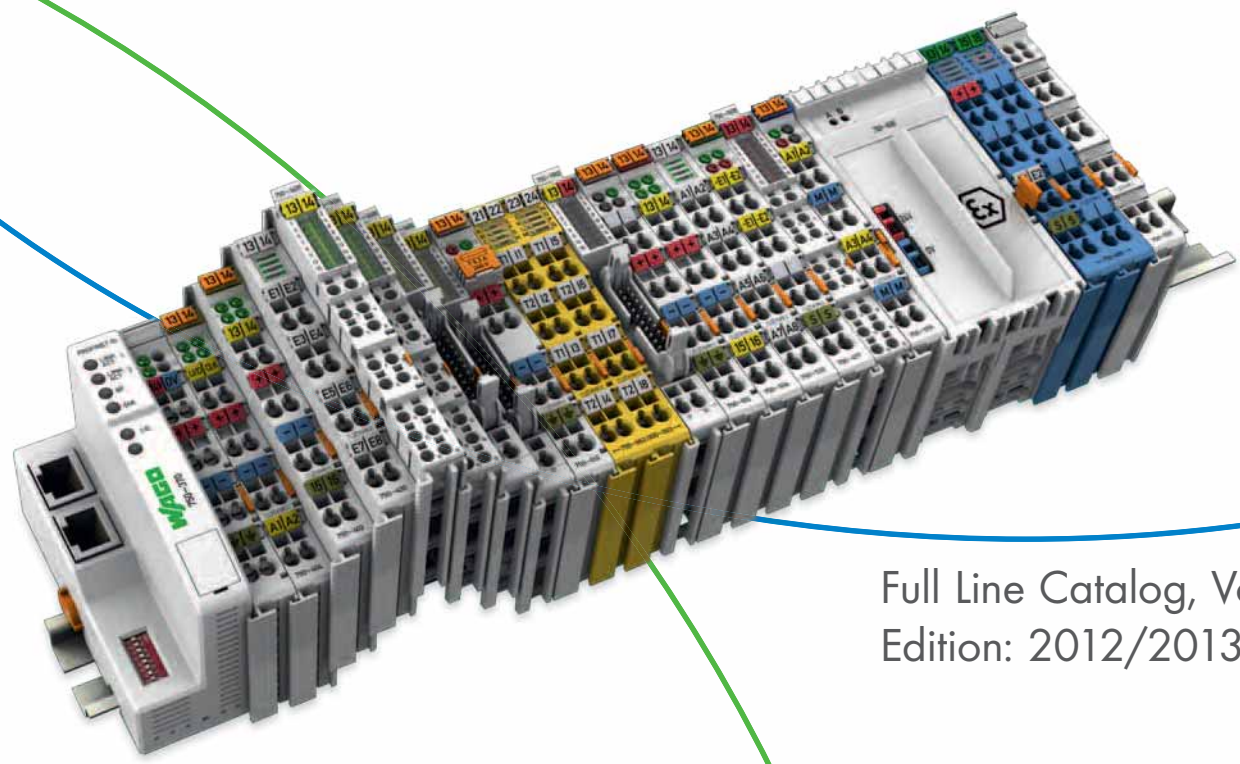


AUTOMATION



Full Line Catalog, Volume 3
Edition: 2012/2013

WAGO Registered Trademarks



CAGE CLAMP®

CAGE CLAMP® 

POWER CAGE CLAMP

FIT CLAMP®

PUSH WIRE®

TOPJOB®

TOPJOB® 

WINSTA®

WAGO®

X-COM®

X-COM® 

JUMPFLEX®

TO-PASS®

ProServe®

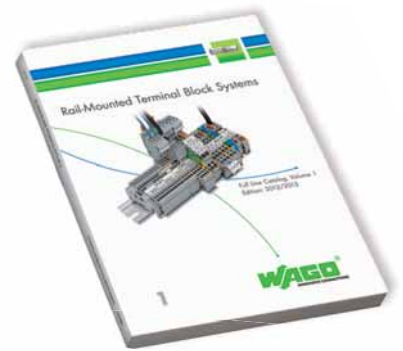
EPSITRON®

picoMAX®

WAGO Full Line Catalogs

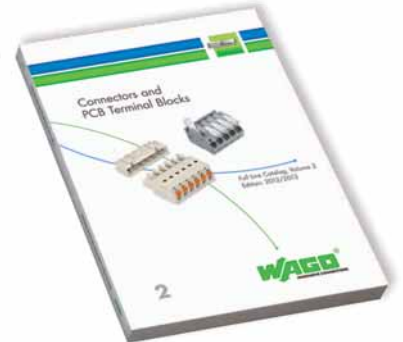
Volume 1, Rail-Mounted Terminal Block Systems

- Rail-Mounted Terminal Blocks
- Modular Connectors (X-COM®-SYSTEM and X-COM®-SYSTEM)
- Patchboard Systems
- Terminal Strips
- PUSH WIRE® Connectors for Junction Boxes
- Lighting Connectors
- Shield Connecting System



Volume 2, Connectors and PCB Terminal Blocks

- PCB Terminal Blocks
- Feedthrough Terminal Blocks
- MULTI CONNECTION SYSTEM
- Pluggable PCB Connectors
- Specialty Connectors



Volume 3, AUTOMATION

- IP20 Modular I/O-SYSTEM
- Wireless Technology, TO-PASS® Telecontrol Technology
- Industrial Switches, PERSPECTO®
- IP67 Modular I/O-SYSTEM, IP67 Block I/O-SYSTEM
- IP67 Sensor/Actuator Boxes, IP67 Cables and Connectors
- Power Supplies



Volume 4, INTERFACE ELECTRONIC

- Relays - Optocouplers - Special Functions
- Interface Modules
- Transducers
- Power Supplies
- Overvoltage Protection
- Wireless Technology
- Empty Housings and Mounting Carriers



Volume 5, WINSTA® - The Connection System

- WINSTA® MINI - Connectors
- WINSTA® MINI special - Connectors
- WINSTA® MIDI - Connectors
- WINSTA® MIDI special - Connectors
- WINSTA® MAXI - Connectors
- WINSTA® RD - Cable Assemblies
- WINSTA® KNX - Connectors
- WINSTA® IDC - Flat Cables



Handling of WAGO Connection Technologies*

CAGE CLAMP® S

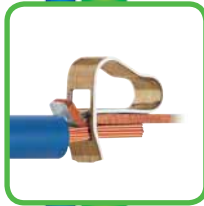


Universal connection with "SPECIAL"

Handling:

Open the clamp, insert wire and release the clamp - done! Solid conductors and fine-stranded conductors with ferrules are connected by simply pushing them in - no operating tool needed.

CAGE CLAMP®



Universal connection of solid, stranded and fine-stranded conductors

Handling:

Open the clamp, insert wire and release the clamp - done!

POWER CAGE CLAMP®



Universal connection of conductors larger than 6 AWG (16 mm²)

Handling:

- To open the clamp with a standard hex wrench or operating tool, and turn approximately twice counter-clockwise.
- Latch holds clamp open.
- Insert conductor.
- A small counter-clockwise rotation releases the latch.

FIT CLAMP®



Insulation displacement connection (IDC)

Handling:

Push unstripped conductor into the IDC contact using an operating tool.

PUSH WIRE®



PUSH WIRE® connection for solid wires and stranded wires (depending on product used)







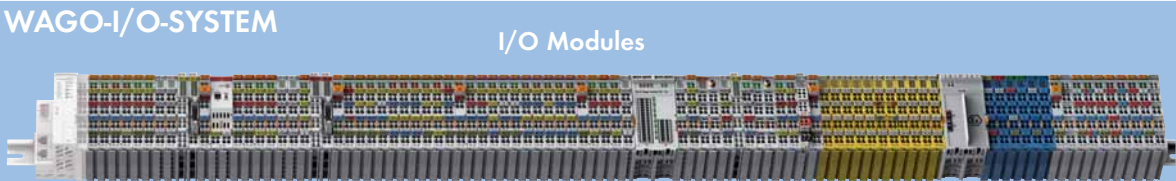





Handling:

Solid and stranded conductors that are rigid enough are connected by simply pushing them in - no operating tool needed.

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2		Modular I/O-SYSTEM IP67 - 767 Series WAGO SPEEDWAY
3		Block I/O-SYSTEM IP67 - 755 Series Fieldbus Components with Fixed Number of Digital Inputs/Outputs
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6		PERSPECTO® - 762 Series
7		Wireless Technology Bluetooth® and EnOcean Components - 750, 770, 789 Series
8		Telecontrol - 761 Series Telecontrol Technology Solutions
9		Industrial Switches - 852 Series
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MODBUS/TCP



CANopen

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Fieldbus Coupler



SPEEDWAY 2



BLOCK I/O-SYSTEM



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Block I/O 3

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MODBUS/TCP



CANopen

SPEEDWAY - I/O Modules



SPEEDWAY 2

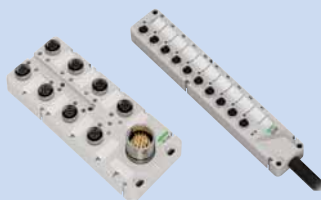
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380

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Sensor/Actuator Boxes

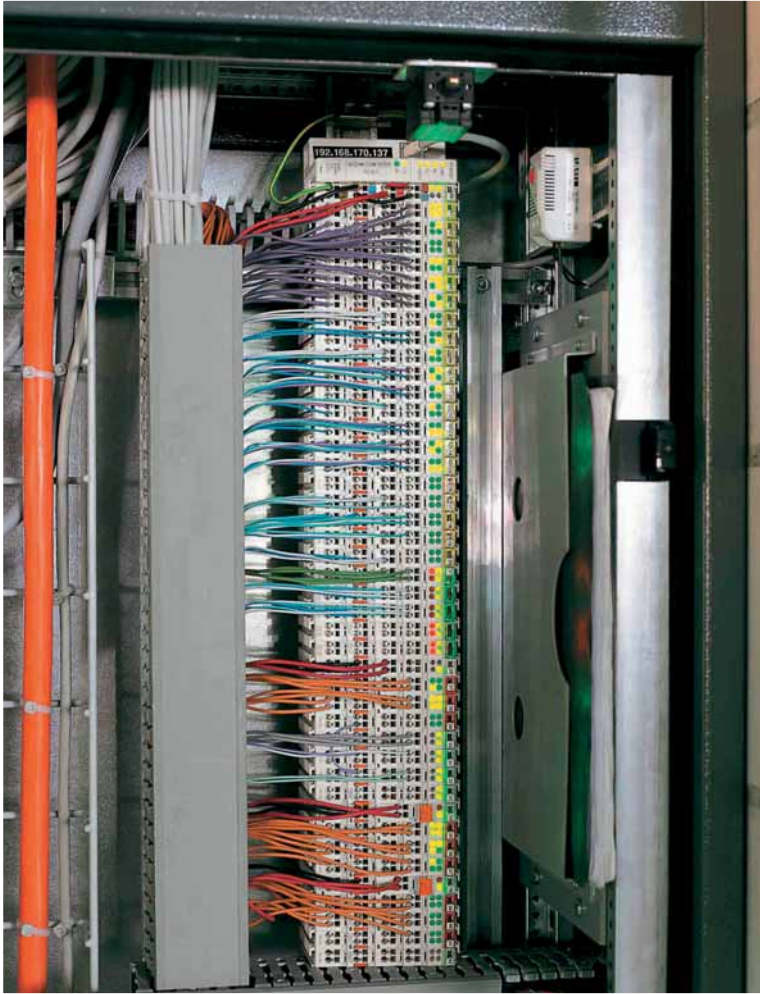
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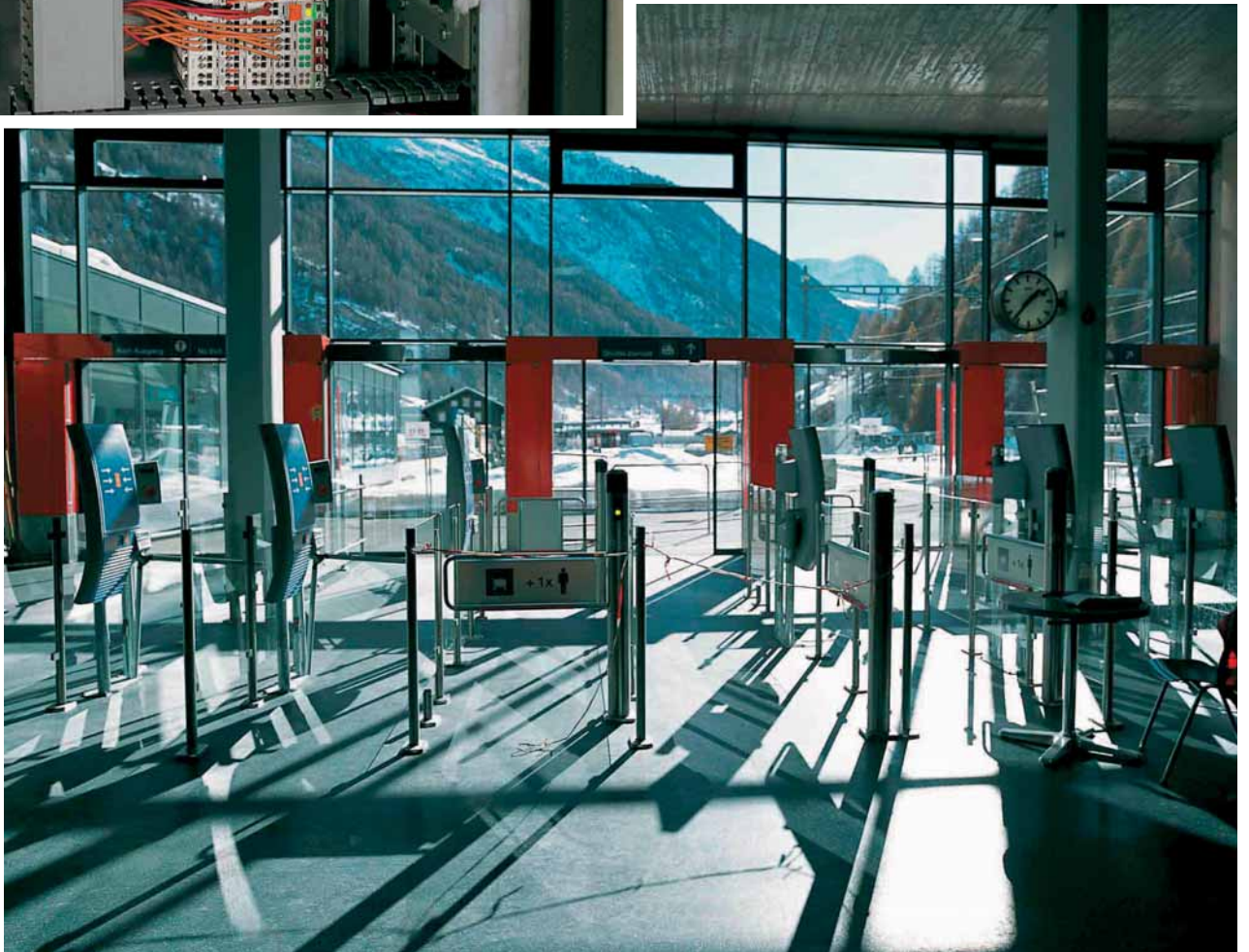
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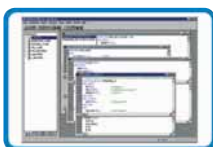
WAGO Application:
Matterhorn Terminal in Täsch, Switzerland

WAGO Products:
WAGO-I/O-SYSTEM with ETHERNET Controllers





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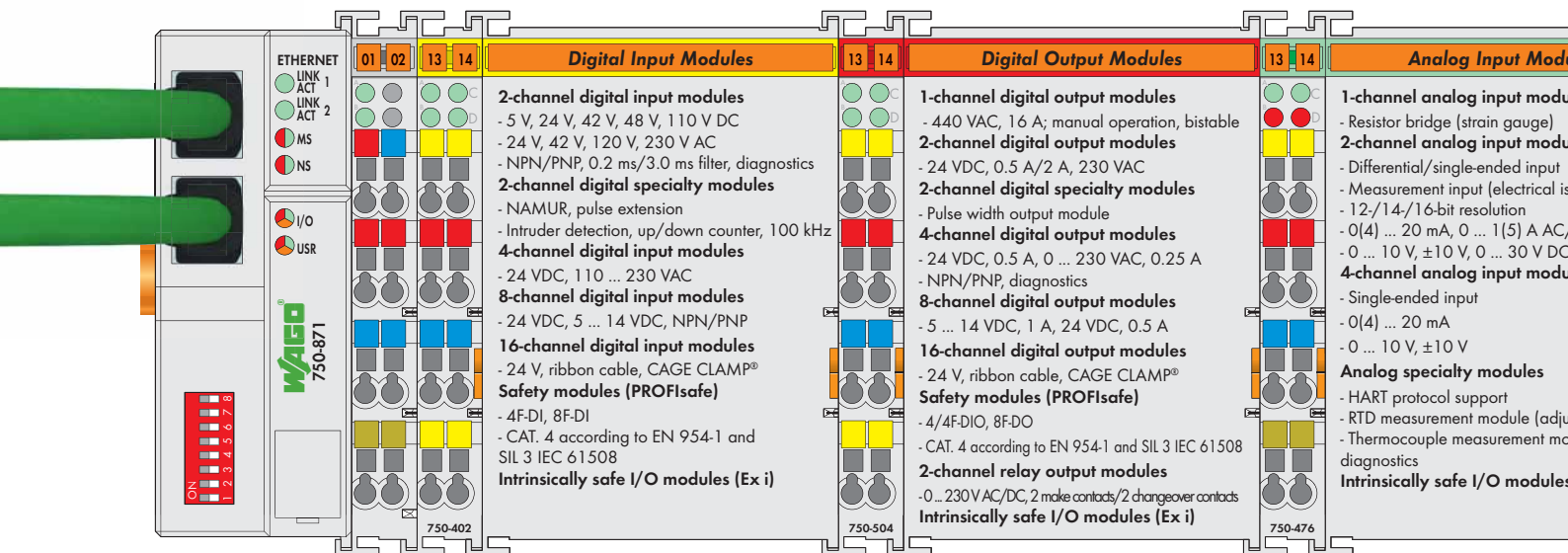
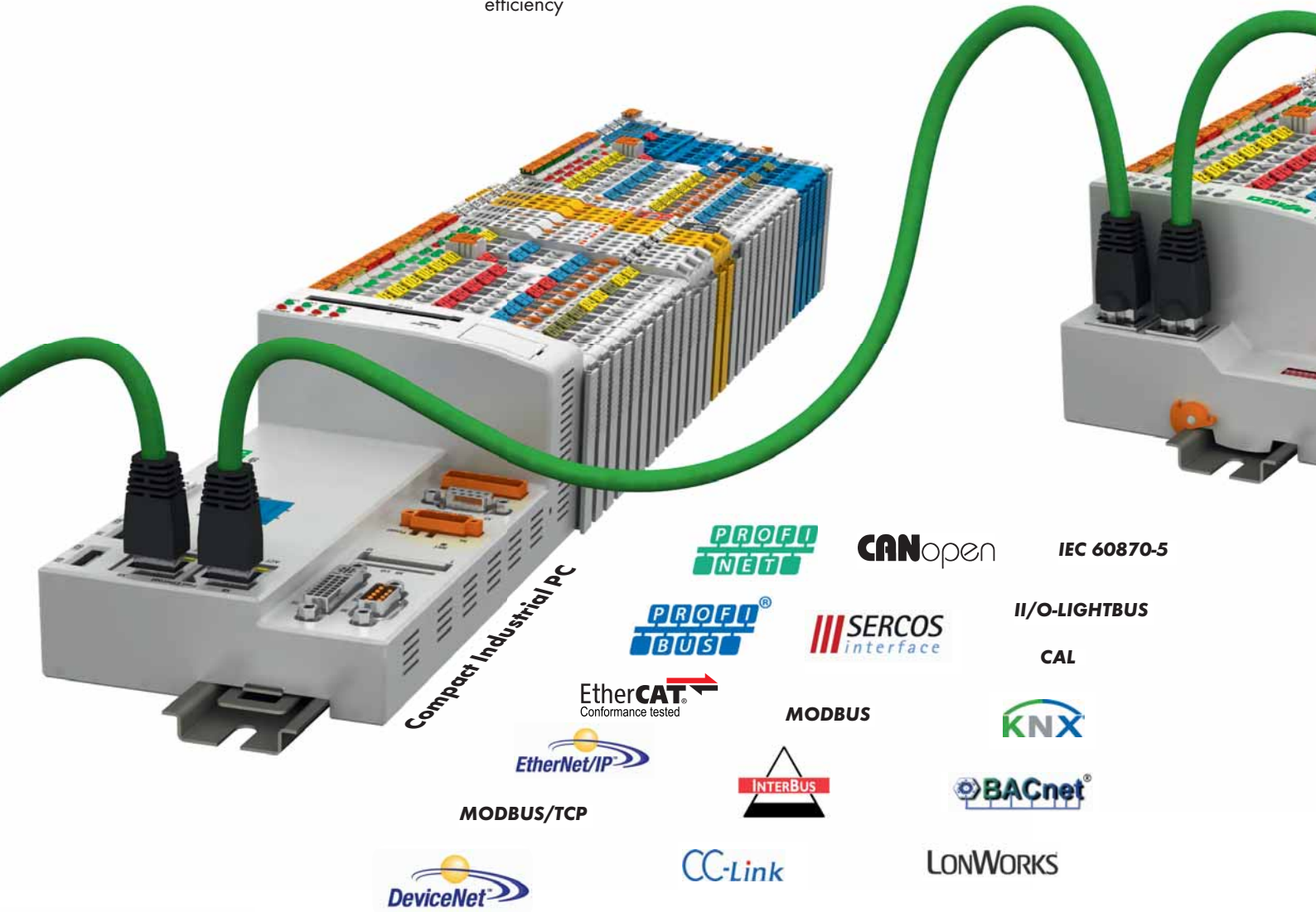
1 Scalable Industrial Ethernet Solutions

8 WAGO I/O-SYSTEM 750, 753 and 758 Series offer future-proof system architecture.

Fine modularity and a fieldbus-independent design are hallmarks of the WAGO I/O-SYSTEM, which boasts approvals for a diverse range of applications.

- Optimized for process-oriented communication with a scalable performance solution
- High integration density
- Unbeatable price/performance ratio
- The variety of possible applications is almost infinite
- The hardware and system costs, by contrast, have been reduced to a minimum
- For simple use that ensures maximum efficiency

The basic premise of the modular system is reflected in the support of numerous fieldbus systems. Depending on the application, it is possible to choose between fieldbus couplers and controllers for different protocols.



Optimized for Practical Requirements

Finely modular:

- 1, 2, 4, 8 or 16 channels on an I/O module

Fieldbus-independent:

- Fieldbus couplers & fieldbus controllers for the most common fieldbus protocols & industrial ETHERNET standards

A good investment:

- Fieldbus-independent node design allows easy change to new bus standards while keeping the I/O modules

Clear identification:

- With color-coded group marker carriers and WAGO WSB module identification.

Scalable performance:

- With economy & standard couplers as well as programmable controllers on through to the IPC

High-performance:

- Fieldbus couplers with additional PLC functionality (controllers) for distributed control networks according to IEC 61131-3

Great flexibility:

- Configuration possibilities for digital and analog inputs and outputs and specialty modules with different potentials, capacity, and signals on one fieldbus node

Dependable:

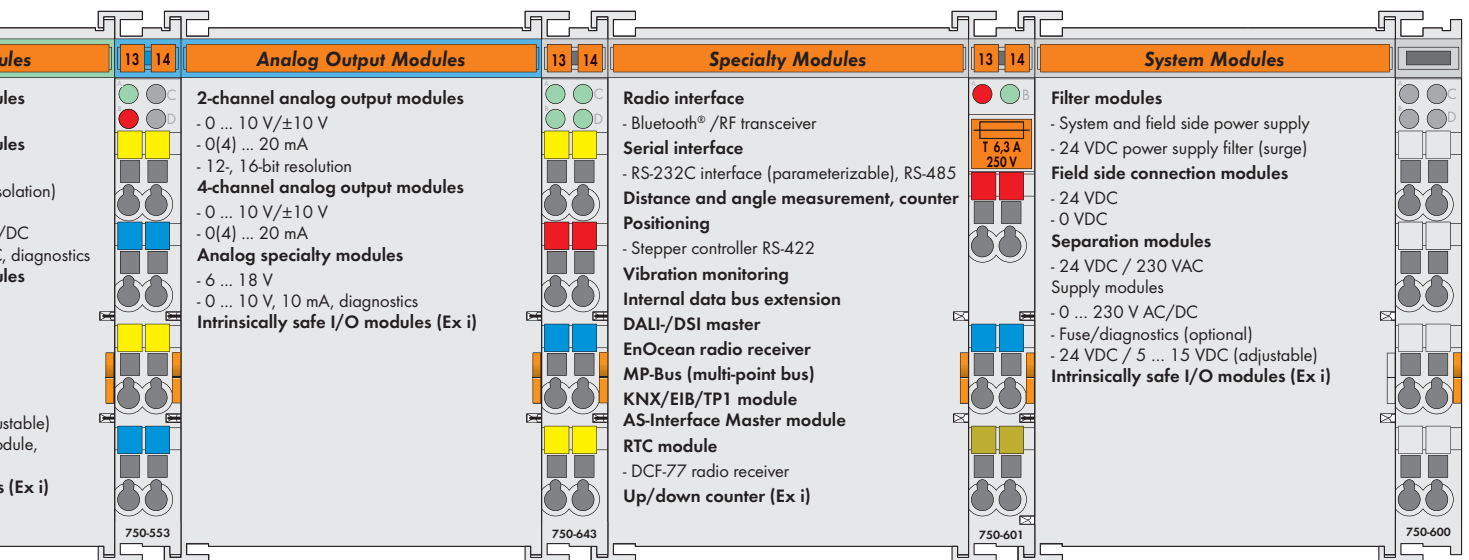
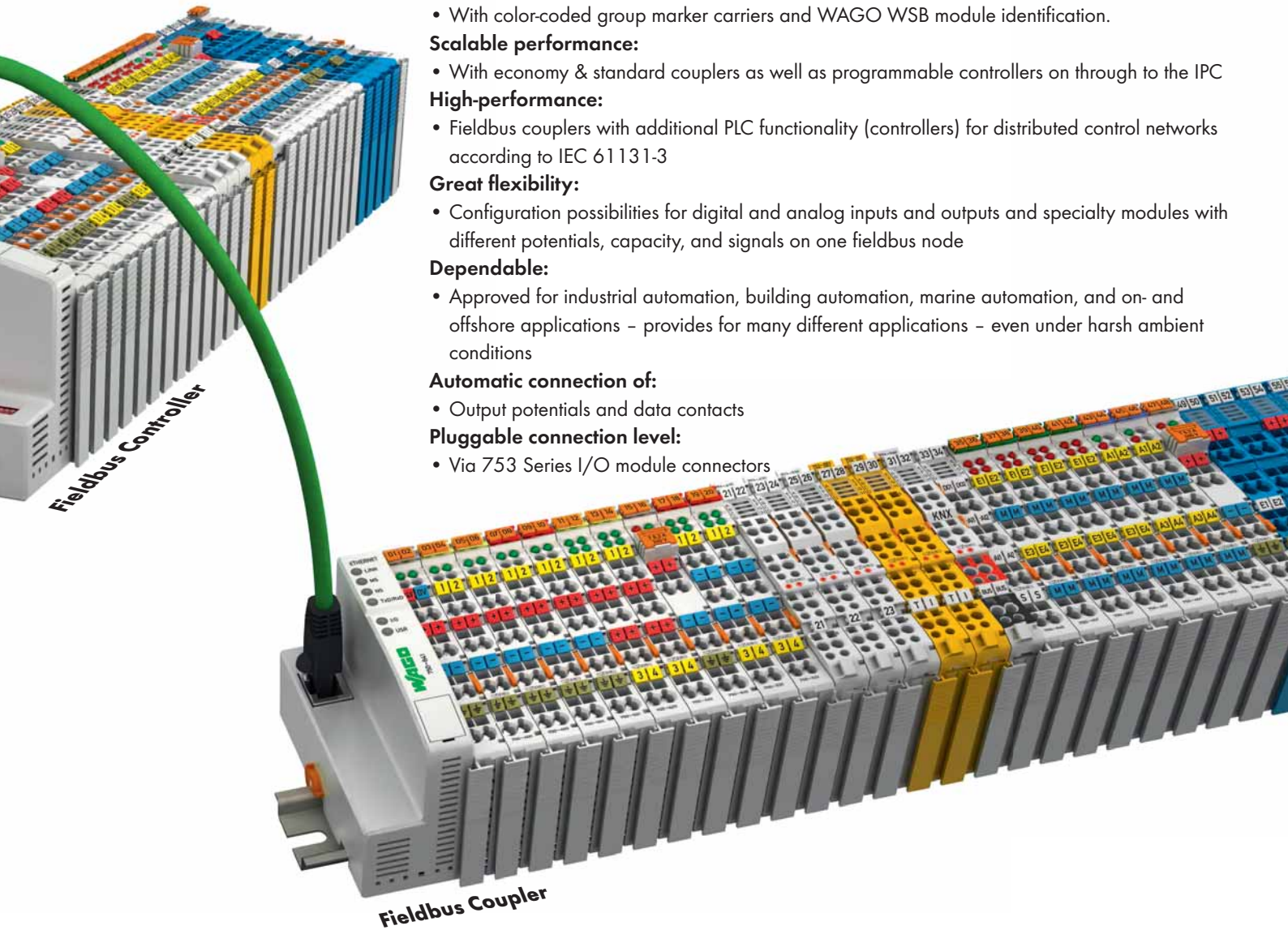
- Approved for industrial automation, building automation, marine automation, and on- and offshore applications – provides for many different applications – even under harsh ambient conditions

Automatic connection of:

- Output potentials and data contacts

Pluggable connection level:

- Via 753 Series I/O module connectors



Universal Basic Module

Assembly

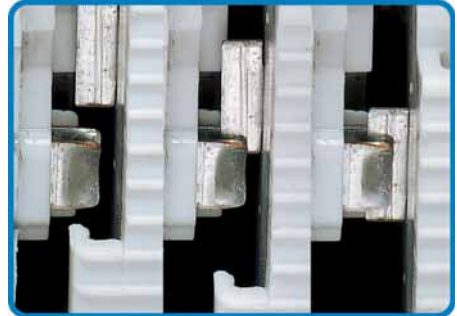


Fine modularity for the assembly on the rail . . .

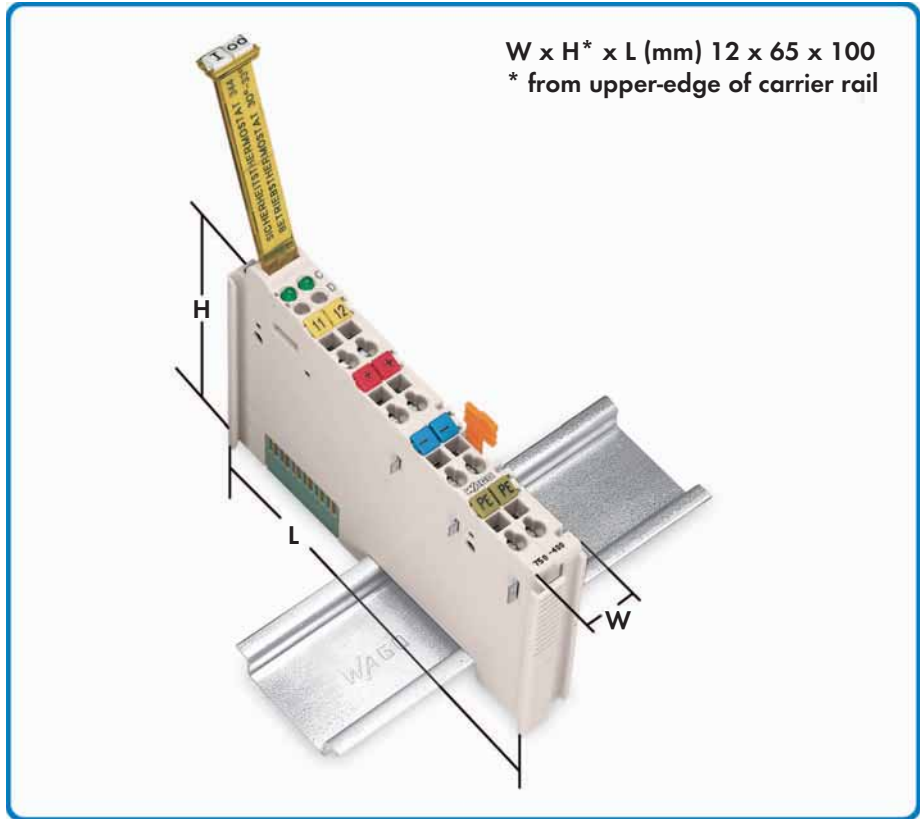
Power jumper contacts on the field side



Safe, automatic connection by tinned, self-cleaning slide contact, ground (earth) contact makes first and breaks last (Series 750 and 753)

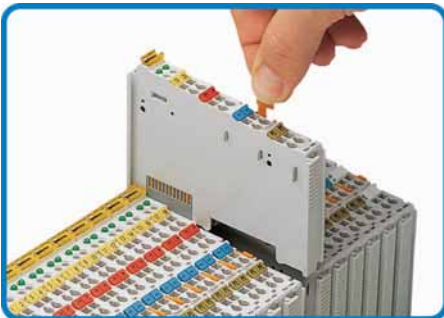


. . . secure connection with dovetails



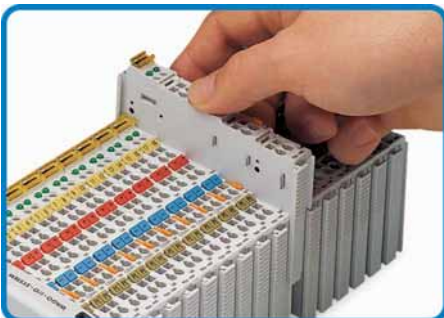
W x H* x L (mm) 12 x 65 x 100
* from upper-edge of carrier rail

Exchange within the assembly



Quick exchange of an I/O module. . .

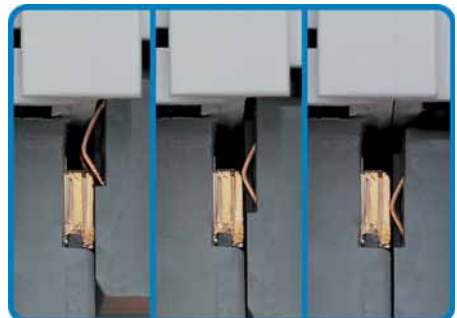
Data contacts



. . . within the assembly – without tool



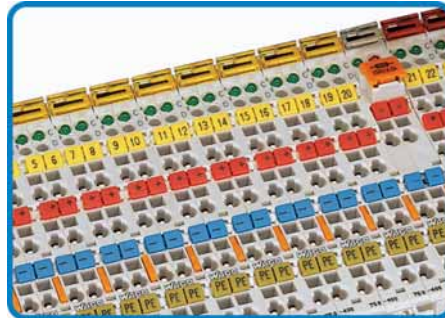
Safe, automatic connection by gold-plated, self-cleaning slide contacts with high contact safety (750 and 753 Series)



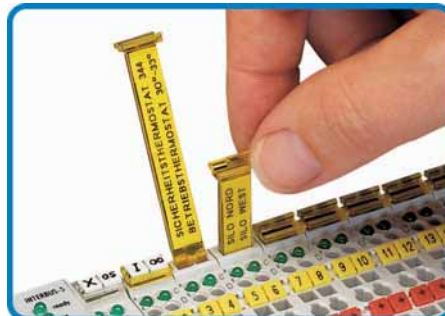
Obvious handling by color coding



Molded marking of clamping units



Marking of clamping units by colored miniature WSB markers



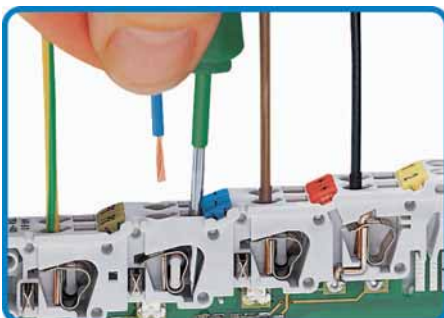
Group marking carrier (can be withdrawn and replaced) with large area for self marking



Different functions marked by transparent colored group marker carriers

- yellow – digital inputs
- red – digital outputs
- green – analog inputs
- blue – analog outputs
- colorless – supply and special function modules

CAGE CLAMP® connection



Vibration-proof, fast and maintenance-free wiring of 0.08 mm² - 2.5 mm² / AWG 28 - 14

Status indication



Diagnosis and status indication by LED for safe start-up and system control

Testing



Signal tracing with wired conductors

Fuse holder



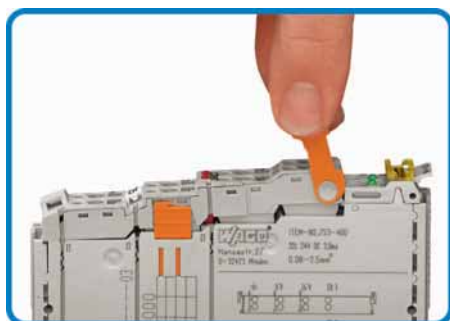
Function at locked position 2: Easy fuse replacement via hinged cover. Use UL-recognized fuses only!

With Pluggable Connector

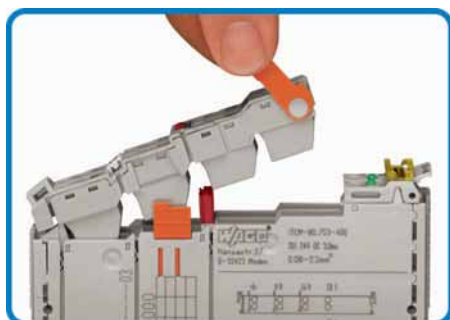
To remove the connector



Locate the orange pull-tab on the connector ...

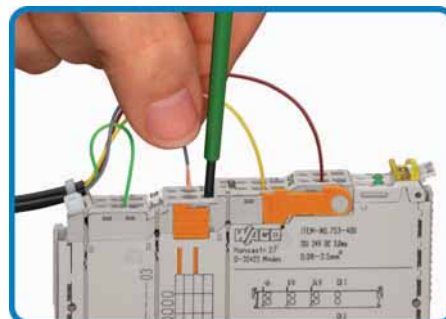


... pull toward the front of the connector ...

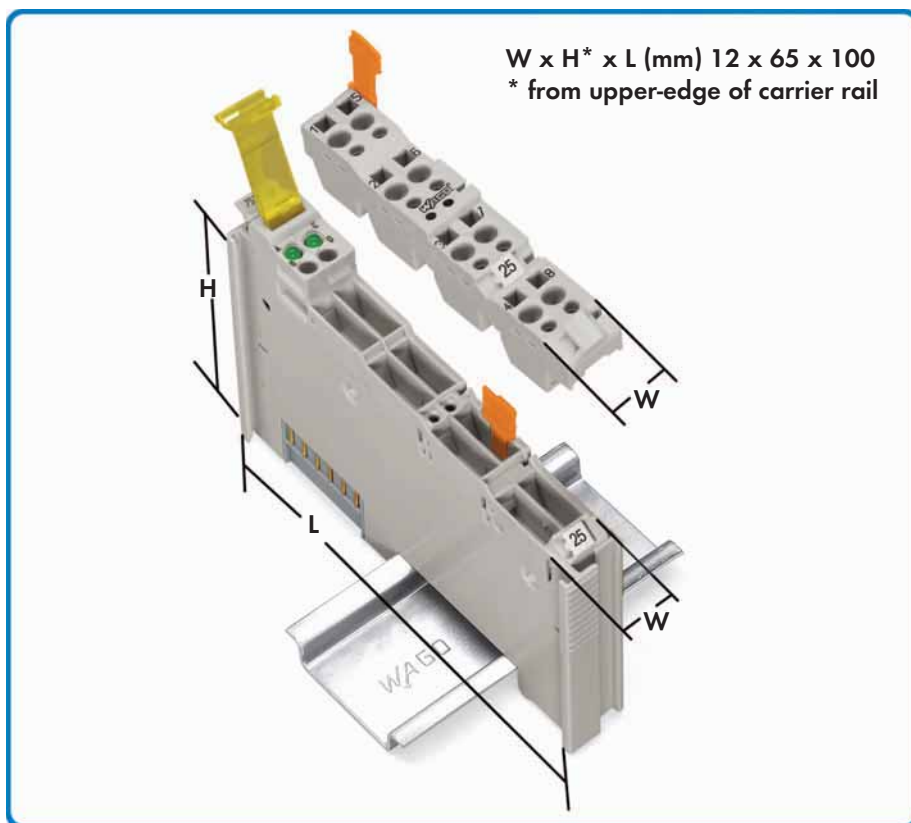


... the connector is automatically disengaged.

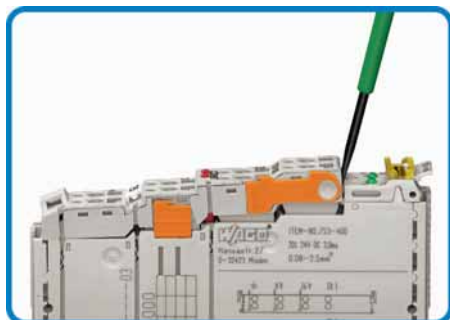
CAGE CLAMP® connection



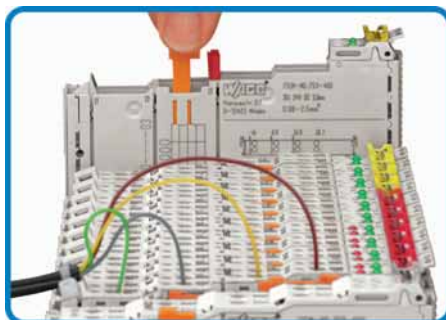
Vibration-proof, fast and maintenance-free wiring of 0.08 mm² - 2.5 mm² / AWG 28 - 14



Removal from the assembly



Alternatively, a standard screwdriver can be used to remove the connector from the I/O module.



Assembly on the rail ...



... removal from the assembly - without tool.

Built-in convenient features

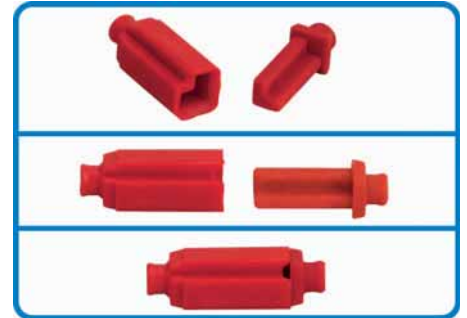


Securing the cable on the connector



Indication on both the connector and the I/O module is possible via miniature WSB marker tags

Coding



Connecting the coding pieces...

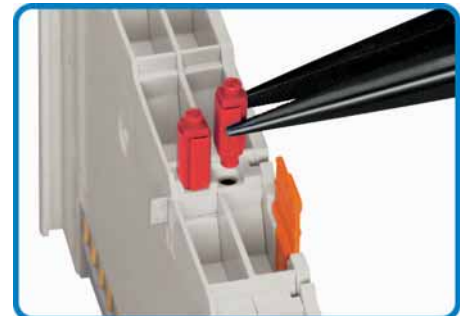


Molded marking of clamping units



- yellow – digital inputs
- red – digital outputs
- green – analog inputs
- blue – analog outputs
- colorless – supply and special function modules

Different functions marked by transparent colored group marker carriers



... place the coding piece into the I/O module ... (up to 16 different positions)



... place the connector into the I/O module.

Testing



Signal tracing with wired conductors

Status indication















LED diagnostic and status indication for start-up and system control





Coded connector can only fit in the corresponding coded I/O module

Approvals Overview WAGO-I/O-SYSTEM 750/753













Approvals for versions with item no. suffix /...-... upon request.
Current approvals overview also on the Internet at www.wago.com



	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
	GL (Germanischer Lloyd)	11 631-10 HH; 26 624-05 HH; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC, AEX-7538-X (OCP 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X

	Item No.	Item Description	Ex												Ship Approvals				UL	Page												
Compact Industrial PCs 	758-870	I/O-IPC-G2 Linux 2.6																	x ¹⁾	x ¹⁾			x	42								
	758-874	I/O-IPC-C6 Linux 2.6																							x	44						
	758-875	I/O-IPC-C10 E Linux 2.6																								x	46					
	758-876	I/O-IPC-P14 Linux 2.6																									x	48				
Fieldbus Controllers 	750-804	INTERBUS Controller	x	x	x																							x	80			
	750-806	DeviceNet Controller	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	68			
	750-812	MODBUS Controller RS-485 (150 ... 19200 Baud)	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	78			
	750-814	MODBUS Controller RS-232 (150 ... 19200 Baud)	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	78			
	750-815	MODBUS Controller RS-485 (1.2 ... 115.2 kBaud)	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	78			
	750-816	MODBUS Controller RS-232 (1.2 ... 115.2 kBaud)	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	78			
	750-819	LonWorks® Controller	x	x	x																								x	88		
	750-830	BACnet/IP Controller			x																								x ²⁾	x ²⁾	x	86
	750-833	PROFIBUS DP/V1 Controller	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	50		
	750-837	CANopen Controller	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	70		
	750-838	CANopen Controller D-Sub			x																									x	72	
	750-841	ETHERNET Controller 100 MBit/s	x		x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	58		
	750-842	ETHERNET Controller 10 MBit/s	x		x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	64		
	750-843	ETHERNET Controller 10 MBit/s																												x	66	
	750-849	KNX IP Controller																											x ²⁾	x ²⁾	x	84
	750-860	Linux Controller			x	x																								x	74	
	750-863	Linux ETHERNET Controller																												x	76	
	750-871	ETHERNET TCP/IP Controller, 2 Ports			x																								x ²⁾	x ²⁾	x	60
	750-872	Telecontrol Controller RJ-45 + D-Sub																													x	82
	750-873	ETHERNET TCP/IP RS-232 Controller			x																								x ²⁾	x ²⁾	x	62
750-880	ETHERNET Controller																													x	52	
750-881	ETHERNET Controller																											x ²⁾	x ²⁾	x	54	
750-882	Media Redundancy ETHERNET Controller																											x ²⁾	x ²⁾	x	56	

¹⁾ Notice: see installation note!

²⁾ Notice: The 750-626 filter module is absolutely necessary!

	c UL US	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
	GL (Germanischer Lloyd)	11 631-10 HH; 26 624-05 HH; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL US	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC,AEX-7538-X (OCF 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X

	Item No.	Item Description	Ex		Ship Approvals												UL	Page				
	750-300	II/O-LIGHTBUS																	x	150		
	750-303	PROFIBUS DP/FMS 12 MBaud		x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	102		
	750-304	INTERBUS 500 kBaud			x	x														x	138	
	750-305	CAN CAL			x	x															x	148
	750-306	DeviceNet			x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	120
	750-307	CANopen			x	x															x	124
	750-310	CC-Link			x	x															x	146
	750-312	MODBUS RS-485 (150 ... 19200 Baud)			x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	136
	750-314	MODBUS RS-232 (150 ... 19200 Baud)		x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	136
	750-315	MODBUS RS-485 (1.2 ... 115.2 kBaud)		x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	136
	750-316	MODBUS RS-232 (1.2 ... 115.2 kBaud)		x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	136
	750-319	LonWorks®			x	x	x														x	154
	750-320	II/O-LIGHTBUS (Digital)																			x	152
	750-331	PROFIBUS DP 1.5 MBaud (Optical Fiber)																			x	108
	750-333	PROFIBUS DP/V1 12 MBaud		x	x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	104
	750-334	INTERBUS 500 kBaud (Optical Fiber)			x		x														x	144
	750-337	CANopen MSS			x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	126
	750-338	CANopen D-Sub					x	x													x	128
	750-340	PROFINET IO Coupler					x														x	98
	750-341	ETHERNET TCP/IP 100 Mbit		x		x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	110
	750-342	ETHERNET TCP/IP 10 Mbit			x	x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾			x	112
	750-343	PROFIBUS DP ECO 12 MBaud			x	x	x								x ²⁾	x ²⁾					x	106
	750-344	INTERBUS ECO 500 kBaud			x	x	x														x	140
	750-345	INTERBUS ECO 2 MBaud			x	x	x														x	142
	750-346	DeviceNet ECO			x	x	x														x	122
	750-347	CANopen ECO MSS			x	x	x								x ²⁾	x ²⁾					x	130
	750-348	CANopen ECO			x	x	x								x ²⁾	x ²⁾					x	132
	750-351	SERCOS III Coupler													x ²⁾	x ²⁾					x	134
	750-352	ETHERNET TCP/IP 10/100 Mbit/s													x ²⁾	x ²⁾					x	114
	750-352/																					
	020-000	ETHERNET TCP/IP 100 Mbit/s ECO																			x	116
	750-354	EtherCAT®																			x	118
750-370	PROFINET IO 100 Mbit 2-port																			x	100	
	750-960	PROFIBUS Fieldbus connector with D-Sub male connector						x	x	x	x	x	x	x	x	x	x			x	586	
	750-961	INTERBUS Fieldbus connector with D-Sub female connector			x	x															x	592
	750-962	INTERBUS Fieldbus connector with D-Sub male connector			x	x															x	593
	750-963	CANopen Fieldbus connector with D-Sub male and female connectors													x	x					x	591
	750-970	PROFIBUS Fieldbus connector with D-Sub female connector						x	x	x	x	x	x	x	x	x	x	x			x	Internet
	750-975	ETHERNET RJ-45 connector													x	x					x	589

²⁾ Notice: The 750-626 filter module is absolutely necessary!

	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
	GL (Germanischer Lloyd)	11 631-10 HH; 26 624-05 HH; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC, AEX-7538-X (OCP 0004)
	TUV	07ATEX554086 X; IECEx TUN 09.0001 X













Digital Input Modules



Item No.	Item Description	Ex	Ship Approvals												UL	Page
			UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL		
750-400	2DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x*	x*	x	x	x*	162	
750-401	2DI 24V DC, 0.2ms		x	x*	x	x	x	x	x	x*	x*	x	x	x*	162	
750-402	4DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x*	x*	x	x	x*	165	
750-403	4DI 24V DC, 0.2ms	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	165	
750-405	2DI 230V AC		x	x*	x	x	x	x	x	x*	x*	x	x	x*	190	
750-406	2DI 120V AC		x	x*	x	x	x	x	x	x*	x*	x	x	x*	188	
750-408	4DI 24V DC, 3.0ms, low-side switching		x	x*										x*	168	
750-409	4DI 24V DC, 0.2ms, low-side switching		x	x*										x*	168	
750-410	2DI 24V DC, 3.0ms, proximity switching		x	x*	x	x	x	x	x	x*	x*	x	x	x*	163	
750-411	2DI 24V DC, 0.2ms, proximity switching		x	x*	x	x	x	x	x	x*	x*	x	x	x*	163	
750-412	2DI 48V DC, 3.0ms		x	x*										x*	184	
750-414	4DI 5V DC, 0.2ms			x										x	160	
750-415	4DI 24V AC/DC 20ms	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	181	
750-418	2DI 24V DC, 3.0ms, diagn., acknowl.	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	164	
750-419	2DI 24V DC, 0.2ms, diagn.	x		x	x	x	x	x	x	x*	x*	x	x	x	on request	
750-421	2DI 24V DC, diagn.		x	x*	x	x	x	x	x	x*	x*	x	x	x*	164	
750-422	2DI 24V DC, pulse extension	x	x	x*										x*	167	
750-423	4DI 24V AC/DC, 50ms, power contacts	x	x	x*	x	x				x*	x*			x*	182	
750-424	2DI 24V DC, intruder detection	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	192	
750-425	2DI NAMUR	x	x	x*						x*	x*			x*	191	
750-427	2DI 110V DC	x	x	x*										x*	186	
750-428	4DI 42V AC/DC, 20ms			x*										x*	183	
750-430	8DI 24V DC, 3.0ms	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	171	
750-431	8DI 24V DC, 0.2ms	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	171	
750-432	4DI 24V DC		x	x*	x	x	x	x	x	x*	x*	x	x	x*	166	
750-433	4DI 24V DC	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	166	
750-435	1DI NAMUR Exi	x ³⁾	x	x	x	x	x	x	x	x	x	x	x	x	308	
750-436	8DI 24V DC, 3.0ms		x	x*	x	x	x	x	x	x*	x*	x	x	x*	172	
750-437	8DI 24V DC, 0.2ms		x	x*	x	x	x	x	x	x*	x*	x	x	x*	172	
750-438	2DI NAMUR Exi	x ³⁾	x	x						x	x			x	310	
750-1400	16DI 24V DC 3.0ms, high-side switch., ribbon cable									x	x			x	177	
750-1402	16DI 24V DC 3.0ms, low-side switch., ribbon cable									x	x			x	179	
750-1405	16DI 24V DC 3.0ms, high-side switch.									x	x			x	178	
750-1407	16DI 24V DC 3.0ms, low-side switch.									x	x			x	180	
750-1415	8DI 24V DC, 3.0ms, high-side switch., 2-conductor									x	x			x	175	
750-1416	8DI 24V DC, 0.2ms, high-side switch., 2-conductor									x	x			x	175	
750-1417	8DI 24V DC, 3.0ms, low-side switch., 2-conductor									x	x			x	176	
750-1418	8DI 24V DC, 0.2ms, low-side switch., 2-conductor									x	x			x	176	
750-1420	4DI 24V DC, 3.0ms, high-side switch., 3-conductor									x	x			x	169	
750-1421	4DI 24V DC, 0.2ms, high-side switch., 3-conductor									x	x			x	169	
750-1422	4DI 24V DC, 3.0ms, low-side switch., 3-conductor									x	x			x	170	
750-1423	4DI 24V DC, 0.2ms, low-side switch., 3-conductor									x	x			x	170	
753-429	2DI 60 V DC, 3.0 ms													x	185	
753-434	8DI 5/12V DC			x										x	161	
753-440	4DI 120/230V AC			x										x	189	

* UL 508, ANSI/ISA 12.12.01, GL (Germanischer Lloyd) and DNV (Det Norske Veritas) approvals is also granted for the 753 Series pluggable I/O modules



³⁾ Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 231)

	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
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	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
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	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC,AEX-7538-X (OCP 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X

Digital Output Modules



Item No.	Item Description	Ex		Ship Approvals												UL	Page
750-501	2DO 24V DC, 0.5A			x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	198
750-502	2DO 24V DC, 2.0A	x		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	199
750-504	4DO 24V DC, 0.5A			x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	202
750-506	2DO 24V DC, 0.5A, diagn.			x	x*											x*	200
750-508	2DO 24V DC, 2.0A, diagn.	x		x	x*	x	x		x		x*	x*				x*	201
750-509	2DO 230V AC, 0.3A, SSR			x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	218
750-512	2DO 230V AC, 2.0A, rel. 2 NO	x		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	222
750-513	2DO 230V AC, 2.0A, rel. 2 NO, pot. free			x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	223
750-514	2DO 125V AC, 0.5A, rel. 2 CO, pot. free					x	x					x*	x*			x*	220
750-516	4DO 24V DC, 0.5A, low side switch	x	x	x*		x	x	x	x	x	x	x*	x*	x	x	x*	204
750-517	2DO 230V AC, 1.0A, rel. 2 CO, pot. free					x	x	x	x	x	x	x*	x*	x	x	x*	221
750-519	4DO 5V DC, 20mA	x		x												x	196
750-522	2DO 230V AC, 3.0A, 30s, SSR	x	x	x												x	219
750-523	1DO 230V AC, 16A, rel. 1a, pot. free					x	x					x	x			x	224
750-530	8DO 24V DC, 0.5A		x	x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	206
750-531	4DO 24V DC, 0.5A	x		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	203
750-532	4DO 24V DC, 0.5A, diagn.			x	x											x	205
750-534	8DO 5/12V DC				x*											x*	197
750-535	2DO 24V DC, Ex i	x ³⁾		x	x	x	x	x	x	x	x	x	x	x	x	x	312
750-536	8DO 24V DC, 0.5A			x	x	x	x	x	x	x	x	x	x	x	x	x	207
750-537	8DO 24V DC, 0.5A, diagn.			x	x	x	x	x	x	x	x	x	x	x	x	x	208
750-1500	16DO 24V DC 0.5A, high-side switch., ribbon cable											x	x			x	213
750-1501	16DO 24V DC 0.5A, low-side switch., ribbon cable											x	x			x	215
750-1502	8DI 8DO 24V DC 0.5A, high-side switch., ribbon cable											x	x			x	209
750-1504	16DO 24V DC 0.5A, high-side switch.											x	x			x	214
750-1505	16DO 24V DC 0.5A, low-side switch.											x	x			x	216
750-1506	8DI 8DO 24V DC 0.5A, high-side switch.											x	x			x	210
750-1515	8DO 24V DC 0.5A, high-side switch., 2-conductor											x	x			x	211
750-1516	8DO 24V DC 0.5A, low-side switch., 2-conductor											x	x			x	212
753-540	4DO 120/230V AC			x												x	217

*  UL 508,  ANSI/ISA 12.12.01, GL (Germanischer Lloyd) and DNV (Det Norske Veritas) approvals is also granted for the 753 Series pluggable I/O modules

³⁾ Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 231)

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	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC, AEX-7538-X (OCP 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X

Analog Input Modules



Item No.	Item Description	Ex	Ship Approvals												UL	Page
750-452	2AI 0 - 20mA, differential input		x	x*	x	x	x	x	x	x*	x*	x	x	x*	228	
750-453	4AI 0 - 20mA, single ended		x	x*	x	x	x	x	x	x*	x*	x	x	x*	232	
750-454	2AI 4 - 20mA, differential input		x	x*	x	x	x	x	x	x*	x*	x	x	x*	228	
750-455	4AI 4 - 20mA, single ended		x	x*	x	x	x	x	x	x*	x*	x	x	x*	232	
750-456	2AI ± 10 VDC		x	x*	x	x	x	x	x	x*	x*	x	x	x*	242	
750-457	4AI ± 10 VDC, single ended		x	x*	x	x	x	x	x	x*	x*	x	x	x*	241	
750-459	4AI 0-10 VDC, single ended		x	x*	x	x	x	x	x	x*	x*	x	x	x*	241	
750-460	4AI Resistance Temperature Device (RTD)													x	246	
750-461	2AI Resistance Temperature Device (RTD)	x	x	x*	x	x	x	x	x	x*	x*	x	x	x*	245	
750-464	2/4AI RTD, configurable										x	x		x	248	
750-465	2AI 0 - 20mA, single ended			x	x*									x*	229	
750-466	2AI 4 - 20mA, single ended	x		x	x*									x*	229	
750-467	2AI 0 - 10 VDC, single ended			x	x*									x*	238	
750-468	4AI 0 - 10 VDC, single ended			x	x*	x	x	x	x	x	x	x	x	x	239	
750-469	2AI Thermocouple (TC) diagn.			x	x*	x	x	x	x	x	x*	x*	x	x	249	
750-470	2AI 0 - 20mA, single ended, s.c. protec.			x	x	x	x	x	x	x	x	x	x	x	230	
750-472	2AI 0 - 20mA, 16 bits, single ended	x	x	x*	x	x	x	x	x	x	x*	x*	x	x	231	
750-473	2AI 4 - 20mA, single ended, s.c. protec.			x	x	x	x	x	x	x	x	x	x	x	230	
750-474	2AI 4 - 20mA, 16 bits, single ended	x	x	x*	x	x	x	x	x	x	x*	x*	x	x	231	
750-475	2AI 0- 1A AC/DC, differential input	x	x	x*										x*	236	
750-476	2AI ±10 VDC, 16 bits, single ended	x	x	x*	x	x	x	x	x	x	x*	x*	x	x	240	
750-477	2AI 0 - 10V AC/DC, differential input			x	x*									x*	237	
750-478	2AI 0 - 10 VDC, 16 bits, single ended	x	x	x*	x	x	x	x	x	x	x*	x*	x	x	240	
750-479	2AI ± 10 VDC, differential measurement input	x	x	x*	x	x	x	x	x	x	x*	x*	x	x	243	
750-480	2AI 0 - 20mA, differential measurement input	x	x	x*										x*	233	
750-481 ⁴⁾	2AI RTD, Ex i	x ³⁾	x	x							x	x		x	318	
750-482	2AI 4 - 20 mA 12 Bit single ended HART													x*	235	
750-483	2AI 0 - 30 VDC, differential measurement input			x	x*	x	x	x	x	x	x*	x*	x	x	244	
750-484	2AI 4 - 20 mA 12 Bit single ended HART Ex i	x												x	316	
750-485	2AI 4 - 20mA, Ex i	x ³⁾	x	x	x	x	x	x	x	x	x	x	x	x	314	
750-487 ⁴⁾	2AI TC, Ex i	x												x	320	
750-492	2AI 4 - 20mA, differential measurement input	x	x	x*										x*	234	

* UL 508, ANSI/ISA 12.12.01, GL (Germanischer Lloyd) and DNV (Det Norske Veritas) approvals is also granted for the 753 Series pluggable I/O modules
³⁾ Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 231)
⁴⁾ Version 750-481/003-000













	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
	GL (Germanischer Lloyd)	11 631-10 HH; 26 624-05 HH; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC,AEX-7538-X (OCP 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X


Analog Output Modules





Item No.	Item Description	Ex	Ship Approvals												UL	Page
750-550	2AO 0 - 10 VDC		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	257
750-552	2AO 0 - 20mA		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	254
750-553	4AO 0 - 20mA		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	256
750-554	2AO 4 - 20mA	x	x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	254
750-555	4AO 4 - 20mA		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	256
750-556	2AO ±10 VDC		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	257
750-557	4AO ± 10 VDC		x	x*	x	x	x	x	x	x	x*	x*	x	x	x*	259
750-559	4AO 0-10 VDC		x	x*	x	x	x	x	x	x	x	x	x	x	x*	259
750-560	2 AO 0-10 VDC 10 bits 10 mA 24V														x	260
750-562	2AO 0/±10 VDC 16 bits														x	258
750-563	2AO 0/4-20 mA / 6-18 VDC 16 bits														x	255
750-585	2AO 0 - 20mA, Ex i	x ³⁾	x	x	x	x	x	x	x	x	x	x	x	x	x	322

*.UL US, ANSI/ISA 12.12.01, GL (Germanischer Lloyd) and DNV (Det Norske Veritas) approvals is also granted for the 753 Series pluggable I/O modules
³⁾ Only use this module in connection with the 24VDC Ex i supply module (note the power supply instructions on page 231)

	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
	GL (Germanischer Lloyd)	11 631-10 HH; 26 624-05 HH; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC, AEX-7538-X (OCP 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X

Specialty Modules	Item No.	Item Description	Ex		Ship Approvals												UL	Page				
	750-404 ⁷¹	Up/down counter, 100kHz			x	x*	x	x	x	x	x	x	x	x	x	x	x	x	x*	264		
	750-511	2 DO, 24 VDC, 0.1A, pulse width			x	x														x	266	
	750-630	SSI transmitter interface	x																		x	267
	750-631	Incremental encoder interface, 16 bits																			x	268
	750-635	Digital pulse interface		x	x	x*															x*	270
	750-637	Incremental encoder interface, 32 bits	x	x	x	x								x	x						x	269
	750-638	Up/down counter, 500kHz		x	x	x*															x*	265
	750-640	RTC Module																			x	281
	750-641	DALI/DSI Master module												x	x						x	277
	750-642	Radio receiver module																			x	278
	750-643	MP-Bus Master module																			x	280
	750-644	Bluetooth®/RF Transceiver																			x	279
	750-645	2AI/2DO VIB VRMS/SPM Multi																			x	287
	750-650	Serial interface RS-232 C					x	x*	x	x	x	x	x	x	x*	x*	x	x	x	x	x*	271
	750-651	TTY interface							x	x	x	x	x	x	x	x	x	x	x	x	x	273
	750-652	RS-232/RS-485 configurable																			x	275
	750-653	Serial interface RS-485					x	x*	x	x	x	x	x	x	x*	x*	x	x	x	x	x*	272
	750-654	Data exchange module								x	x	x	x	x	x	x	x	x	x	x	x	274
	750-655	AS-Interface Master					x	x							x	x					x	283
	750-660	PROFIsafe 8 DI					x	x													x	302
	750-661	PROFIsafe 4FDI 24V																			x	298
	750-665	PROFIsafe 4 FDO 0.5A; 4 FDI 24 VDC					x	x													x	303
	750-667	PROFIsafe 4FDI/4FDO 24V/2A																			x	300
	750-670	Stepper Controller RS-422/24V/20mA					x														x	288
	750-671	Stepper Controller 24V/1.5A					x															289
		753-646	KNX/EIB/TP1 module												x	x					x	276
		753-662	8FDI 24V PROFIsafe																		x	299
	753-667	4FDI/4FDO 24V/2A PROFIsafe																		x	300	

*  UL 508,  ANSI/ISA 12.12.01, GL (Germanischer Lloyd) und DNV (Det Norske Veritas) approvals is also granted for the 753 Series pluggable I/O modules

⁷¹ Notice: The ship approvals are only valid for the 750-404/020-003 version!

	c UL us	E175199, UL 508
	ABS (American Bureau of Shipping)	03-HG374860/2-PDA; 05-ES578983-X
	BV (Bureau Veritas)	13453/B0 BV
	DNV (Det Norske Veritas)	A-12260; Cl. B
	GL (Germanischer Lloyd)	11 631-10 HH; 26 624-05 HH; 26 898-05 HH; 59 627-08 HH; 60 241-09 HH; Cat. A, B, C, D (EMC 1)
	KR (Korean Register of Shipping)	HMB05880-EL004 ff
	LR (Lloyd's Register)	02/20026 (E2); Env. 1, 2, 3, 4
	NKK (Nippon Kaiji Kyokai)	TA06190M
	Polski Rejestr Statkow	TE/1720/880590/08
	RINA (Registro Italiano Navale)	ELE153207CS 001
	c UL us	E198726, ANSI/ISA 12.12.01
	DEMKO, PTB	08ATEX142851 X; IECEx PTB 07.0064 X
	Brazilian Ex	MC,AEX-7538-X (OCP 0004)
	TÜV	07ATEX554086 X; IECEx TUN 09.0001 X

System Modules	Item No.	Item Description	Ex		Ship Approvals												UL	Page		
	750-600	End module	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	347	
	750-601	Supply module 24 VDC /fuse	x	x	x	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x	331
	750-602	Supply module 24 VDC		x	x	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x	330
	750-603	Field side connection module		x	x*								x*	x*					x*	338
	750-604	Field side connection module		x	x*								x*	x*					x*	339
	750-606	Supply module 24 VDC Ex i	x																	306
	750-609	Supply module 230 VAC /fuse		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	331
	750-610	Supply module 24 VDC /fuse /diagn.		x	x	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x ⁵⁾	x	332
	750-611	Supply module 230 VDC /fuse /diagn.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	332
	750-612	Supply module 0-230 V AC/DC		x	x	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x ⁶⁾	x	330
	750-613	Internal system supply module 24 VDC		x	x	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x ²⁾	x	334
	750-614	Field side connection module, 0 - 230 V AC/DC	x	x	x*	x	x	x	x	x	x	x	x*	x*	x	x	x	x*	x	337
	750-615	Supply module 120 VAC /fuse		x	x														x	331
	750-616	Separation module		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	346
	750-621	Separation module with contacts		x	x														x	346
	750-622	Binary spacer module with power supply		x	x														x	343
	750-623	Supply module 24/5-15 VDC																	x	333
750-624	Overvoltage protection, field side power supply	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	335	
750-625/	Supply module 24 VDC Ex i																			
000-001			x															x	305	
750-626	Filter module, system and field side power supply	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	336	
750-1605	Field side connection module												x	x				x	340	
750-1606	Field side connection module												x	x				x	341	
750-1607	Field side connection module												x	x				x	342	

* - UL 508, - ANSI/ISA 12.12.01, GL (Germanischer Lloyd) und DNV (Det Norske Veritas) approvals is also granted for the 753 Series pluggable I/O modules

²⁾ Notice: The 750-626 filter module is absolutely necessary! ⁵⁾ Notice: The 750-624 filter module is absolutely necessary!

⁶⁾ Notice: The 750-626 filter module is absolutely necessary for the supply of 24VDC!

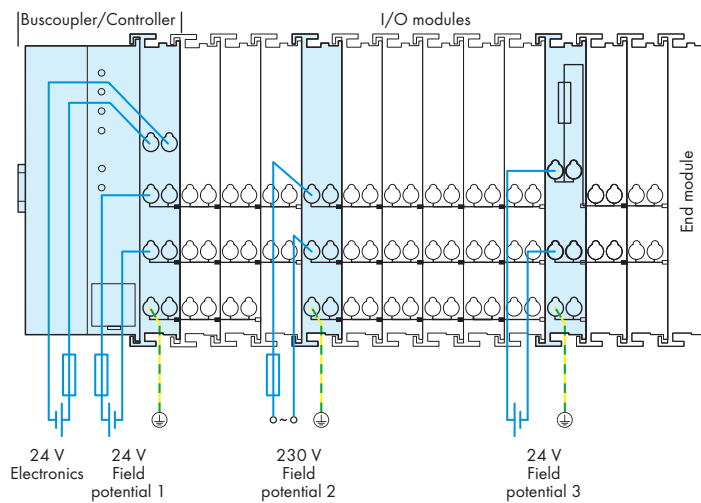


The bus coupler/controller has provisions for an electrically isolated supply to the internal electronics and the field side, which enables a separate supply of the sensors and actuators. The supply voltages are made automatically by snapping the individual I/O modules into the assembly. Furthermore, power supply modules with diagnostics allow for supply monitoring, so that an I/O node can be supplied in a flexible and user defined way. The power supply to the electronics is limited to a maximal possible value depending on the coupler/controller used. If the sum of the internal current consumption of all I/O modules exceed this value, an additional supply module, 750-613, has to be used. In the same way, the supply of the field power (via power contacts) must not exceed 10A. However, using different power supply modules allows for a change of voltage and/or power supply. Assembling groups of different voltage potentials (e.g. 24VDC, 230VAC) will also permit the use of Emergency Stops within a system.

Note:

Some I/O modules have no or only individual power contacts so that the transmission of potentials may be interrupted. If field power is necessary for the following I/O modules, a supply module has to be used (see data sheets).

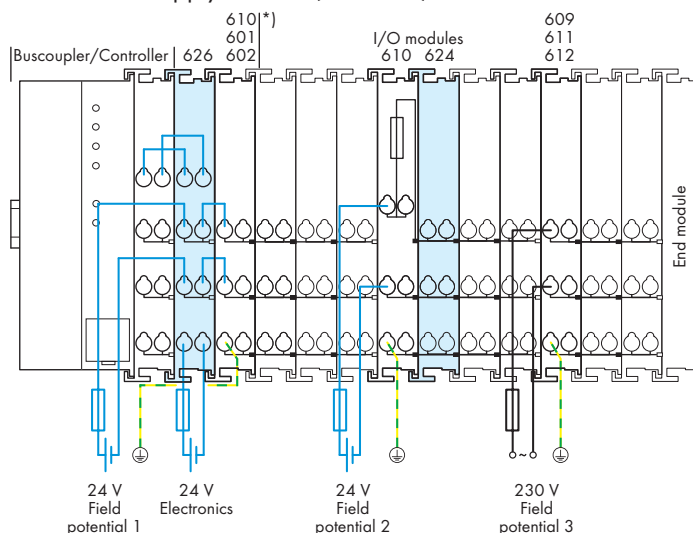
Where unregulated power supplies are used to supply the electronics, a supporting capacitor should be used (200µF per 1 amp. of load current) (see also page 566). A back-up capacitor module is used to smoothe unstable 24VDC power supplies.



Additional voltage supply regulation for certified implementation in shipping industry or offshore/onshore applications

Some specific bus couplers/controllers and I/O modules of the WAGO-I/O-SYSTEM 750 are certified for the above mentioned application fields. To ensure a proper system operation, the standards of leading certification agencies must be observed. For this purpose, the following power supply filter modules must be used:

- 750-624 24VDC field side power supply filter (surge) used to filter the 24VDC fieldside power supply of the corresponding power supply module
- 750-626 24VDC power supply filter (surge) used to filter the electronics and field side supply for buscoupler, controller and internal bus supply module (750-613)



*) Only required if the ground connection is necessary for the adjacent modules

Additional voltage supply regulation for the operation of intrinsically safe Ex i modules (750-435, -438, -481/003-000, -485, -535, -585)

Fig. I

When operating the intrinsically safe Ex i modules in connection with sensors/actuators operating in hazardous environments of Zones 0 and 1, the supply module 24VDC Ex i (750-625) must be used to supply the I/O modules. If further 24VDC Ex i supply modules are required, four separation modules (750-616) must be placed between the intrinsically safe sections

Fig. II

The operation of intrinsically safe Ex i modules according to shipbuilding certification standards requires the use of 750-624 or 750-626 Filter Modules! If, due to load conditions, supplying the Ex i segment is no longer possible via the supply module (potential 1), an additional power supply is required. The additional supply module (e.g., 750-610) must be connected together with a 750-624 Filter Module upstream of the 750-625 Ex i Supply Module. Electrical connection between the additional supply module and the Ex i power supply is also provided via wire jumpers between filter module and Ex i supply module (see Fig. II).

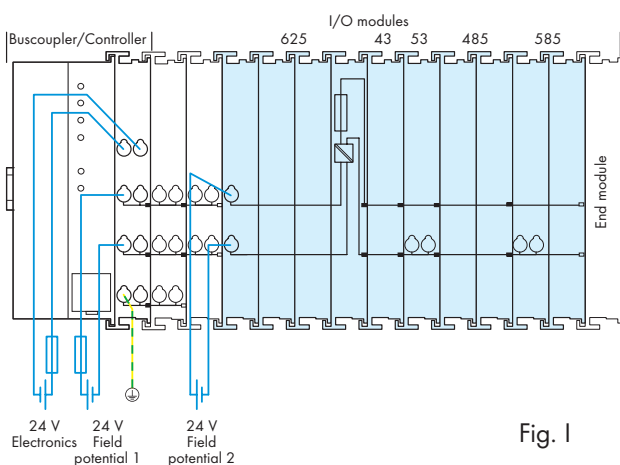


Fig. I

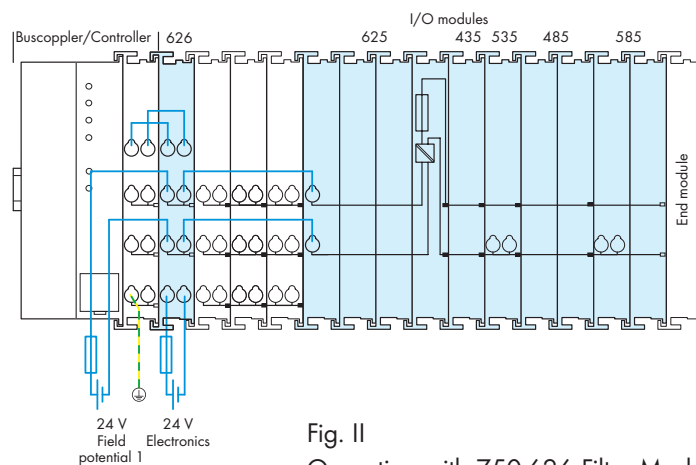


Fig. II

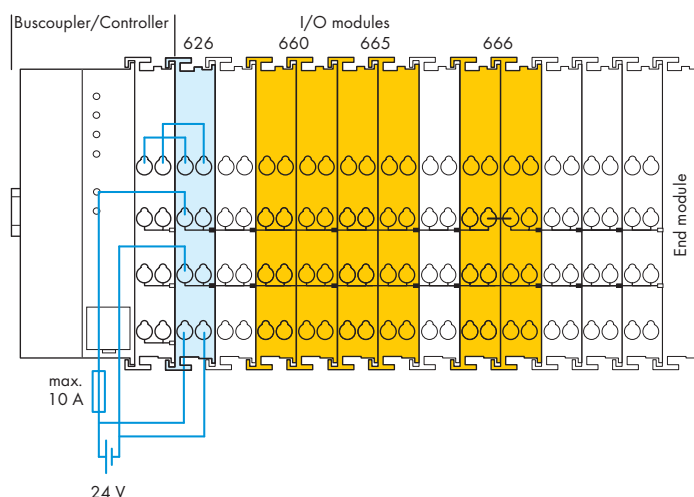
Operation with 750-626 Filter Modul

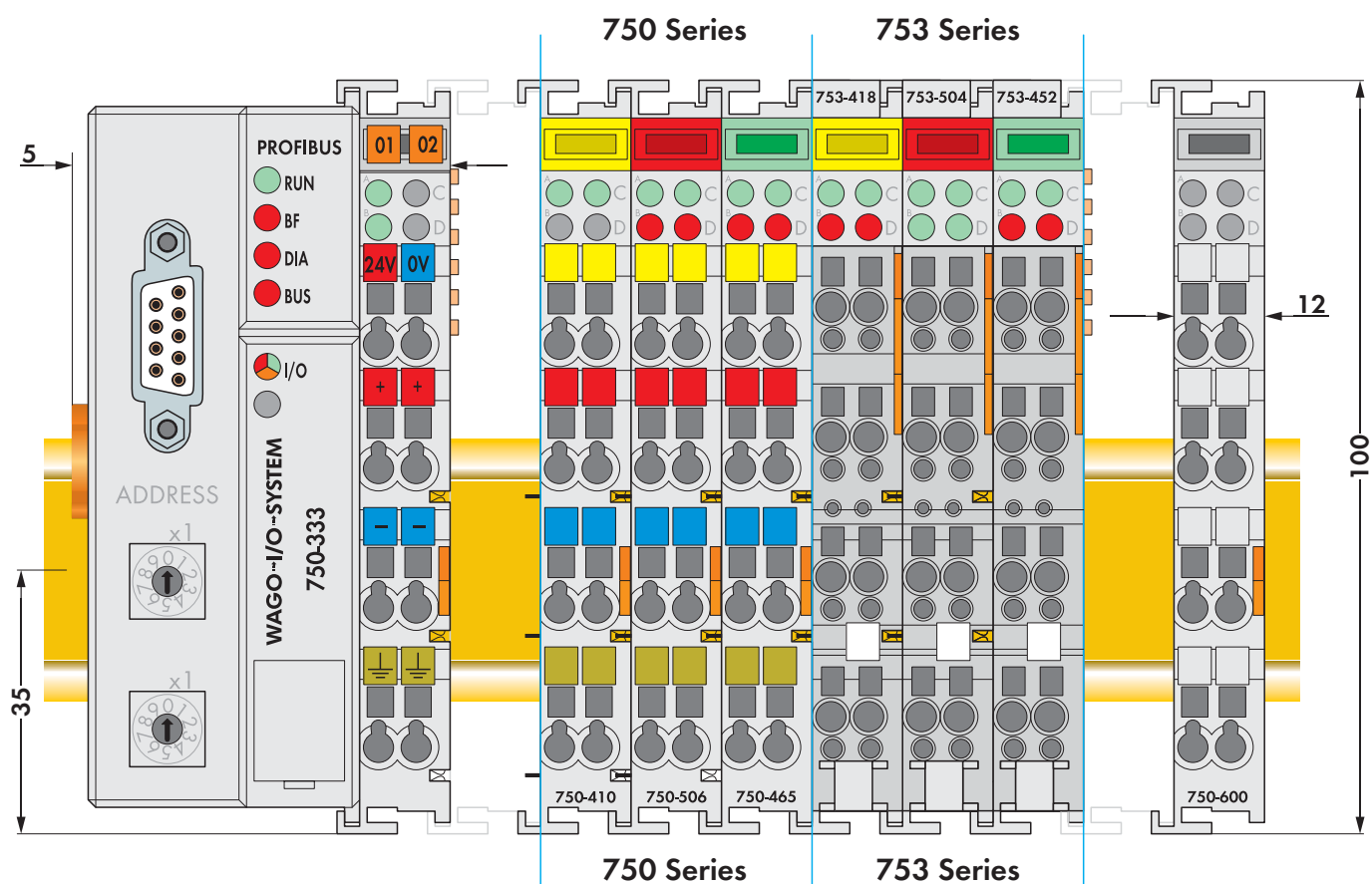
Power supply concept for the operation of digital safety modules for PROFIsafe

When using PROFIsafe modules, only power supplies with protective extralow voltage (PELV/SELV) shall be used for the 24VDC power supply. This is also valid for the system supply terminations of the coupler/controller. Furthermore, the supply voltage must be performed via a 750-626 Series filter module equipped with surge suppression.

A node containing PROFIsafe components shall only be supplied using a filtered voltage. Make sure that the cable length between the filter module with surge suppression and the node is kept as short as possible.

The PROFIsafe modules can be supplied via the power jumper contacts from the 24 V DC field supply of the node, if the power required by the I/O modules via the power jumper contacts of the filter module 750-626 is smaller than 10 A. If the power required exceeds 10A, an additional power supply must be provided. This can be realized using the supply modules 750-601 or -610 (with fuse max. 6.3A).





The electronics of the WAGO buscouplers are integrated in a housing with a width of approximately 51 mm.

The electronics of the WAGO I/O System modules are designed into housings ranging from 12 mm up to 48 mm in width, and are known as 750 and 753 Series. 753 Series modules offer the added convenience of pluggable field wiring. 750 and 753 Series modules can co-exist in the same WAGO-I/O-SYSTEM node, and are 100% compatible. Both series offer internal power jumper contacts rated at 10 amps (up to 3 per module), extending field device power to adjacent modules.

Notice:

Depending on the I/O function, all modules do not have the same number of power jumper contacts. Power jumper contacts of adjacent I/O modules must be compatible (i.e. blade contacts must have corresponding spring contacts). Please review the circuit diagrams of the individual modules. An additional power supply module may be necessary.

Note: A bus end module (750-600) is always required at the end of each node and is placed at the end of each node at the end opposite the buscoupler.

Mechanic	
Material	polycarbonate, polyamide 6.6
Dimensions W x H* x L:	
* from upper-edge of DIN rail	
- Coupler/Controller (Standard)	- 51 mm x 65 mm x 100 mm
- Coupler/Controller (ECO)	- 50 mm x 65 mm x 100 mm
- I/O module, single	- 12 mm x 64 mm x 100 mm
- I/O module, double	- 24 mm x 64 mm x 100 mm
- I/O module, fourfold	- 48 mm x 64 mm x 100 mm
Installation	on DIN 35 rail with interlock
Modular by	double featherkey-dovetail
Mounting position	any position
Marking	Standard markers and 8 x 47 mm markers for group marker carriers
Connection	
Connection type	CAGE CLAMP®
Wire range	0.08 mm ² ... 2.5 mm ² , AWG 28 ... 14
Stripped length	8 ... 9 mm, 9 ... 10 mm for components with pluggable wiring (753-xxx)
Contacts	
Power jumper contacts	blade/spring contact, self-cleaning
Current I _{max}	10 A
Voltage drop (I=10 A)	< 1 V/64 modules
Data contacts	slide contact, hard gold plated 1.5 μ, self-cleaning
General Environmental Conditions	
Operating temperature	0 °C ... +55 °C,
for components with extended temperature range (750-xxx/025-xxx)	-20 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity	95 % without condensation
Resistance to harmful substances	acc. to IEC 60068-2-42 and IEC 60068-2-43
Maximum pollutant concentration at relative humidity < 75%	SO ₂ ≤ 25 ppm H ₂ S ≤ 10 ppm
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Pollution degree II	acc. to IEC 61131-2
Air and creepage distance	acc. to IEC 60664-1
Degree of protection	IP20
Length of entire node	≤ 831 mm








Without taking protective measures the WAGO-I/O-SYSTEM 750 and 753 must not be used:

- in places with unfavorable conditions, for example with dust, corrosive vapors or gases
- in places with high ionizing radiation








Modular I/O System Overview




Industrial Compact PC / PLC / Fieldbus Coupler



Fieldbus System	PLC - Industrial Compact PC	Page	PLC - Programmable Fieldbus Controller	Page
	758-870/000-111 PLC - I/O-IPC-G2 Linux 2.6 CoDeSys Visu PDP-M	42	750-833 PLC - Programmable Fieldbus Controller DP/V1	50
	758-874/000-111 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu PDP-M	44		
	758-874/000-131 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol PDP-M	44		
	758-875/000-111 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu PDP-M	46		
	758-875/000-131 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol PDP-M	46		
	758-876/000-111 PLC - I/O-IPC-P14 Linux 2.6 CoDeSys Visu PDP-M	48		
 MODBUS/TCP			750-880 PLC - Prog. Fieldbus Controller, 2-port, 10/100 Mbit/s	52
			750-881 PLC - Prog. Fieldbus Controller, 2-port, 10/100 Mbit/s	54
			750-841 PLC - Programmable Fieldbus Controller, 100 Mbit	58
			750-871 PLC - Programmable Fieldbus Controller, 2-port	60
			750-873 PLC - Programmable Fieldbus Controller, RS-232	62
MODBUS/TCP	758-870/000-110 PLC - I/O-IPC-G2 Linux 2.6 CoDeSys Visu	42	750-882 PLC - Media Redundancy Prog. Fieldbus Controller	56
	758-874/000-110 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu	44	750-842 PLC - Programmable Fieldbus Controller, 10 Mbit	64
	758-874/000-130 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol	44	750-843 PLC - Programmable Fieldbus Controller, 10 Mbit	66
	758-875/000-110 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	46	750-863 PLC - Programmable Fieldbus Controller, RS-232	76
	758-875/000-130 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol	46		
	758-876/000-110 PLC - I/O-IPC-P14 Linux 2.6 CoDeSys Visu	48		
			750-806 PLC - Programmable Fieldbus Controller	68
	758-870/000-112 PLC - I/O-IPC-G2 Linux 2.6 CoDeSys Visu CO-M	42	750-837 PLC - Programmable Fieldbus Controller, MCS	70
	758-874/000-112 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu CO-M	44	750-838 PLC - Programmable Fieldbus Controller, D-Sub	72
	758-875/000-112 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu CO-M	46		
	758-876/000-112 PLC - I/O-IPC-P14 Linux 2.6 CoDeSys Visu CO-M	48		
LINUX®	758-870 PLC - I/O-IPC-G2 Linux 2.6	42	750-860 PLC - Programmable Fieldbus Controller, MCS	74
	758-874 PLC - I/O-IPC-C6 Linux 2.6	44	750-863 PLC - Programmable Fieldbus Controller, RS-232	76
	758-875 PLC - I/O-IPC-C10 E Linux 2.6	46		
	758-876 PLC - I/O-IPC-P14 Linux 2.6	48		
MODBUS			750-812, PLC - Prog. Fieldbus Controller, RS-485 (150 ... 19200 Bd)	78
			750-814, PLC - Prog. Fieldbus Controller, RS-232 (150 ... 19200 Bd)	78
			750-815, PLC - Prog. Fieldbus Controller, RS-485 (1,2 ... 115,2 kbd)	78
			750-816, PLC - Prog. Fieldbus Controller, RS-232 (1,2 ... 115,2 kbd)	78
			750-804 PLC - Programmable Fieldbus Controller	80
IEC 60870-5 -101/-104 IEC 61850 IEC 61400-25	758-874/000-130 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol	42	750-872 PLC - Programmable Fieldbus Telecontroller	82
	758-874/000-131 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol PDP-M	44		
	758-875/000-130 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol	46		
	758-875/000-131 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol PDP-M	48		
			750-849 PLC - Programmable Fieldbus Controller	84
			750-830 PLC - Programmable Fieldbus Controller	86
LONWORKS			750-819 PLC - Programmable Fieldbus Controller	88

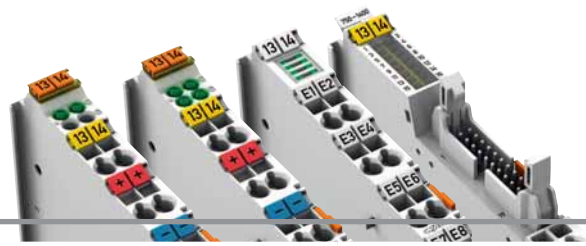


Fieldbus System	Fieldbus Coupler	Page
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	750-370 Fieldbus Coupler, 2-port, 100 Mbits	100
	750-303 DP/FMS Fieldbus Coupler, 12 Mbaud	102
	750-333 DP/V1 Fieldbus Coupler, 12 Mbaud	104
	750-343 DP ECO Fieldbus Coupler, 12 Mbaud	106
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 MODBUS/TCP	750-341 Fieldbus Coupler, 100 Mbits	110
	750-352 Fieldbus Coupler, 10/100 Mbits	114
	750-352/020-000 Fieldbus Coupler, 100 Mbits	116
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Fieldbus System	Fieldbus Coupler	Page
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	750-344 ECO Fieldbus Coupler, 500 kbaud	140
	750-345 ECO Fieldbus Coupler, 2 Mbaud	142
	750-334 Fieldbus Coupler with fiber optic plug	144
	750-310 Fieldbus Coupler	146
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	750-320 Fieldbus Coupler	152
	750-319 Fieldbus Coupler	154
	750-319/004-000 Fieldbus Coupler	156

1 Modular I/O System Overview

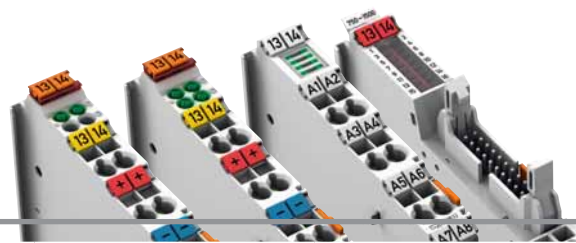
Digital Inputs



Function	2-Channel Digital Input	Page	4-Channel Digital Input	Page	8-Channel Digital Input	Page	16-Channel Digital Input	Page
5 VDC			750-414 0.2 ms, high-side switch.	160				
5/12 VDC					753-434 (5 ... 14 V DC) 0.2 ms, high-side switch.	161		
24 VDC	750-400 / 753-400 3.0 ms, high-side switch.	162	750-402 / 753-402 3.0 ms, high-side switch.	165	750-430 / 753-430 3.0 ms, high-side switch.	171	750-1400 3.0 ms, high-side switch., ribbon cable	177
	750-401 / 753-401 0.2 ms, high-side switch.	162	750-403 / 753-403 0.2 ms, high-side switch.	165	750-431 / 753-431 0.2 ms, high-side switch.	171	750-1405 3.0 ms, high-side switch.	178
	750-410 / 753-410 3.0 ms, high-side switch., proximity switch	163	750-432 / 753-432 3.0 ms, high-side switch.	166	750-436 / 753-436 3.0 ms, low-side switch.	172	750-1406 0.2 ms, high-side switch.	178
	750-411 / 753-411 0.2 ms, high-side switch., proximity switch	163	750-433 / 753-433 0.2 ms, high-side switch.	166	750-437 / 753-437 0.2 ms, low-side switch.	172	750-1402 3.0 ms, low-side switch., ribbon cable	179
	750-418 / 753-418 3.0 ms, high-side switch., diagnostics, acknowl.	164	750-422 / 753-422 Pulse extension, 10 ms	167	750-1415 3.0 ms, high-side switch.	175	750-1407 3.0 ms, low-side switch.	180
	750-421 / 753-421 3.0 ms, high-side switch., diagnostics	164	750-408 / 753-408 3.0 ms, low-side switch.	168	750-1416 0.2 ms, high-side switch.	175		
			750-409 / 753-409 0.2 ms, low-side switch.	168	750-1417 3.0 ms, low-side switch.	176		
	750-425 / 753-425, NAMUR Proximity switch acc. to DIN EN 50227	191	750-1420 3.0 ms, high-side switch.	169	750-1418 0.2 ms, low-side switch.	176		
	750-424 / 753-424 Intruder detection	192	750-1421 0.2 ms, high-side switch.	169				
			750-1422 3.0 ms, low-side switch.	170	8-Channel Digital Input/Output			
			750-1423 0.2 ms, low-side switch.	170	750-1502 0.5 A, high-side switch., ribbon cable	173		
					750-1506 0.5 A, high-side switch.	174		
	24 V AC/DC			750-415 / 753-415 20 ms	181			
			750-423 / 753-423 50 ms, power jumper contacts	182				
42 V AC/DC		750-428 / 753-428 20 ms	183					
48 VDC	750-412 / 753-412 3.0 ms, high-side switch.	184						
60 VDC	753-429 3.0 ms, high-side switch.	185						
110 VDC	750-427 / 753-427 3.0 ms, high-side switch. or low-side switch	186						
220 VDC	750-407 3.0 ms, high-side switch	187						
120 VAC	750-406 / 753-406 10 ms, high-side switch	188						
120/230 VAC			753-440 (120 ... 230 VAC) 10 ms, high-side switch	189				
230 VAC	750-405 / 753-405 10 ms, high-side switch	190			8-Channel Digital Input			
PROFIsafe Modules			750-661/000-003; 753-661/000-003 PROFIsafe V2 iPar, 4 FDI 24 V	298	750-662/000-003; 753-662/000-003 PROFIsafe V2 iPar, 8 FDI 24 V	299		
			750-667/000-003; 753-667/000-003 PROFIsafe V2 iPar, 4 FDI/4 FDO 24 V/2 A	300	750-660/000-001 , PROFIsafe, 8 FDI 24 V	302		
			750-666/000-003; 753-666/000-003 PROFIsafe V2 iPar, 4 FDI/2 FDO 24 V/2 A	301				
			750-665/000-001 , PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	303				
Ex i Modules	750-438, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	310						
	1-Channel Digital Input							
	750-435, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	308						

Modular I/O System Overview

Digital Outputs



Function	2-Channel Digital Output	Page	4-Channel Digital Output	Page	8-Channel Digital Output	Page	16-Channel Digital Output	Page
5 VDC			750-519 Highside switch.	196				
5/12 VDC					753-534 (5 ... 14 VDC) 1 A, short-circuit protec., high-side switch.	197		
24 VDC	750-501 / 753-501 0.5 A, short-circuit protec., high-side switch.	198	750-504 / 753-504 0.5 A, short-circuit protec., high-side switch.	202	750-530 / 753-530 0.5 A, short-circuit protec., high-side switch.	206	750-1500 0.5 A, high-side switch., ribbon cable	213
	750-502 / 753-502 2.0 A, short-circuit protec., high-side switch.	199	750-531 / 753-531 (2-conductor) 0.5 A, short-circuit protec., high-side switch.	203	750-536 / 753-536 0.5 A, short-circuit protec., low-side switch.	207	750-1504 0.5 A, high-side switch.	214
	750-506 / 753-506 0.5 A with diagnostics, short-circuit protec., high-side switch.	200	750-516 / 753-516 Short-circuit protec., low-side switch.	204	750-537 0.5 A with diagnostics short-circuit protec., high-side switch.	208	750-1501 0.5 A, low-side switch., ribbon cable	215
	750-508 / 753-508 2.0 A with diagnostics, short-circuit protec., high-side switch.	201	750-532 / 753-532 (2-conductor) 0.5 A with diagnostics, short-circuit protec., high-side switch.	205	750-1515 0.5 A, high-side switch.	211	750-1505 0.5 A, low-side switch.	216
					750-1516 0.5 A, low-side switch.	212		
					8-Channel Digital Input/Output			
					750-1502 0.5 A, high-side switch., ribbon cable	209		
					750-1506 0.5 A, high-side switch.	210		
120/230 VAC			753-540 (120 ... 230 VAC) 0.25 A, high-side switch.	217				
230 V AC/DC	750-509 / 753-509 0.3 A, solid state relay	218						
230 VAC	750-522 0.5 A, solid state relay (3 A < 30 ms)	219						
Relay Modules	750-514 / 753-514 (2 changeover contacts) potential free, 125 VAC, 0.5 A	220						
	750-517 / 753-517 (2 changeover contacts) potential free, 230 VAC, 1 A	221						
	750-512 / 753-512 (2 make contacts) non-floating, 230 VAC, 2 A	222						
	750-513 / 753-513 (2 make contacts) potential free, 230 VAC, 2 A	223						
	1-Channel Digital Output							
	750-523 (Relay with manual operation) potential free, 1 make contact, 230 VAC, 16 A	224						
PROFIsafe Modules			750-667/000-003; 753-667/000-003 PROFIsafe V2 iPar, 4 FDI/4 FDO 24 V/2 A	300				
			750-666/000-003; 753-666/000-003 PROFIsafe V2 iPar, 4 FDI/2 FDO 24 V/2 A	301				
			750-665/000-001 , PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	303				
Ex i Modules	750-535, Ex i Short-circuit protec., high-side switch.	312						

Modular I/O System Overview

Analog Inputs



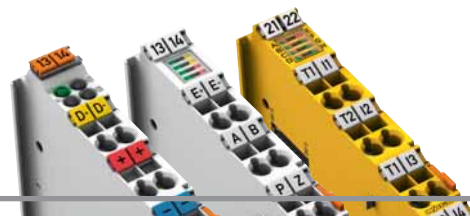
Function	2-Channel Analog Input	Page	4-Channel Analog Input	Page			
0 – 20 mA	750-452 / 753-452 Differential inputs	228	750-453 / 753-453 Single-ended (S.E.)	232			
	750-465 / 753-465 Single-ended (S.E.)	229					
	750-470 Single-ended (S.E.), short-circuit protec.	230					
	750-472 / 753-472 Single-ended (S.E.), 16 bits	231					
	750-480 / 753-480 Differential measurement inputs	233					
4 – 20 mA	750-454 / 753-454 Differential inputs	228	750-455 / 753-455 Single-ended (S.E.)	232			
	750-466 / 753-466 Single-ended (S.E.)	229					
	750-473 Single-ended (S.E.), short-circuit protec.	230					
	750-474 / 753-474 Single-ended (S.E.), 16 bits	231					
	750-492 / 753-492 Differential measurement inputs	234					
	750-482 / 753-482 Single-ended (S.E.), 16 bits, HART	235					
0 – 1 A	750-475 / 753-475 Differential inputs	236					
0 – 10 V	750-477 / 753-477 Differential inputs	237	750-468 Single-ended (S.E.)	239			
	750-467 / 753-467 Single-ended (S.E.)	238		750-459 / 753-459 Single-ended (S.E.)	241		
	750-478 / 753-478 Single-ended (S.E.), 16 bits	240					
± 10 V	750-456 / 753-456 Differential inputs	242	750-457 / 753-457 Single-ended (S.E.)	241			
	750-479 / 753-479 Differential measurement inputs	243					
	750-476 / 753-476 Single-ended (S.E.), 16 bits	240					
0 – 30 V	750-483 / 753-483 Differential measurement inputs	244					
Modules for RTDs	750-461 / 753-461 PT100 / RTD / NTC 20kΩ	245	750-460 Pt100 / RTD	246			
				750-463 4AI RTD (Building Automation)	247		
					750-464 NTC, Configurable	248	
Thermocouples	750-469 / 753-469 Sensor types: J, K, B, E, N, R, S, T, U, L	249					
Analog Special Functions	750-493 3-Phase Power Measurement Module	251					
	1-Channel Analog Input						
	750-491 Resistor Bridges (Strain Gauge)	250					
Ex i Modules	750-485, Ex i 4–20 mA, single-ended (S.E.)	314					
	750-484, Ex i 4–20 mA, single-ended (S.E.), HART	316					
	750-481/003-000, Ex i PT100 / RTD	318					
	750-487/003-000, Ex i TC	320					

Modular I/O System Overview

Analog Outputs



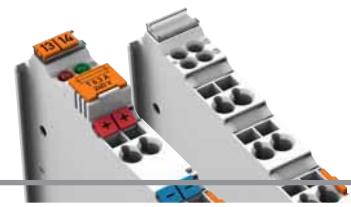
Function	2-Channel Analog Output	Page	4-Channel Analog Output	Page		
0 – 20 mA	750-552 / 753-552	254	750-553 / 753-553	256		
4 – 20 mA	750-554 / 753-554	254	750-555 / 753-555	256		
0/4 – 20 mA	750-563	255				
0 – 10 V	750-550 / 753-550	257	750-559 / 753-559	259		
	750-560 10 bits, 100 mW, 24 V	260				
± 10 V	750-556 / 753-556	257	750-557 / 753-557	259		
0 V/± 10 V	750-562	258				
Ex i Modules	750-585, Ex i 0–20 mA	322				



Function	Specialty Module	Page	Specialty Module	Page
Counter Modules	750-404 / 753-404 Up/Down Counter, 24 VDC, 100 kHz	264	750-638 / 753-638 , 2-Channel- Up/Down Counter, 24 VDC/16 bits /500 Hz	265
	Pulse Width Module	750-511 , 2-Channel Pulse Width Module, 24 VDC, short-circuit protec., pos. switch.	266	
Distance and Angle Measurement Modules	750-630 SSI Transmitter Interface	267	750-631/000-004 Incremental Encoder Interface	268
	750-637 , Incremental Encoder Interface	269	750-635 / 753-635 Digital Impulse Interface	270
Serial Interface	750-650 / 753-650 Serial Interface RS-232 C	271	750-653 / 753-653 Serial Interface RS-485	272
	750-651 TTY Interface 20 mA Current Loop	273	750-654 Data Exchange Module	274
	750-652 Serial Interface RS-232 C/RS-485	275		
KNX/EIB/TP1 Module	753-646 KNX/EIB/TP1 Module	276		
DALI/DSI Master Module	750-641 DALI/DSI Master Module	277		
RF Modules	750-642 EnOcean Radio Receiver Module	278	750-644 Bluetooth® RF-Transceiver	279
	MP-Bus Master Module	750-643 MP-Bus Master Module	280	
RTC Module	750-640 RTC Module, Real-Time Clock	281		
AS-Interface Master Module	750-655 AS-Interface Master	283		
IO-Link Master Module	750-657 IO-Link Master	285		
Vibration Monitoring	750-645 , 2-Channel Vibration Velocity/ Bearing Condition Monitoring VIB I/O	287		
Stepper Modules	750-670 Stepper Controller RS-422, 24 V, 20 mA	288	750-671 Stepper Controller 24 V, 1.5 A	289
	750-672 Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	290	750-673 Servo Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	292
DC-Drive Controller	750-636 DC-Drive Controller, 24 V, 5 A	295		
PROFIsafe Modules	750-661/000-003 ; 753-661/000-003 PROFIsafe V2 iPar, 4 FDI 24 V	298	750-662/000-003 ; 753-662/000-003 PROFIsafe V2 iPar, 8 FDI 24 V	299
	750-667/000-003 ; 753-667/000-003 PROFIsafe V2 iPar, 4 FDI/4 FDO 24 V/2 A	300	750-666/000-003 ; 753-666/000-003 PROFIsafe V2 iPar, 4 FDI/2 FDO 24 V/2 A	301
	750-660/000-001 , PROFIsafe, 8 FDI 24 V	302	750-665/000-001 , PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	303
Ex i Modules	750-438, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	310	750-435, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	308
	750-535, Ex i Short-circuit protec., high-side switch.	312	750-485, Ex i 4-20 mA, Single-ended (S.E.)	314
	750-481/003-000, Ex i Pt100 / RTD	318	750-484, Ex i 4-20 mA, Single-ended (S.E.), HART	316
	750-487/003-000, Ex i TC	320	750-585, Ex i 0-20 mA	322
	750-633 Up/Down Counter, 24 VDC, 100 kHz	324	750-606; 750-625/000-001 Ex i Supply Module	306

Modular I/O System Overview

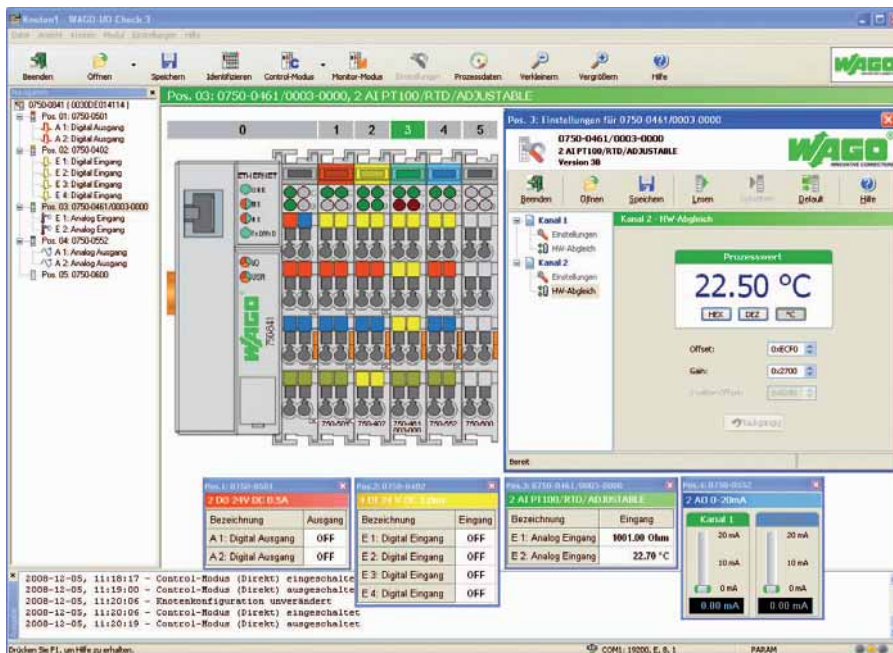
System Modules



Function	System Module	Page	System Module	Page
Internal Data Bus Extension	750-627 End Module	328	750-628 Coupler Module	329
24 VDC Supply Modules	750-602, 24 VDC, passive	330	750-601, 24 VDC, max. 6.3 A without diagnostics, with fuse carrier	331
	750-610, 24 VDC, max. 6.3 A with diagnostics, with fuse carrier	332	750-623, 24 VDC, 5 ... 15 V	333
24 VDC Internal System Supply Module with Bus Power Supply	750-613, 24 VDC	334		
24 VAC Power Supply Modules	750-617 24 VAC, with fuse carrier	331		
120 VAC Power Supply Module	750-615, 120 VAC, max. 6.3 A without diagnostics, with fuse carrier	331		
230 VAC Power Supply Modules	750-612, 0 ... 230 V AC/DC without diagnostics, passive	330	750-609, 230 VAC, max. 6.3 A without diagnostics, with fuse carrier	331
	750-611, 230 VAC, max. 6.3 A with diagnostics, with fuse carrier	332		
Filter Modules	750-624 Field Side Power Supply Filter	335	750-626 Power Supply Filter with Overvoltage (Surge) Protection	336
Field Side Connection Modules	750-604 / 753-604 0 VDC	339	750-603 / 753-603 24 VDC	338
	750-614 / 753-614 0 ... 230 V AC/DC	337	750-1605 24 VDC	340
	750-1606 0 VDC	341	750-1607 24 V / 0 VDC	342
Separation Modules	750-616 Separation Module	346	750-621 Separation Module with Contacts	346
Binary Spacer Module	750-622 Binary Spacer Module	343		
	753-1629 Binary Spacer Module, active	344	753-629/020-000 Binary Spacer Module, passive	345
End Module	750-600 End Module	347		
Ex i Module	750-625/000-001, Ex i Supply Module (without diagnostics)	306		
	750-606, Ex i Supply Module	306		

WAGO-I/O-CHECK

Start-up and diagnostic tool for the WAGO-I/O-SYSTEM 750



WAGO-I/O-CHECK is an easy-to-use Windows application for the checking of inputs and outputs and the display of a WAGO-I/O-SYSTEM 750 node. The software reads the configuration from the node and displays it as a graphic on the screen. The graphic can be printed together with a configuration list as documentation. With WAGO-I/O-CHECK it is possible to display and determine the process data of the bus modules. The field wiring, including all sensors and actuators, can thus be checked before startup. Application-specific settings, such as the baud rate or type of sensors, can be made with certain interface, Pt100 and thermocouple terminal blocks.

The coupler must be connected at a vacant serial or USB port of the PC using the communication cable supplied in the kit with the system to enable communication between WAGO-I/O-CHECK and the coupler.

Description	Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232 kit	759-302	1
WAGO-I/O-CHECK, USB kit	759-302/000-923	1
WAGO-I/O-CHECK, CD-ROM	759-920	1

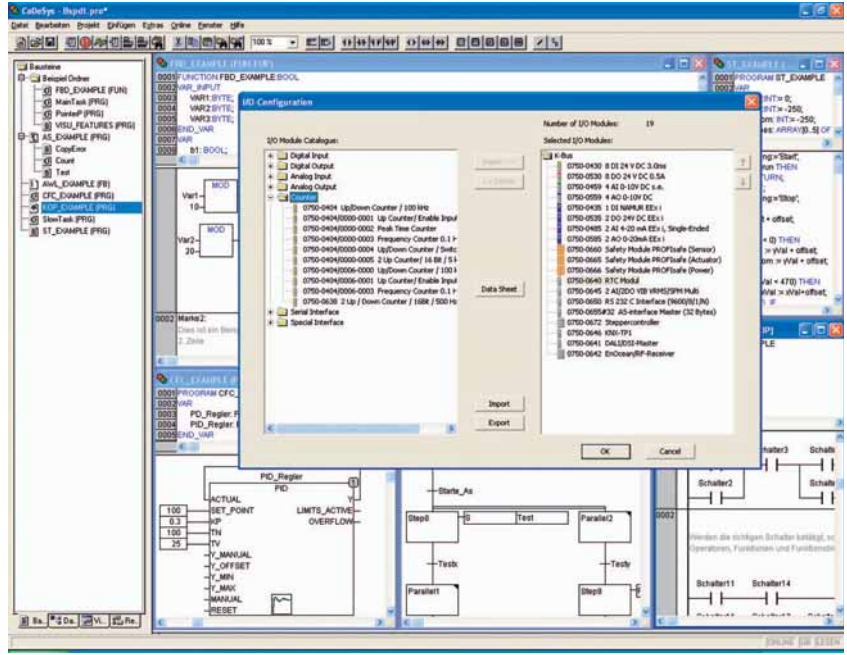
Technical Data	
System requirements:	
Operating system	Windows XP (SP3 or later), Windows 7
Processor	1 GHz or higher, with 32 bits (x86) or 64 bits (x64)
RAM memory	min. 1 GB RAM (recommended: 2 GB RAM or more)
Hard disk storage	min. 150 Mbytes
CD-ROM	required
Graphics resolution	min. 1024 x 786 (recommended: 1280 x 1024 or higher)
Mouse	required
Included:	RS-232 kit:
	CD-ROM with software and serial communication cable (750-920)
	USB kit:
	CD-ROM with software and USB communication cable (750-923)
	CD-ROM:
	CD-ROM with software without communication cable

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WAGO-I/O-PRO V2.3

Programming tool, IEC 61131-3 compliant



WAGO-I/O-PRO is a programming and visualization tool. It permits development of PLC applications for Programmable Fieldbus Controllers found within the WAGO-I/O-SYSTEM 750.

WAGO-I/O-PRO conforms to IEC 61131-3. This standard defines the requirements fulfilled by a programming system as well as 5 programming languages for PLCs. The languages IL, LD, FBD, ST and FC are supported. For every automation task, the appropriate language can be chosen.

The software meets increasing requirements of control program development, such as re-usability or modularization.

- Powerful translation of the programming languages
- Automatic declaration of variables
- Librarian /Library maintenance

Furthermore, integrated test and diagnostic functions facilitate and expedite PLC working processes.

Features:

- Online status indication in the program code
- Offline simulation
- Integrated visual display of internal and external flags (markers)
- Storage and graphic display of project variables

WAGO-I/O-PRO not only programs WAGO CoDeSys Automation Alliance products but also CoDeSys Automation Alliance products from other manufacturers.

Description	Item No.	Pack. Unit
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
WAGO-I/O-PRO, USB kit	759-333/000-923	1
WAGO-I/O-PRO, CD-ROM	759-911	1

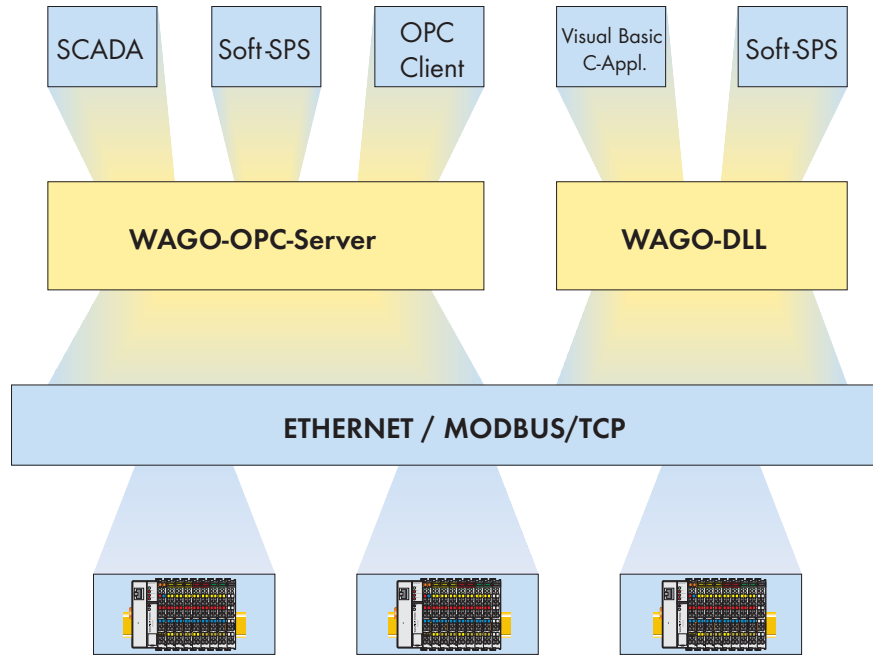
Technical Data	
System requirements:	
Operating system	Windows XP (SP3 or later), Windows 7
Processor	1 GHz or higher, with 32 bits (x86) or 64 bits (x64)
RAM memory	min. 1 GB RAM (recommended: 2 GB RAM or more)
Hard disk storage	min. 300 Mbytes
CD-ROM	required
Graphics resolution	min. 1024 x 786 (recommended: 1280 x 1024 or higher)
Mouse	required
Other	Serial interface
Included:	
RS-232 kit:	
CD-ROM with software and serial communication cable (750-920)	
USB kit:	
CD-ROM with software and USB communication cable (750-923)	
CD-ROM:	
CD-ROM with software without communication cable	

Approvals

Shipbuilding ABS, DNV, GL, KR, NKK, RINA

WAGO Interface Software

OPC Server / DLL for MODBUS/TCP



WAGO OPC Server MODBUS/TCP

The OPC standard defines an open industrial interface which can be used by PC-based software components to transfer data. The interface is based on the OLE (Object Linking and Embedding), COM (Component Object Model), and DCOM (Distributed COM) Windows technologies. OPC therefore offers the ideal basis for linking industrial applications, or MS Office programs with the automation level field devices, such as the WAGO-I/O-SYSTEM 750. The MODBUS/TCP-OPC server from WAGO enables extremely simple and convenient access to your MODBUS/TCP-ETHERNET devices. Simple configuration of the OPC server shortens the time needed for training and startup.

WAGO-DLL-MODBUS/TCP

The DLL supports the programmer when programming his own automation applications. Using the DLL allows easy access to the WAGO Ethernet coupler. Both C and Visual Basic are appropriate for use with the DLL.

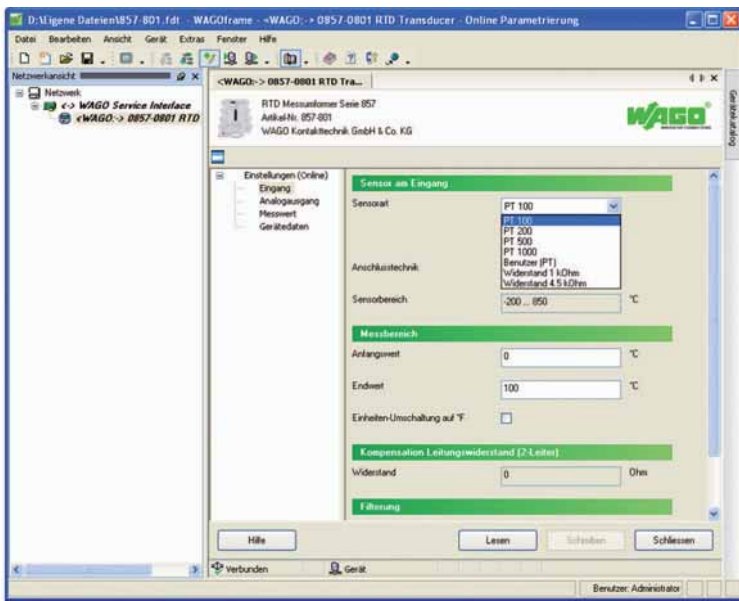
Description	Item No.	Pack. Unit
WAGO OPC Server for MODBUS/TCP	759-311	1
Technical Data		
System requirements:		
OPC specifications	Data Access V 1.0A; Data Access V 2.04	
Operating system	Windows XP	
Supported protocols	MODBUS/TCP and MODBUS via UDP	
OPC server licenses	759-311	1
	759-311/000-100	10
	759-311/000-200	25
	759-311/000-300	unlimited
Included:	incl. configuration tool	

Description	Item No.	Pack. Unit
WAGO DLL for MODBUS/TCP	759-312	1
Technical Data		
System requirements:		
Operating system	Windows XP	
Supported protocols	MODBUS/TCP and MODBUS via UDP; FC1, FC2, FC3, FC4, FC7, FC15, FC16	
Supported programming languages	Visual Basic (synchronous function calls); Visual Basic .NET; C (synchronous and asynchronous function call); C#	

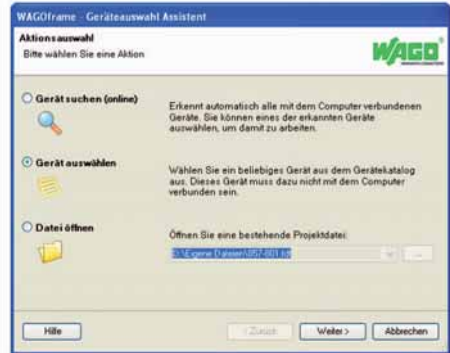
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WAGOframe

FDT frame application for parameterization, commissioning and diagnostics of devices with DTM device driver



WAGOframe: Parameterizing a JUMPFLEX® transducer



WAGOframe: Wizard function

WAGOframe is an FDT/DTM-based software used for parameterization, commissioning and diagnostics of field devices.

DTM device drivers for the devices employed are required to use the WAGOframe FDT frame application.

The WAGOframe FDT frame application provides a wizard, which simplifies the operation of components, such as WAGO JUMPFLEX DTMs. For example, this wizard guides the user through the different operating modes of DTM device drivers.

Depending on the PC communication interface used, an appropriate communication cable including DTM is required.

Description	Item No.	Pack. Unit
WAGOframe	759-370	1
Accessories	Item No.	Pack. Unit
857 Series JUMPFLEX configuration		
WAGO USB Communication Cable	750-923	1
767 Series SPEEDWAY configuration		
USB communication cable	756-4101/042-030	1

Technical Data	
System requirements:	
Operating system	Windows XP (SP3 or later), Windows 7
Processor	1 GHz or higher, with 32 bits (x86) or 64 bits (x64)
RAM memory	min. 1 GB RAM (recommended: 2 GB RAM or more)
Hard disk storage	min. 300 Mbytes
CD-ROM	required
Graphics resolution	min. 1024 x 786 (recommended: 1280 x 1024 or higher)
Mouse	required
Other	Free interface in PC for communication with the device (e.g., USB, Serial, ETHERNET, ...)
Included:	CD ROM with software and documentation
Additional requirements:	Cable between PC communication interface and device.
	DTM software for the communication interface used in the PC.
	DTM software of the device.

Windows® is a registered trademark of Microsoft Corporation

PLC - Industrial Compact PC / PLC - Programmable Fieldbus Controller



MODBUS/TCP

CANopen

IEC 60870-5-101/-104

IEC 61850
IEC 61400-25

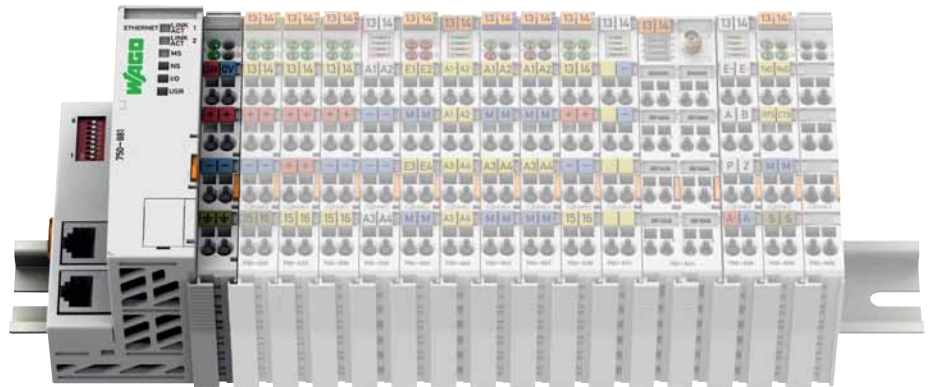


LINUX®

MODBUS-RTU



LONWORKS










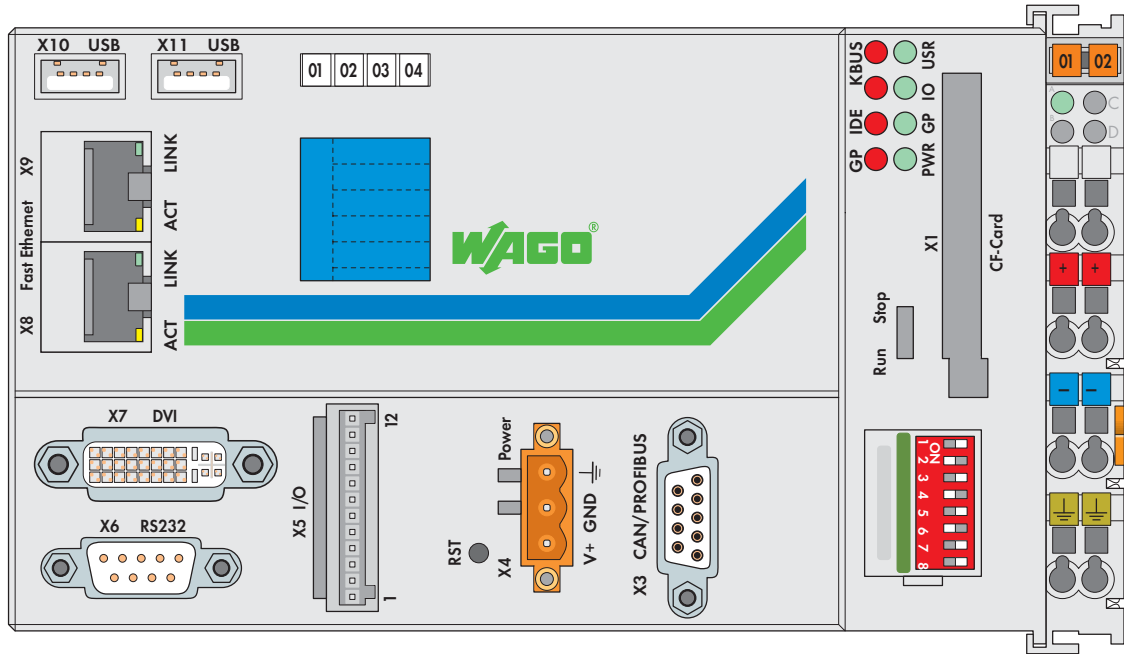
Depending on the application, PLCs can be selected for various protocols. The wide variety of controllers available for the main fieldbus systems and industrial Ethernet standards enables the I/O system to easily accommodate individual customer requirements without major modifications. These factors minimize handling errors and ensure the long-term protection of system investments.

Modular I/O System Overview

Industrial Compact PC / PLC



Fieldbus System	PLC - Industrial Compact PC	Page	PLC - Programmable Fieldbus Controller	Page
	758-870/000-111 PLC - I/O-IPC-G2 Linux 2.6 CoDeSys Visu PDP-M	42	750-833 PLC - Programmable Fieldbus Controller DP/V1	50
	758-874/000-111 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu PDP-M	44		
	758-874/000-131 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol PDP-M	44		
	758-875/000-111 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu PDP-M	46		
	758-875/000-131 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol PDP-M	46		
	758-876/000-111 PLC - I/O-IPC-P14 Linux 2.6 CoDeSys Visu PDP-M	48		
 MODBUS/TCP			750-880 PLC - Prog. Fieldbus Controller, 2-port, 10/100 Mbit/s	52
			750-881 PLC - Prog. Fieldbus Controller, 2-port, 10/100 Mbit/s	54
			750-841 PLC - Programmable Fieldbus Controller, 100 Mbit	58
			750-871 PLC - Programmable Fieldbus Controller, 2-port	60
			750-873 PLC - Programmable Fieldbus Controller, RS-232	62
MODBUS/TCP	758-870/000-110 PLC - I/O-IPC-G2 Linux 2.6 CoDeSys Visu	42	750-882 PLC - Media Redundancy Prog. Fieldbus Controller	56
	758-874/000-110 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu	44	750-842 PLC - Programmable Fieldbus Controller, 10 Mbit	64
	758-874/000-130 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol	44	750-843 PLC - Programmable Fieldbus Controller, 10 Mbit	66
	758-875/000-110 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu	46	750-863 PLC - Programmable Fieldbus Controller, RS-232	76
	758-875/000-130 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol	46		
	758-876/000-110 PLC - I/O-IPC-P14 Linux 2.6 CoDeSys Visu	48		
			750-806 PLC - Programmable Fieldbus Controller	68
	758-870/000-112 PLC - I/O-IPC-G2 Linux 2.6 CoDeSys Visu CO-M	42	750-837 PLC - Programmable Fieldbus Controller, MCS	70
	758-874/000-112 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu CO-M	44	750-838 PLC - Programmable Fieldbus Controller, D-Sub	72
	758-875/000-112 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu CO-M	46		
	758-876/000-112 PLC - I/O-IPC-P14 Linux 2.6 CoDeSys Visu CO-M	48		
LINUX®	758-870 PLC - I/O-IPC-G2 Linux 2.6	42	750-860 PLC - Programmable Fieldbus Controller, MCS	74
	758-874 PLC - I/O-IPC-C6 Linux 2.6	44	750-863 PLC - Programmable Fieldbus Controller, RS-232	76
	758-875 PLC - I/O-IPC-C10 E Linux 2.6	46		
	758-876 PLC - I/O-IPC-P14 Linux 2.6	48		
MODBUS			750-812, PLC - Prog. Fieldbus Controller, RS-485 (150 ... 19200 Bd)	78
			750-814, PLC - Prog. Fieldbus Controller, RS-232 (150 ... 19200 Bd)	78
			750-815, PLC - Prog. Fieldbus Controller, RS-485 (1,2 ... 115,2 kbd)	78
			750-816, PLC - Prog. Fieldbus Controller, RS-232 (1,2 ... 115,2 kbd)	78
			750-804 PLC - Programmable Fieldbus Controller	80
IEC 60870-5 -101/-104 IEC 61850 IEC 61400-25	758-874/000-130 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol	42	750-872 PLC - Programmable Fieldbus Telecontroller	82
	758-874/000-131 PLC - I/O-IPC-C6 Linux 2.6 CoDeSys Visu Telecontrol PDP-M	44		
	758-875/000-130 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol	46		
	758-875/000-131 PLC - I/O-IPC-C10 E Linux 2.6 CoDeSys Visu Telecontrol PDP-M	48		
			750-849 PLC - Programmable Fieldbus Controller	84
			750-830 PLC - Programmable Fieldbus Controller	86
LONWORKS			750-819 PLC - Programmable Fieldbus Controller	88



Technical Data

I/O interfaces (serial)	1 x serial interface; COM 1 acc. to EIA RS-232 standard; 9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 1.1
Additional interfaces	2 x digital output, isolated; 2 x digital input, isolated
Diagnostic LEDs	Power supply; Watchdog; PROFIBUS DP, CANopen; Run/Stop; IDE; Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	128 KB PLC-SRAM battery backup; NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at time-out)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-10 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 m ... 2000 m
Storage/transit	0 m ... 15000 m

Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	172 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	850 g
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Plastics
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 **SPS - I/O-IPC-C6 Linux 2.6**

Industrial PC with Celeron® M 600 MHz

44




Compact and robust, the WAGO I/O-IPC-C6 is designed for general control applications. The high-performance IPC can fully perform controlling, monitoring and visualization tasks.

The I/O-IPC features 600 MHz Celeron® M processor and all standard PC interfaces (e.g., 2 x USB, RS-232, DVI-I and 2 x ETHERNET).

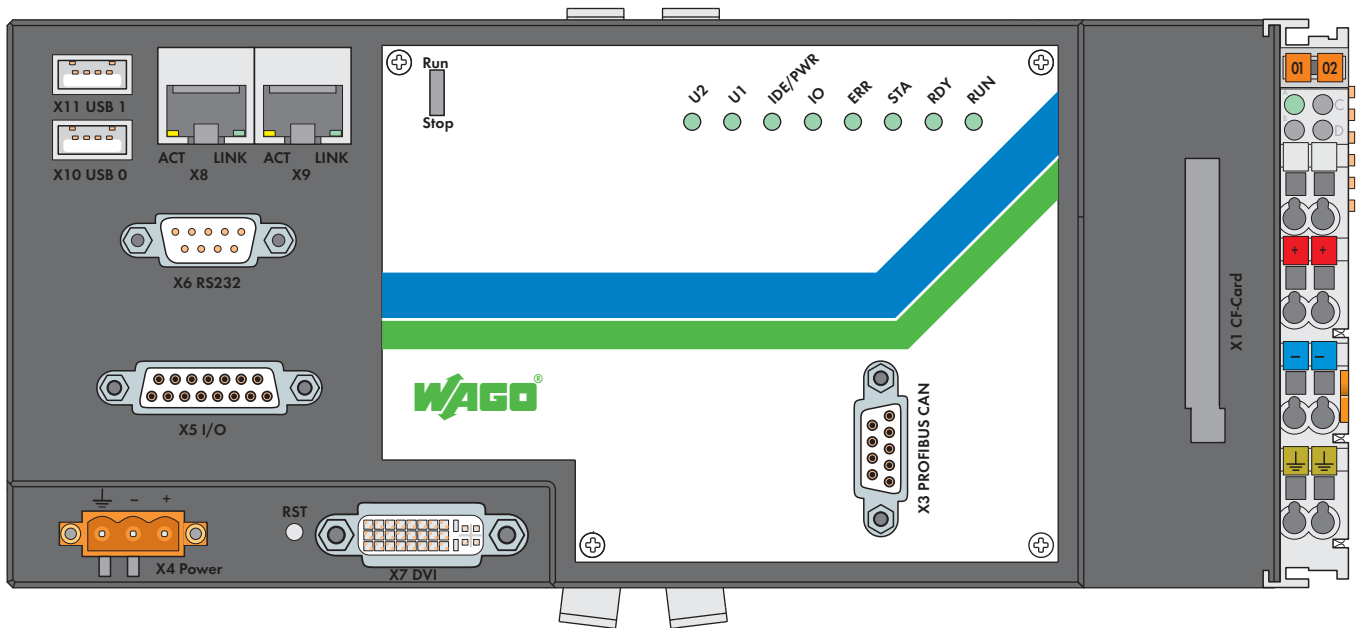
Depending on the application, WAGO I/O-SYSTEM modules are connected to the I/O-IPC to suit the particular task. Two opto-isolated digital I/Os (24VDC) are directly integrated for fast signal transmission.

With optional CANopen and PROFIBUS DP fieldbuses in master version, the I/O-IPC may also function as a main PLC in industrial environments.

Using Linux operating system and optional CoDeSys PLC software, including CoDeSys visualization, a stable and high-performance automation system featuring universal communication characteristics is available for long-term, reliable service.

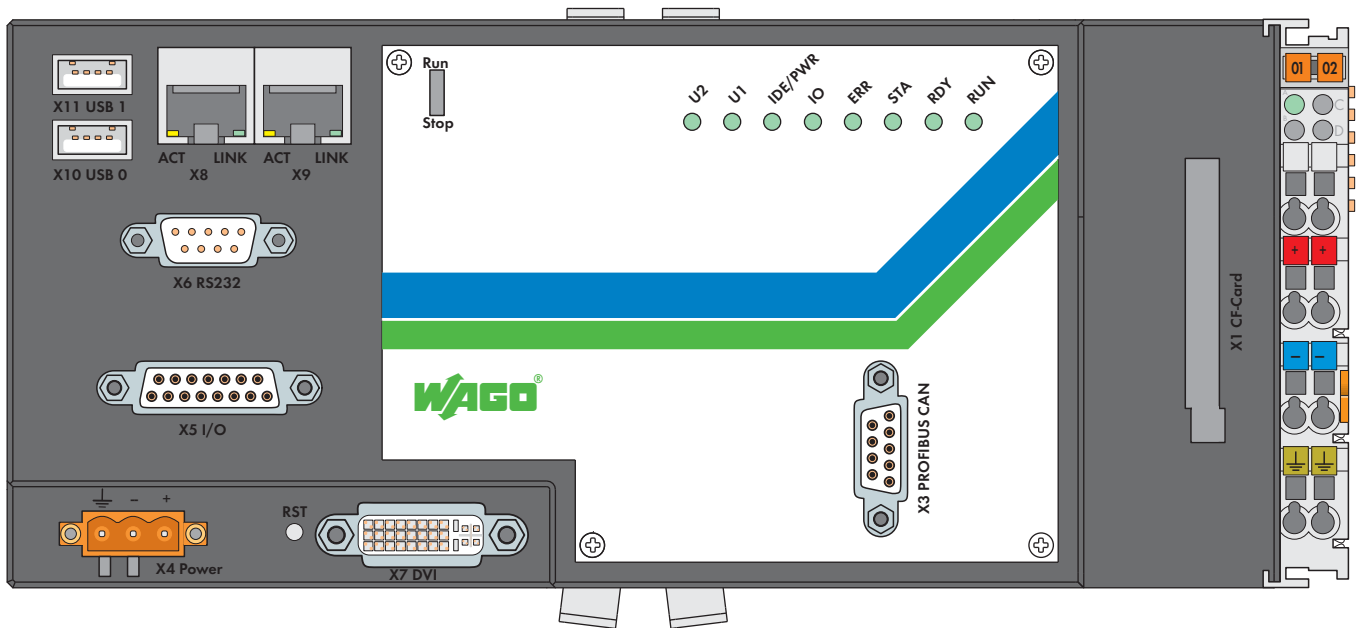
Description	Item No.	Pack. Unit
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	758-874/000-110	1
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	758-874/000-111	1
PROFIBUS DP Master		
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	758-874/000-112	1
CANopen Master		
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	758-874/000-130	1
Telecontrol		
I/O-IPC-C6 Linux 2.6 CoDeSys Visu	758-874/000-131	1
Telecontrol PDP-M		
Accessories		
	Item No.	Pack. Unit
WAGO I/O-PRO V2.3, RS-232 kit	759-333	1
CF memory card, 1 GB	758-879/000-000	1
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Memory cards, connection cables	see page 519	
Approvals		
	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
UL 508		

Technical Data	
Number of I/O modules (per node)	64
with bus extension	250
Max. input process image	500 bytes
Max. output process image	500 bytes
CPU	Celeron® M; 600 MHz
Main memory (RAM)	256 Mbytes
Internal memory (flash)	512 Mbytes
Non-volatile memory (retain)	1024 Kbytes
Bios	Insyde
Graphic	DVI, 1280*1024; LCD / Panellink
Memory expansion	Compact Flash Type I/II
LAN	2 x 10Base-T/100Base-TX
Fieldbus (optional)	PROFIBUS DP master, CANopen master
Libraries	Telecontrol: IEC 60870-5-101/-104, 3964R/RK512, IEC 61850, IEC 61400-25 (applies to 758-874/000-13x)
Linux® is a registered trade mark of Linus Torvalds.	
Celeron® is a registered trade mark of Intel Corporation.	



Technical Data	
I/O interfaces (serial)	1 x serial interface; COM 1 acc. to EIA RS-232 standard; 9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 2.0
Additional interfaces	2 x digital output, isolated; 2 x digital input, isolated
Diagnostic LEDs	Power supply; Watchdog; PROFIBUS DP, CANopen; Run/Stop; IDE; Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	1024 KB PLC SRAM battery backup; NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at time-out)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-10 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 m ... 2000 m
Storage/transit	0 m ... 15000 m

Technical Data	
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	236 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	1556 g
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Aluminum
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

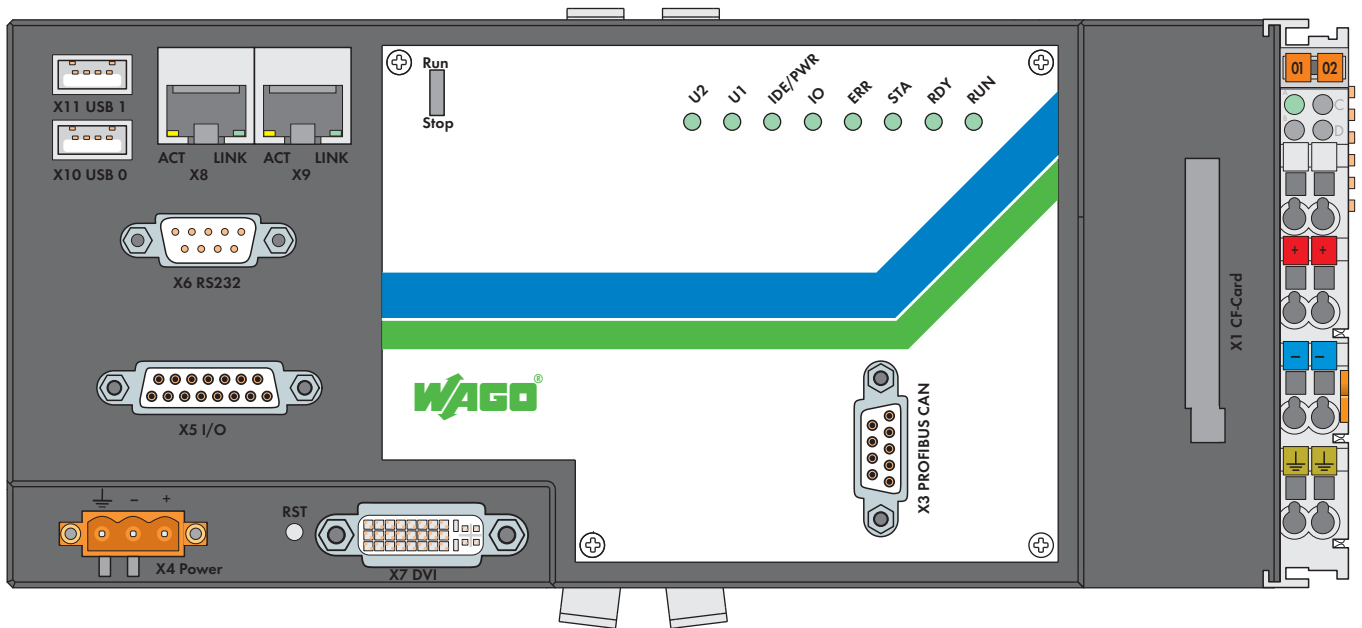


Technical Data

I/O interfaces (serial)	1 x serial interface; COM 1 acc. to EIA RS-232 standard; 9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 1.1
Additional interfaces	2 x digital output, isolated; 2 x digital input, isolated
Diagnostic LEDs	Power supply; Watchdog; PROFIBUS DP, CANopen; Run/Stop; IDE; Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	1024 KB PLC SRAM battery backup; NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at time-out)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	-20 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 m ... 2000 m
Storage/transit	0 m ... 15000 m

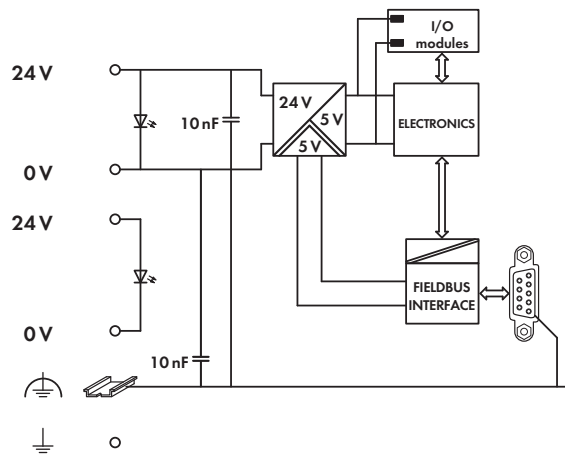
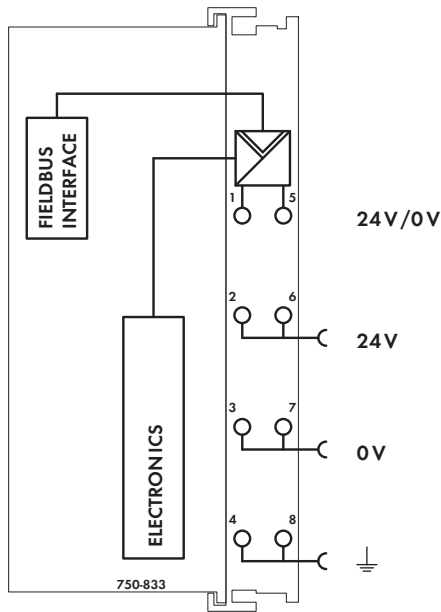
Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	236 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	1520 g
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Aluminum
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)



Technical Data	
I/O interfaces (serial)	1 x serial interface; COM 1 acc. to EIA RS-232 standard; 9-pole D-Sub plug
I/O interfaces (USB)	2 x USB port acc. to Specification 2.0
Additional interfaces	2 x digital output, isolated; 2 x digital input, isolated
Diagnostic LEDs	Power supply; Watchdog; PROFIBUS DP, CANopen; Run/Stop; IDE; Internal data bus
Programming	WAGO-I/O-PRO CAA
IEC 61131-3	IL, LD, FBD, ST, FC
Operating system	Linux 2.6 with RT-Preempt patch
RT support	1024 KB PLC SRAM battery backup; NMI timer
Watchdog	Trigger interval 400 ms (reset triggered at time-out)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	770 mA
Total current for I/O modules (5 V)	1000 mA
Ambient conditions	
Operating temperature	0 °C ... +55 °C
Storage temperature	-10 °C ... +85 °C
Vibration resistance	
Operation	0.5 G, 10-500 Hz
Storage/transit	1 G, 10-500 Hz
Shock resistance	
Operation	5 g, 11 ms, 6 axis
Storage/transit	30 g, 11 ms., 6 axis
Humidity	
Operation	5-90 %, non condensing at 50 °C
Storage/transit	0-90 %, non condensing at 50 °C
Altitude	
Operation	0 m ... 2000 m
Storage/transit	0 m ... 15000 m

Technical Data	
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	236 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	1585 g
Degree of protection	IP20 acc. to DIN 40050
Type of mounting	DIN 35 rail
Housing material	Aluminum
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

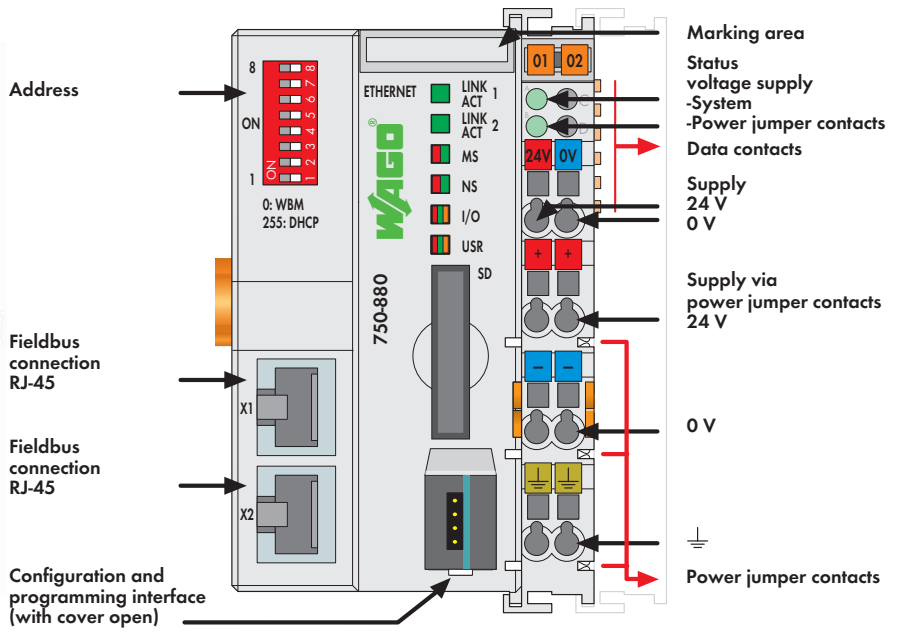


Technical Data	
Number of I/O modules	63
Fieldbus	
Max. input process image	244 bytes
Max. output process image	244 bytes
Max. input variables	244 bytes
Max. output variables	244 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)


PLC - ETHERNET Programmable Fieldbus Controller

32-bit CPU, multitasking

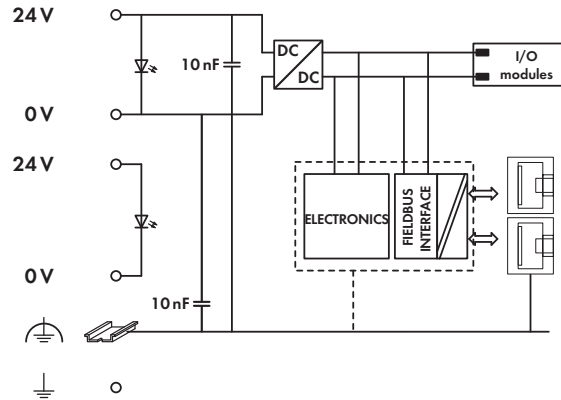
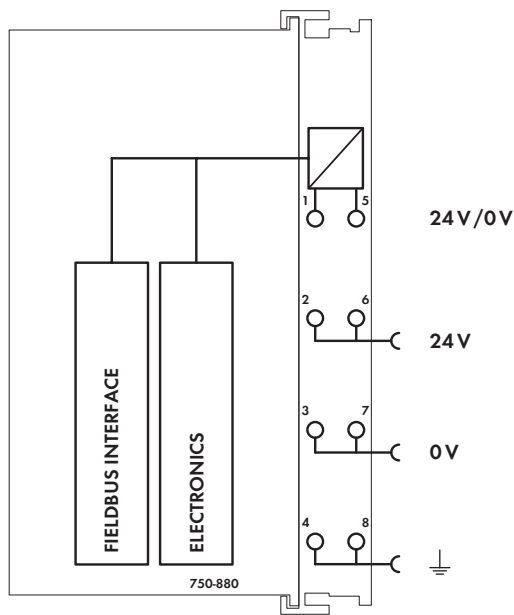


In conjunction with the WAGO-I/O-SYSTEM, the ETHERNET PLC is used as a programmable controller within ETHERNET networks. The PLC supports all digital, analog and specialty modules found within the 750/753 Series, and is suitable for data rates of 10/100 Mbit/s. Two ETHERNET interfaces and an integrated switch allow the fieldbus to be wired in a line topology. This eliminates additional network devices, such as switches or hubs. Both interfaces support Auto-Negotiation and Auto-MDI(X). The DIP switch configures the last byte of the IP address and may be used for IP address assignment. The PLC supports both MODBUS/TCP and ETHERNET/IP for use in industrial environments. It also supports a wide variety of standard ETHERNET protocols for easy integration into IT environments (e.g., HTTP, BootP, DHCP, DNS, SNTP, SNMP, FTP).

An integrated Web server provides the user with configuration options and status information from the controller. The IEC 61131-3 programmable controller is multitasking-capable and features a battery-backed RTC. 1 Mbyte of data memory is available. The 750-880 PLC has a slot for a removable memory card, allowing device parameters or files (e.g., boot files) to be transferred from one controller to another. The memory card can be accessed via FTP and be used as an additional drive.

Description	Item No.	Pack. Unit
ETHERNET Controller	750-880	1
ETHERNET-Controller/T	750-880/025-000	1
Extended operating temperature range: -20 °C ... +60 °C		
ETHERNET Controller Telecontrol/T	750-880/025-001	1
Extended operating temperature range: -20 °C ... +60 °C		
Accessories	Item No.	Pack. Unit
SD memory card, 1 GB	758-879/000-001	1
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, DNV, GL, KR	
UL 508		

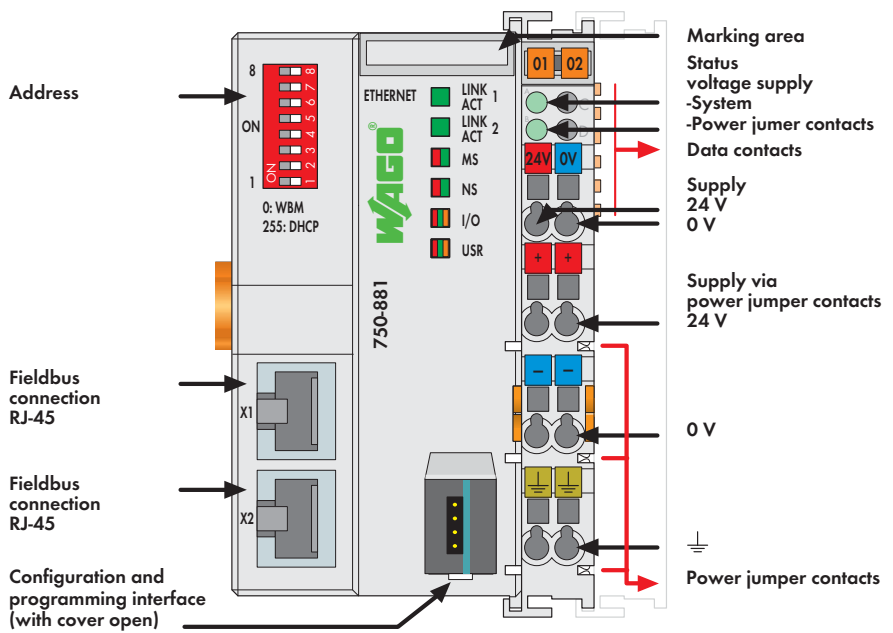
System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP
	100 Ω, Cat 5;
	Max. line length: 100 m
Baud rate	10/100 Mbit/s
Transmission performance	Class D acc. to EN 50173
Buscoupler connection	2 x RJ-45
Protocols	EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC
SD card slot	Push-push mechanism, sealable cover lid
Type of memory card	SD and SDHC up to 8 Gbytes (All guaranteed properties are only valid in combination with the WAGO 758-879/000-001 memory card.)



Technical Data		General Specifications	
Number of I/O modules	64	Operating temperature	0 °C ... +55 °C
with bus extension	250	Wire connection	CAGE CLAMP [®]
Fieldbus		Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Max. input process image	1020 words	Stripped lengths	8 ... 9 mm / 0.33 in
Max. output process image	1020 words	Dimensions (mm) W x H x L	62 x 65 x 100
Configuration	via PC		Height from upper-edge of DIN 35 rail
Program memory	1024 Kbytes	Weight	164 g
Data memory	1024 Kbytes	Storage temperature	-25 °C ... +85 °C
Non-volatile memory (retain)	32 Kbytes	Relative air humidity (no condensation)	95 %
Power supply	24 V DC (-25 % ... +30 %)	Vibration resistance	acc. to IEC 60068-2-6
Input current typ. at rated load (24 V)	500 mA	Shock resistance	acc. to IEC 60068-2-27
Efficiency of the power supply (typ.) at nominal load (24 V)	90 %	Degree of protection	IP20
Internal current consumption (5 V)	450 mA	EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
Total current for I/O modules (5 V)	1700 mA	EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
Isolation	500 V system/supply	EMC: marine applications	
		- immunity to interference	acc. to Germanischer Lloyd (2003)
		EMC: marine applications	
		- emission of interference	acc. to Germanischer Lloyd (2003)

PLC - ETHERNET Programmable Fieldbus Controller

32-bit CPU, multitasking



The 750-881 ETHERNET PLC connects ETHERNET to the modular WAGO-I/O-SYSTEM.

The PLC automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.

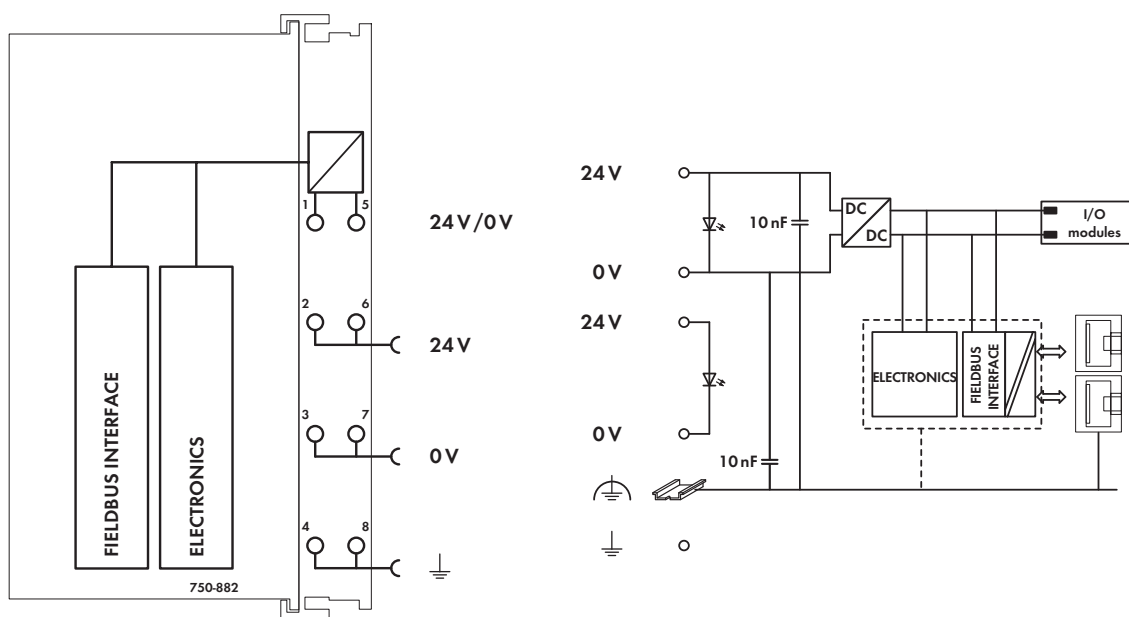
Two ETHERNET interfaces and an integrated switch allow the fieldbus to be wired in a line topology. This eliminates additional network devices, such as switches or hubs. Both interfaces support Auto-Negotiation and Auto-MDI(X).

The DIP switch configures the last byte of the IP address and may be used for IP address assignment.

The PLC is designed for fieldbus communication in both EtherNet/IP and MODBUS networks. It also supports a wide variety of standard ETHERNET protocols (e.g., HTTP, BootP, DHCP, DNS, SNTP, SNMP, FTP). An integrated Web server provides the user with configuration options and status information from the controller. The IEC 61131-3 programmable controller is multitasking-capable and features a battery-backed RTC.

Description	Item No.	Pack. Unit
ETHERNET Controller	750-881	1
Accessories		
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP
	100 Ω, Cat 5;
	Max. line length: 100 m
Baud rate	10/100 Mbit/s
Transmission performance	Class D acc. to EN 50173
Buscoupler connection	2 x RJ-45
Protocols	EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC

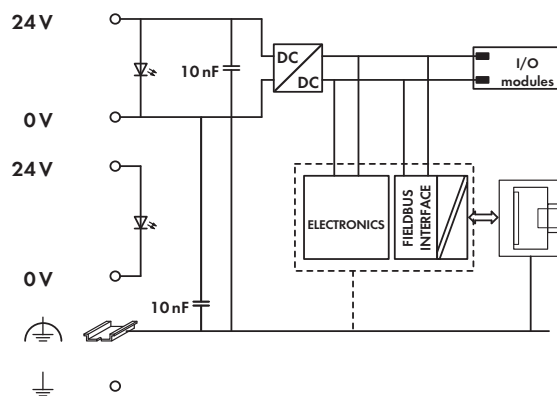
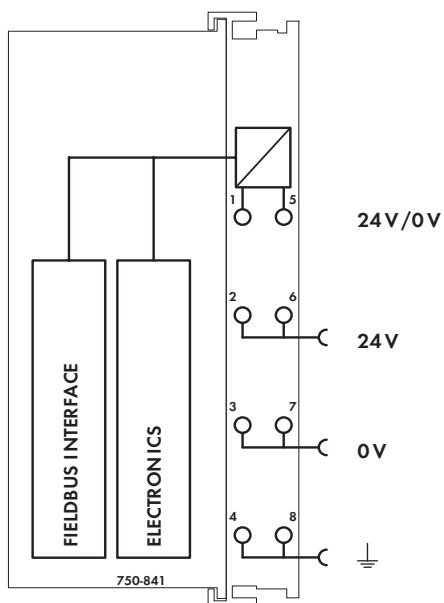


Technical Data

Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	1020 words
Max. output process image	1020 words
Configuration	via PC
Program memory	1024 Kbytes
Data memory	512 Kbytes
Non-volatile memory (retain)	32 Kbytes
Power supply	24 V DC (-25 % ... +30 %)
Input current typ. at rated load (24 V)	500 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	90 %
Internal current consumption (5 V)	450 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	62 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	164 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)



Technical Data

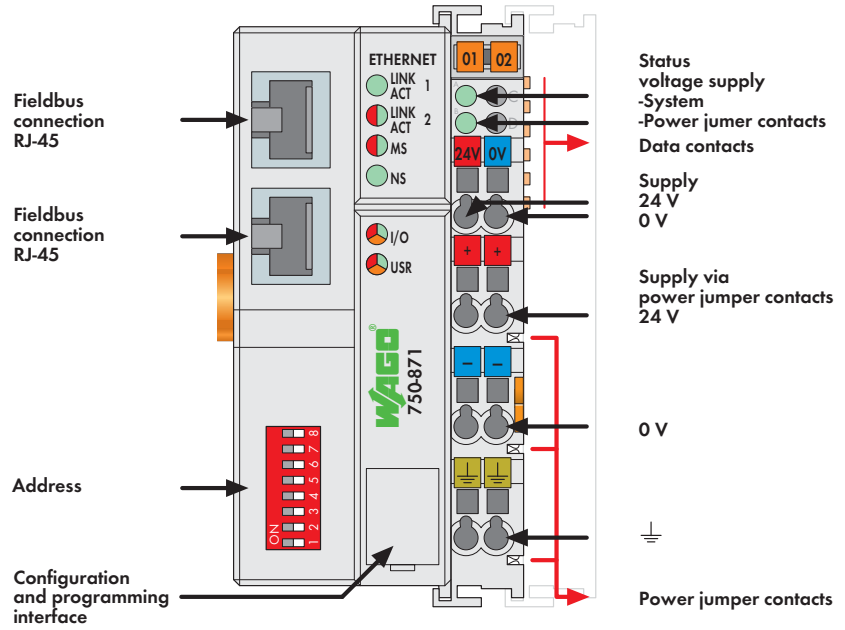
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

PLC - ETHERNET TCP/IP Programmable Fieldbus Controller, 2 Ports

32-bit CPU, multitasking

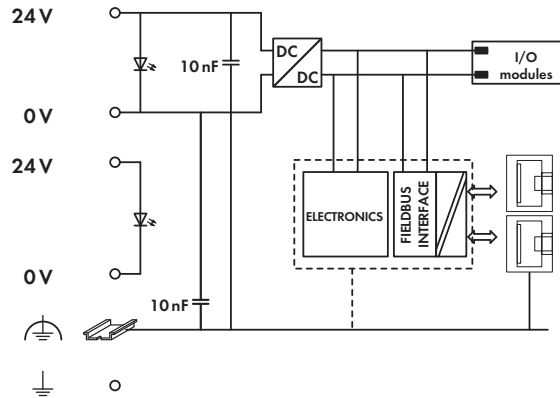
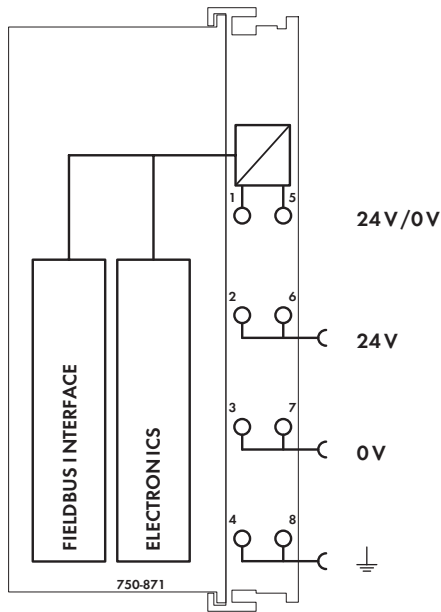


This PLC connects the ETHERNET fieldbus to the WAGO-I/O-SYSTEM. The controller automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit. The IEC 61131-3 programmable controller is capable of 10/100 Mbit/s data rates, providing 1 MB program memory, 512 KB data memory and 24 KB retain memory. It has a battery-backed RTC and 32-bit multitasking CPU.

The PLC offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP). For Web-based applications, HTML pages can be generated on an internal server. The second ETHERNET interface allows daisy-chaining up to a maximum segment length of 100 m. Due to signal propagation time, the maximum number of controllers that can be wired in series is 20. In addition, the PLC provides the option of configuring the IP address via built-in DIP switch.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 2-port Controller	750-871	1
Accessories		
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m hub station and 750-871; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data	
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	1024 Kbytes
	as from firmware 5, 512 kbyte (previous versions)
Data memory	512 Kbytes
	as from firmware 5, 256 kbyte (previous versions)
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	214.3 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

PLC - ETHERNET TCP/IP Programmable Fieldbus Controller, RS-232

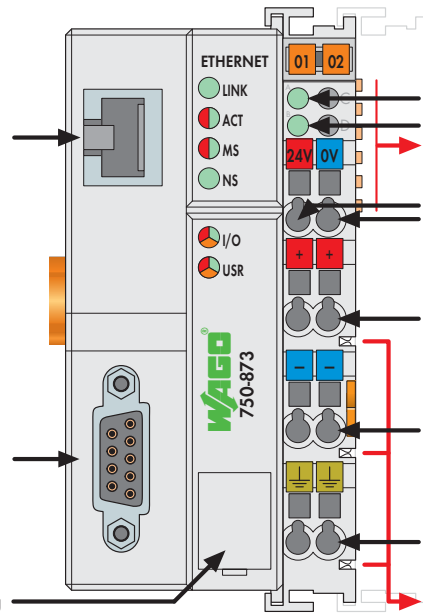
32-bit CPU, multitasking



Fieldbus connection RJ-45

Fieldbus connection RS-232

Configuration and programming interface



Status voltage supply
-System
-Power jumper contacts
Data contacts

Supply
24 V
0 V

Supply via power jumper contacts
24 V

0 V

⊥

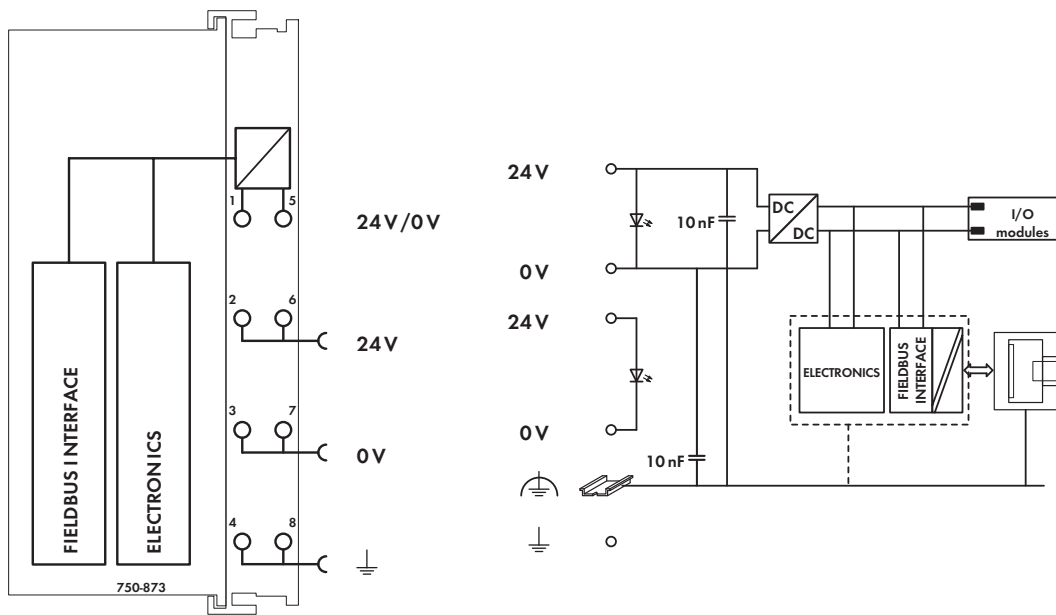
Power jumper contacts

This PLC connects ETHERNET to the WAGO-I/O-SYSTEM. The controller automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit. The IEC 61131-3 programmable controller is capable of 10/100 Mbit/s data rates, providing 512 KB program memory, 256 KB data memory and 24 KB retain memory. It has a battery-backed RTC and 32-bit multitasking CPU.

The PLC offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP). For Web-based applications, HTML pages can be generated on an internal server. The integrated RS-232 interface communicates with external devices. The PLC can also be addressed as Modbus RTU slave via RS-232 interface.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP RS-232 Controller	750-873	1
Accessories		
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
System data ETHERNET:	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m hub station and 750-873; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP
System data Serial:	
Transmission medium	shielded Cu cable 2 (4) x 0.25 mm ²
Max. length of fieldbus segment	15 m depending on the baud rate / on the cable (at 19200 baud)
Baud rate	9600 baud ... 115 200 baud
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data	
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	204.5 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

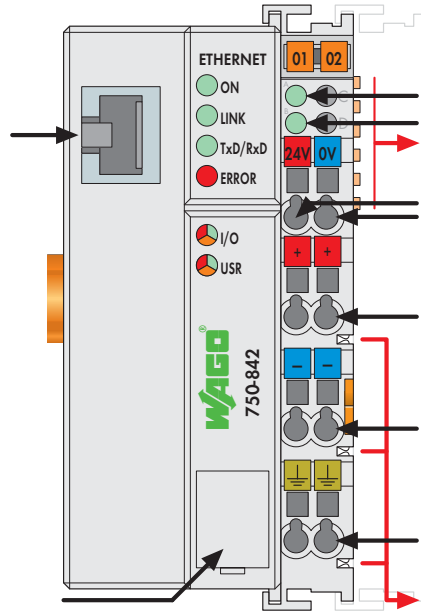
PLC - ETHERNET TCP/IP Programmable Fieldbus Controller

16-bit CPU



Fieldbus connection RJ-45

Configuration and programming interface



Status voltage supply
-System
-Power jumper contacts
Data contacts

Supply
24 V
0 V

Supply via power jumper contacts
24 V

0 V

⊥

Power jumper contacts

The ETHERNET PLC combines control functionality, I/O interface and ETHERNET in one device.

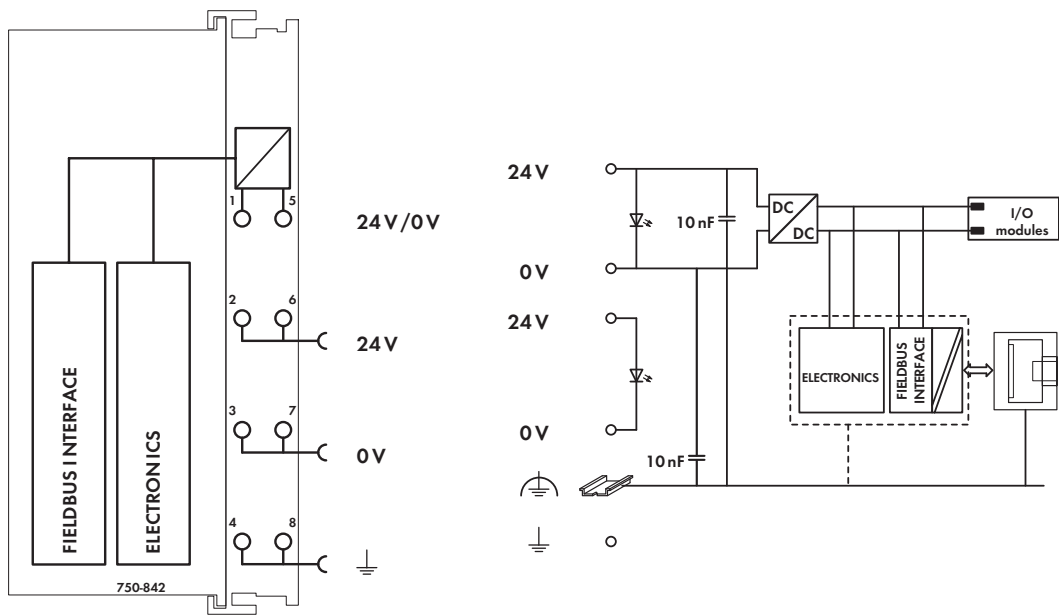
Programming PLC applications is performed in compliance with IEC 61131-3. Function blocks allow both clients and servers to be programmed via socket APIs for all transport protocols (e.g., TCP, UDP).

Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Stand-alone, compact controller

Description	Item No.	Pack. Unit
ETHERNET Controller 10 MBit	750-842	1
Accessories		
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-842;
	max. length of network limited by
	ETHERNET specification
Baud rate	10 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP
Programming	WAGO-I/O-PRO 32 (as of firmware SW 15 also programmable with WAGO-I/O-PRO V2.3)
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3ms for 1,000 statements / 256 dig. I/Os
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

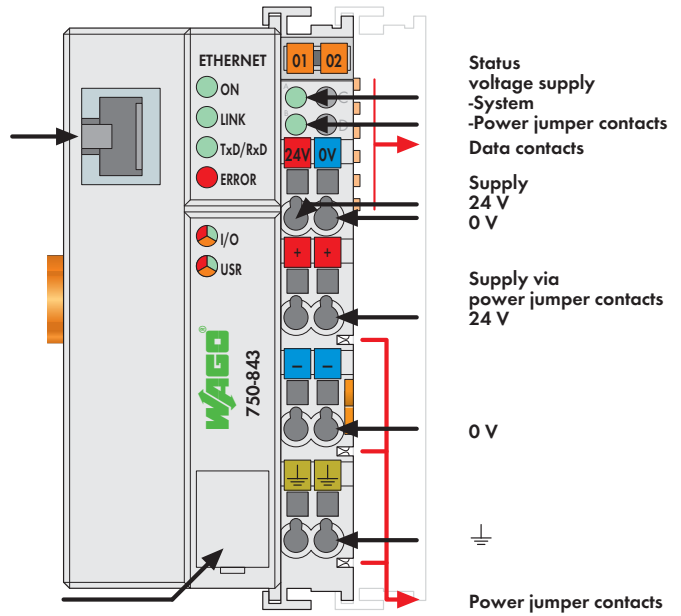
PLC - ETHERNET TCP/IP Programmable Fieldbus Controller

16-bit CPU



Fieldbus connection RJ-45

Configuration and programming interface



The ETHERNET PLC combines control functionality, I/O interface and ETHERNET in one device.

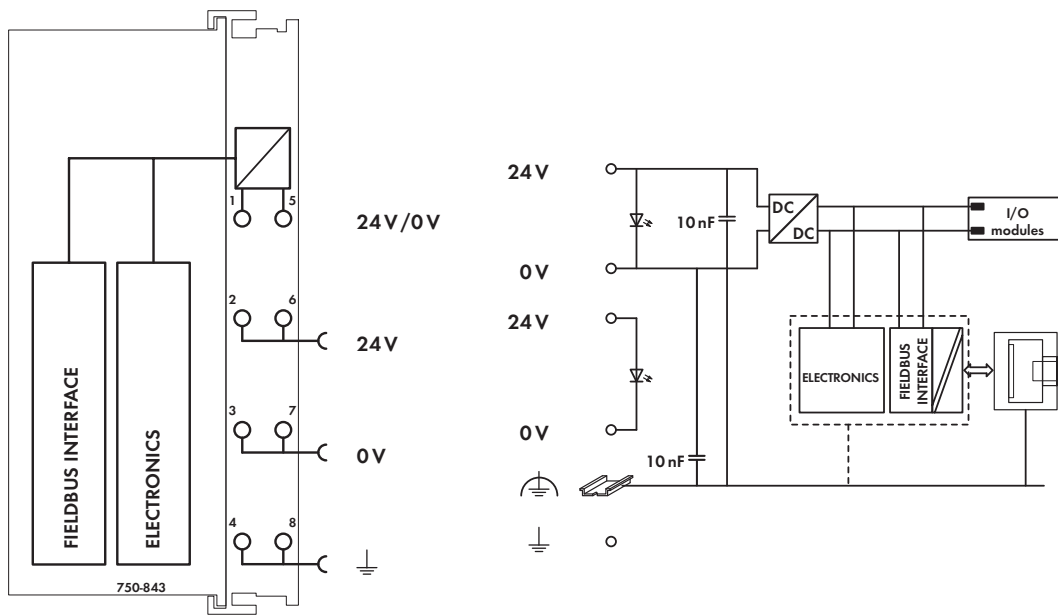
Programming PLC applications is performed in compliance with IEC 61131-3. Function blocks allow both clients and servers to be programmed via socket APIs for all transport protocols (e.g., TCP, UDP).

Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Stand-alone, compact controller

Description	Item No.	Pack. Unit
ETHERNET Controller 10 MBit	750-843	1
Accessories		
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-843;
	max. length of network limited by
	ETHERNET specification
Baud rate	10 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data

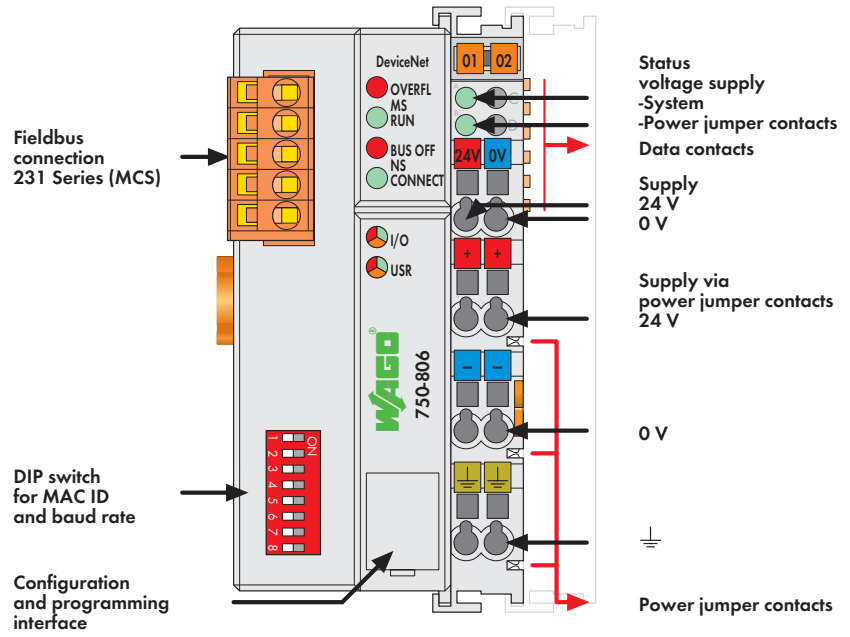
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic
Program memory	64 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3ms for 1,000 statements / 256 dig. I/Os
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

PLC - DeviceNet Programmable Fieldbus Controller

16-bit CPU



The DeviceNet PLC combines control functionality, I/O interface and fieldbus in one device.

Programming PLC applications is performed in compliance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

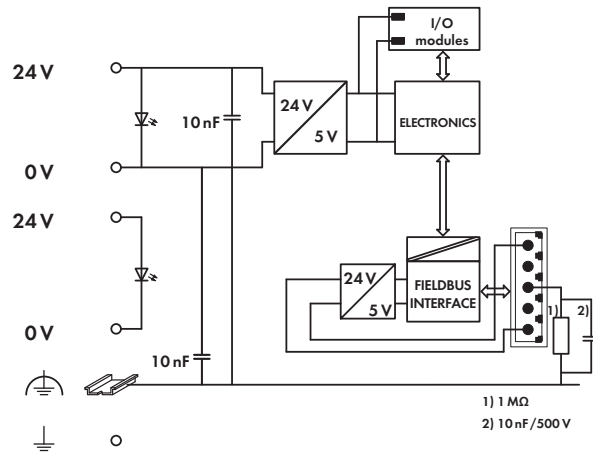
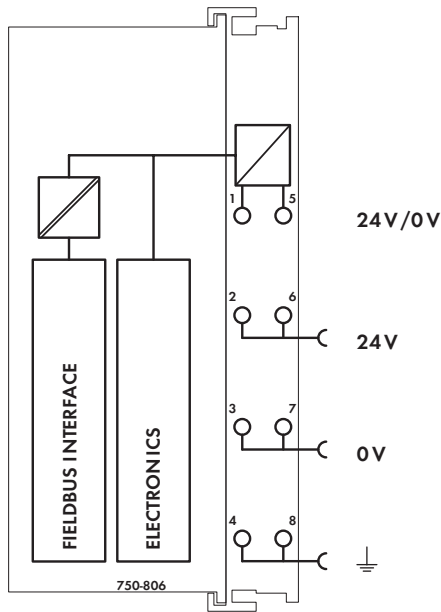
Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Stand-alone, compact controller

Notice: EDS files required

Description	Item No.	Pack. Unit
Contr. DeviceNet	750-806	1
Accessories		
EDS files	Download: www.wago.com	
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	64 with scanner
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable Trunk line: 2 x 0.82 mm ² + 2 x 1.7 mm ² Drop line: 2 x 0.2 mm ² + 2 x 0.32 mm ²
Max. length of bus line	100 m ... 500 m (depends on baud rate/ cable)
Baud rate	125 Kbaud, 250 Kbaud, 500 Kbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS), female connector 231-305/ 010-000/ 050-000 (included)
Programming	WAGO-I/O-PRO 32 (as of firmware SW 08 also programmable with WAGO-I/O-PRO V2.3)
IEC 61131-3	IL, LD, FBD, ST, FC

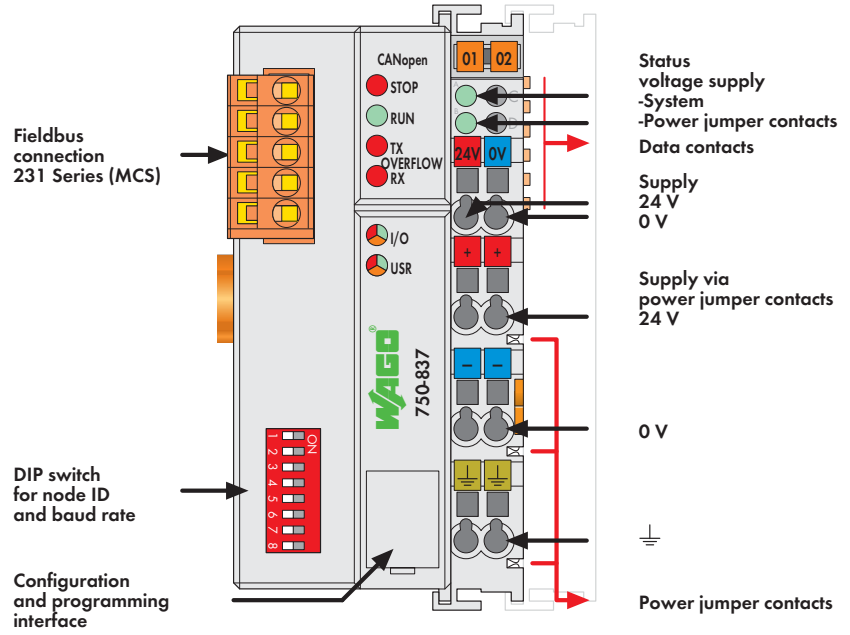


Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	1024 bytes
Max. output process image	1024 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC or PLC
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
DeviceNet features	
	Polled I/O message connection
	Strobed I/O message connection
	Change of state
	Cyclic message connection
	UCMM
	DeviceNet master can be programmed using function blocks
Power supply	24 V DC (-25 % ... +30 %)
Current consumption	
via power supply terminal	< 500 mA / 24 V
via DeviceNet interface	< 120 mA / 11 V
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

PLC - CANopen Programmable Fieldbus Controller, MCS

16-bit CPU



The CANopen PLC combines control functionality, I/O interface and fieldbus in one device.

Programming PLC applications is performed in compliance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

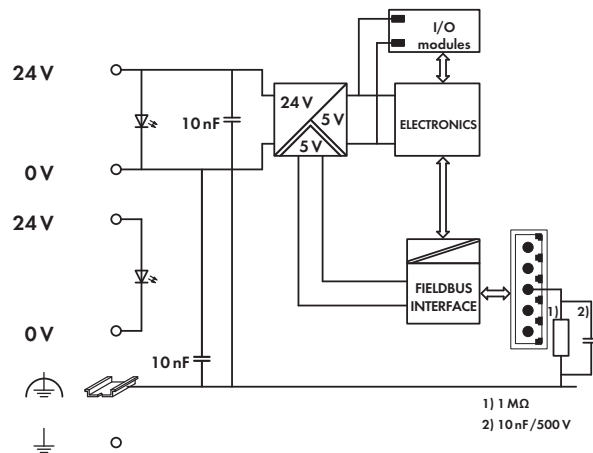
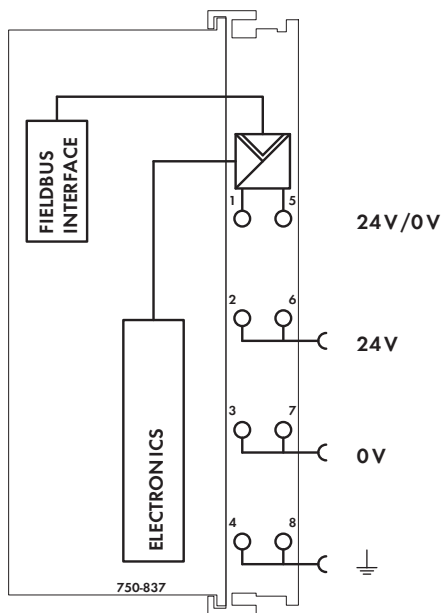
Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Stand-alone, compact controller

Note: EDS files required

Description	Item No.	Pack. Unit
CANopen Controller MCS	750-837	1
CANopen Controller MCS	750-837/020-000	1
Program memory 256 Kbytes; Data memory 192 Kbytes		
CANopen Controller MCS	750-837/021-000	1
Program memory 640 Kbytes; Data memory 832 Kbytes		
Accessories		
EDS files	Download: www.wago.com	
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-837
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm ²
Max. length of bus line	30 m ... 1000 m (depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS), female connector 231-305/ 010-000 (included)
Programming	WAGO-I/O-PRO 32 (as of firmware SW 11 also programmable with WAGO-I/O-PRO V2.3)
IEC 61131-3	IL, LD, FBD, ST, FC

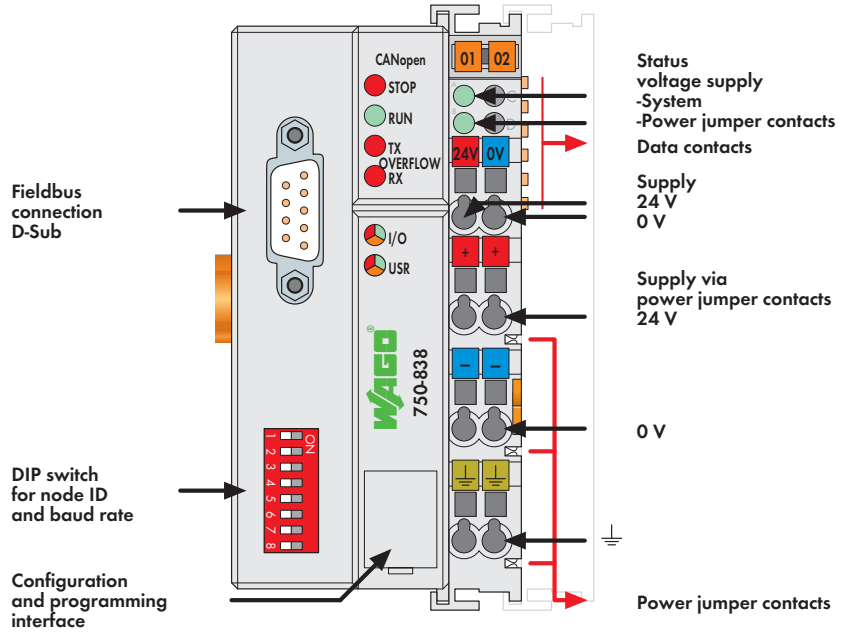


Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs / 16 client SDOs
Communication profile	DS-301 V4.01
Device profile	DS-401 V 2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
	DSP 405
	using function blocks NMT master can be programmed
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding / heartbeat
	Configuration of virtual modules
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 PLC - CANopen Programmable Fieldbus Controller, D-Sub

72 16-bit CPU




The CANopen PLC combines control functionality, I/O interface and fieldbus in one device.

Programming PLC applications is performed in compliance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

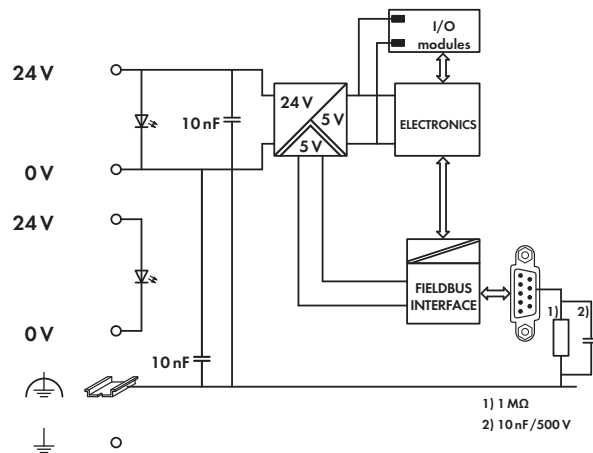
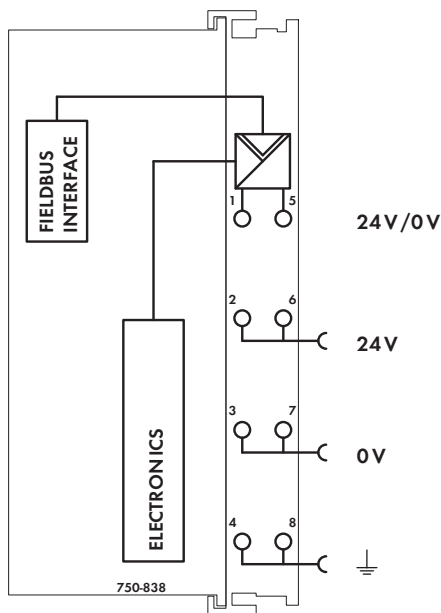
Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Compact, self-sufficient controller

Note: EDS files required

Description	Item No.	Pack. Unit
Contr. CANopen D-Sub	750-838	1
Contr. CANopen D-Sub	750-838/020-000	1
Program memory 256 Kbytes; Data memory 192 Kbytes		
Contr. CANopen D-Sub	750-838/021-000	1
Program memory 640 Kbytes; Data memory 832 Kbytes		
Accessories		
EDS files	Download: www.wago.com	
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Approvals		
	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	GL	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm ²
Max. length of bus line	30 m ... 1000 m (depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	1 x D-Sub 9; plug
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC or PLC
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs / 16 client SDOs
Communication profile	DS-301 V4.01
Device profile	DS-401 V 2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
	DSP 405
	using function blocks NMT master can be programmed
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding / heartbeat
	Configuration of virtual modules
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

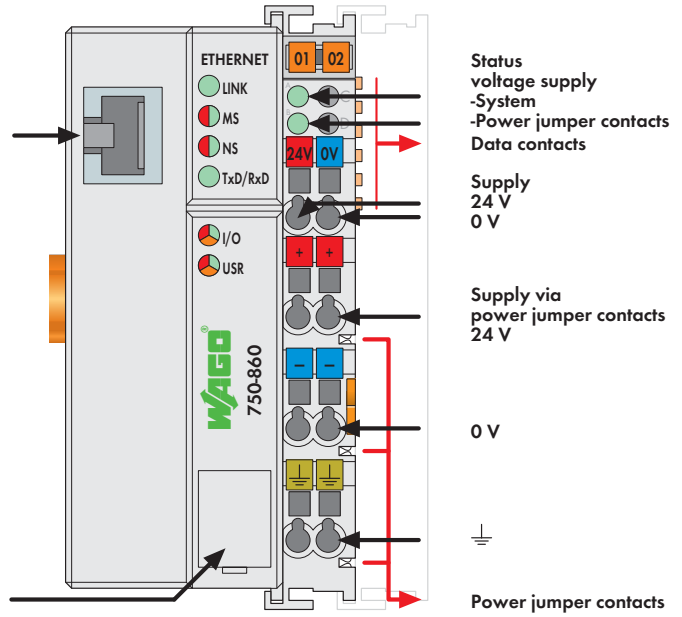
1 PLC - Linux Programmable Fieldbus Controller

74 32-bit CPU



Fieldbus connection RJ-45

Configuration interface



With the Linux ETHERNET PLC, a platform is now available for a high-level language software running on an open operating system.


The Linux operating system (kernel version 2.6) is tailor-made for the "embedded" controller, providing efficient software development from PC applications.

Free availability of Linux source code and a license-free operating system are the major advantages of the Linux operating system.

The Linux ETHERNET Controller is suitable for a wide range of applications currently using specialty hardware or small PC systems.

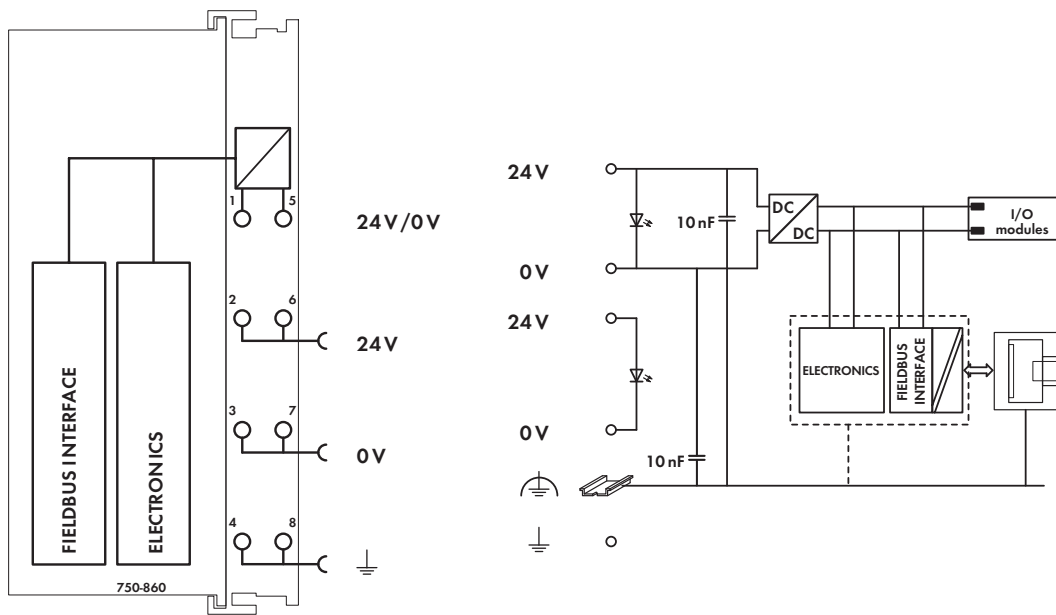
Software development is also commonly performed in a Linux environment and supported by illustrative examples.

Support: Owing to the complexity of the open Linux ETHERNET Controller and WAGO-I/O-IPC, the large number of application options and potential error sources, WAGO can only provide hardware support for these versions. Users must contact our product partners for software support if required, which may incur additional charges.

Description	Item No.	Pack. Unit
Linux ETHERNET Controller	750-860	1
Accessories		
Linux® Controller Distribution CD	759-914	1
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-860; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, DHCP, DNS, SNMP, FTP, NFS

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Technical Data

Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
CPU	32-Bit-Risc ARM7TDMI
RAM memory	16 Mbyte SDRAM, 32 Kbyte NOVRAM
Flash	4 Mbytes
EEPROM	4 Kbytes
Operating system	Linux (Kernel version 2.6)
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	181.3 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

PLC - Linux Programmable Fieldbus Controller, RS-232

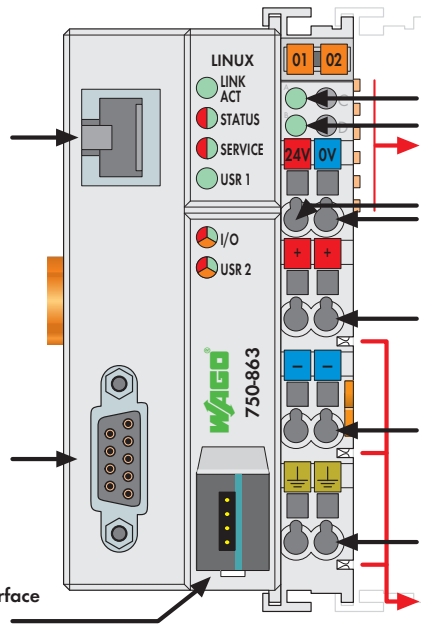
32-bit CPU



Fieldbus connection RJ-45

Fieldbus connection RS-232

Configuration and programming interface (with cover open)



Status voltage supply
-System
-Power jumper contacts

Data contacts

Supply
24 V
0 V

Supply via power jumper contacts
24 V

0 V

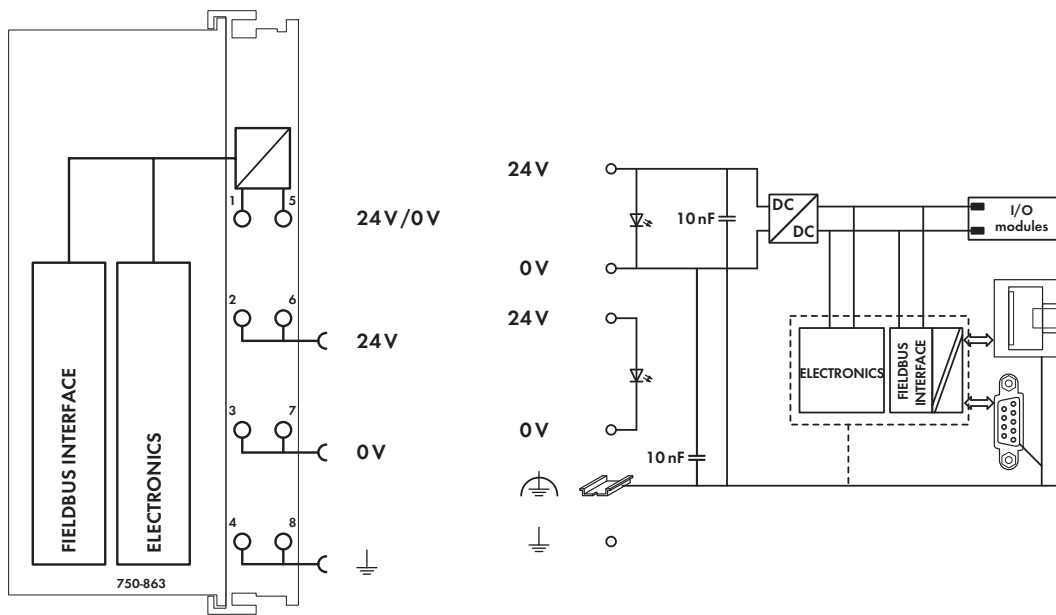
Power jumper contacts

With the Linux ETHERNET PLC, a platform is now available for a high-level language software running on an open operating system. The Linux operating system (kernel version 2.6) is tailor-made for the "embedded" controller, providing efficient software development from PC applications. Free availability of Linux source code and a license-free operating system are the major advantages of the Linux operating system. The Linux ETHERNET Controller is suitable for a wide range of applications currently using specialty hardware or small PC systems. The controller has a battery-backed RTC and 32-bit multitasking CPU. The integrated RS-232 interface communicates with external devices. Software development is also commonly performed in a Linux environment and supported by illustrative examples.

Support:
Owing to the complexity of the open Linux ETHERNET Controller and WAGO-I/O-IPC, the large number of application options and potential error sources, WAGO can only provide hardware support for these versions. Users must contact our product partners for software support if required, which may incur additional charges.

Description	Item No.	Pack. Unit
Linux ETHERNET Controller, RS-232	750-863	1
Accessories		
Linux® Controller Distribution CD	759-914	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		

System Data	
System data ETHERNET:	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-863; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, DHCP, FTP
System data Serial:	
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm ²
Max. length of fieldbus segment	15 m depending on baud rate/cable (at 19,200 baud)
Baud rate	9,600 baud ... 115,200 baud
Buscoupler connection	1 x D-Sub 9; socket
Linux® is a registered trade mark of Linus Torvalds.	



Technical Data

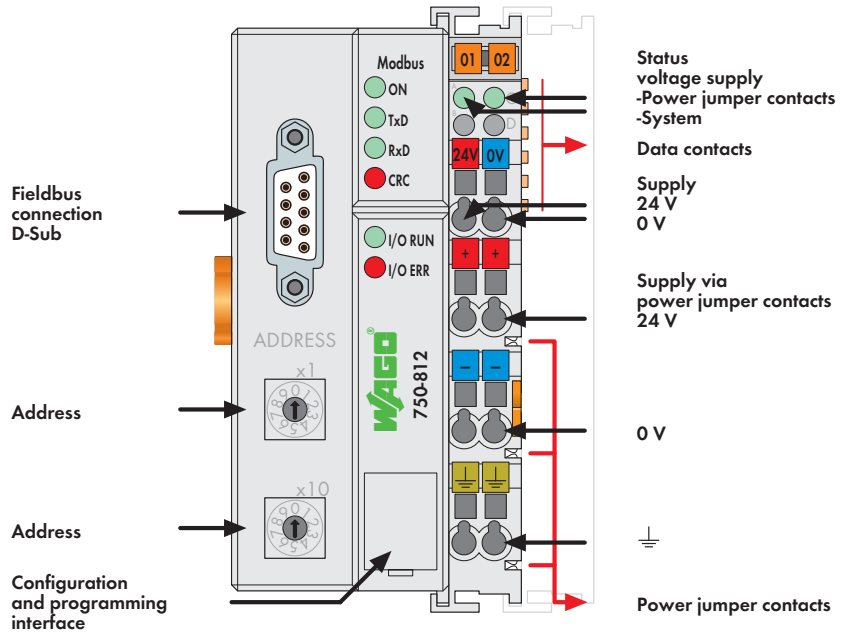
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
CPU	32-Bit-Risc ARM7TDMI
RAM memory	16 Mbyte SDRAM, 32 Kbyte NOVRAM
Flash	8 Mbytes
EEPROM	4 Kbytes
Operating system	Linux (Kernel version 2.6)
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	181 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

PLC - MODBUS Programmable Fieldbus Controller

16-bit CPU




The MODBUS PLC is an expansion for the WAGO-I/O-SYSTEM.

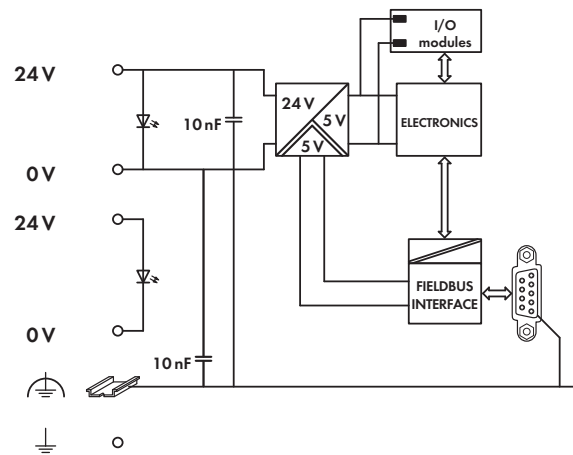
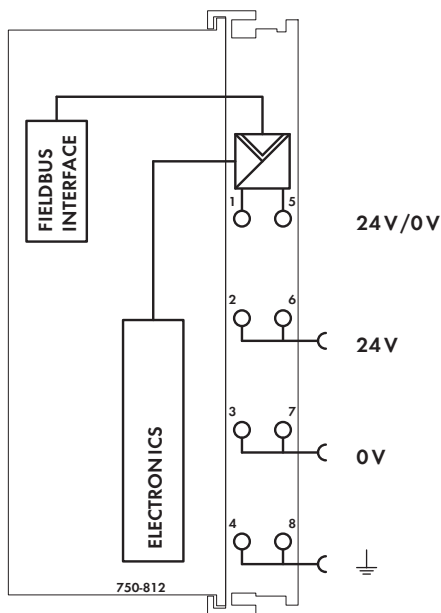
This controller combines the WAGO fieldbus coupler for MODBUS with the functionality of a PLC. Programming PLC applications is performed in compliance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Stand-alone, compact controller

Description	Item No.	Pack. Unit
Contr. MODBUS / RS 485 / 150 ... 19200 Bd	750-812	1
Contr. MODBUS / RS 485 / 150 ... 19200 Bd/T	750-812/025-000	1
Extended temperature range: -20 °C ... +60 °C		
Contr. MODBUS / RS 232 / 150 ... 19200 Bd	750-814	1
Contr. MODBUS / RS 485 / 1.2 ... 115.2 kBd	750-815	1
Contr. MODBUS / RS 485 / 1.2 ... 115.2 kBd/T	750-815/025-000	1
Extended temperature range: -20 °C ... +60 °C		
Contr. MODBUS / RS 232 / 1.2 ... 115.2 kBd	750-816	1
Accessories		
Miniature WSB Quick marking system		
	plain	248-501
	with marking	see pages 352 ... 353
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	750-812, -814, -815, -816
IEC 60079-0, -15	BR-Ex nA II T4	750-812, -814, -815, -816
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	750-812, -814, -815, -816

System Data	
No. of controllers connected to Master	99 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm ²
Max. length of fieldbus segment	1200 m (depends on baud rate/cable)
Baud rate	150 baud ... 19200 baud (750-812, 750-814) 1.2 Kbaud ... 115.2 Kbaud (750-815, 750-816)
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO 32
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	1024 bytes
Max. output process image	1024 bytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	automatic and via switches
Program memory	32 Kbytes
Data memory	32 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
	-20 °C ... +60 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	205 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

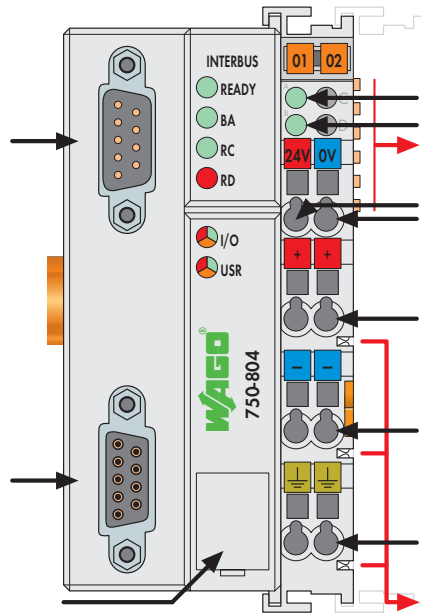
1 PLC - INTERBUS Programmable Fieldbus Controller



Fieldbus connection D-Sub Input

Fieldbus connection D-Sub Output

Configuration and programming interface



Status voltage supply
-System
-Power jumper contacts
Data contacts

Supply
24 V
0 V

Supply via power jumper contacts
24 V

0 V

⏚


Power jumper contacts

The INTERBUS PLC is an expansion for the WAGO I/O SYSTEM.

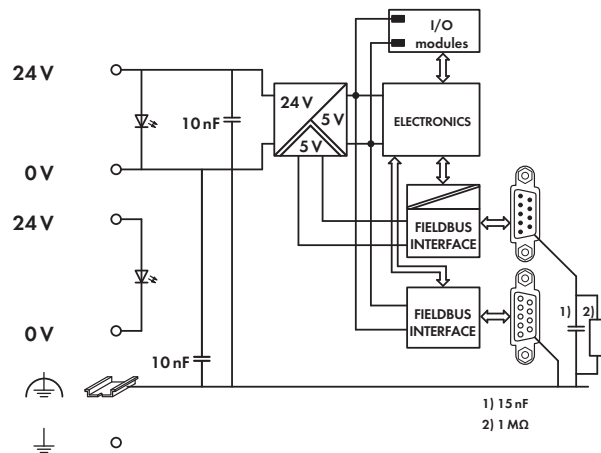
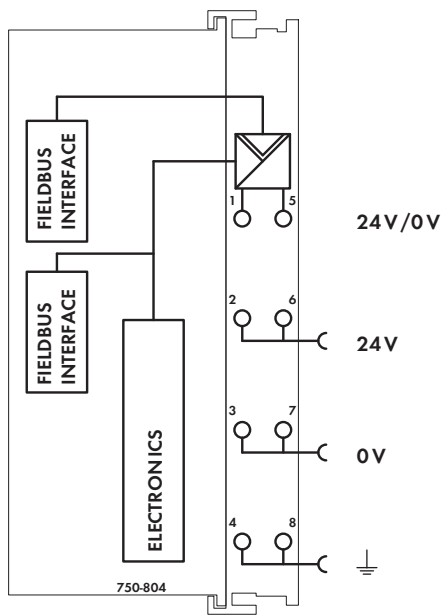
This controller combines the WAGO fieldbus coupler for INTERBUS with the functionality of a PLC. Programming PLC applications is performed in compliance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

Features and applications:

- Use of decentralized control can better support a PLC or PC
- Complex applications can be divided into individually testable units
- Programmable fault response in the event of a fieldbus failure
- Signal pre-processing reduces fieldbus transmissions
- Peripheral equipment can be controlled directly, resulting in faster system response times
- Stand-alone, compact controller

Description	Item No.	Pack. Unit
Contr. INTERBUS	750-804	1
Accessories		
INTERBUS files	Download: www.wago.com	
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50254	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508	Class I, Div. 2, Grp. ABCD, T4	
ANSI/ISA 12.12.01	BR-Ex nA II T4	
IEC 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 60079-0, -15	EN 61241-0, -1	

System Data	
No. of controllers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	400 m
Baud rate	500 Kbaud
Transmission time	typ. 1.43 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	1 x D-Sub 9; plug for input interface 1 x D-Sub 9; socket for output interface
Programming	WAGO I/O-PRO 32
IEC 61131-3	IL, LD, FBD, ST, FC


Technical Data

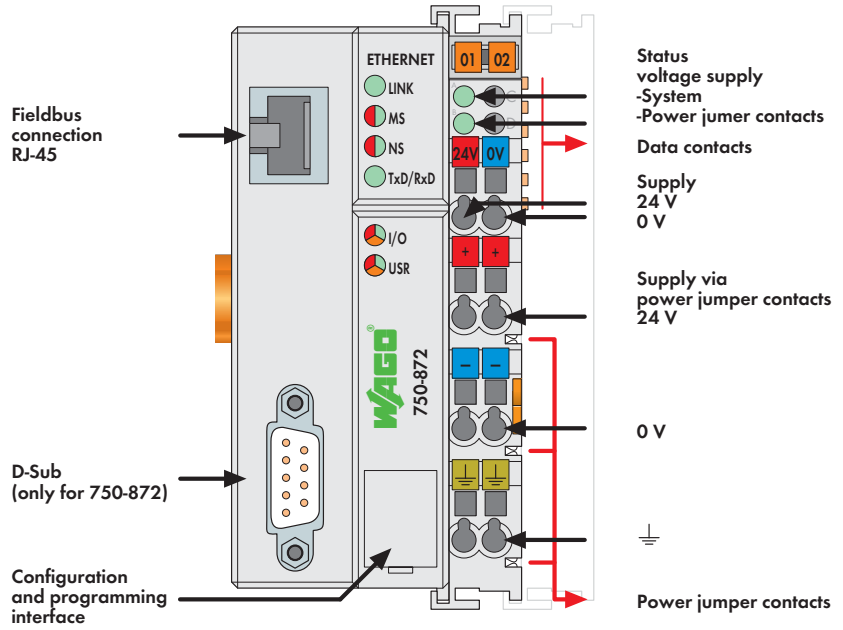
Number of I/O modules	64
Fieldbus	
Max. input process image	64 bytes
Max. output process image	64 bytes
Max. input variables	64 bytes
Max. output variables	64 bytes
Configuration	automatic
Program memory	128 Kbytes
Data memory	64 Kbytes
Non-volatile memory (retain)	8 Kbytes
Cycle time	< 3 ms for 1,000 statements / 256 dig. I/Os
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	400 mA
Total current for I/O modules (5 V)	1600 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 PLC - Programmable Fieldbus Telecontroller

82 32-bit CPU, multitasking



This PLC from the WAGO-I/O-SYSTEM meets all requirements for telecontrol technology applications.

The controller offers many different application protocols for I/O data control (MODBUS TCP/RTU, IEC 60870-5-101/-104, 3964R, RK512, Ethernet/IP) or for system management and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP and SMTP).

For Web-based applications, HTML pages can be generated on an internal server. Programs are directly accessible via XML and ASP. Furthermore, the controller incorporates library functions for e-mail, SOAP, ASP, IP configuration, ETHERNET sockets and file system.

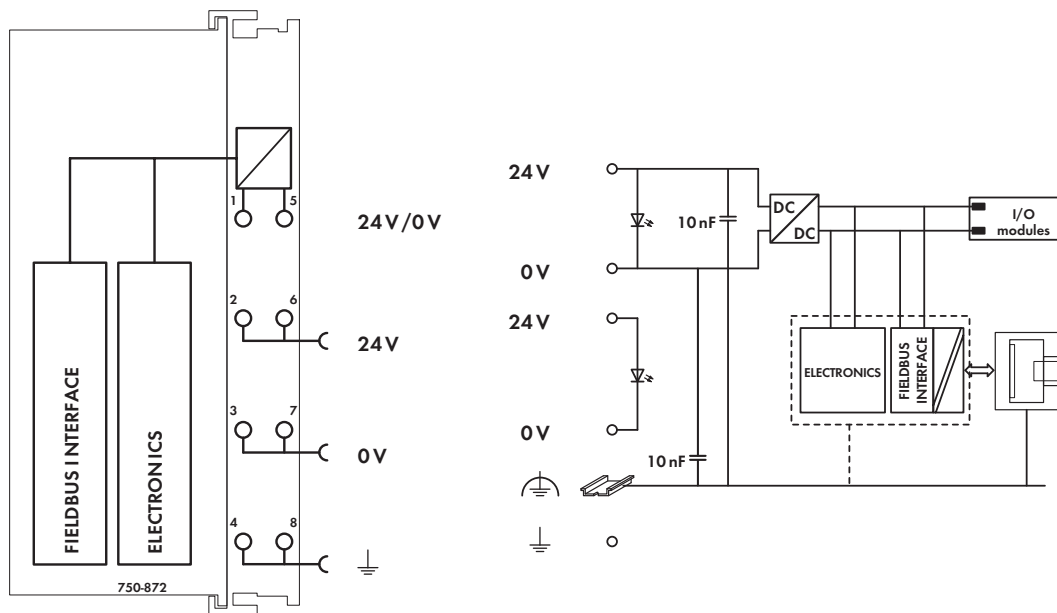
The controller has a battery-backed RTC and 32-bit multitasking CPU. Programming of the application is done in accordance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

IEC 60870-5-101/-104, IEC 61850 and IEC 61400-25 telecontrol protocols can be accessed via CoDeSys function blocks.

For users who do not want to write a PLC program, protocols may also simply be configured via CoDeSys tool.

Description	Item No.	Pack. Unit
Telecontrol Controller RJ-45 + D-Sub	750-872	1
Accessories		
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	Also see "Approvals Overview" in Section 1	
Shipbuilding	CE	pending
UL 508		

System Data	
System data ETHERNET:	
No. of controllers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m hub station and 750-872; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, NTP, SNTP, FTP, SNMP
System data Serial:	
No. of controllers connected to Master	limited
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm ²
Max. length of fieldbus segment	1200 m (depending on baud rate/cable)
Baud rate	9600 baud ... 115 200 baud
Buscoupler connection	1 x D-Sub 9; socket
Libraries	IEC 60870-5-101/-104, 3964R/RK512, IEC 61850, IEC 61400-25
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data

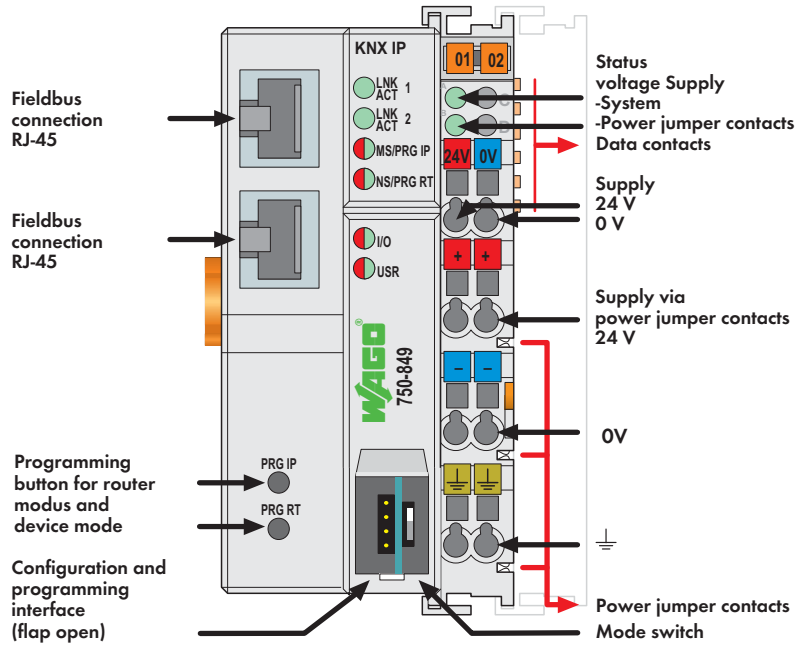
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes
Configuration	via PC
Program memory	1024 Kbytes
Data memory	1024 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
File system	2 Mbytes
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
IEC60870-5-101 and -104 library:	
Document of conformity	see www.wago.com
Number of control stations	4
Number of information objects	150
Functions	Client and server
IEC 61850 and 61400-25 library	
Document of conformity	see www.wago.com
Function	Server

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	184 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

PLC - KNX IP Programmable Fieldbus Controller

32-bit CPU, multitasking



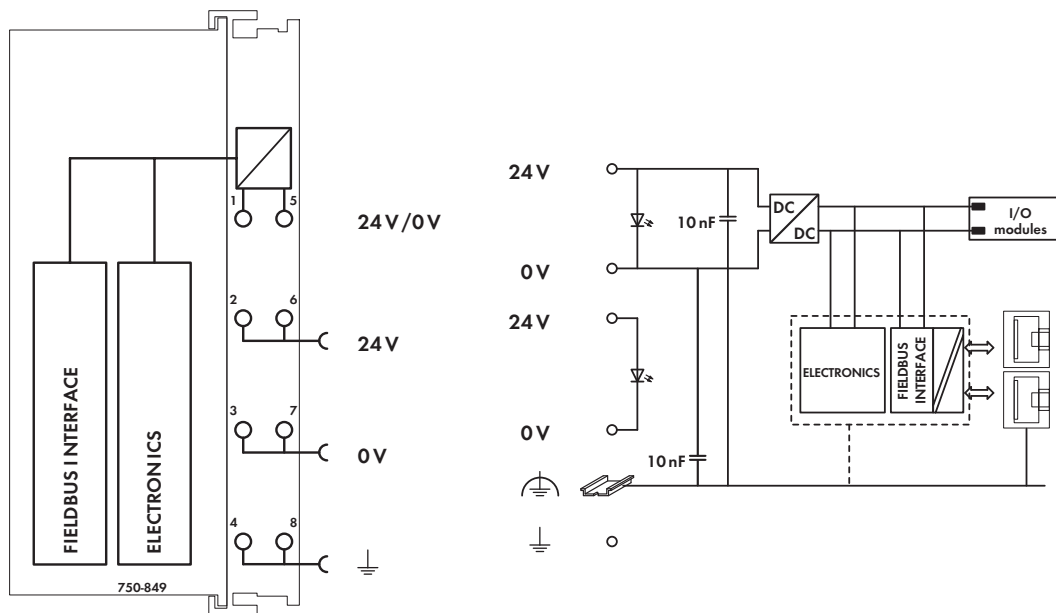
This controller can contain up to two logical KNX devices simultaneously.

- In conjunction with the WAGO-I/O-SYSTEM, the KNX IP PLC is used as an application controller within KNX IP networks. The PLC supports all digital, analog and specialty modules found within the 750/753 Series. The controller is capable of 10/100 Mbit/s data rates and is programmable in accordance with IEC 61131-3. KNX objects of any type (EIS/DPT) can be created using the programming tool. Libraries including ready-made function blocks are readily available on the WAGO Web site for programming. The controller supports a maximum of 253 communication objects, 254 group addresses and 254 associations. Supported DPTs: All (acc. to KNX standard 03_07_02 Datapoint Types V1.0).
- Combined with the KNX/EIB/TP1 module, the 750-849 KNX IP PLC can be operated as a router on an IP backbone (ETHERNET). No IEC application is required for router functionality.

Both devices are commissioned and configured in ETS3/4 using the WAGO product database. The software includes a plug-in that automatically installs and opens for configuration. The KNX IP PLC features an integrated 2-port 10/100 Mbit/s switch and allows easy creation of a line structure without requiring additional network components. The maximum number of controllers that can be wired in series is 20. An internal server is available for Web-based applications. The controller provides 512 KB program memory, 256 KB data memory and 24 KB retain memory. It has a battery-backed RTC and 32-bit multitasking CPU. The controller offers many different application protocols for control tasks (MODBUS, KNXnet/IP) or for system management and diagnostics (HTTP, BootIP, DHCP, DNS, Auto-IP, SNTP, FTP, SNMP and SMTP). The number of KNX/EIB/TP1 modules (750-646) that are supported by the KNX IP PLC does not depend on the application.

Description	Item No.	Pack. Unit
KNX IP Controller	750-849	1
Accessories		
WAGO ETS3/4 plug-in	see page 93	
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
	Also see "Approvals Overview" in Section 1	
KNX certified	IP controller: 61/8316/08; IP router: 61/8317/08	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

System Data	
No. of controllers	limited by network topology
Transmission medium	S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m limited by IEEE 802.3
Max. length of network	≤ 2000 m; max. 20 controllers in series
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45 (linked via 2-port switch)
Protocols	KNXnet/IP, MODBUS/TCP (UDP), HTTP, BootIP, DHCP, DNS, AutoIP, SNTP, FTP, SNMP V3, SMTP
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
KNX-specific	
KNX/TP1 bus specification	1.0
Commissioning (KNX side)	with ETS3/4 plug-in, 2 programming buttons
Device mode:	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All (*acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
Max. number of logical KNX devices, simultaneous	2; 1. device, 2. router (with 1. KNX/EIB/TP1 module)

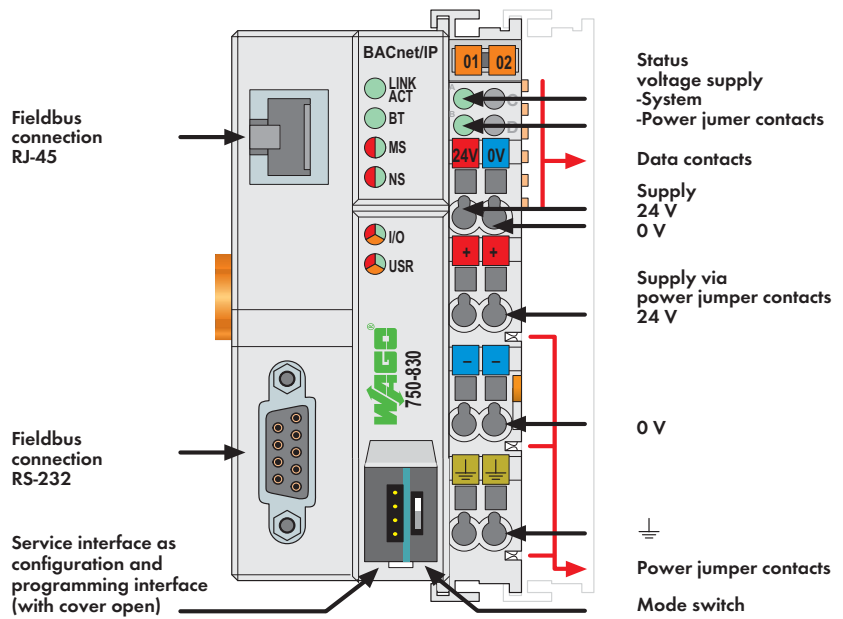


Technical Data	
Number of I/O modules	64
with bus extension	250
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Fieldbus (Modbus/TCP):	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	190 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

PLC - BACnet/IP Programmable Fieldbus Controller

32-bit CPU, multitasking



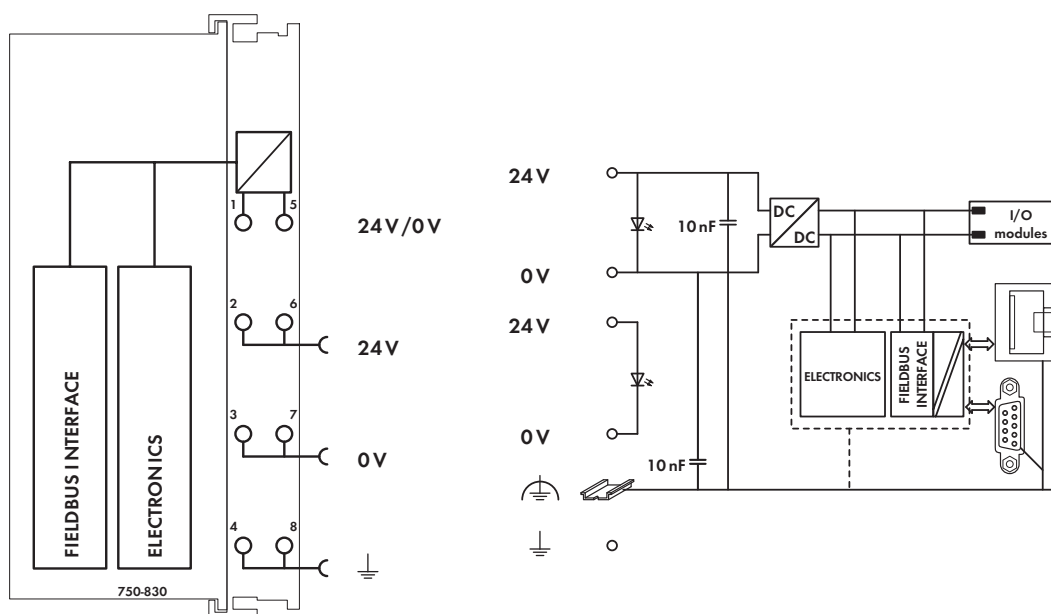
The 750-830 BACnet PLC connects the WAGO-I/O-SYSTEM to the BACnet protocol. The 750-830 controller corresponds to BACnet B-BC device profile according to DIN EN ISO 16484-5. The controller provides the three following functionalities:

1. Native server: For each channel, appropriate BACnet objects are generated automatically for the digital and analog I/O modules that are connected to the controller.
2. Application server: Other supported BACnet objects can be created via IEC -61131-3 programming environment.

3. Application client: Using the client functionality, objects and their properties can be accessed by other BACnet devices. Access to BACnet/IP networks is provided by the controller's RJ-45 interface. The integrated RS-232 interface communicates with external devices. The controller can also be addressed as Modbus RTU slave via RS-232 interface. Programming PLC applications is performed in compliance with IEC 61131-3. The controller has a battery-backed RTC and 32-bit multitasking CPU. For Web-based applications, HTML pages can be generated on an internal server. Start-up and configuration of the BACnet networks is performed using the Windows-compliant WAGO BACnet Configurator.

Description	Item No.	Pack. Unit
BACnet/IP Controller	750-830	1
Accessories		
PC software WAGO BACnet configurator	see page 92	
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
BACnet approvals		
WSPCert certification	ISO 16484-5:2010	
BTL listing	BTL (BACnet® Testing Laboratories)	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
System data ETHERNET:	
No. of controllers	limited by network topology
Transmission medium	S-UTP 100 Ω Cat 5
Max. length of fieldbus segment	100 m limited by IEEE 802.3
Max. length of network	acc. to IEEE 802.3 standard
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	BACnet/IP, MODBUS/TCP (UDDP), HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP V1, SMTP
System data Serial:	
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm ²
Max. length of fieldbus segment	15 m depending on baud rate/cable (at 19200 baud)
Baud rate	9600 baud ... 115 200 baud
Buscoupler connection	1 x D-Sub 9; socket
Programming	WAGO-I/O-PRO V2.3
IEC 61131-3	IL, LD, FBD (CFC), ST, FC
BACnet device profile	B-BC (BACnet Building Controller)
BACnet-Revision	1.7

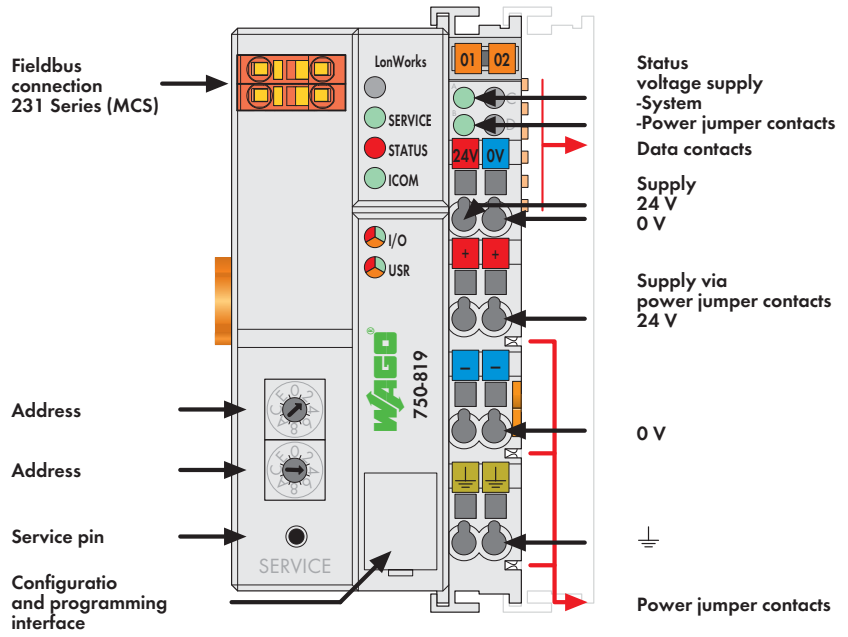


Technical Data	
Number of I/O modules	64
with bus extension	250
Configuration	via PC
Program memory	512 Kbytes
Data memory	256 Kbytes
Non-volatile memory (retain)	24 Kbytes (16 Kbytes retain, 8 Kbytes flag)
Flash	4.5 Mbytes
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	DC10 A DC A
BACnet implementation acc. to	DIN EN ISO 16484-5 =ANSI/ASHRAE 135-2004
Fieldbus (Modbus/TCP):	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Max. input variables	512 bytes
Max. output variables	512 bytes

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

PLC - LonWorks Programmable Fieldbus Controller

16-bit CPU



The LonWorks® PLC is an expansion for the WAGO-I/O-SYSTEM. Programming PLC applications is performed in compliance with IEC 61131-3. The programmer can access all fieldbus and I/O data.

Features and applications:

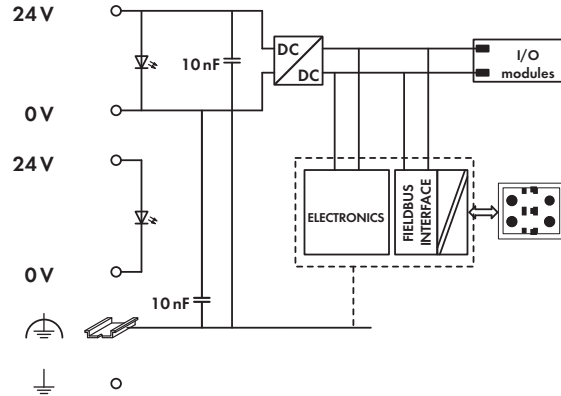
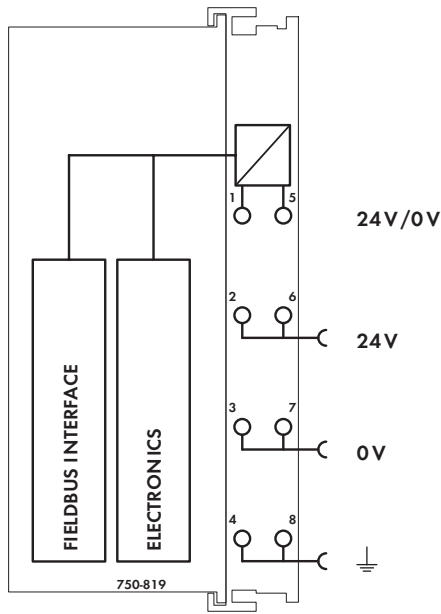
In addition to the Neuron chip, the LonWorks® controller also has a host processor (40 MHz) that can be programmed via WAGO-I/O-PRO. All available types of modules up to 248 digital or 124 analog input/output channels as well as modules with special functions can be addressed and handled using the program generated by WAGO-I/O-PRO.

The Neuron chip connection is made through IEC-61131-3 variables with special addresses. These can be imported via LNSTM-compliant PRIO LNS plug-in and assigned to a maximum of 52 network variables. Any Standard Network Variable Type (SNVT) can be assigned to each of these network variables. The PRIO LNS plug-in supports all available SNVTs from the LonMark® SNVT Master List (1-31 bytes in length). Network variables can be assigned to any SNVTs, ensuring the best possible interoperability with LonMark®-compliant products of other manufacturers.

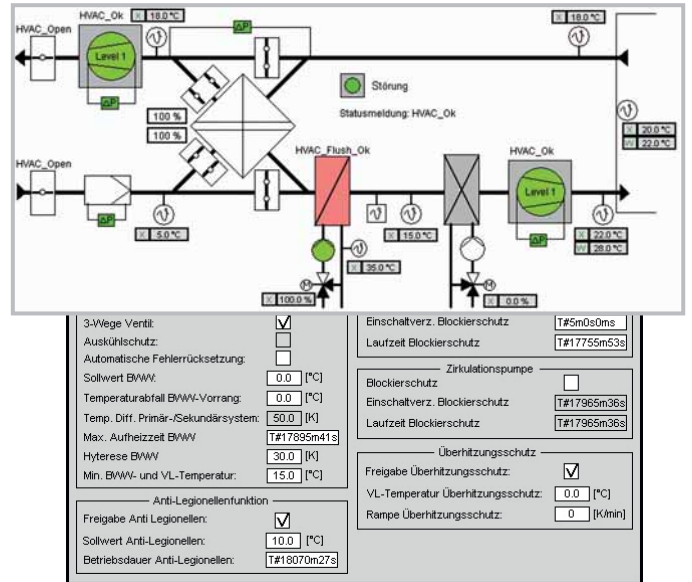
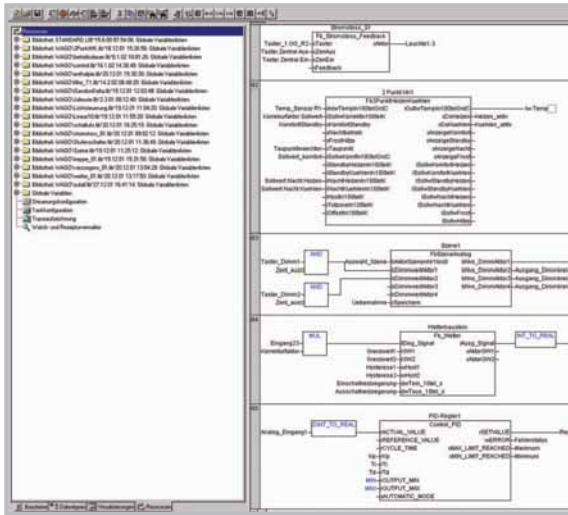
LON®, LONMARK®, LONWORKS® and Echelon® are registered trademarks of Echelon Corporation. LNS™ is a trademark of Echelon Corporation. TOPLON® is a registered trademark of WAGO Kontakttechnik GmbH & Co. KG

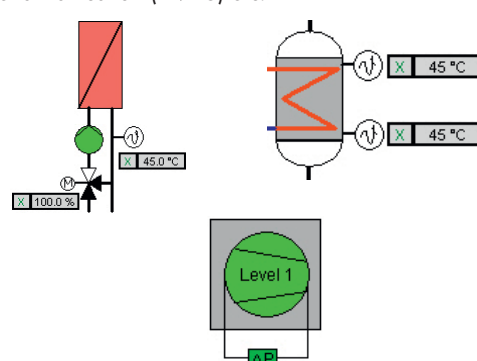
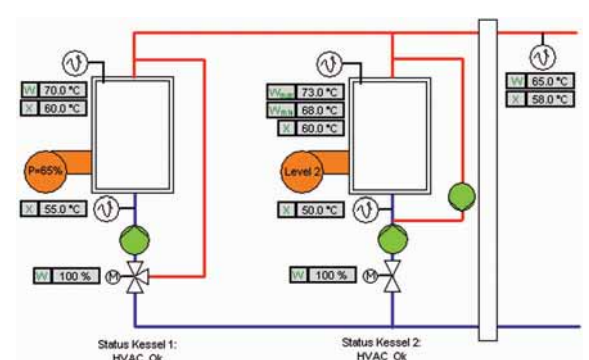
Description	Item No.	Pack. Unit
LonWorks® Controller	750-819	1
Accessories		
WAGO LNS Plug-In PRIO	see page 94	
WAGO-I/O-PRO V2.3, RS-232 kit	759-333	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of controllers connected to Master	64 without repeater, 127 with repeater
Transmission medium	Twisted pair - FTT
Max. length of fieldbus segment	500 m (free topology) 2700 m (bus-topology)
Topology	in accordance with LON specification
Baud rate	78 kbps
Buscoupler connection	2-pole male connector, 231 Series (MCS),
Programming	WAGO-I/O-PRO 32 (as of firmware SW 07 also programmable with WAGO-I/O-PRO V2.3)
IEC 61131-3	IL, LD, FBD, ST, FC



Technical Data		General Specifications	
Number of I/O modules	62	Operating temperature	0 °C ... +55 °C
Digital signals	max. 248 (in- and outputs)	Wire connection	CAGE CLAMP®
Analog signals	max. 124 (in- and outputs)	Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Configuration	via PC with LON Interface	Stripped lengths	8 ... 9 mm / 0.33 in
Program memory	128 Kbytes	Dimensions (mm) W x H x L	51 x 65 x 100
Data memory	64 Kbytes		Height from upper-edge of DIN 35 rail
Non-volatile memory (retain)	7 Kbytes	Weight	205 g
Power supply	24 V DC (-15 % ... +20 %)	Storage temperature	-25 °C ... +85 °C
Max. input current (24 V)	500 mA	Relative air humidity (no condensation)	95 %
Efficiency of the power supply	87 %	Vibration resistance	acc. to IEC 60068-2-6
Internal current consumption (5 V)	300 mA	Shock resistance	acc. to IEC 60068-2-27
Total current for I/O modules (5 V)	1700 mA	Degree of protection	IP20
Isolation	500 V system/supply	EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)	EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
Current via power jumper contacts (max.)	10 A DC		
Transceiver	FTT 10 A		

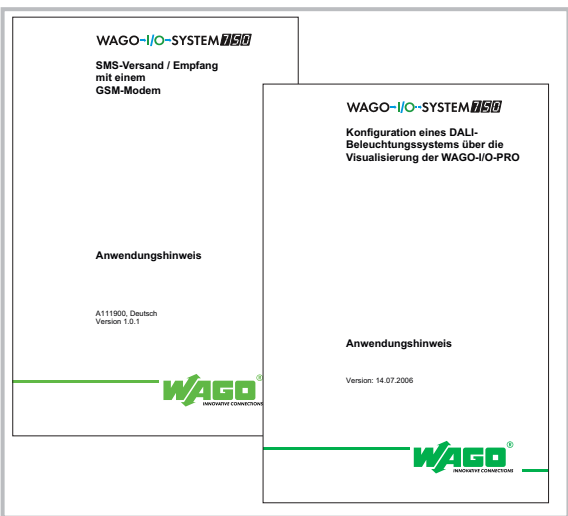
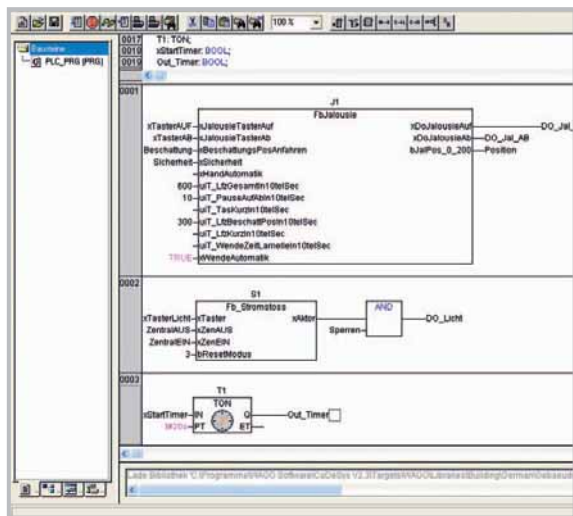



Description	Description
<p>Heating, ventilation, air conditioning</p> <p>The library contains function blocks (FBs) to create automation applications for complex heating, ventilation and air-conditioning systems (HVAC).</p> <p>These include fault monitoring, starter circuits, the monitoring of frost protection systems, fan control (stepped/continuous), air mixture valve control, control of air heaters, control of air coolers, cascade control of room/feed air temperature, free night cooling, summer/winter compensators, enthalpy calculations, filter monitoring, blockage protection, heating circuit control, heat recovery control (HRC), boiler control (stepped, continuous), boiler sequence, duty cycle monitoring (hot water), start/stop optimization, humidification and dehumidification (HVAC) etc.</p> 	<p>System macros</p> <p>Boiler control Ventilation systems Heating circuit control Duty cycle conditioning (hot water)</p>  <p>Boiler sequence control</p>

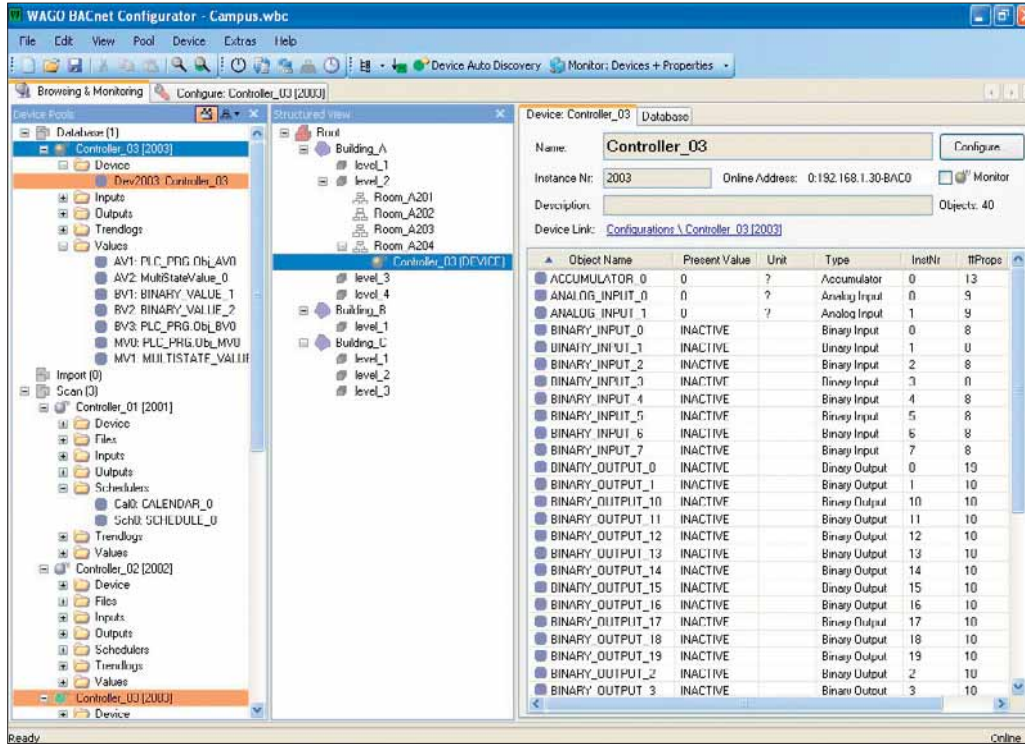
Software System Requirements:

Description	Item no.
WAGO-I/O-PRO V2.3	759-333

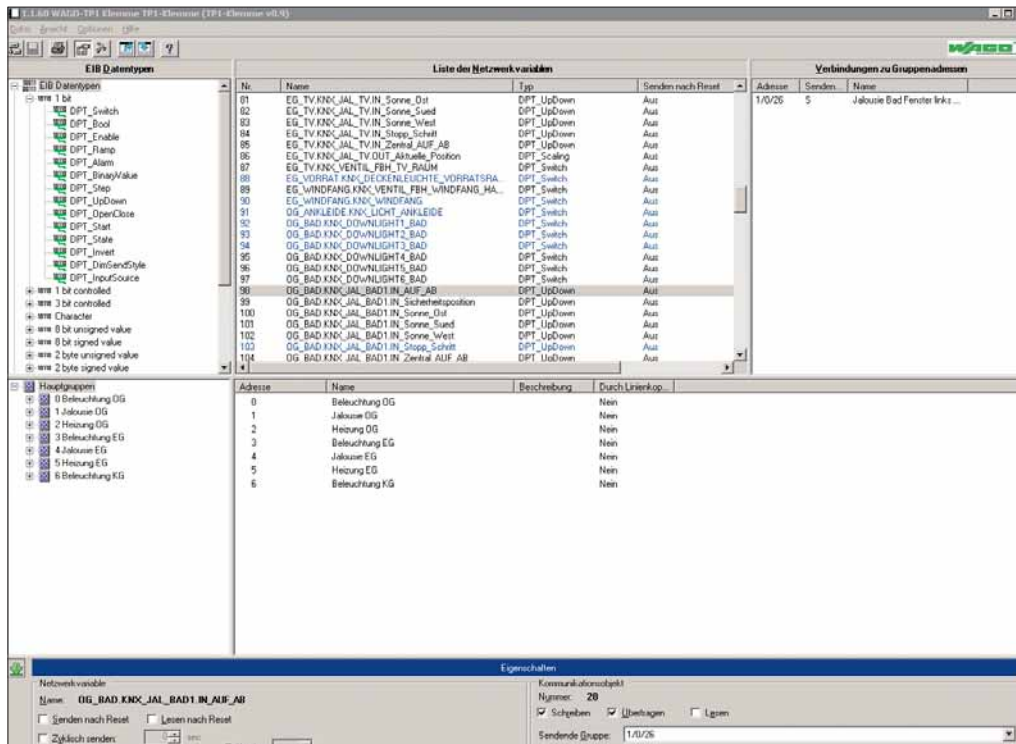
Download:
 Current libraries including descriptions can be downloaded for free at: www.wago.com



Description	Description				
<p>Room applications</p>	<p>Application notes</p>				
<p>The library contains function blocks that have been customized especially for building automation. They serve as an aid for the rapid programming of building applications.</p> <ul style="list-style-type: none"> • Lighting • Dimmers • Lighting scenarios • Constant light control • Blinds • Shading • and other applications 	<p>The application notes contain function blocks (FBs) for communications applications.</p> <ul style="list-style-type: none"> • SMI • EnOcean radio technology • DALI • MP-Bus • KNX/EIB • M-Bus • E-Mail • SMS • MODBUS • AS-Interface • LonWorks • and other applications 				
<p>Software System Requirements:</p> <table border="1"> <tr> <td>Description</td> <td>Item no.</td> </tr> <tr> <td>WAGO-I/O-PRO V2.3</td> <td>759-333</td> </tr> </table>	Description	Item no.	WAGO-I/O-PRO V2.3	759-333	<p>Download:</p> <p>Current application notes can be downloaded at: www.wago.com</p>
Description	Item no.				
WAGO-I/O-PRO V2.3	759-333				



<p>Description</p>	
<p>WAGO BACnet Configurator</p>	
<p>The WAGO BACnet Configurator is an independent commissioning, configuration and management software. The configurator fully supports BACnet-specific functions of the WAGO 750-830 BACnet/IP Controller.</p> <p>The configurator creates and configures WAGO BACnet/IP controllers and sets up data exchange between IEC application and BACnet objects. Import and export functions allow further processing of configuration data.</p> <p>For integration into existing BACnet/IP networks, the BACnet devices available can be scanned, displayed in a browser and data exchange can be implemented for WAGO devices. Among the configurator's additional capabilities are the logical structuring of the project and network, addressing of the controller and configuration of client and server in every WAGO BACnet/IP controller.</p> <p>The representation of the devices, objects and configuration data is done in a logical, structured network and browser view.</p>	<p>Depending on the function used, both online and offline operation is possible.</p> <p>The configurator displays all configuration data. The user may change the data, load it onto either one, or several, controllers and save it as a project.</p> <p>The configurator provides a browser to view the BACnet object properties and modify the current parameters (communicate value changes, write property values, utilize BACnet services, etc.). Additionally, a Transaction Log window is available for client services.</p>
	<p>System requirements:</p> <p>Operating system: Windows® 2000, Windows® XP (XP recommended) Windows® Vista</p> <p>WAGO BACnet Configurator can be downloaded for free at: www.wago.com</p>



Description	
<p>WAGO ETS3/4 Plug-In</p>	
<p>The WAGO ETS3/4 Plug-In is a WAGO ETS3 product database extension that allows the use of WAGO products, such as: 753-646 KNX/EIB/TP1 Module, 750-849 KNXnet/IP Controller and KNXnet/IP Router (consisting of KNX Module and KNX IP Controller).</p> <p>The software's enhanced structure offers intuitive navigation - providing both experienced ETS users and newcomers with exceptional usability.</p> <p>WAGO ETS3/4 Plug-In provides 3 clear user interfaces for various devices. Depending on the mode selected, either the KNX/EIB/TP1 module, the KNX IP controller or the KNXnet/IP router (IP controller with KNX module in first position) are supported.</p> <p>In the graphical interfaces, device parameters are easy to configure and only the setting options required for the selected device are displayed.</p> <p>The following configurations can be performed on the WAGO devices:</p>	<ol style="list-style-type: none"> 1.) KNX/EIB/TP1 Module <ul style="list-style-type: none"> • Import/Assignment of IEC variables (communication objects) • Creation/Configuration of group addresses 2.) KNX IP Controller <ul style="list-style-type: none"> • Assignment of IP addresses • Download of IEC application into the controller • Import/Assignment of IEC variables (communication objects) • Creation/Configuration of group addresses 3.) KNXnet/IP Router <ul style="list-style-type: none"> • Assignment of IP addresses • Setting of routing multicast address • Filtering/Transmission of telegrams <p>Great importance was attached to a convenient und time-saving graphical user interface - especially when assigning communication objects to group addresses. Two different drag-and-drop options and a context menu with automatic filter function are available allowing the user to select his favorite procedure.</p>
	<p>System requirements:</p> <p>Operating system: Windows® XP, Windows® 7</p> <p>Other: The plug-in requires the ETS 3/4</p> <p>WAGO ETS3/4 Plug-In can be downloaded for free at: www.wago.com</p>

Um nach einer Spalte zu gruppieren, ziehen Sie die Spaltenkopftabe hierher:

NV	Netzwerkvaria.	Typ	SNVTID	Länge in By...
1	nvo_temp	SNVT_temp_p (2 Bytes)	105	2
2	nvo_tester1	SNVT_switch (2 Bytes)	95	2
3	nvo_alarm	SNVT_alarm (29 Bytes)	88	29
4	nvo_dgbeleuc...	SNVT_switch (2 Bytes)	95	2
5	nvo_counter	SNVT_count (2 Bytes)	8	2
6	nvo_str_esc	SNVT_str_esc (31 Bytes)	36	31
7	nvo_hvac	SNVT_hvac_status (12 Byt...	112	12
8	nvo_light_status	SNVT_lux (2 Bytes)	79	2
9	nvo_blind	SNVT_setting (4 Bytes)	117	4
10	nvo_temp	SNVT_temp_f (4 Bytes)	63	4
11	nvo_time	SNVT_time_stamp (7 Bytes)	84	7
12	nvo_blind	SNVT_scene (2 Bytes)	115	2
13	nvo_state	SNVT_state (2 Bytes)	83	2
14	nvo_occup	SNVT_occupancy (1 Bytes)	109	1
15	nvo_flow	SNVT_flow (2 Bytes)	15	2
16	nvo_lev_perc...	SNVT_lev_percent (2 Byte...	81	2
17	nvo_tester2	SNVT_switch (2 Bytes)	95	2
18	nvo_tester3	SNVT_switch (2 Bytes)	95	2
19	nvo_tester4	SNVT_switch (2 Bytes)	95	2
20	nvo_temp_jst	SNVT_temp (2 Bytes)	39	2
21	nvo_temp_soll	SNVT_temp (2 Bytes)	39	2
22	nvo21	SNVT_temp_f (4 Bytes)	63	4
23	nvo22	SNVT_str_esc (31 Bytes)	36	31
24	nvo23	SNVT_str_esc (31 Bytes)	36	31

Speicherauslastung

<p>Description</p> <p>WAGO LNS Plug-In PRIO</p>	
<p>WAGO LNS Plug-In PRIO is an LNS plug-in used to connect the LonWorks® controller of the WAGO-I/O-SYSTEM 750 to the LON® network.</p> <p>The following functions are available:</p> <ul style="list-style-type: none"> • Connection to WAGO-I/O-PRO CAA programming software (user interface acc. to IEC61131-3) • Allocation of IEC61131-3 variables to network variables, to which any standard network variable types (SNVTs) can be assigned. • Parameters for harmonization purposes with network/coupler behavior (send_on_reset, max /minimum_send_time, send_on_delta, default mask after timeout,...) • IEC61131 application can be downloaded via the network • A maximum of 52 network variables, types available NVI /NVOs: 0/52; 20/32; 26/26; 32/20; 52/0) 	
<p>System Requirements:</p> <p>Operating system: Windows® 2000, Windows® XP (XP recommended)</p> <p>The WAGO LNS Plug-In PRIO can be downloaded for free at: www.wago.com</p>	<p>Windows® is a registered trademark of Microsoft Corporation LON® and LonWorks® are registered trademarks of Echelon® Corporation</p>

Fieldbus Couplers



MODBUS/TCP



CANopen



MODBUS



CAL

I/O-LIGHTBUS

LONWORKS



Depending on the application, it is possible to choose between fieldbus couplers for different protocols. The wide variety of fieldbus couplers available for the main fieldbus systems and industrial Ethernet standards enables the I/O system to easily accommodate individual customer requirements without major modifications. These factors minimize handling errors and ensure the long-term protection of system investments.

Modular I/O System Overview

Fieldbus Couplers



Fieldbus System	Fieldbus Coupler	Page
	750-340 Fieldbus Coupler, 100 Mbits	98
	750-370 Fieldbus Coupler, 2-port, 100 Mbits	100
	750-303 DP/FMS Fieldbus Coupler, 12 Mbaud	102
	750-333 DP/V1 Fieldbus Coupler, 12 Mbaud	104
	750-343 DP ECO Fieldbus Coupler, 12 Mbaud	106
	750-331 Fieldbus Coupler with fiber optic plug 1,5 Mbaud	108
 MODBUS/TCP	750-341 Fieldbus Coupler, 100 Mbits	110
	750-352 Fieldbus Coupler, 10/100 Mbits	114
	750-352/020-000 Fieldbus Coupler, 100 Mbits	116
MODBUS/TCP	750-342 Fieldbus Coupler, 10 Mbits	112
 Conformance tested	750-354 Fieldbus Coupler, 100 Mbit/s	118
	750-306 Fieldbus Coupler	120
	750-346 ECO Fieldbus Coupler	122
	750-307 Fieldbus Coupler	124
	750-337 Fieldbus Coupler	126
	750-338 Fieldbus Coupler, D-Sub	128
	750-347 ECO Fieldbus Coupler	130
	750-348 ECO Fieldbus Coupler, D-Sub	132
	750-351 Fieldbus Coupler, 2-port, 100 Mbits	134
MODBUS	750-312 , Fieldbus Coupler RS-485 (150 ... 19200 Bd)	136
	750-314 , Fieldbus Coupler RS-232 (150 ... 19200 Bd)	136
	750-315 , Fieldbus Coupler RS-485 (1,2 ... 115,2 kbd)	136
	750-316 , Fieldbus Coupler RS-232 (1,2 ... 115,2 kbd)	136

Fieldbus System	Fieldbus Coupler	Page
	750-304 Fieldbus Coupler	138
	750-344 ECO Fieldbus Coupler, 500 kbaud	140
	750-345 ECO Fieldbus Coupler, 2 Mbaud	142
	750-334 Fieldbus Coupler with fiber optic plug	144
	750-310 Fieldbus Coupler	146
CAL	750-305 Fieldbus Coupler	148
II/O-LIGHTBUS	750-300 Fieldbus Coupler	150
	750-320 Fieldbus Coupler	152
	750-319 Fieldbus Coupler	154
	750-319/004-000 Fieldbus Coupler	156

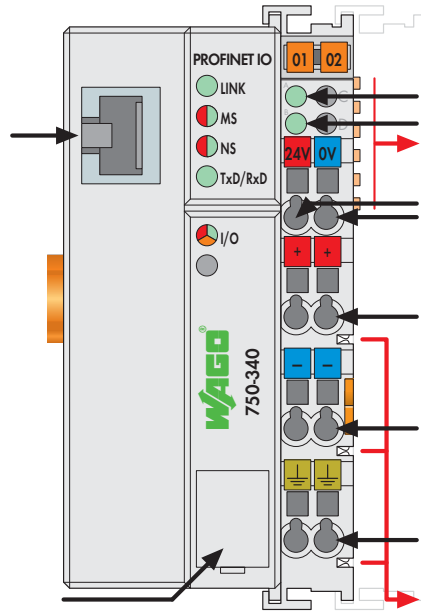
PROFINET IO Fieldbus Coupler

10/100 Mbit/s; digital and analog signals



Fieldbus connection RJ-45


Configuration interface



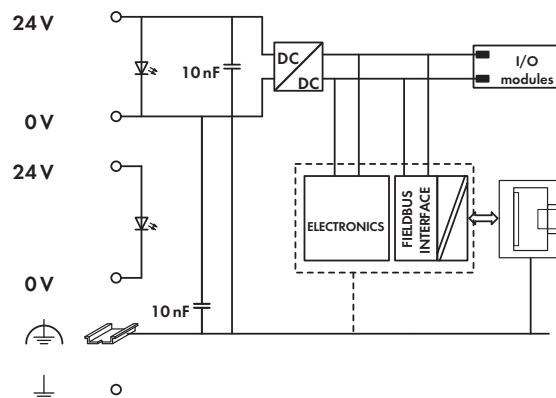
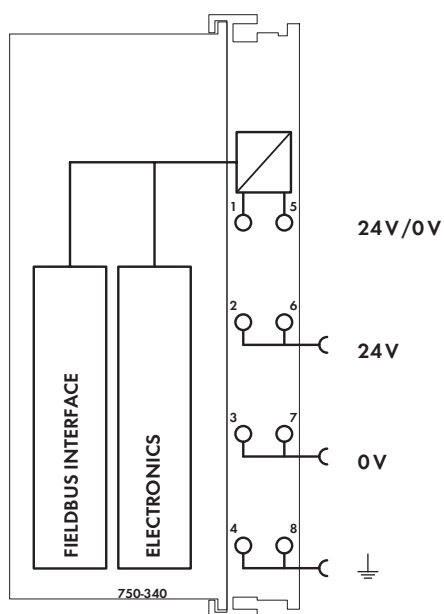
This fieldbus coupler connects the WAGO-I/O-SYSTEM as a slave to the PROFINET IO Industrial ETHERNET standard for automation. The fieldbus coupler supports all WAGO-I/O-SYSTEM modules.

The coupler automatically configures, creating a local process image which may include analog, digital, or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.

The fieldbus coupler is integrated into the application as a PROFINET IO device.

Description	Item No.	Pack. Unit
PROFINET IO 100 MBit	750-340	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	limited by PROFINET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-340; max. length of network limited by PROFINET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	PROFINET RT V2.0 (RT Class 1); Conformance Class A (DCP, UDP); HTTP



Technical Data		General Specifications	
Number of I/O modules	64	Operating temperature	0 °C ... +55 °C
with bus extension	128	Wire connection	CAGE CLAMP [®]
Fieldbus		Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Max. input process image	320 bytes	Stripped lengths	8 ... 9 mm / 0.33 in
Max. output process image	320 bytes	Dimensions (mm) W x H x L	51 x 65 x 100
Configuration	via PC		Height from upper-edge of DIN 35 rail
Power supply	24 V DC (-15 % ... +20 %)	Weight	179.5 g
Max. input current (24 V)	500 mA	Storage temperature	-25 °C ... +85 °C
Efficiency of the power supply	87 %	Relative air humidity (no condensation)	95 %
Internal current consumption (5 V)	300 mA	Vibration resistance	acc. to IEC 60068-2-6
Total current for I/O modules (5 V)	1700 mA	Shock resistance	acc. to IEC 60068-2-27
Isolation	500 V system/supply	Degree of protection	IP20
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)	EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
Current via power jumper contacts (max.)	10 A DC	EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

PROFINET IO Fieldbus Coupler

2-port; 100 Mbit/s; digital and analog signals

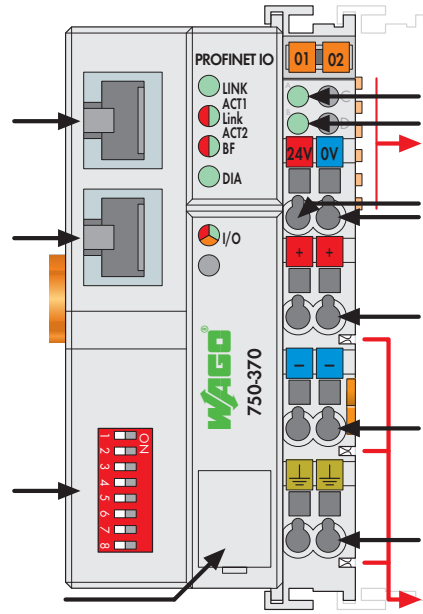


Fieldbus connection RJ-45

Fieldbus connection RJ-45

Dip switch

Configuration interface



Status voltage supply
-System
-Power jumper contacts
Data contacts

Supply
24 V
0 V


Supply via power jumper contacts
24 V

0 V

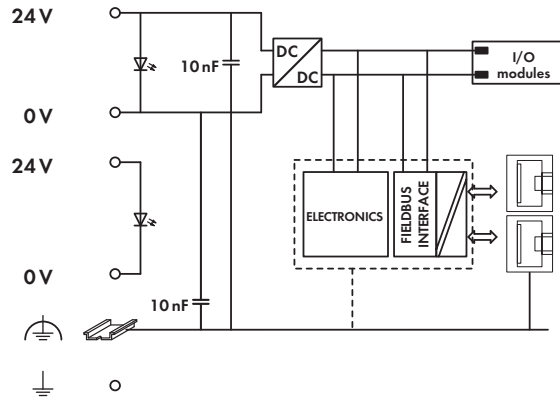
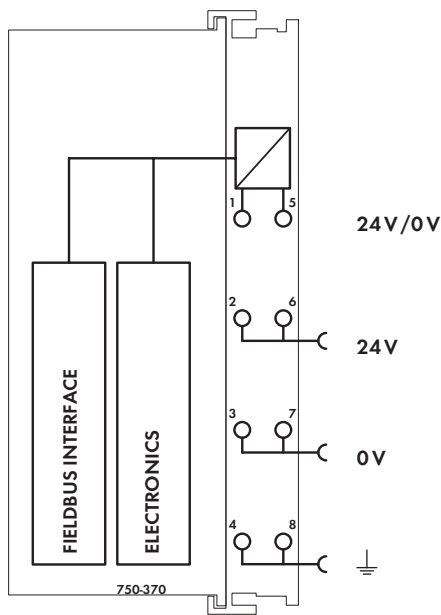
⊥

Power jumper contacts

This fieldbus coupler connects to the WAGO-I/O-SYSTEM as a slave of the PROFINET IO, the open Industrial ETHERNET standard for automation. The fieldbus coupler supports all I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit. This buscoupler can integrate into the application as a PROFINET IO device. The buscoupler features an integrated 2-port switch, allowing easy line structure creation without requiring any additional network components. The device name can be assigned via LLDP protocol or be adjusted by a DIP switch if the protocol is not supported by the control systems.

Description	Item No.	Pack. Unit
PROFINET IO 100 MBit 2-port	750-370	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		

System Data	
No. of couplers connected to Master	limited by PROFINET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between switch and 750-370; max. length of network limited by PROFINET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	2 x RJ-45
Protocols	PROFINET IO (RT Class 1); Conformance Class B (DCP, SNMP, LLDP); HTTP



Technical Data

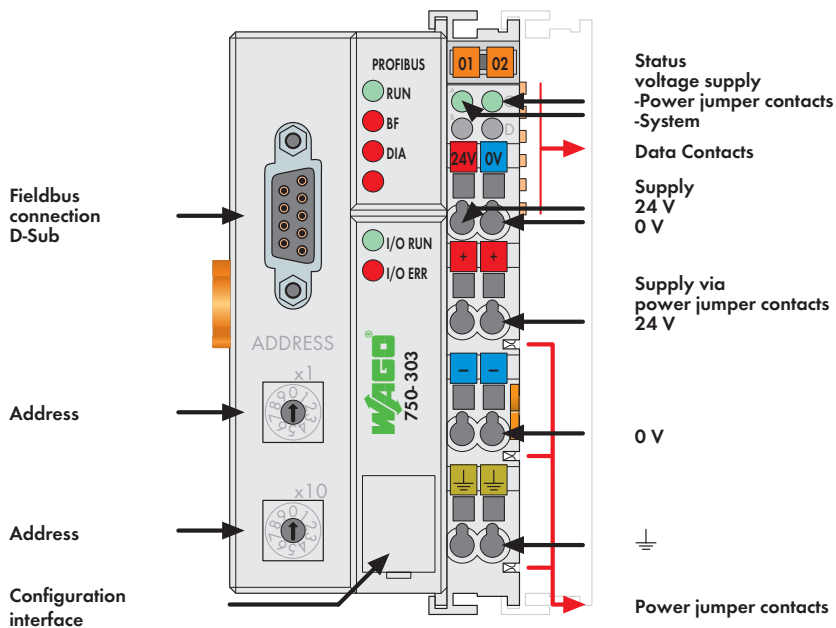
Number of I/O modules	64
with bus extension	128
Fieldbus	
Max. input process image	320 bytes
Max. output process image	320 bytes
Configuration	via PC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	180 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

1 PROFIBUS DP/FMS Fieldbus Coupler

102 12 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the PROFIBUS fieldbus.


The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit. PROFIBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the PROFIBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via PROFIBUS.

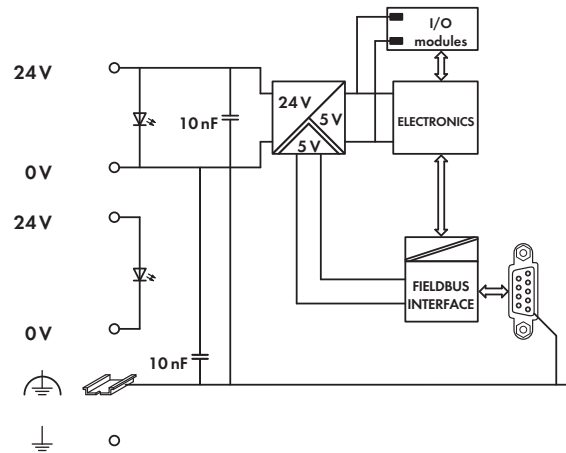
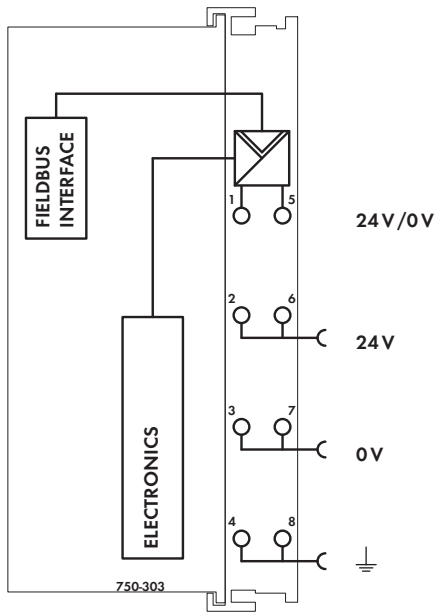
The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

When implementing new installations with PROFIBUS DP, please consider 750-333 Fieldbus Coupler with extended functions (page 104).

Notice: GSD files required

Description	Item No.	Pack. Unit
PROFIBUS DP/FMS 12 MBd	750-303	1
Accessories		
GSD files Download: www.wago.com		
Miniature WSB Quick marking system		
	plain 248-501	5
	with marking see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50170	
Certification	PNO	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	96 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Cu cable acc. to EN 50170
Max. length of fieldbus segment	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	9.6 Kbaud ... 12 Mbaud
Transmission time	typ. 1 ms (10 couplers; 32 digital I/Os per coupler at 12 Mbaud) max. 3.3 ms
Buscoupler connection	1 x D-Sub 9; socket

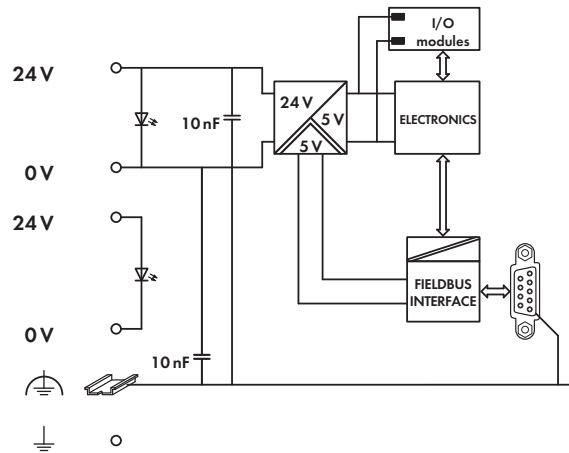
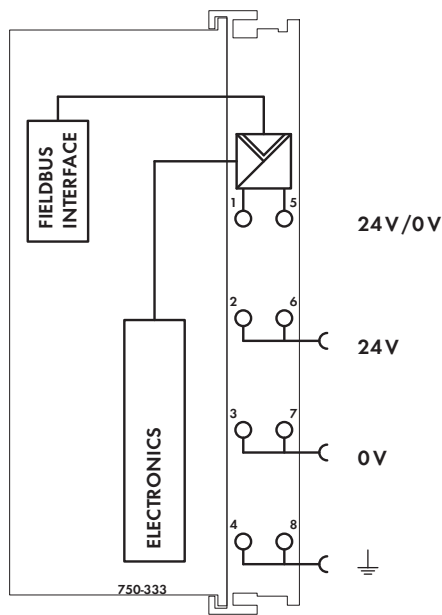


Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	128 bytes
Max. output process image	128 bytes
	up version 05xx, max. 64 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	190 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)



Technical Data		General Specifications	
Number of I/O modules	63	Operating temperature	0 °C ... +55 °C
Fieldbus			-20 °C ... +60 °C
Max. input process image	244 bytes	Wire connection	CAGE CLAMP®
Max. output process image	244 bytes	Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Configuration	via PC or PLC	Stripped lengths	8 ... 9 mm / 0.33 in
Power supply	24 V DC (-25 % ... +30 %)	Dimensions (mm) W x H x L	51 x 65 x 100
Max. input current (24 V)	500 mA		Height from upper-edge of DIN 35 rail
Efficiency of the power supply	87 %	Weight	190 g
Internal current consumption (5 V)	200 mA	Storage temperature	-25 °C ... +85 °C
Total current for I/O modules (5 V)	1800 mA	Relative air humidity (no condensation)	95 %
Isolation	500 V system/supply	Vibration resistance	acc. to IEC 60068-2-6
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)	Shock resistance	acc. to IEC 60068-2-27
Current via power jumper contacts (max.)	10 A DC	Degree of protection	IP20
		EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
		EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
		EMC: marine applications	
		- immunity to interference	acc. to Germanischer Lloyd (2003)
		EMC: marine applications	
		- emission of interference	acc. to Germanischer Lloyd (2003)

1 PROFIBUS DP ECO Fieldbus Coupler

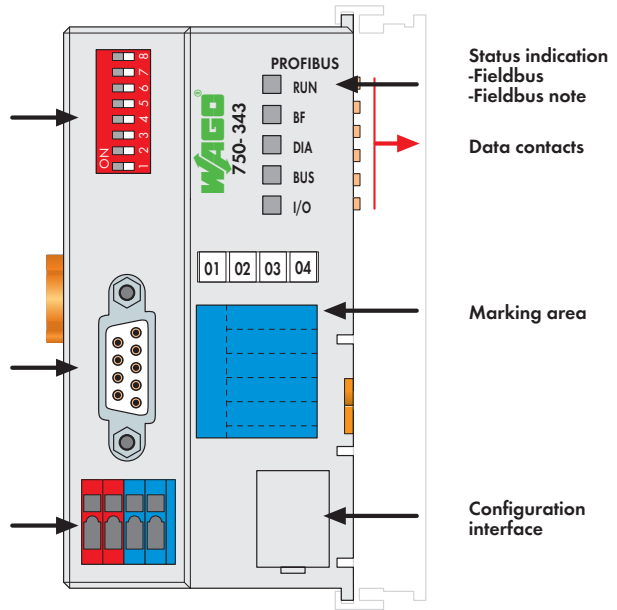
106 12 Mbaud; digital and analog signals



DIP switch Address

Fieldbus connection D-Sub

Supply 24 V 0 V



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.


It is furthermore possible to deactivate I/O modules and to modify the image of the node according to the connected signals without having to modify the existing application.

The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.

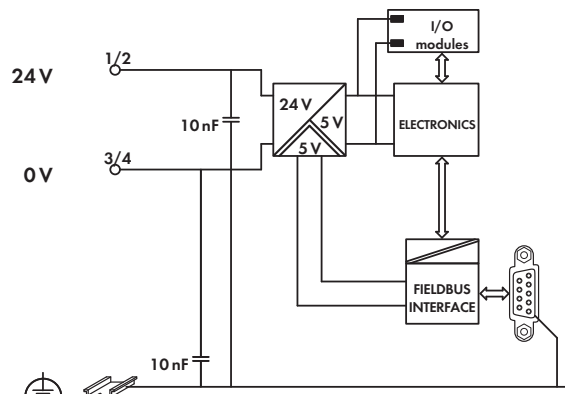
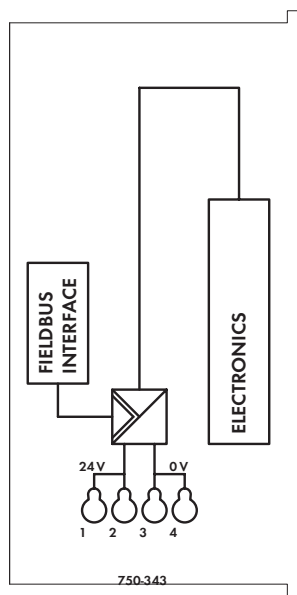
The diagnosis concept is based on diagnostics according to the EN 50170 standard. Therefore the programming of modules is not necessary to interpret the diagnostic information from each manufacturer.

When initializing, the buscoupler determines the module structure of the node, to create the process image in PROFIBUS. In order to optimize addresses, the I/O modules with a bit width smaller than 8 are grouped in one byte.

Notice: GSD files required

Description	Item No.	Pack. Unit
PROFIBUS DP ECO 12 MBd	750-343	1
Accessories		
Download: www.wago.com		
GSD files		
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50170	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508	-	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1	-	

System Data	
No. of couplers connected to Master	125 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Cu cable acc. to EN 50170
Max. length of fieldbus segment	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	9.6 Kbaud ... 12 Mbaud
Transmission time	typ. 1 ms (10 couplers; 32 digital I/Os per coupler at 12 Mbaud) max. 3.3 ms
Buscoupler connection	1 x D-Sub 9; socket



1.2

Technical Data

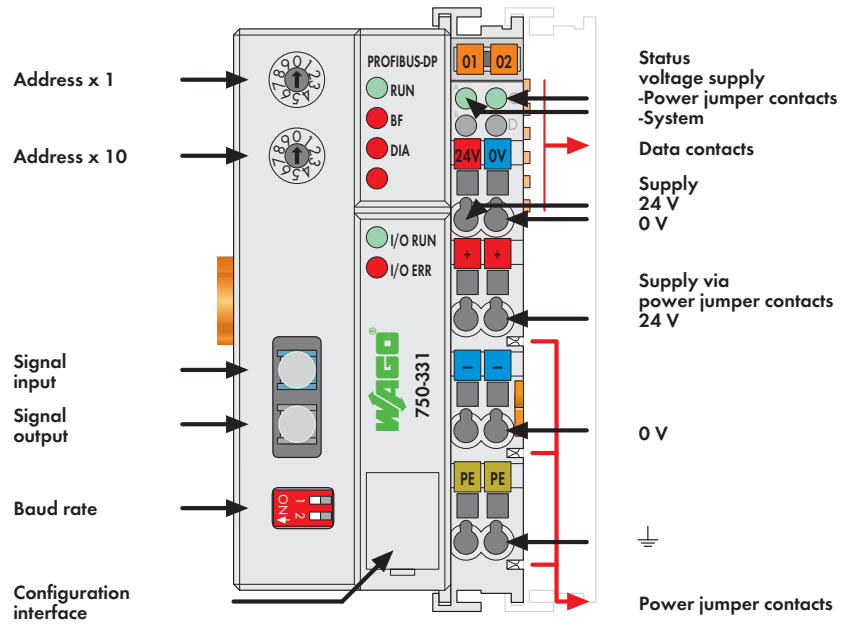
Number of I/O modules	63
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	110.4 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 PROFIBUS DP Fieldbus Coupler

108 1.5 Mbaud; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the PROFIBUS DP fieldbus.


The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the PROFIBUS DP fieldbus to the PLC, PC or NC for further processing, and received from the field via PROFIBUS DP.

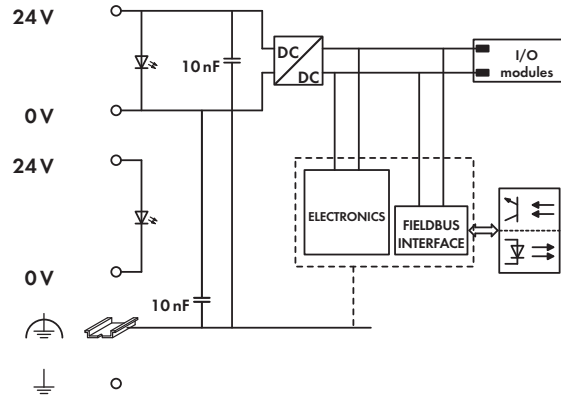
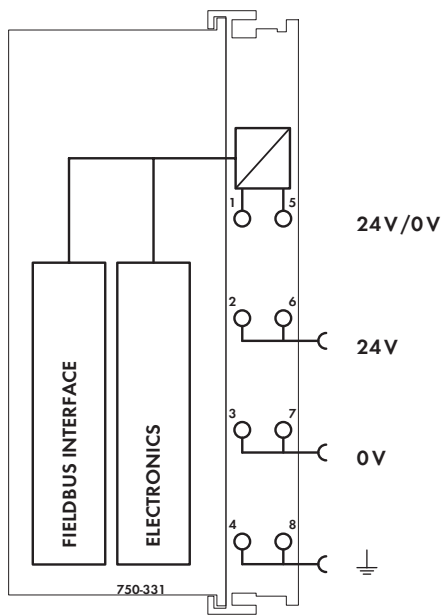
Notice: GSD files required

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

For the operation of a PROFIBUS DP coupler with fiber optic cable connection, an interface module is also necessary to transfer RS-485 on a fiber optic ring. A subring can contain up to 10 other fiber optic modules. The baud rate is set via two DIP switches on the buscoupler.

Description	Item No.	Pack. Unit
PROFIBUS DP 1.5 MBd / Opt. Fiber	750-331	1
Accessories		
GSD files Download: www.wago.com		
Miniature WSB Quick marking system		
	plain 248-501	5
	with marking see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50170	
Conformity marking	CE	
UL 508		

System Data	
No. of couplers connected to Master	10 in the subring
Transmission medium	APF (plastic) fiber (1000µm)
Max. length of fieldbus segment	1 m ... 25 m
Topology	Subring, single-fiber ring
Baud rate	93.75 Kbaud ... 1 500 Kbaud
Buscoupler connection	HP Simplex fiber optic plug (included)



Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	128 bytes
Max. output process image	128 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	187 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

DIP Switches

Baud rate	93.75 kBd / S1 = off; S2 = off
	187.5 kBd / S1 = off; S2 = on
	500 kBd / S1 = on; S2 = off
	1500 kBd / S1 = on; S2 = on

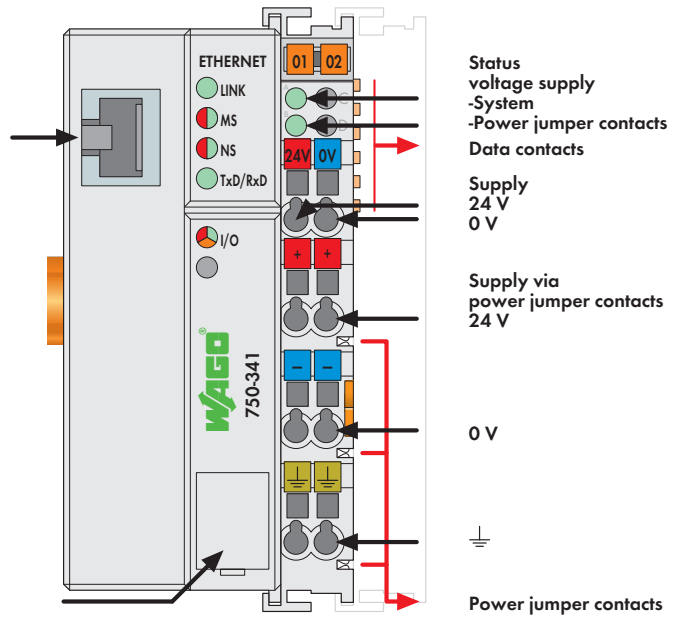
ETHERNET TCP/IP Fieldbus Coupler

10/100 Mbit/s; digital and analog signals




Fieldbus connection RJ-45

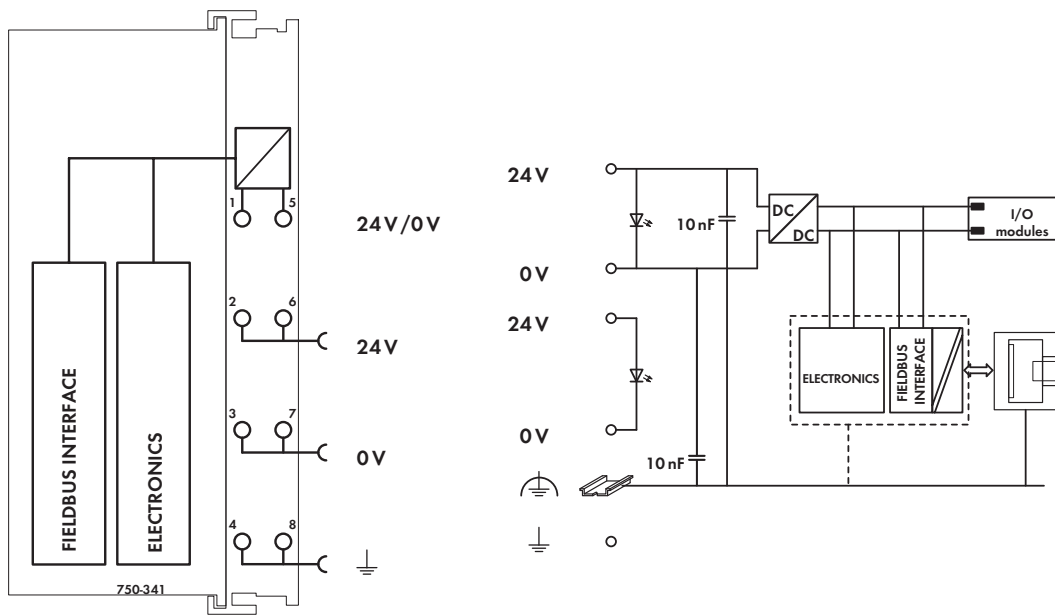
Configuration interface



This fieldbus coupler connects the WAGO-I/O-SYSTEM as a slave to the ETHERNET fieldbus. The fieldbus coupler is capable of supporting all I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty data is sent via words and/or bytes, digital data is sent bit by bit. This buscoupler is suitable for data rates of 10MBit/s and 100MBit/s. The buscoupler offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET /IP) or for system managing and diagnostics (HTTP, BootP, DHCP, DNS, SNTP, FTP and SNMP). HTML pages can be placed on an internal server for use in Web-based applications.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 100 MBit	750-341	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -11, -15	I M2 Ex d I	750-341*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-341*
	II 3 D Ex tD A22 IP6X T135°C	750-341*
* Permissible operating temperature: 0°C ... +60°C		

System Data	
No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-341; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, HTTP, BootP, DHCP, DNS, SNTP, FTP, SNMP



Technical Data	
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes
Max. output process image	2 Kbytes
Configuration	via PC
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	179.5 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

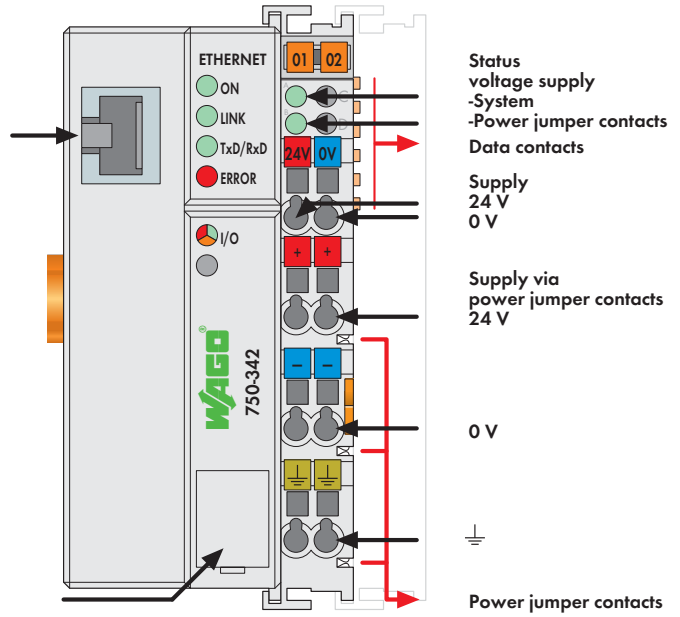
1 ETHERNET TCP/IP Fieldbus Coupler

10 Mbit/s; digital and analog signals




Fieldbus connection RJ-45

Configuration interface

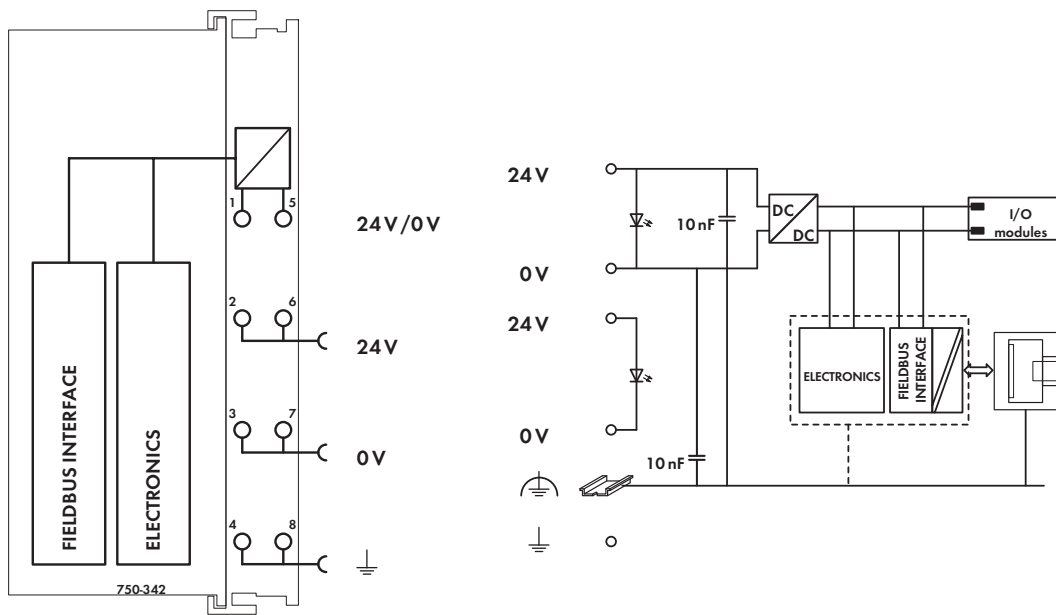


The ETHERNET TCP/IP fieldbus coupler supports a number of network protocols to send process data via ETHERNET TCP/IP. By observing the relevant IT standards, connection to existing local or global networks (LAN, Internet) is possible without any problem. Using ETHERNET as a fieldbus makes universal data transmission between the factory and the office possible. Moreover, the ETHERNET TCP/IP fieldbus coupler offers remote maintenance, i.e. processes can be controlled regardless of the location. Process data exchange is done using the MODBUS/TCP protocol. The buscoupler supports all I/O modules and automatically configures, creating a local process image. The HTML pages that are stored in the fieldbus coupler allow access to infor-

mation on configuration, status, or I/O data of the ETHERNET TCP/IP fieldbus coupler. Only a standard WEB browser is required. Dynamic configuration of the IP addresses via a BootP server provides a flexible and easy way to configure the network.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 10 MBit	750-342	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-342;
	max. length of network limited by
	ETHERNET specification
Baud rate	10 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP, HTTP, BootP, MODBUS/UDP



Technical Data

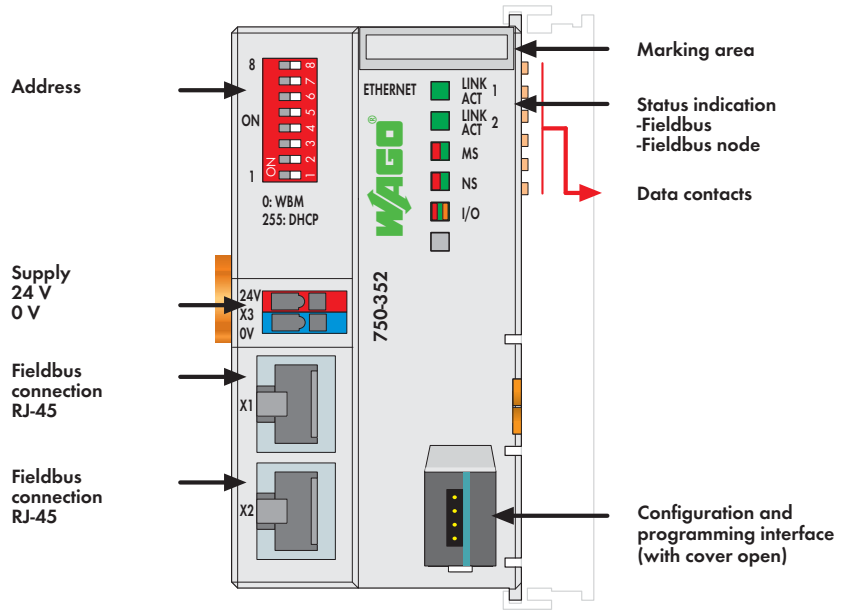
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Max. number of socket connections	1 HTTP; 3 MODBUS / TCP
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	200 mA
Total current for I/O modules (5 V)	1800 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

ETHERNET Fieldbus Coupler

10/100 Mbit/s; digital and analog signals



The 750-352 ETHERNET Fieldbus Coupler connects ETHERNET to the modular WAGO-I/O-SYSTEM.

The fieldbus coupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.


Two ETHERNET interfaces and an integrated switch allow the fieldbus to be wired in a line topology. This eliminates additional network devices such as switches or hubs. Both interfaces support Auto-Negotiation and Auto-MDI(X).

The DIP switch configures the last byte of the IP address and may be used for IP address assignment (DHCP, BootP, static).

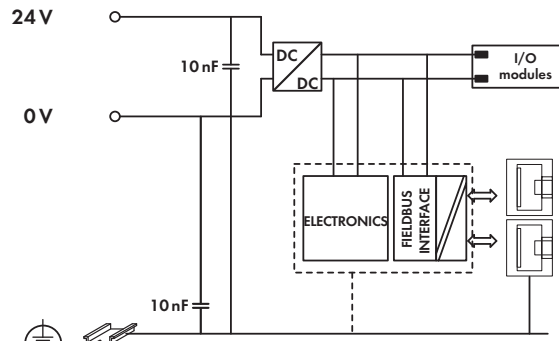
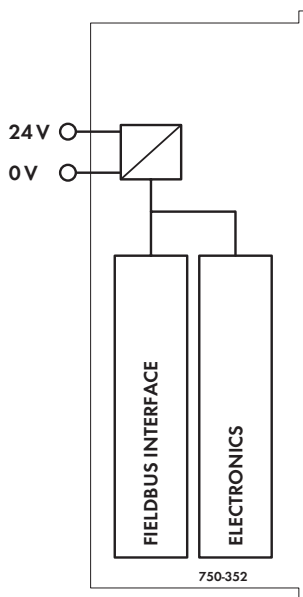
The coupler is designed for fieldbus communication in both Ethernet/IP and MODBUS networks. It also supports a wide variety of standard ETHERNET protocols (e.g., HTTP, BootP, DHCP, DNS, SNMP, FTP).

An integrated Web server provides configuration and status information to the coupler.

The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.

Description	Item No.	Pack. Unit
ETHERNET Coupler	750-352	1
Accessories		
Miniature WSB Quick marking system		
	plain	248-501
	with marking	see pages 352 ... 353
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508	UL 508	

System Data	
No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP
	100 Ω, Cat 5;
	Max. line length: 100 m
Baud rate	10/100 Mbit/s
Transmission performance	Class D acc. to EN 50173
Buscoupler connection	2 x RJ-45
Protocols	EtherNet/IP, MODBUS/TCP (UDP), HTTP, BootP, DHCP, DNS, FTP, SNMP



Technical Data	
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	1020 words
Max. output process image	1020 words
Configuration	via PC
Power supply	24 V DC (-25 % ... +30 %)
Input current typ. at rated load (24 V)	280 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	90 %
Internal current consumption (5 V)	450 mA
Total current for I/O modules (5 V)	700 mA
Isolation	500 V system/supply

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 14
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	112 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

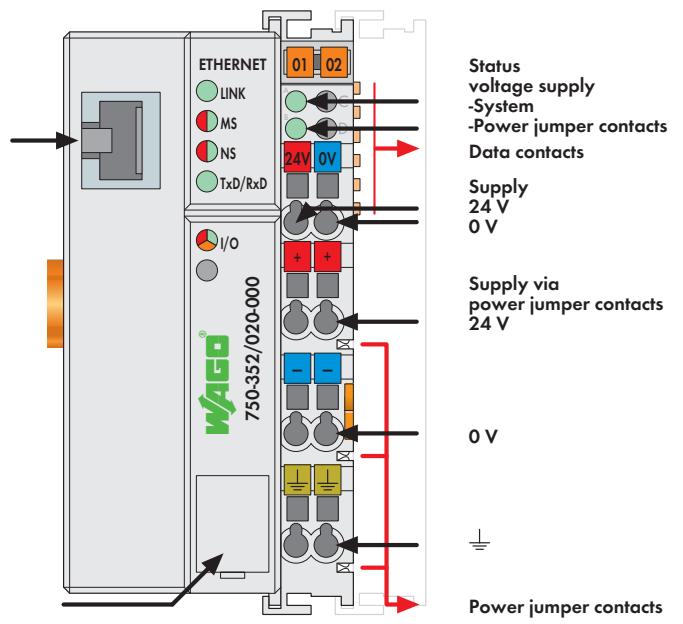
1 ETHERNET TCP/IP Eco Fieldbus Coupler

10/100 Mbit/s; digital and analog signals




Fieldbus connection RJ-45

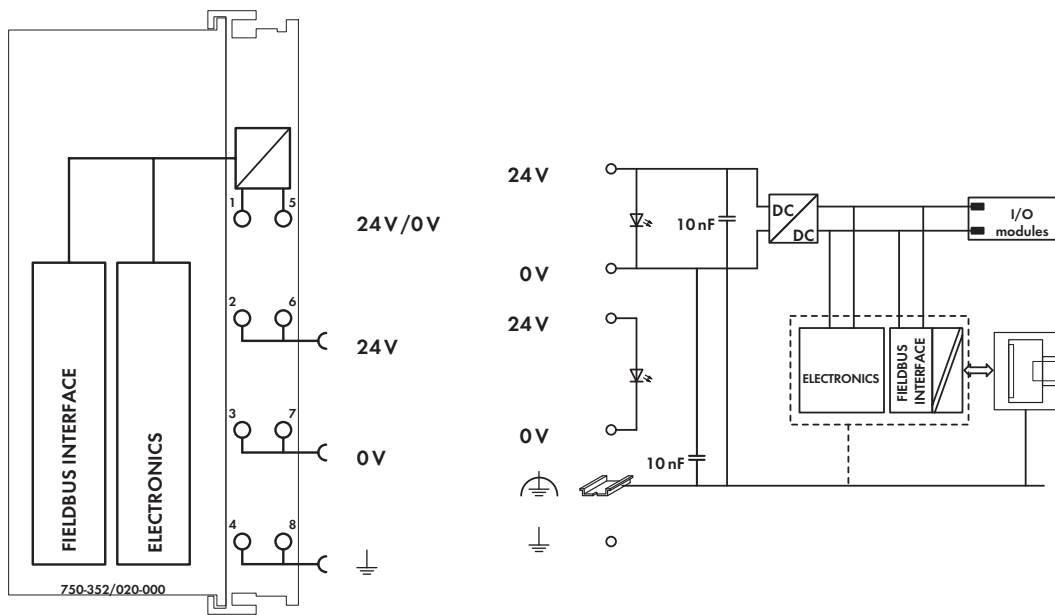
Configuration interface



This Eco fieldbus coupler connects the WAGO-I/O-SYSTEM as a slave to the ETHERNET fieldbus. The fieldbus coupler is capable of supporting all I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty data is sent via words and/or bytes, digital data is sent bit by bit. This buscoupler is suitable for data rates of 10MBit/s and 100MBit/s. The buscoupler offers many different application protocols which can be used for data acquisition or control (MODBUS, ETHERNET /IP) or for system managing and diagnostics (HTTP, BootP, DHCP, DNS and SNMP). HTML pages can be placed on an internal server for use in Web-based applications.

Description	Item No.	Pack. Unit
ETHERNET TCP/IP 100 MBit/s ECO	750-352/020-000	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	
Shipbuilding	ABS, KR	
UL 508		

System Data	
No. of couplers connected to Master	limited by ETHERNET specification
Transmission medium	Twisted Pair S-UTP 100 Ω cat. 5
Max. length of fieldbus segment	100 m between hub station and 750-352/020-000; max. length of network limited by ETHERNET specification
Baud rate	10/100 Mbit/s
Buscoupler connection	RJ-45
Protocols	MODBUS/TCP (UDP), EtherNet/IP, SNMP, HTTP, BootP, DHCP, DNS



Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	256 bytes
Max. output process image	256 bytes
Configuration	via PC
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	180 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

EtherCAT Fieldbus Coupler

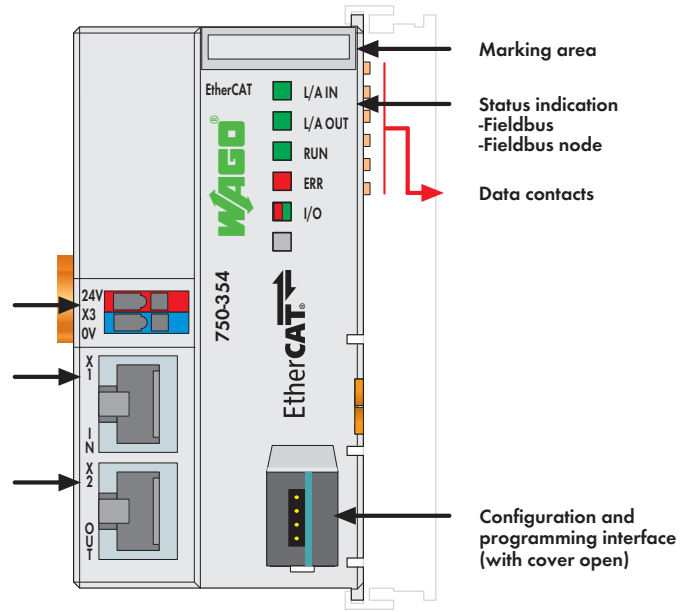
100 Mbit/s; digital and analog signals



Supply
24 V
0 V

Fieldbus
connection
RJ-45

Fieldbus
connection
RJ-45




The 750-354 EtherCAT Fieldbus Coupler connects EtherCAT to the modular WAGO-I/O-SYSTEM.

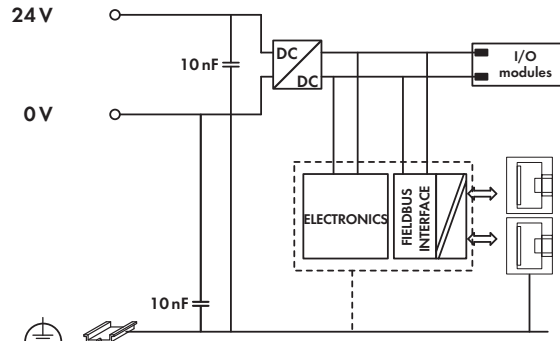
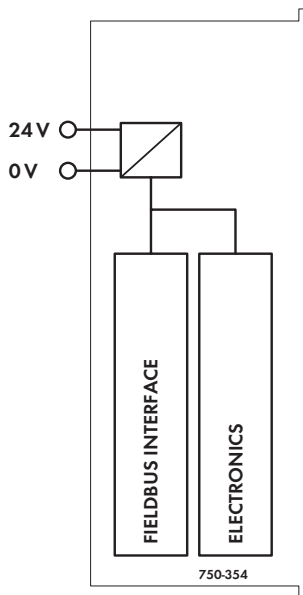
The fieldbus coupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit.

The "upper" EtherCAT interface connects the coupler to the network. The "lower" RJ-45 socket connects additional EtherCAT devices to the same line.

EtherCAT® (Ethernet Control Automation Technology) is a real-time ETHERNET solution designed for industrial automation applications and characterized by high performance, flexible topology and simple configuration. With EtherCAT®, the costly ETHERNET star topology can be replaced with a simple line or tree structure.

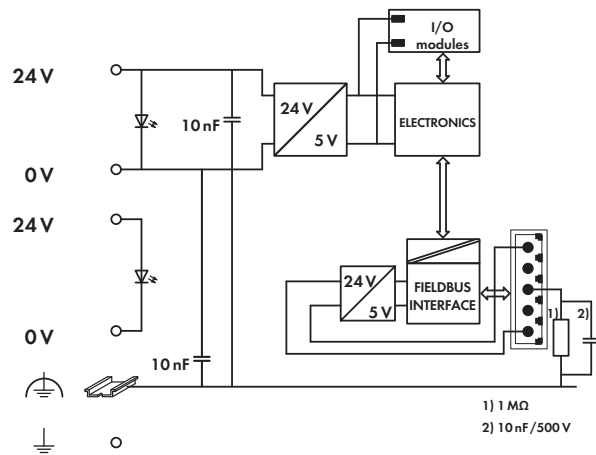
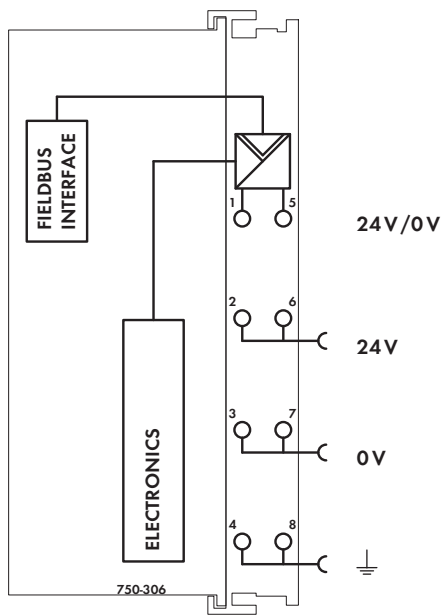
Description	Item No.	Pack. Unit
EtherCAT® Coupler	750-354	1
Accessories		
Miniature WSB Quick marking system		
	plain 248-501	5
	with marking see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		

System Data	
No. of couplers connected to Master	limited by EtherCAT specification
Transmission medium	Twisted Pair 2 x 2 or 4 x 2; AWG 26/7 to AWG 22/1; SF/FTP, SF/UTP or S/FTP; 100 Ω, Cat 5; Max. line length: 100 m
Baud rate	100 Mbit/s
Transmission performance	Class D acc. to EN 50173-1
Buscoupler connection	2 x RJ-45
Protocols	EtherCAT (direct mode)
* EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.	



Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	1024 bytes
Max. output process image	1024 bytes
Configuration	via PC
Power supply	24 V DC (-25 % ... +30 %)
Input current typ. at rated load (24 V)	250 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	
	85 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	700 mA
Isolation	500 V system/supply

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	
	65 x 50 x 97
	Height from upper-edge of DIN 35 rail
Weight	152 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	
	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	
	acc. to EN 61000-6-3 (2007)


Technical Data

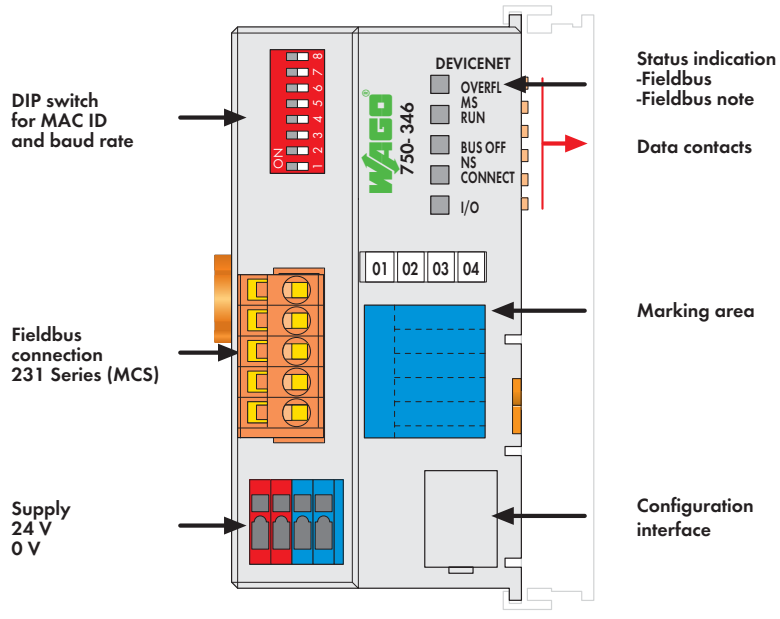
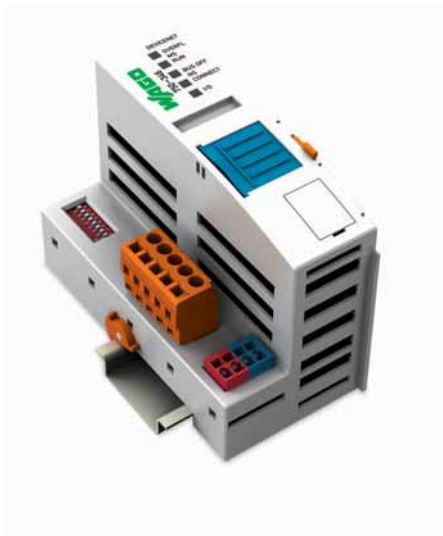
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
DeviceNet features	
	Polled I/O message connection
	Strobed I/O message connection
	Change of state
	Cyclic message connection
	Group 2 only, slave
Power supply	24 V DC (-25 % ... +30 %)
Current consumption	
via power supply terminal	< 500 mA / 24 V
via DeviceNet interface	< 120 mA / 11 V
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	202 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference acc. to EN 61000-6-4 (2007)	
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 DeviceNet ECO Fieldbus Coupler

122 125 ... 500 Kbaud; digital and analog signals




The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O. The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module. The DeviceNet™ buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. DeviceNet™ stores the process image in the corresponding Master control (PLC, PC or NC).

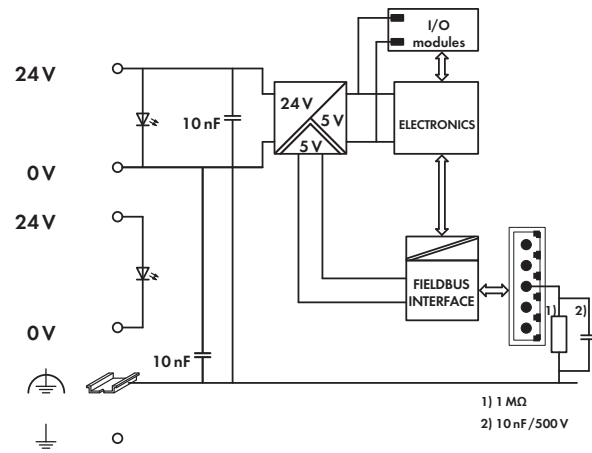
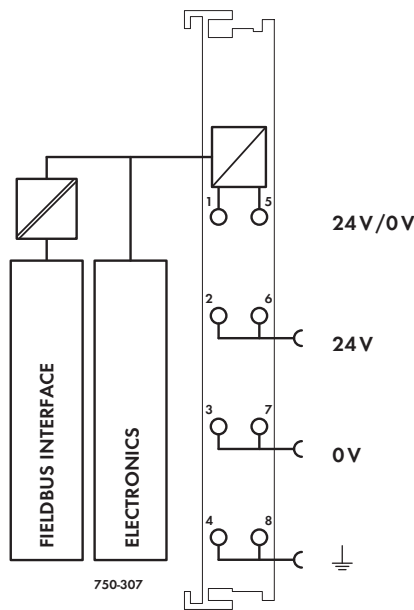
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the DeviceNet™ fieldbus to the PLC, PC or NC for further processing, and received from the field via DeviceNet™.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Notice: EDS files required

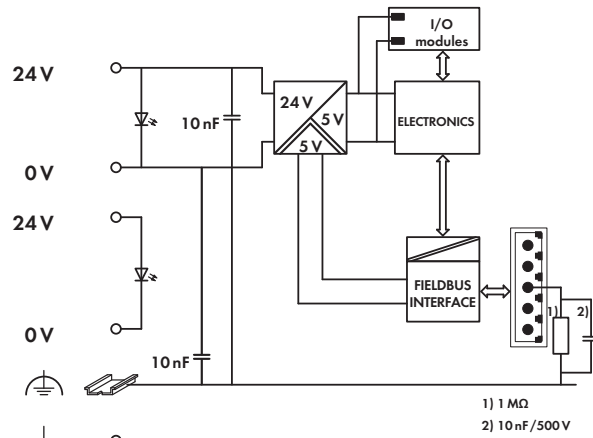
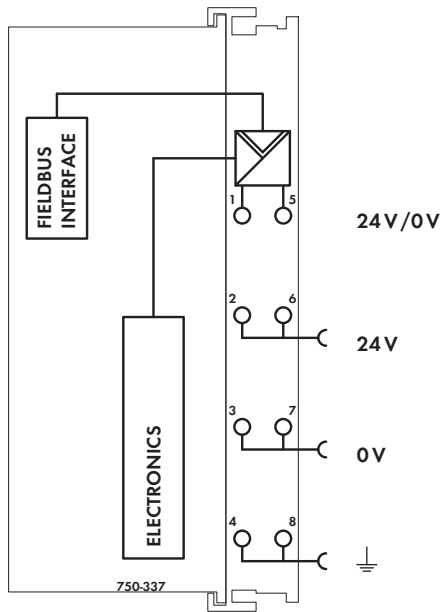
Description	Item No.	Pack. Unit
DeviceNet ECO	750-346	1
Accessories		
EDS files Download: www.wago.com		
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	64 with scanner
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable Trunk line: 2 x 0.82 mm ² + 2 x 1.7 mm ² Drop line: 2 x 0.2 mm ² + 2 x 0.32 mm ²
Max. length of bus line	100 m ... 500 m (depends on baud rate/ cable)
Baud rate	125 Kbaud, 250 Kbaud, 500 Kbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS), female connector 231-305/ 010-000/ 050-000 (included)



Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
No. of PDOs	5 Tx / 5 Rx
No. of SDOs	2 server SDOs
Communication profile	DS-301 V3.0
Device profile	DS-401 V1.4
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)



Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs
Communication profile	DS-301 V4.1
Device profile	DS 401 V2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
	Configuration of virtual modules
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
	-20 °C ... +60 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 CANopen Fieldbus Coupler D-Sub

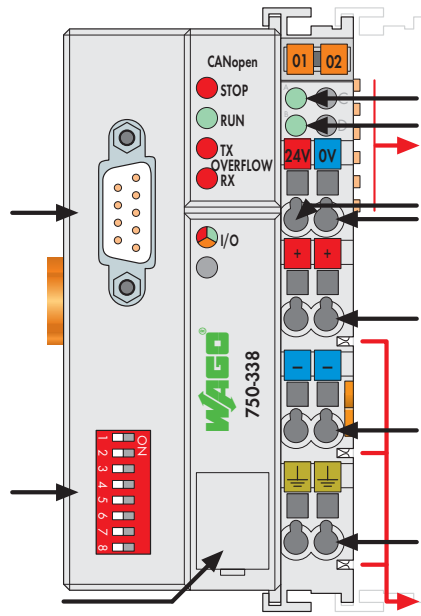
128 10 Kbaud ... 1 Mbaud; digital and analog signals



Fieldbus connection D-Sub

DIP switch for node ID and baud rate

Configuration interface



Status voltage supply
-System
-Power jumper contacts
Data contacts

Supply
24 V
0 V

Supply via power jumper contacts
24 V

0 V

⊥


Power jumper contacts

This buscoupler connects the WAGO I/O SYSTEM as a slave to the CANopen fieldbus.

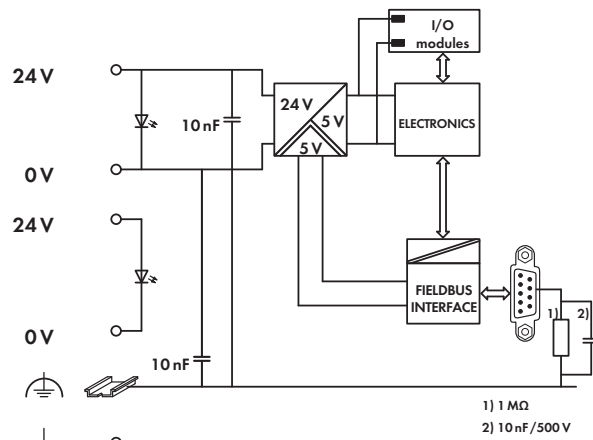
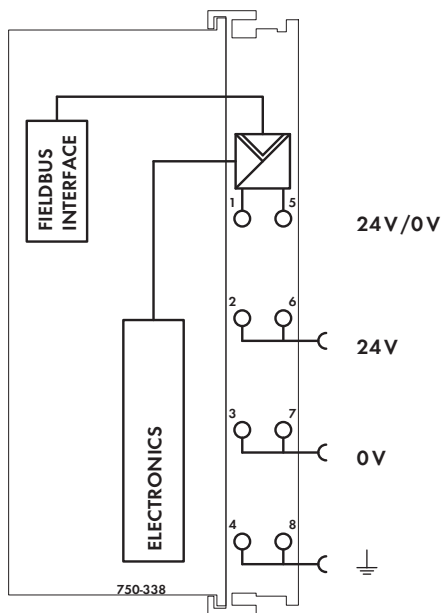
The module data is transmitted using PDOs and SDOs. The buscoupler is capable of supporting all bus modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is packed into bytes. CANopen allows the storing of the process image in the corresponding Master control (PLC, PC or NC). The local process image is divided into two data zones containing the data received and the data to be sent.

The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen. The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte. All entries of the object dictionary can be mapped - as the user likes - in the 32 Rx PDOs and 32 Tx PDOs. The complete input and output process image can be transmitted using SDOs. "Spacer modules" can be set via software.

Note: EDS files required

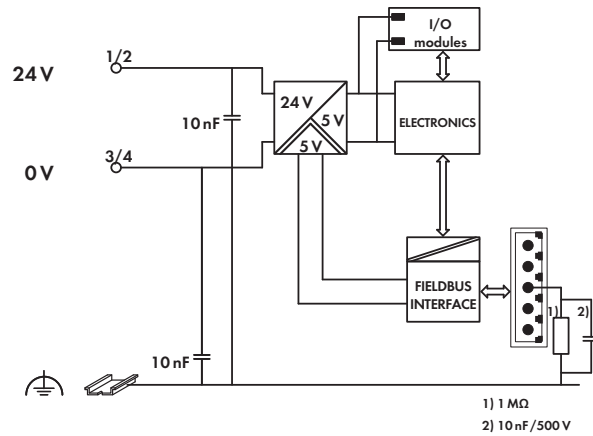
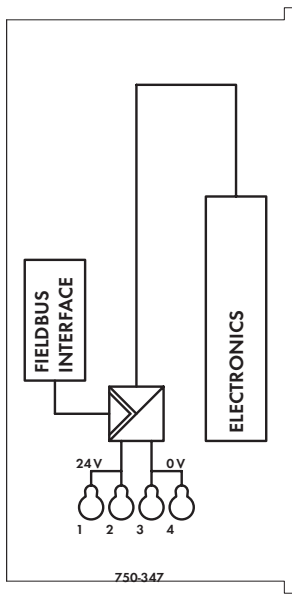
Description	Item No.	Pack. Unit
CANopen D-Sub	750-338	1
Accessories		
EDS files Download: www.wago.com		
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	GL	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm ²
Max. length of bus line	30 m ... 1000 m (depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	1 x D-Sub 9; plug



Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
No. of PDOs	32 Tx / 32 Rx
No. of SDOs	2 server SDOs
Communication profile	DS-301 V4.1
Device profile	DS 401 V2.0
	Marginal check
	Edge-triggered PDOs
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
	Configuration of virtual modules
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)



Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
No. of PDOs	5 Tx / 5 Rx
No. of SDOs	1 server SDO
Communication profile	DS-301 V4.1
Device profile	DS-401 V2.0
	Programmable error response
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
	Minimum boot-up
	Variable PDO mapping
	Emergency message
	Life guarding
Power supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 16
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	135 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 CANopen ECO Fieldbus Coupler D-Sub

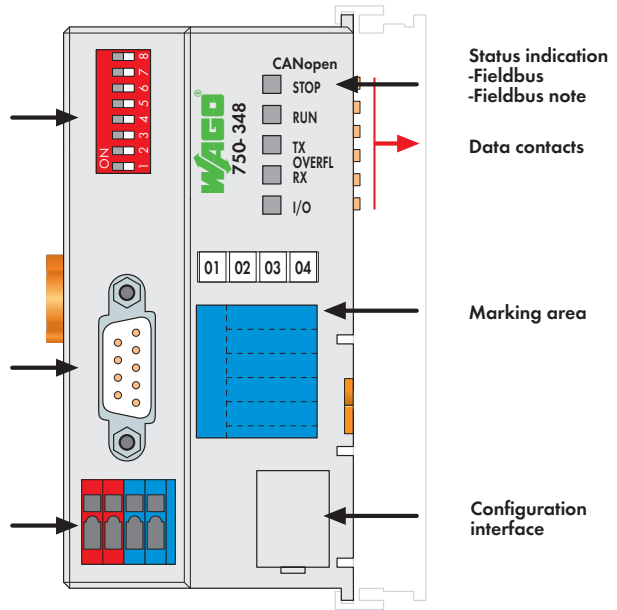
10 Kbaud ... 1 Mbaud; digital and analog signals



DIP switch for node ID and baud rate

Fieldbus connection D-Sub

Supply 24 V 0 V



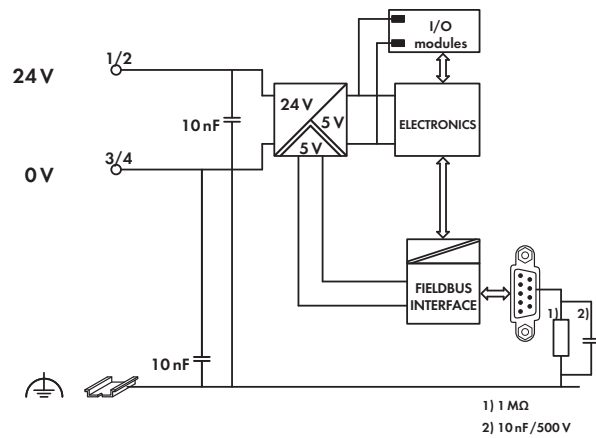
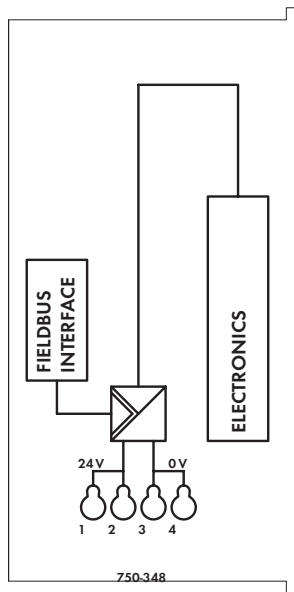
The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O. The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module. The CANopen bus coupler is capable of supporting all I/O modules and automatically configures, creating a local process image. The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CANopen fieldbus to the PLC, PC or NC for further processing, and received from the field via CANopen.

The data of the analog modules is stored in the PDOs according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and also mapped in the PDOs. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte. All entries of the object dictionary can be mapped - as the user likes - in the 5 Rx PDOs and 5 Tx PDOs. The complete input and output process image can be transmitted using SDOs. "Spacer modules" can be set via software.

Note: EDS files required

Description	Item No.	Pack. Unit
CANopen ECO D-Sub	750-348	1
Accessories		
EDS files	Download: www.wago.com	
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	110
Transmission medium	Shielded Cu cable 3 x 0.25 mm ²
Max. length of bus line	30 m ... 1000 m (depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	1 x D-Sub 9; plug



Technical Data

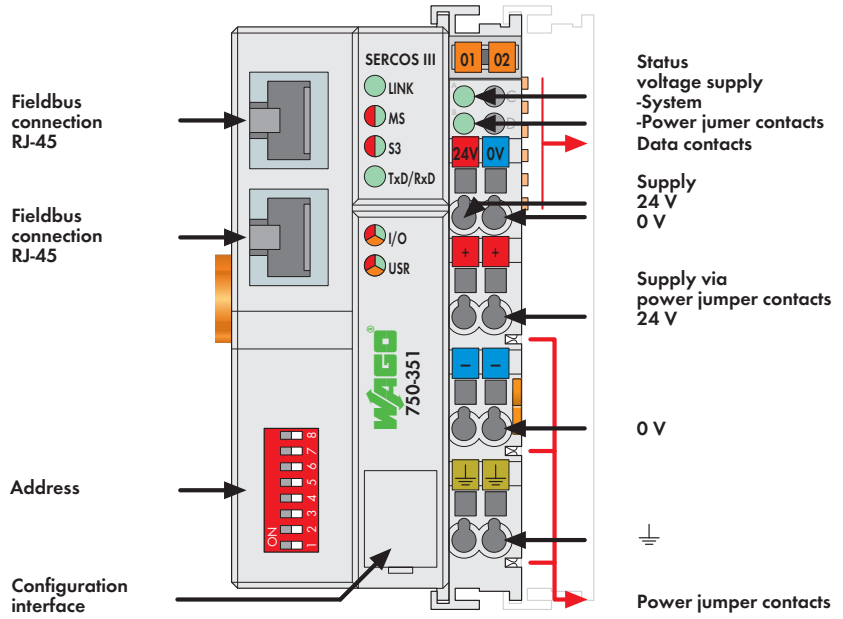
Number of I/O modules	64
Fieldbus	
Max. input process image	32 bytes
Max. output process image	32 bytes
Configuration	via PC or PLC
No. of PDOs	5 Tx / 5 Rx
No. of SDOs	1 server SDO
Communication profile	DS-301 V4.1
Device profile	DS-401 V2.0
Programmable error response	
COB ID distribution	SDO, standard
Node ID distribution	DIP switches
Other CANopen features	NMT slave
Minimum boot-up	
Variable PDO mapping	
Emergency message	
Life guarding	
Power supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)


SERCOS III Fieldbus Coupler

2-port; 100 Mbit/s; digital and analog signals

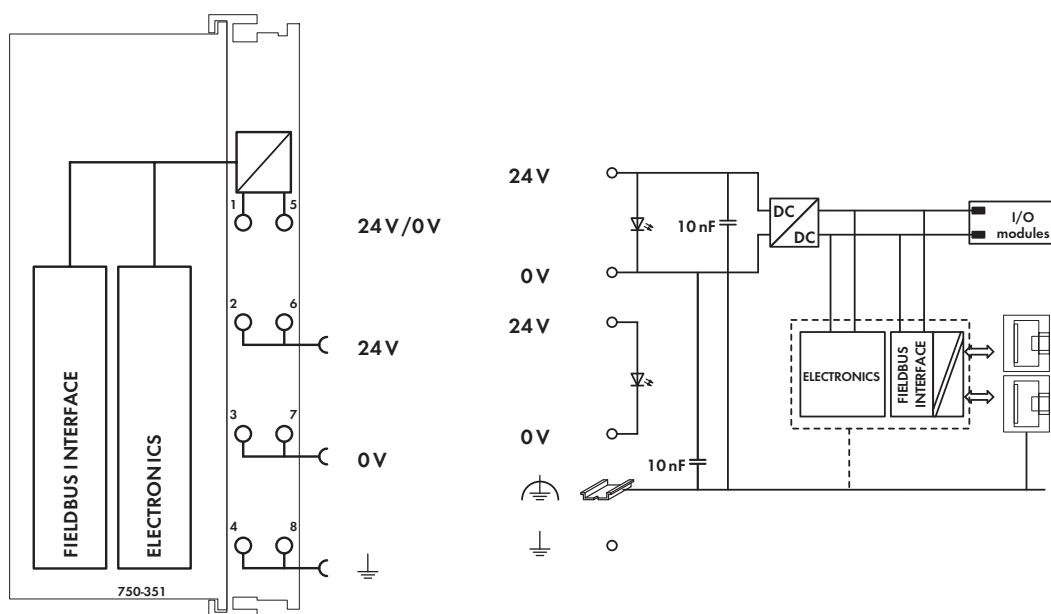


The 750-351 Fieldbus Coupler connects the WAGO I/O-SYSTEM to the SERCOS III network. The fieldbus coupler is capable of supporting all WAGO I/O modules. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes; digital data is sent bit by bit. The buscoupler can integrate into the application as a SERCOS III I/O device and supports the SERCOS III service channel (SVC), real-time channel (RTC) and TCP/IP communication standard.

Two integrated ports allow easy creation of a line or ring structure without requiring additional components. The ports support Auto-MDI/MDIX and will automatically detect the data direction so interchanging cables on the coupler will not impact operation. The SERCOS III node ID is assigned directly via network configuration.

Description	Item No.	Pack. Unit
SERCOS III Coupler	750-351	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
SERCOSIII version	V1.1.1	
IO profile	V1.1.1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

System Data	
Number of couplers (slaves) in Sercos ring	512
Transmission medium	Twisted Pair S-UTP 100 Ω Cat. 5
Max. length of fieldbus segment	100 m,
	limited by ETHERNET specification
Max. length of network	51.2 km, limited by ETHERNET specification
Baud rate	100 Mbit/s, full duplex
Buscoupler connection	2 x RJ-45
Protocols	SERCOS III, FSP-IO, TCP/IP, FTP, HTTP, BootP, DHCP, SNMP
Supported services	SVC, RTC, CC, IP, ring break (GDP_Basic, SCP_VarCFG, SCP_Sync)


Technical Data

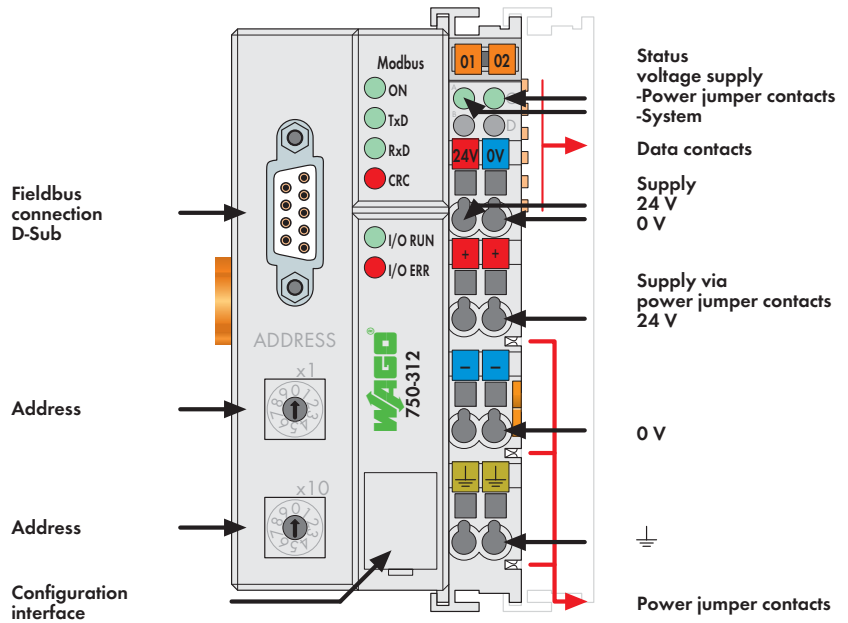
Number of I/O modules	64
with bus extension	250
Fieldbus	
Max. input process image	2 Kbytes (RTC and SVC)
Max. output process image	2 Kbytes (RTC and SVC)
Configuration	
Node configuration via: WAGO ETHERNET settings, Web-based management, WAGO-I/O-CHECK, SERCOS III-Master (CP2 or higher), address selector switch	
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	
500 V system/supply	
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	
Height from upper-edge of DIN 35 rail	
Weight	210 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	
acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	
acc. to EN 61000-6-4 (2007)	
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

MODBUS Fieldbus Coupler

RS 232/485; 150 (1200) baud ... 19.2 (115.2) Kbaud; digital and analog signals




This buscoupler allows connection of the WAGO-I/O-SYSTEM as a slave to the MODBUS fieldbus.

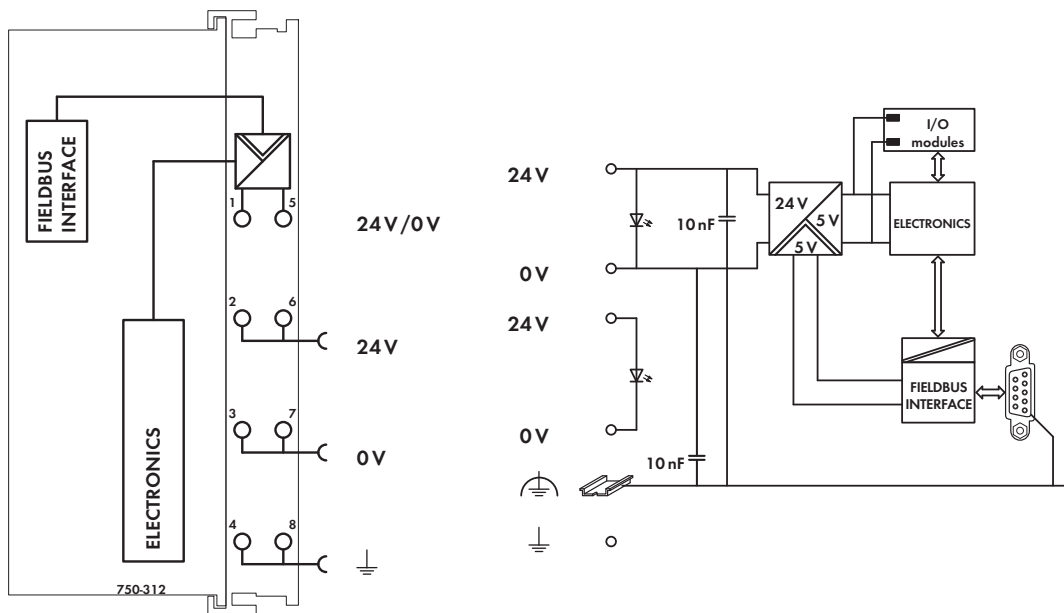
The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

When implementing new installations, please consider 750-812, 750-814, 750-815 and 750-816 Fieldbus Controllers (page 78) with extended functions.

Description	Item No.	Pack. Unit
MODBUS / RS 485 / 150 ... 19200 Bd	750-312	1
MODBUS / RS 232 / 150 ... 19200 Bd	750-314	1
MODBUS / RS 485 / 1.2 ... 115.2 kBd	750-315	1
MODBUS / RS 232 / 1.2 ... 115.2 kBd	750-316	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-314 750-315 750-316
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	99 with repeater
Max. no. of I/O points	approx. 6000 (depends on master)
Transmission medium	Shielded Cu cable 2 (4) x 0.25 mm ²
Max. length of fieldbus segment	1200 m (depends on baud rate/cable)
Baud rate	150 baud ... 19200 baud (750-312, 750-314) 1.2 Kbaud ... 115.2 Kbaud (750-315, 750-316)
Buscoupler connection	1 x D-Sub 9; socket

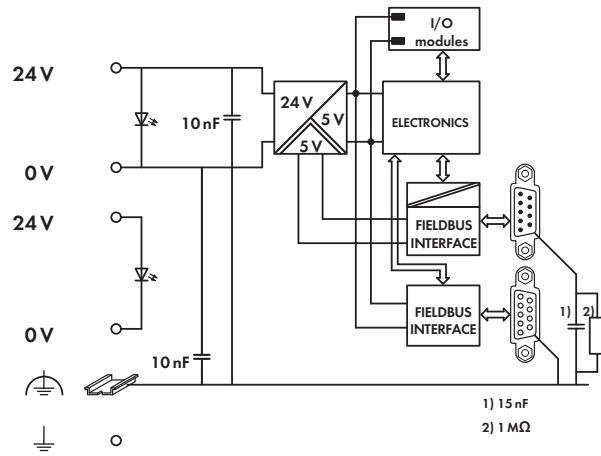
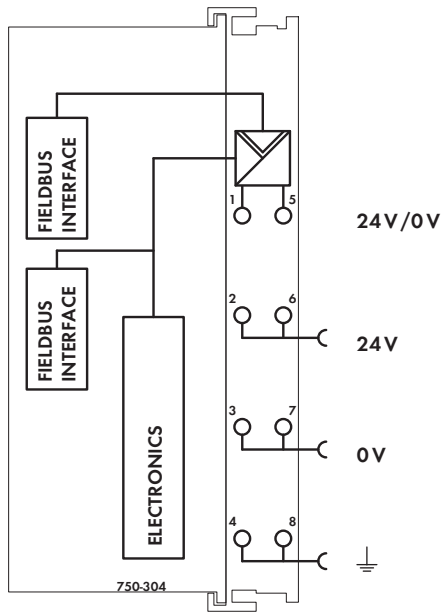


Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	DIP switch and 2 decimal coders or via PC or PLC
Power supply	24 V DC (-25 % ... +30 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	199 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)


Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	64 bytes
Max. output process image	64 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
	(as from version 0101), 450 mA (previous)
Total current for I/O modules (5 V)	1700 mA
	(as from version 0101), 1550 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	192 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 INTERBUS ECO Fieldbus Coupler

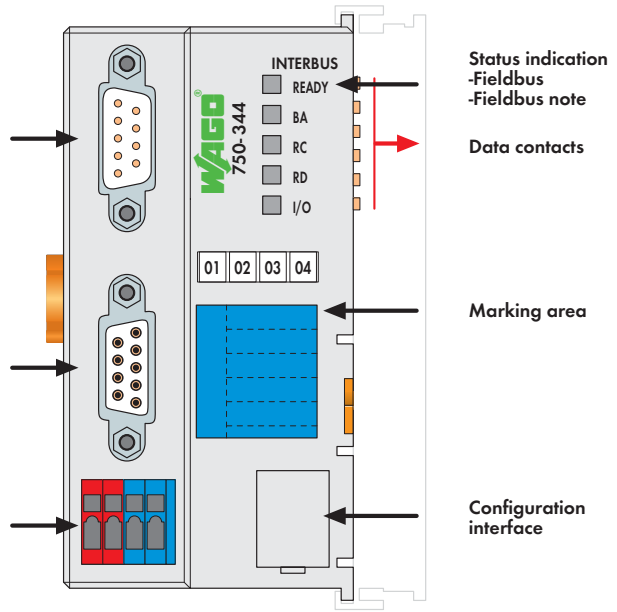
500 Kbaud; digital and analog signals



Fieldbus connection D-Sub Input

Fieldbus connection D-Sub, Output

Supply 24 V 0 V



The ECO fieldbus coupler is designed for applications with a reduced scale I/O requirement. Using digital only process data or small amounts of analogs, while retaining all of the choice that's offered by the Series 750 I/O.


The coupler has an integrated supply terminal for the system voltage. The field power jumper contacts are supplied via a separate supply module.

The INTERBUS bus coupler automatically configures, creating a local process image which may include analog, digital or specialty modules.

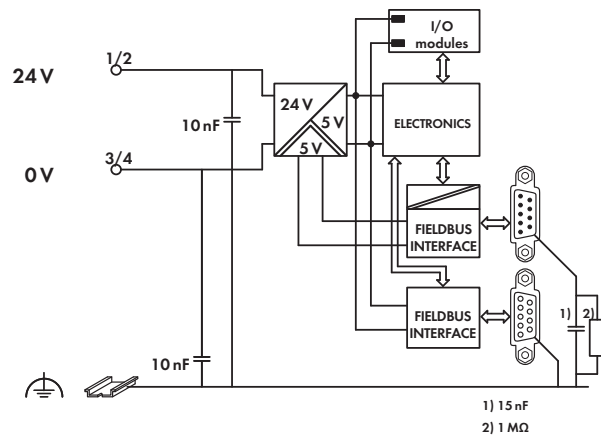
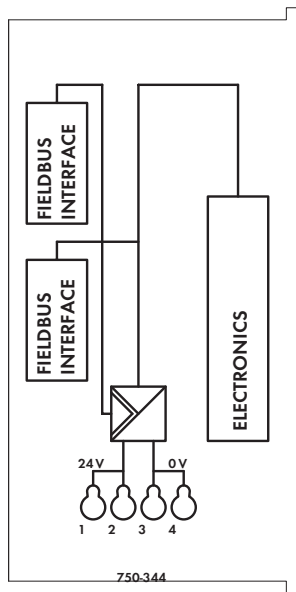
INTERBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
INTERBUS ECO 500 kBd	750-344	1
Accessories		
INTERBUS files	Download: www.wago.com	
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50254	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	400 m
Baud rate	500 Kbaud
Transmission time	typ. 1.43 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	1 x D-Sub 9; plug for input interface 1 x D-Sub 9; socket for output interface


Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	20 bytes
Max. output process image	20 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

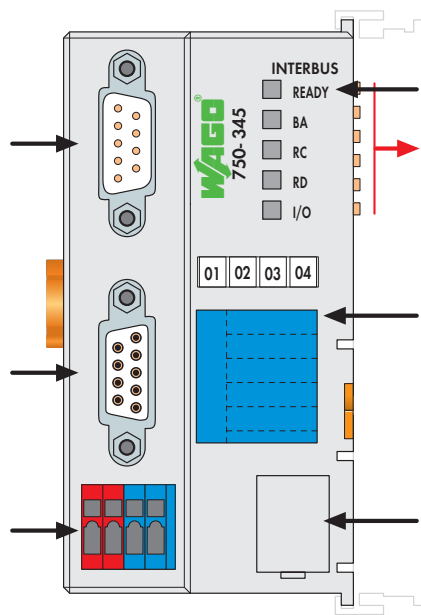
1 INTERBUS ECO Fieldbus Coupler
142 2 Mbaud; digital and analog signals



Fieldbus connection
D-Sub Input

Fieldbus connection
D-Sub Output

Supply
24 V
0 V



Status indication
-Fieldbus
-Fieldbus note

Data contacts

Marking area

Configuration interface

This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the INTERBUS fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

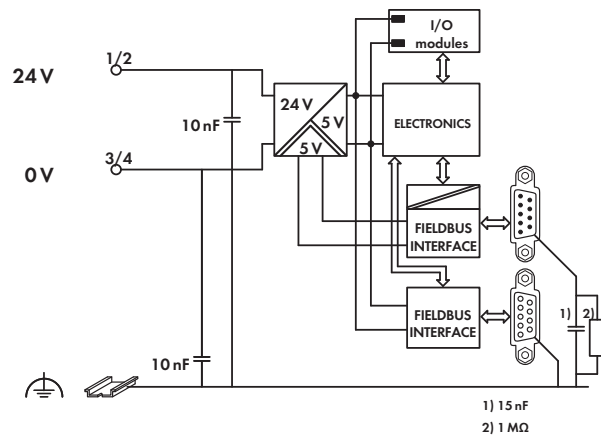
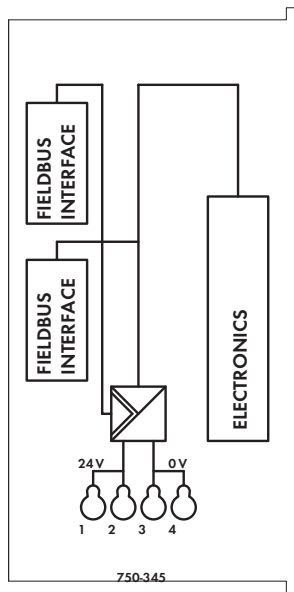
INTERBUS stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
INTERBUS ECO 2 MBd	750-345	1
Accessories		
INTERBUS files	Download: www.wago.com	
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50254	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	Certified Cu cable
Max. length of fieldbus segment	150 m
Baud rate	2 Mbaud
Transmission time	on request
Buscoupler connection	1 x D-Sub 9; plug for input interface 1 x D-Sub 9; socket for output interface


Technical Data

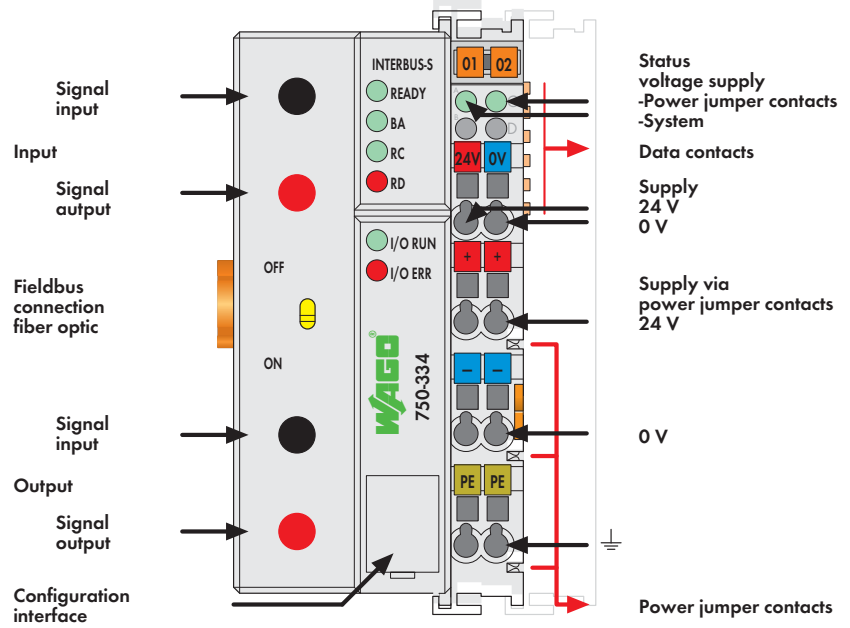
Number of I/O modules	64
Fieldbus	
Max. input process image	20 bytes
Max. output process image	20 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Input current typ. at rated load (24 V)	260 mA
Efficiency of the power supply (typ.) at nominal load (24 V)	80 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	650 mA

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	50 x 65 x 97
	Height from upper-edge of DIN 35 rail
Weight	115 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

INTERBUS Fieldbus Coupler

digital and analog signals; fiber optic




This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the INTERBUS fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

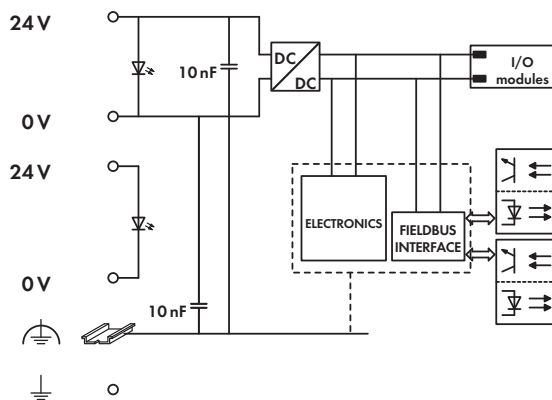
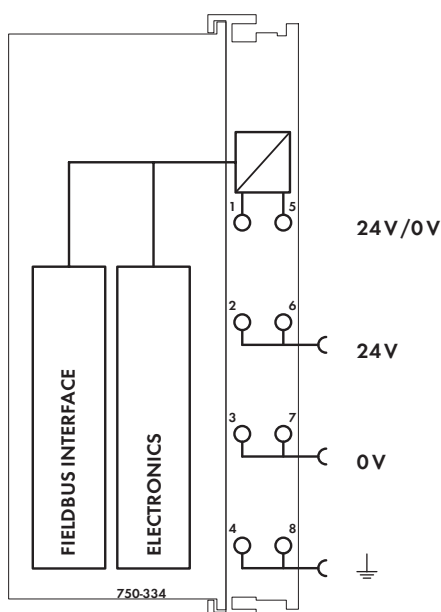
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the INTERBUS fieldbus to the PLC, PC or NC for further processing, and received from the field via INTERBUS.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

The fiber optic INTERBUS coupler can be put in any place on the ring.

Description	Item No.	Pack. Unit
INTERBUS 500 kBd / Opt. Fiber	750-334	1
Accessories		
INTERBUS files	Download: www.wago.com	
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Standard	EN 50254	
Certification	INTERBUS CLUB	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 50021	II 3 GD EEx nA II T4	
EN 50281-1-1		

System Data	
No. of couplers connected to Master	256
Max. no. of I/O points	4096 (depends on master)
Transmission medium	APF (plastic) fiber (1000µm)
Topology	Ring, double fiber ring
Max. length of fieldbus segment	1 m ... 40 m
Baud rate	500 Kbaud
Buscoupler connection	F-SMA



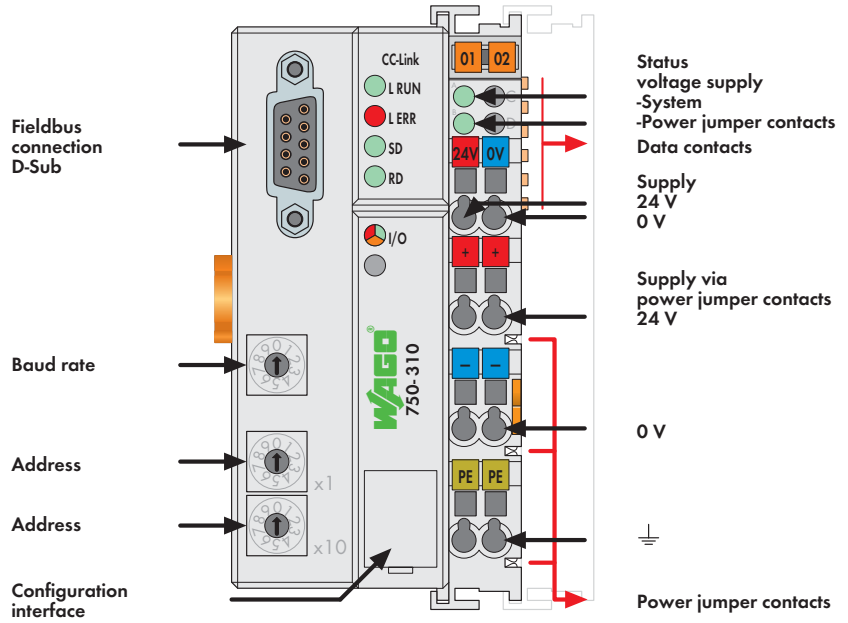
Technical Data	
Number of I/O modules	64
Fieldbus	
Max. input process image	64 bytes
Max. output process image	64 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	202 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Switch	
OFF	Fieldbus coupler is the last fieldbus device
ON	Output fieldbus interface is active

CC-Link Fieldbus Coupler

156 Kbaud ... 10 Mbaud; digital and analog signals




This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the CC-Link fieldbus.

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

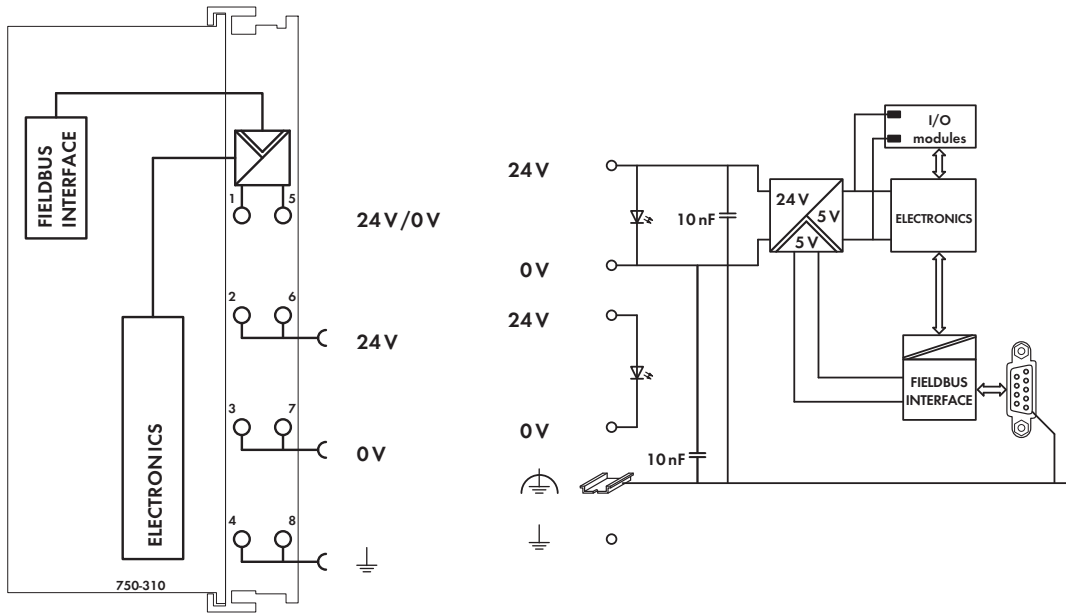
CC-Link stores the process image in the corresponding Master control (PLC, PC or NC).

The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CC-Link fieldbus to the PLC, PC or NC for further processing, and received from the field via CC-Link.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
CC-Link	750-310	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Bus connector with D-Sub male connector; 9 poles	750-965	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	64
Transmission medium	Shielded Cu cable 2 / 3 x 0.5 mm ²
Max. length of bus line	100 m ... 1200 m (depends on baud rate/cable)
Baud rate	156 Kbaud ... 10 Mbaud
Buscoupler connection	1 x D-Sub 9; socket

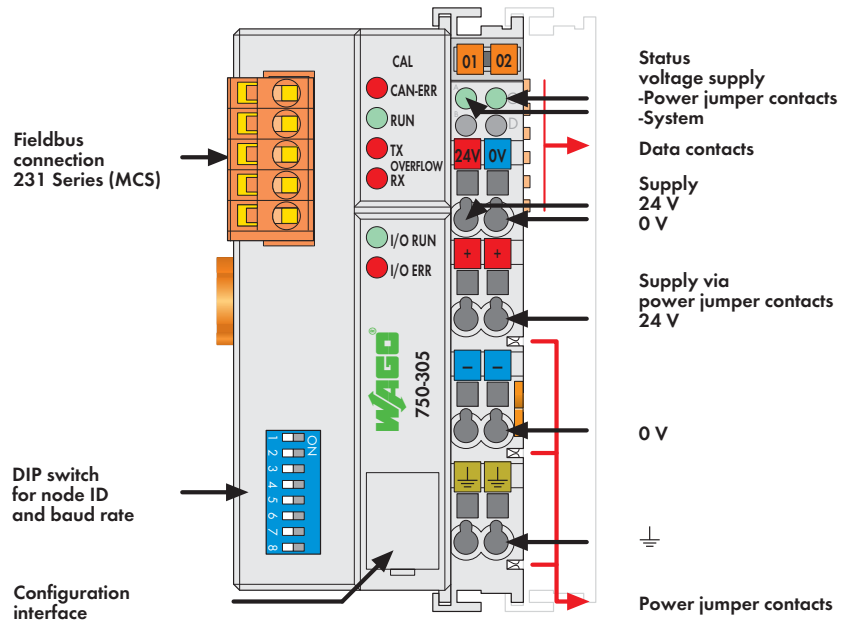


Technical Data	
Number of I/O modules	64
Station addresses	up to 4
Fieldbus	
Max. input process image	14-byte digital, 2-byte system, 32-byte analog
Max. output process image	14-byte digital, 2-byte system, 32-byte analog
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications	
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	210 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

CAL Fieldbus Coupler

10 Kbaud ... 1 Mbaud; digital and analog signals




This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the CAL fieldbus. The module data is transmitted using Communication Objects (COB).

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

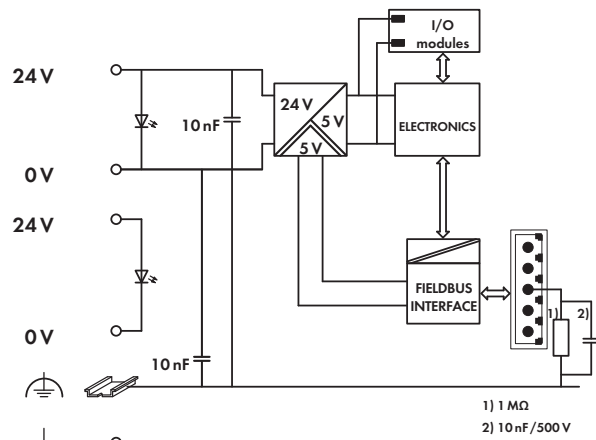
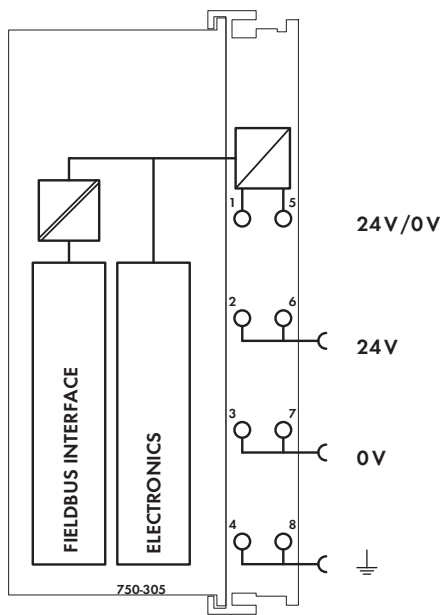
The local process image is divided into two data zones containing the data received and the data to be sent. The process data can be sent via the CAL fieldbus to the PLC, PC or NC for further processing, and received from the field via CAL.

The data of the analog modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte. The input and output process image is transmitted using the Basic Domain Protocol.

A Communication Object (COB) is assigned to each channel of an analog module and each digital byte group. They are transmitted using the Basic Variable Protocol.

Description	Item No.	Pack. Unit
CAL	750-305	1
Accessories		
Miniature WSB Quick marking system		
	plain 248-501	5
	with marking	see pages 352 ... 353
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	25
Transmission medium	Shielded Cu cable 3 x 0.25 mm ²
Max. length of bus line	1000 m (depends on baud rate/cable)
Baud rate	10 Kbaud ... 1 Mbaud
Buscoupler connection	5-pole male connector, 231 Series (MCS), female connector 231-305/ 010-000 (included)

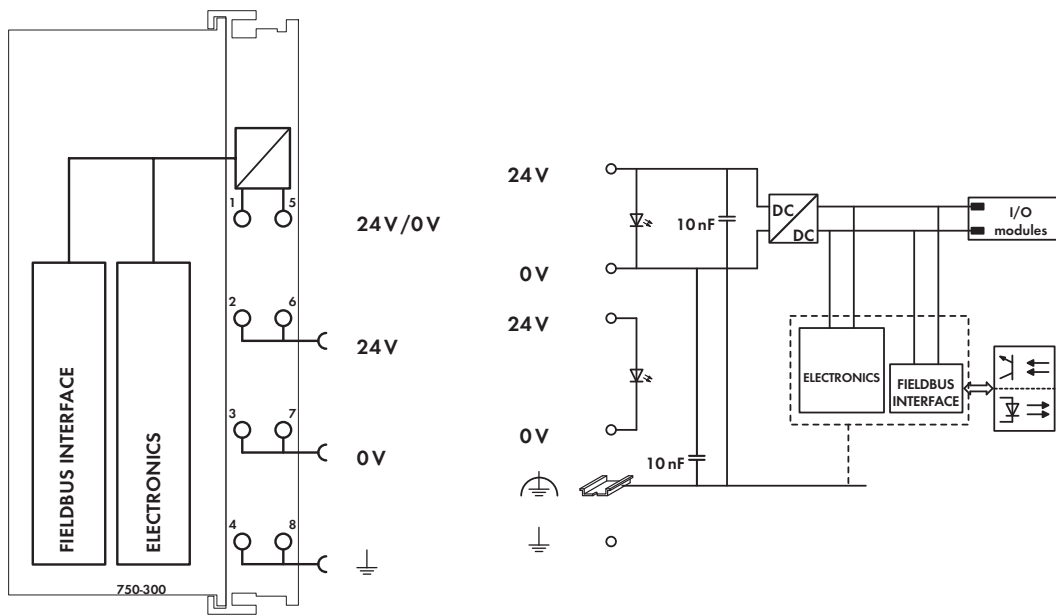


Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	205 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)



Technical Data

Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	197 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 II/O-LIGHTBUS Fieldbus Coupler
2.5 Mbaud; digital signals

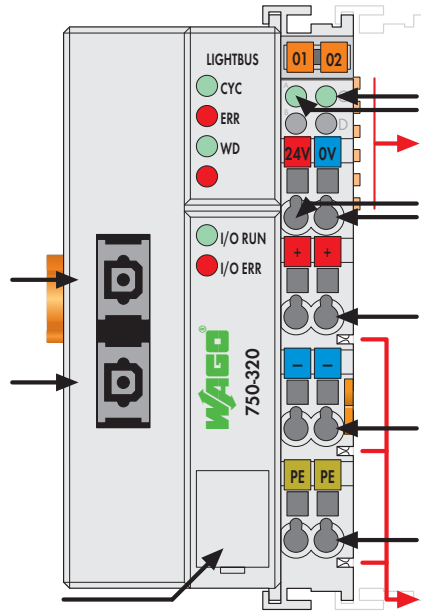


Fieldbus connection fiber optic

Signal input

Signal output

Configuration interface



Status voltage supply
-Power jumper contacts
-System

Data contacts

Supply
24 V
0 V

Supply via power jumper contacts
24 V


0 V

⊥

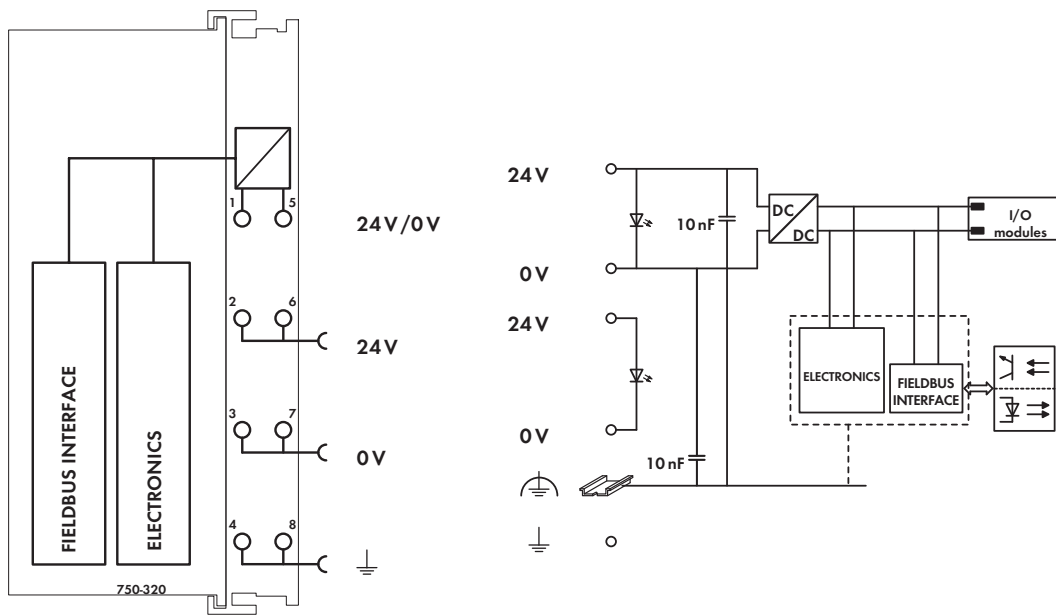
Power jumper contacts

This buscoupler connects the WAGO-I/O-SYSTEM as a slave to the LIGHTBUS fieldbus. The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules.

The data of the modules is stored in the process image which is created automatically according to the order in which the modules are connected to the buscoupler. The bits of the digital modules are sent byte by byte and added to the analog data. If the amount of digital information exceeds 8 bits, the buscoupler automatically starts with a new byte.

Description	Item No.	Pack. Unit
II/O-LIGHTBUS / Digital	750-320	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 50021	II 3 G EEx nA II T4	

System Data	
No. of couplers connected to Master	254
Max. no. of I/O points	16192
Transmission medium	Fiber optic cable; APF (pastic) or HCS
Max. length of fieldbus segment	140 ft (45 m) [APF]; 900 ft (300 m)
Baud rate	2.5 Mbaud
Transmission time	1 ms (10 couplers; 32 digital I/Os per coupler)
Buscoupler connection	2 x fiber optic cable Z1000 (APF); Z1010 (HCS)



Technical Data

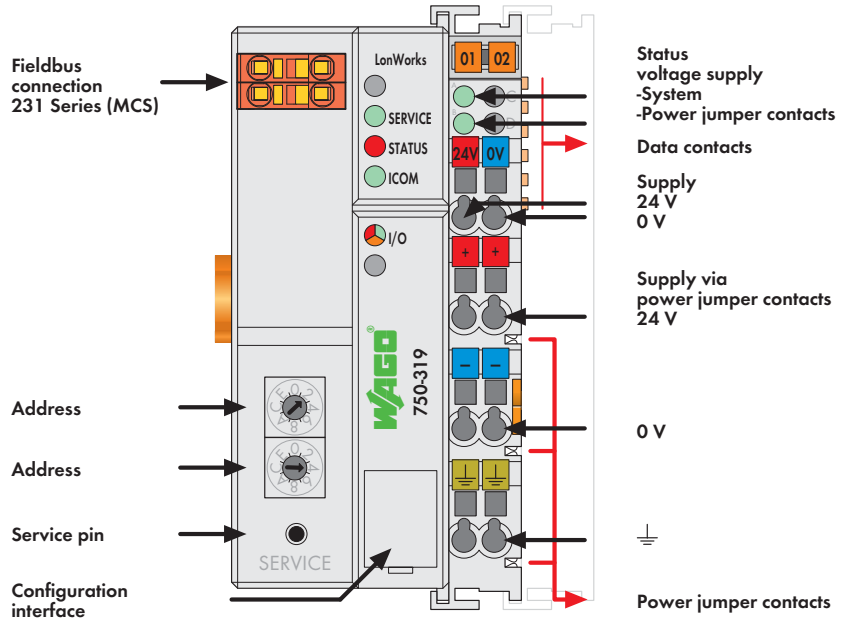
Number of I/O modules	64
Fieldbus	
Max. input process image	512 bytes
Max. output process image	512 bytes
Configuration	via PC or PLC
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	350 mA
Total current for I/O modules (5 V)	1650 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 LONWORKS® Fieldbus Coupler

78 kbps; digital and analog signals



This buscoupler connects the WAGO-I/O-SYSTEM to the LON® fieldbus using FT (Free Topologie Transceiver).

The buscoupler automatically configures, creating a local process image which may include analog, digital or specialty modules. Analog and specialty module data is sent via words and/or bytes, digital data is sent bit by bit.

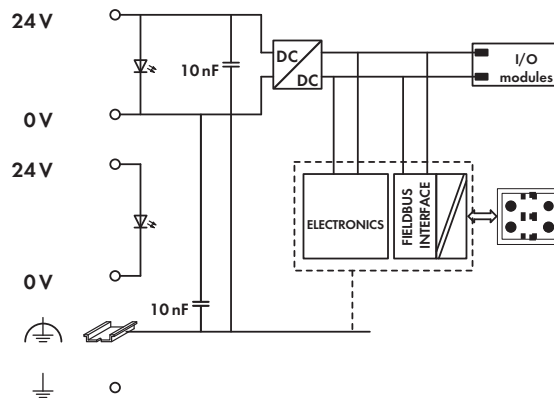
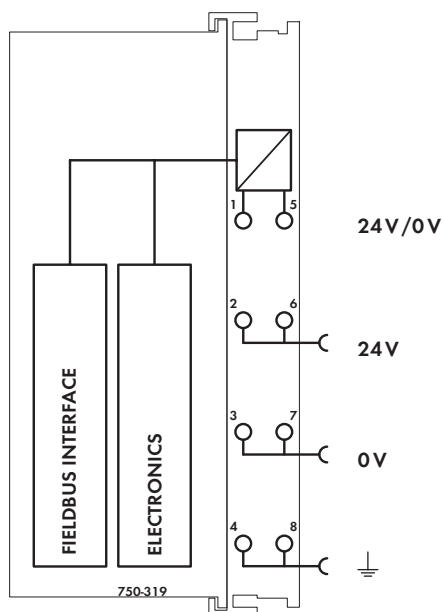
The following LNS compliant plug-ins are available:

- WAGO TOPLON®-PRIO (Programmable Remote I/O) is the interface between the I/Os of the fieldbus coupler and the LON® network Processing of up to 248 digital or 124 analog inputs /outputs To each network variable any SNVT can be assigned A maximum of 52 network variables, types available NVI/NVOs: 0/52; 20/32; 26/26; 32/20; 52/0
- WAGO TOPLON®-IF (Installation Functions) with ready-to-use applications in any combination. For example, for stairwell light control, ambient light control, touch control dimmer, and window blind control. Processing of up to 48 digital inputs /outputs 48 network variables of the SNVT_switch type are available.

LON® and LONWORKS® are registered trademarks of Echelon Corporation.

Description	Item No.	Pack. Unit
LonWorks®	750-319	1
Accessories		
WAGO LNS Plug-In PRIO	see page 94	
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	Also see "Approvals Overview" in Section 1	
UL 508	CE	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	64 without repeater, 127 with repeater
Transmission medium	Twisted pair - FTT
Max. length of fieldbus segment	500 m (free topology) 2700 m (bus-topology)
Topology	in accordance with LON specification
Baud rate	78 kbps
Buscoupler connection	2-pole male connector, 231 Series (MCS), female connector (231-302) (included)



Technical Data

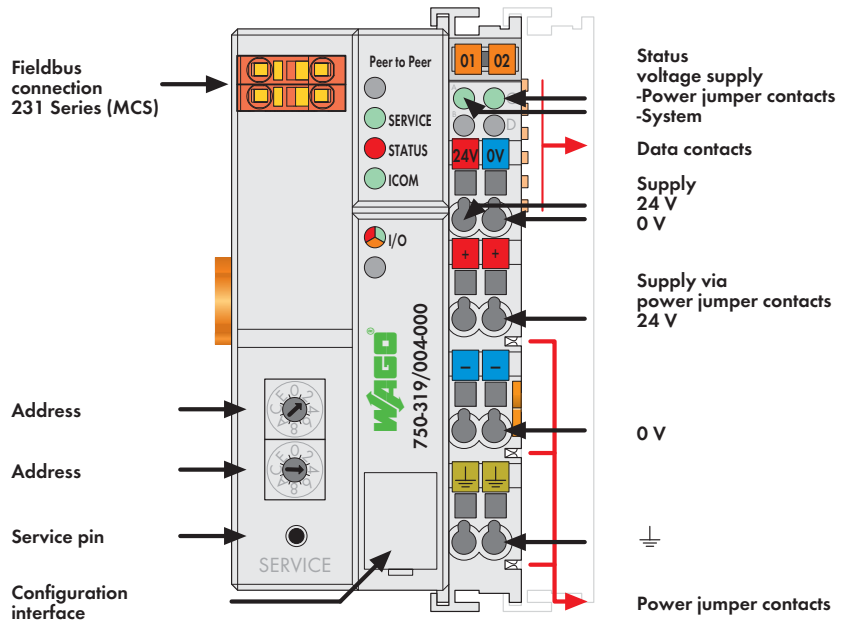
Number of I/O modules	62
Digital signals	max. 248 (in- and outputs)
Analog signals	max. 124 (in- and outputs)
Configuration	via PC with LON Interface
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Transceiver	FTT 10 A

General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

LON[®] Data Exchange Coupler (Peer to Peer)

78 kbps; digital and analog signals



The data exchange coupler transfers the input process image data to the output process image of the coupled partner. The data exchange coupler is a variant of the LON[®] fieldbus coupler.

Applications:


- **Peer to Peer**
one master and one slave
- **Broadcast**
one master and several slaves

The coupler, together with I/O modules, is a fieldbus node which is connected to other nodes by means of a twisted wire pair. The coupler can also be integrated into existing LON[®] networks if appropriate node addresses are available.

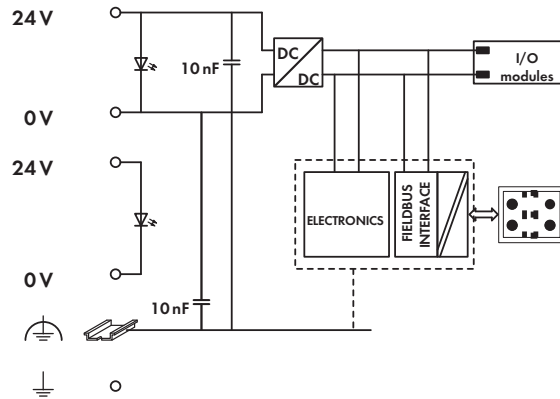
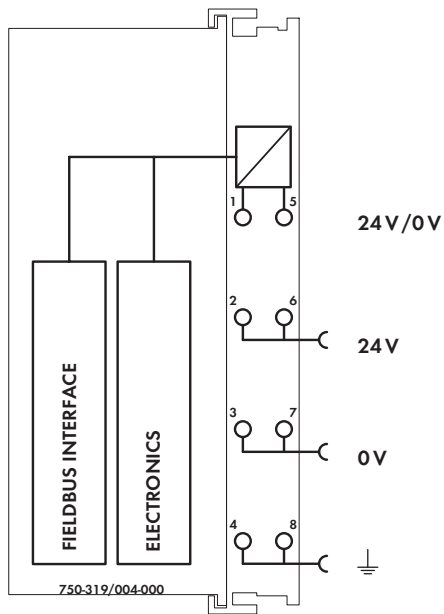
The coupler automatically creates the process image using the types and widths of data of the connected I/O modules. The input process image is transferred to the output process image of the partner or partners.

The monitoring system switches digital outputs off or stores the last analog value if the connection to the coupled partner is interrupted longer than 1 second.

LON[®] is a registered trademark of Echelon Corporation.

Description	Item No.	Pack. Unit
Peer to Peer Coupler	750-319/004-000	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

System Data	
No. of couplers connected to Master	64 without repeater, 127 with repeater
Transmission medium	Twisted pair - FTT
Max. length of fieldbus segment	500 m (free topology) 2700 m (bus-topology)
Topology	in accordance with LON specification
Baud rate	78 kbps
Buscoupler connection	2-pole male connector, 231 Series (MCS), female connector (231-302) (included)



Technical Data

Number of I/O modules	62
Digital signals	max. 248 (in- and outputs)
Analog signals	max. 124 (in- and outputs)
Configuration	via PC with LON Interface
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	500 mA
Efficiency of the power supply	87 %
Internal current consumption (5 V)	300 mA
Total current for I/O modules (5 V)	1700 mA
Isolation	500 V system/supply
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Transceiver	FTT 10 A

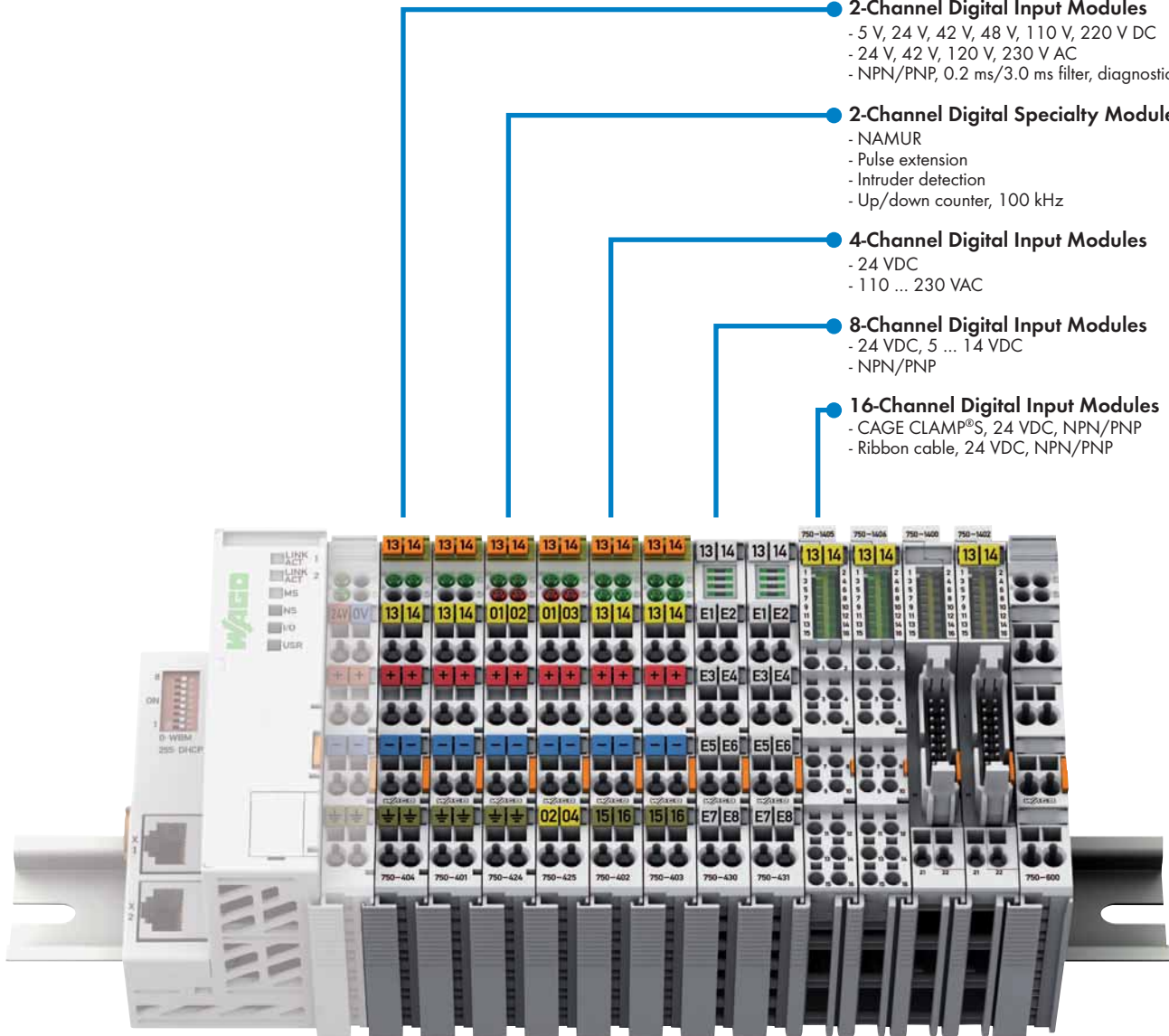
General Specifications

Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	51 x 65 x 100
	Height from upper-edge of DIN 35 rail
Weight	200 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP20
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Digital Input Modules

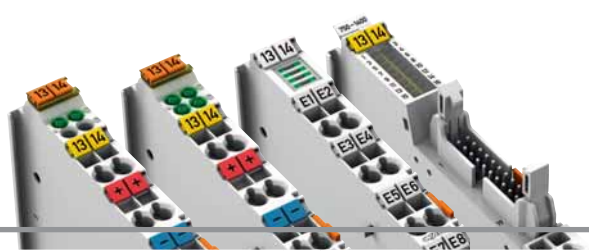


- **2-Channel Digital Input Modules**
 - 5 V, 24 V, 42 V, 48 V, 110 V, 220 V DC
 - 24 V, 42 V, 120 V, 230 V AC
 - NPN/PNP, 0.2 ms/3.0 ms filter, diagnostics
- **2-Channel Digital Specialty Modules**
 - NAMUR
 - Pulse extension
 - Intruder detection
 - Up/down counter, 100 kHz
- **4-Channel Digital Input Modules**
 - 24 VDC
 - 110 ... 230 VAC
- **8-Channel Digital Input Modules**
 - 24 VDC, 5 ... 14 VDC
 - NPN/PNP
- **16-Channel Digital Input Modules**
 - CAGE CLAMP®S, 24 VDC, NPN/PNP
 - Ribbon cable, 24 VDC, NPN/PNP



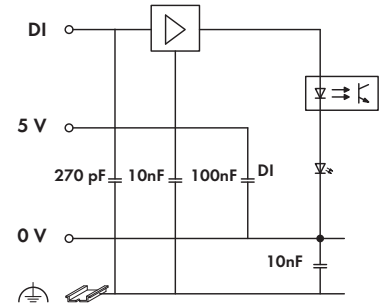
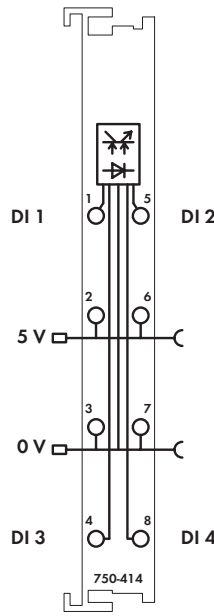
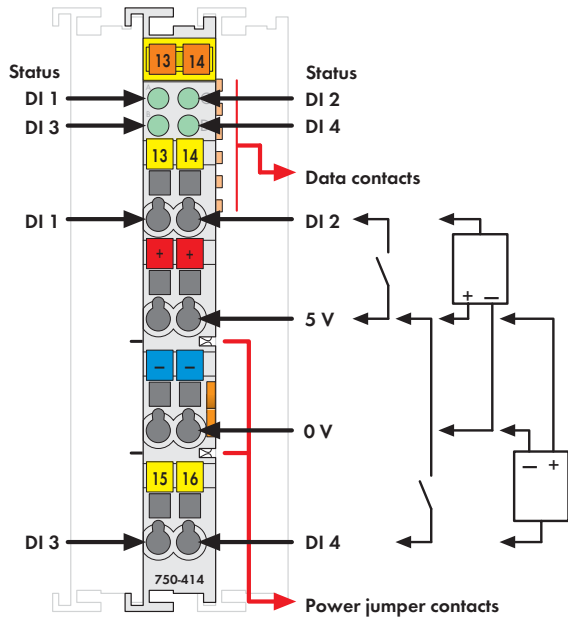
Modular I/O System Overview

Digital Inputs



Function	2-Channel Digital Input	Page	4-Channel Digital Input	Page	8-Channel Digital Input	Page	16-Channel Digital Input	Page
5 VDC			750-414 0.2 ms, high-side switch.	160				
5/12 VDC					753-434 (5 ... 14 VDC) 0.2 ms, high-side switch.	161		
24 VDC	750-400 / 753-400 3.0 ms, high-side switch.	162	750-402 / 753-402 3.0 ms, high-side switch.	165	750-430 / 753-430 3.0 ms, high-side switch.	171	750-1400 3.0 ms, high-side switch., ribbon cable	177
	750-401 / 753-401 0.2 ms, high-side switch.	162	750-403 / 753-403 0.2 ms, high-side switch.	165	750-431 / 753-431 0.2 ms, high-side switch.	171	750-1405 3.0 ms, high-side switch.	178
	750-410 / 753-410 3.0 ms, high-side switch., proximity switch	163	750-432 / 753-432 3.0 ms, high-side switch.	166	750-436 / 753-436 3.0 ms, low-side switch.	172	750-1406 0.2 ms, high-side switch.	178
	750-411 / 753-411 0.2 ms, high-side switch., proximity switch	163	750-433 / 753-433 0.2 ms, high-side switch.	166	750-437 / 753-437 0.2 ms, low-side switch.	172	750-1402 3.0 ms, low-side switch., ribbon cable	179
	750-418 / 753-418 3.0 ms, high-side switch., diagnostics, acknow.	164	750-422 / 753-422 Pulse extension, 10 ms	167	750-1415 3.0 ms, high-side switch.	175	750-1407 3.0 ms, low-side switch.	180
	750-421 / 753-421 3.0 ms, high-side switch., diagnostics	164	750-408 / 753-408 3.0 ms, low-side switch.	168	750-1416 0.2 ms, high-side switch.	175		
			750-409 / 753-409 0.2 ms, low-side switch.	168	750-1417 3.0 ms, low-side switch.	176		
	750-425 / 753-425, NAMUR Proximity switch acc. to DIN EN 50227	191	750-1420 3.0 ms, high-side switch.	169	750-1418 0.2 ms, low-side switch.	176		
	750-424 / 753-424 Intruder detection	192	750-1421 0.2 ms, high-side switch.	169				
			750-1422 3.0 ms, low-side switch.	170	8-Channel Digital Input/Output			
			750-1423 0.2 ms, low-side switch.	170	750-1502 0.5 A, high-side switch., ribbon cable	173		
					750-1506 0.5 A, high-side switch.	174		
	24 V AC/DC			750-415 / 753-415 20 ms	181			
				750-423 / 753-423 50 ms, power jumper contacts	182			
	42 V AC/DC		750-428 / 753-428 20 ms	183				
48 VDC	750-412 / 753-412 3.0 ms, high-side switch.	184						
60 VDC	753-429 3.0 ms, high-side switch.	185						
110 VDC	750-427 / 753-427 3.0 ms, high-side switch. or low-side switch	186						
220 VDC	750-407 3.0 ms, high-side switch	187						
120 VAC	750-406 / 753-406 10 ms, high-side switch	188						
120/230 VAC			753-440 (120 ... 230 VAC) 10 ms, high-side switch	189				
230 VAC	750-405 / 753-405 10 ms, high-side switch	190						
Functional Safety			see pages 296 ... 303					
Ex i Modules			see pages 304 ... 325					

1 4-Channel Digital Input Module 5 V DC
2- to 3-conductor connection; high-side switching



Delivered without miniature WSB markers


The digital input module receives control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:

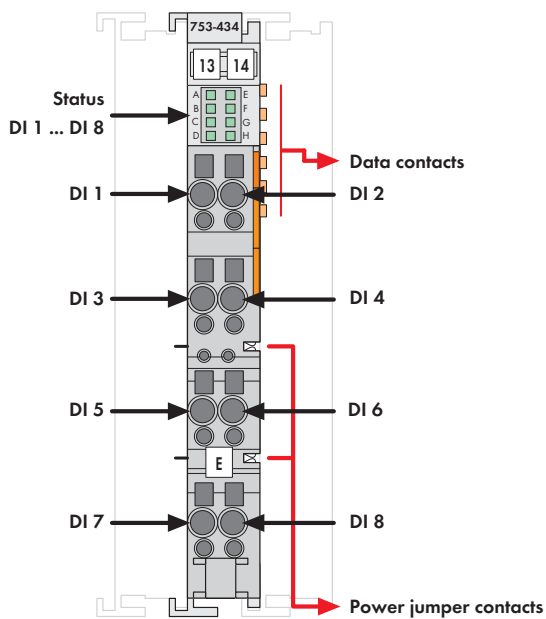
An additional supply module must be added for operation with 5VDC.

Description	Item No.	Pack. Unit
4DI 5V DC 0.2ms	750-414	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 50021	II 3 G EEx nA II T4	

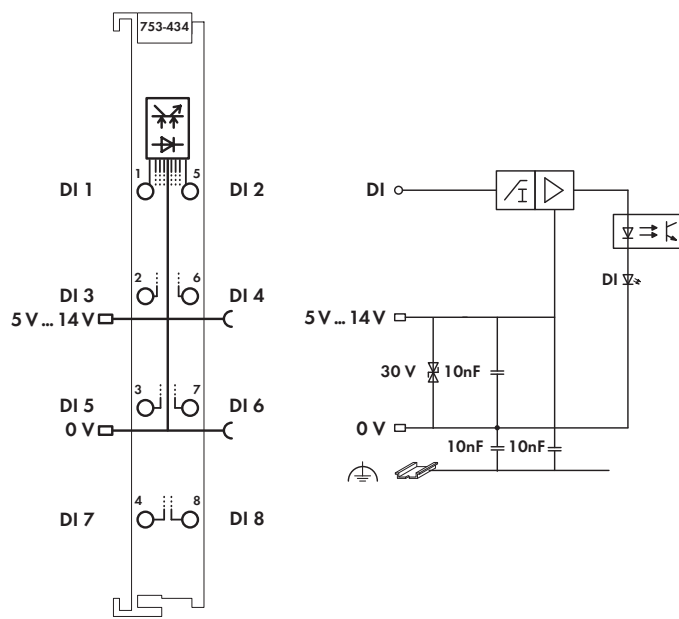
Technical Data	
Number of inputs	4
Current consumption (internal)	5 mA
Voltage via power jumper contacts	5 V DC
Signal voltage (0)	0 V ... +0.8 V DC
Signal voltage (1)	2.4 V ... 5 V DC
Input filter	0.2 ms
Input current (typ.)	50 µA
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Input Module 5 ... 14 V DC

1-conductor connection; high-side switching



Delivered without miniature WSB markers



NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital input module provides 8 channels maintaining a width of only 12mm.




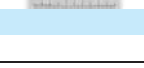
It receives control signals from the digital field devices (sensors, etc.).

Each input module has a noise-rejection filter.

Field and system levels are electrically isolated.

Notice:

An additional supply module must be added for operation with 5-14VDC.

Description	Item No.	Pack. Unit
8DI 5 (14)V DC 0.2ms (without connector)	753-434	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	8
Current consumption (internal)	4 mA
Voltage via power jumper contacts	5 V ... 14 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V DC ... 0.2 x V _V
Signal voltage (1)	0.5 V _V ... 1.1 V _V
Input filter	0.2 ms
Input current (typ.)	60 µA at 12 V
Input resistance	> 100 kΩ
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	40.4 g
EMC: CE - immunity to interference	acc. to EN 61131-2 (2003)
EMC: CE - emission of interference	acc. to EN 61131-2 (2003)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 2-Channel Digital Input Module 24 V DC
2- to 4-conductor connection; high-side switching

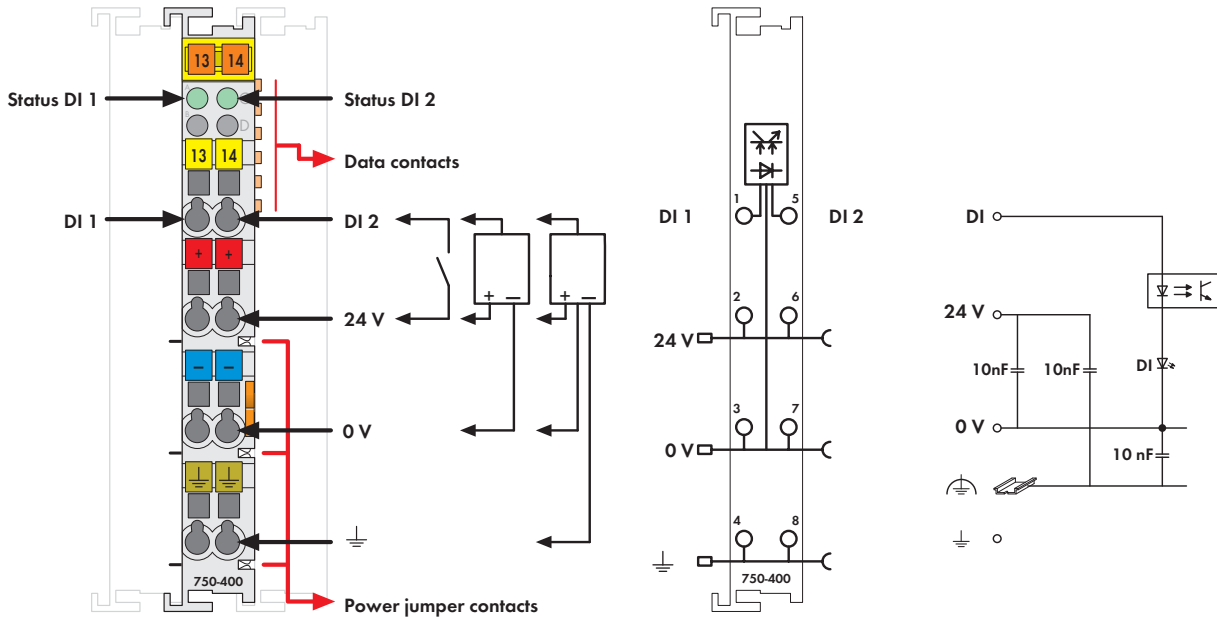






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input modules receive the control signal from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
2DI 24V DC 3.0ms	750-400	10 ¹⁾
2DI 24V DC 3.0ms	750-400/025-000	1
[Operating temperature -20 °C ... +60 °C]		
2DI 24V DC 0.2ms	750-401	10 ¹⁾
2DI 24V DC 3.0ms (without connector)	753-400	1
2DI 24V DC 0.2ms (without connector)	753-401	1
1) Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-400, -401
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-400, -401
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Current consumption (internal)	3.7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-400 / 753-400) 0.2 ms (750-401 / 753-401)
Input current (typ.)	4.5 mA
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	57 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module 24 V DC

2- to 4-conductor connection; high-side switching

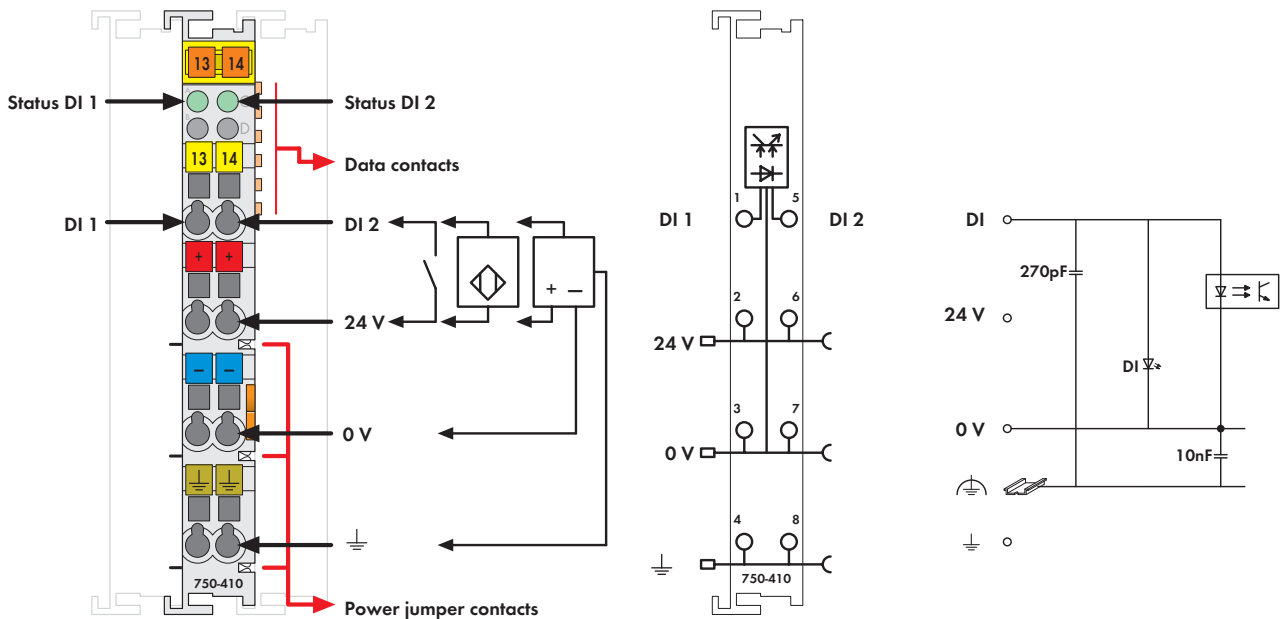


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




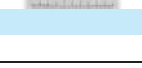




The digital input module receives the control signal from digital field devices (sensors, etc.).

A 2-wire proximity switch can be connected to this module.

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
2DI 24V DC 3.0ms, proximity switch	750-410	10 ¹⁾
2DI 24V DC 0.2ms, proximity switch	750-411	1
2DI 24V DC 3.0ms, proximity switch (without connector)	753-410	1
2DI 24V DC 0.2ms, proximity switch (without connector)	753-411	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

Technical Data	
Number of inputs	2
Max. current consumption (internal)	2.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-410 / 753-410) 0.2 ms (750-411 / 753-411)
Input current (typ.)	8 mA
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 2-Channel Digital Input Module 24 V DC
2- to 3-conductor connection; high-side switching; diagnostics

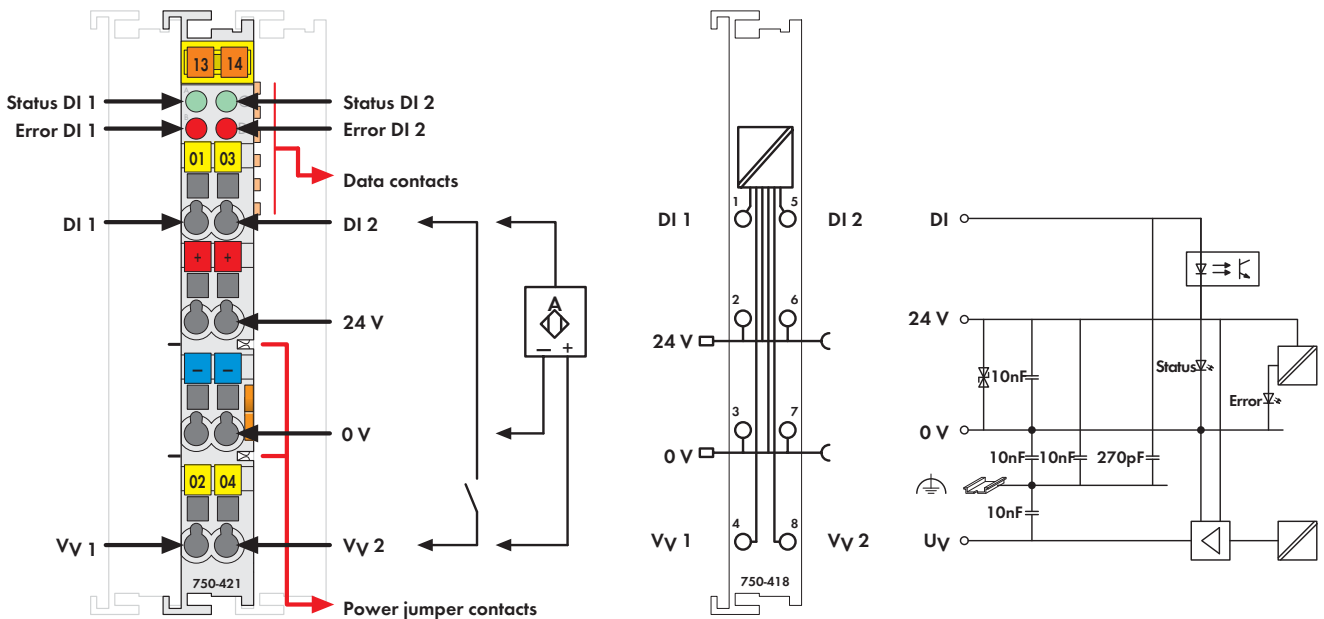






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input module receives control signals from the field side and supplies a short-circuit proof voltage to the sensors. The module transfers the control signals and other information via fieldbus coupler to a supervisory control.

An optocoupler is used for electrical isolation between the bus and the field side.

Each input module has a noise-rejection filter.

Each sensor can be supplied separately. A short circuit to ground is indicated as an error/fieldbus failure and a message is sent to the supervisory control. After the error has been eliminated the 750-418 Input Module will require an acknowledgement (performed by the operator via control). The 750-421 Input Module will acknowledge automatically.

Description	Item No.	Pack. Unit
2DI 24V DC 3.0ms, diagnostics, acknowledgement	750-418	1
2DI 24V DC 3.0ms, diagnostics	750-421	1
2DI 24V DC 3.0ms, diagnostics, acknowledgement (without connector)	753-418	1
2DI 24V DC 3.0ms, diagnostics (without connector)	753-421	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
No. of outputs	2 for transmitter supply
Current consumption (internal)	< 12 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	3.7 mA
Short-circuit current	1.5 A, undulating because of thermal overload protection
Sensor supply V _v	DC24 V
Max. output current	0.5 A
Isolation	500 V system/supply
Internal bit width	4 bits in; 4 bits out (750-418 / 753-418) 4 bits in (750-421 / 753-421)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V DC

2- to 3-conductor connection; high-side switching

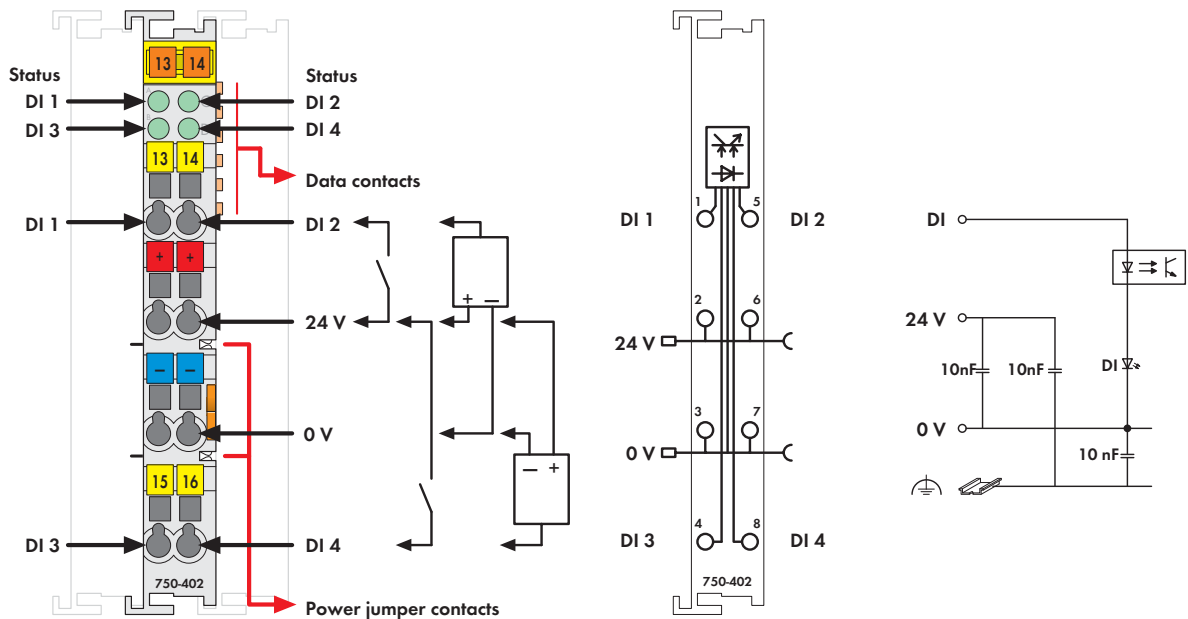


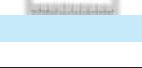
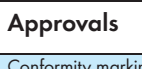


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input modules receive the control signal from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms	750-402	10 ¹⁾
4DI 24V DC 3.0ms/T	750-402/025-000	1
[Operating temperature -20 °C ... +60 °C]		
4DI 24V DC 0.2ms	750-403	10 ¹⁾
4DI 24V DC 3.0ms (without connector)	753-402	1
4DI 24V DC 0.2ms (without connector)	753-403	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508	-	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-402, -403
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-402, 753-403
EN 61241-0, -1		
EN 60079-0, -11, -15	I M2 Ex d I	750-403*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-403*
	II 3 D Ex tD A22 IP6X T135 °C	750-403*
	* Permissible operating temperature: 0 °C ... +60 °C	

Technical Data	
Number of inputs	4
Current consumption (internal)	7.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-402 / 753-402) 0.2 ms (750-403 / 753-403)
Input current (typ.)	4.5 mA
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 166 **4-Channel Digital Input Module 24 V DC**
2-conductor connection; high-side switching

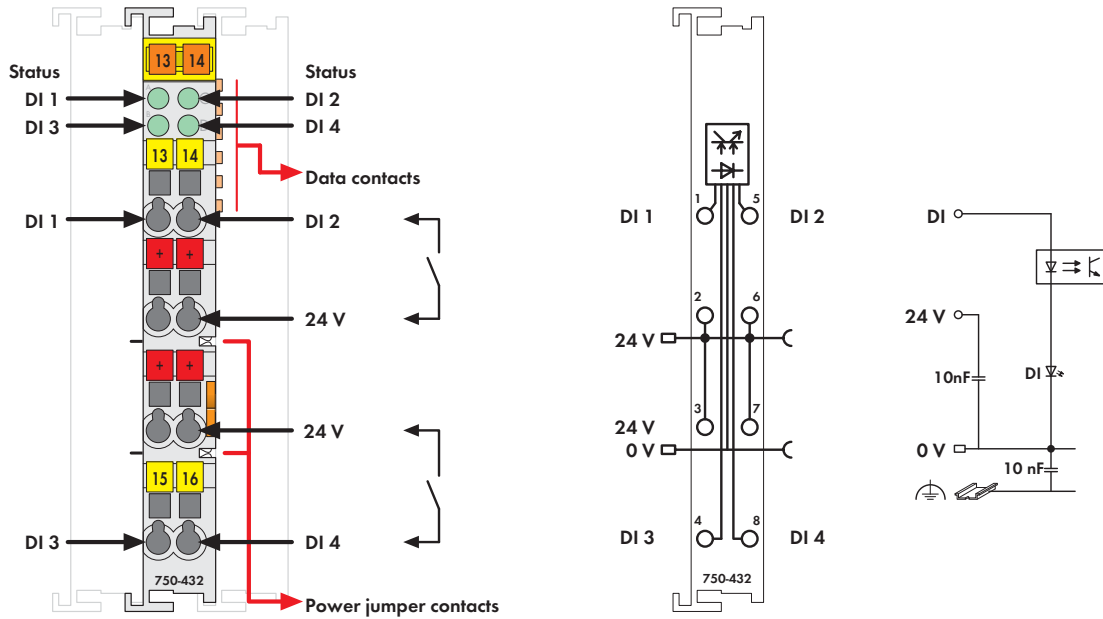




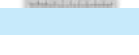

Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 4-input channel, 2-conductor device. Due to its four 24V connections, four sensors may be directly connected to the module.

Each input module has a noise-rejection filter. This filter is available with different time constants.

An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms/2-conductor	750-432	1
4DI 24V DC 0.2ms/2-conductor	750-433	1
4DI 24V DC 3.0ms/2-conductor (without connector)	753-432	1
4DI 24V DC 0.2ms/2-conductor (without connector)	753-433	1
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15 EN 61241-0, -1	I M2 / II 3 GD Ex nA IIC T4	75x-432, 753-433
EN 60079-0, -11, -15 EN 61241-0, -1, -11	I M2 Ex d I II 3 G Ex nA IIC T4 II 3 D Ex tD A22 IP6X T135°C	750-433* 750-433* 750-433*
* Permissible operating temperature: 0°C ... +60°C		

Technical Data	
Number of inputs	4
Current consumption (internal)	5.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-432 / 753-432) 0.2 ms (750-433 / 753-433)
Input current (typ.)	4.5 mA
Isolation	500 V system/supply
Internal bit width	4 bits in
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V DC

2- to 3-conductor connection; high-side switching; 10 ms pulse extension

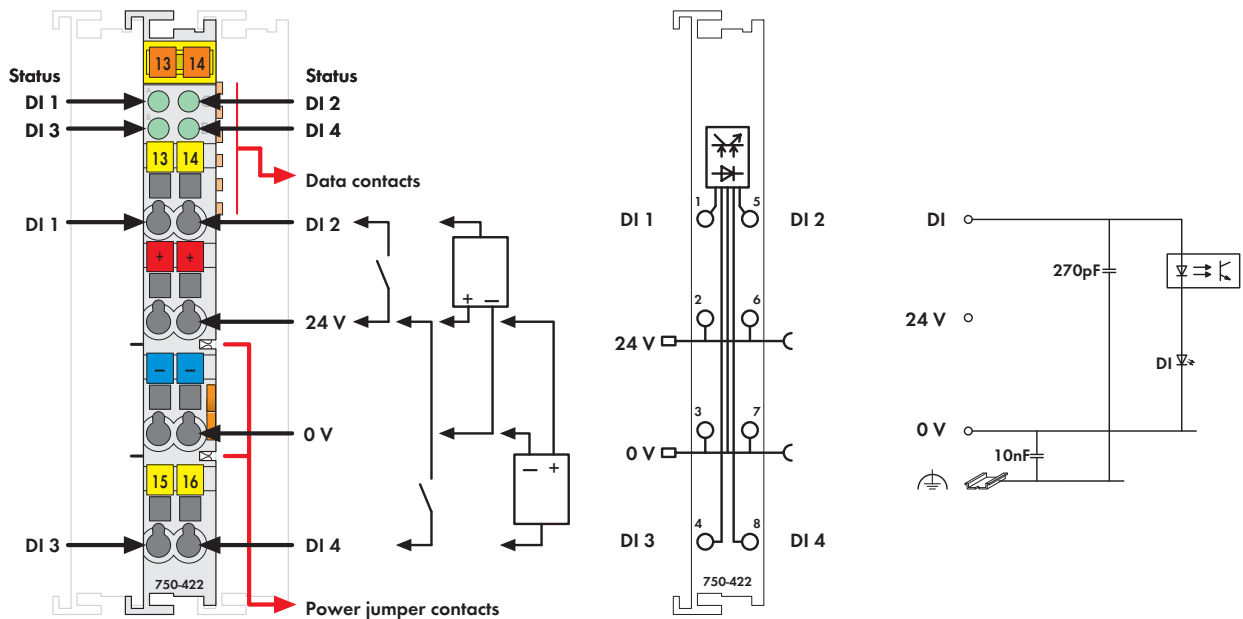
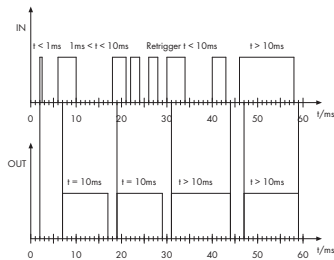


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input module receives control signals from digital field devices (sensors, etc.).

This input module extends input signals to at least 10ms. Only signals ≥ 1 ms will be acquired. Input signals > 10 ms will not be extended (see timing technical data).

An optocoupler is used for electrical isolation between the bus and the field side.



Description	Item No.	Pack. Unit
4DI 24V DC, pulse extension	750-422	1
4DI 24V DC, pulse extension (without connector)	753-422	1
Accessories		
753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	4
Max. current consumption (internal)	9 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	1.0 ms ($\pm 15\%$)
Input current (typ.)	4 mA
Input frequency (max.)	80 Hz
Dead time	1 ms
$t_{ON}(IN) < 1$ ms	$t_{ON}(OUT) = 0$
$1 \text{ ms} < t_{ON}(IN) < 10$ ms	$t_{ON}(OUT) = 10 \text{ ms} (\pm 15\%)$
$t_{ON}(IN) > 10$ ms	$t_{ON}(OUT) = t_{ON}(IN)$
Pulse extension	see graphic
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 50081-1 (1993)

1 4-Channel Digital Input Module 24 V DC
2- to 3-conductor connection; low-side switching

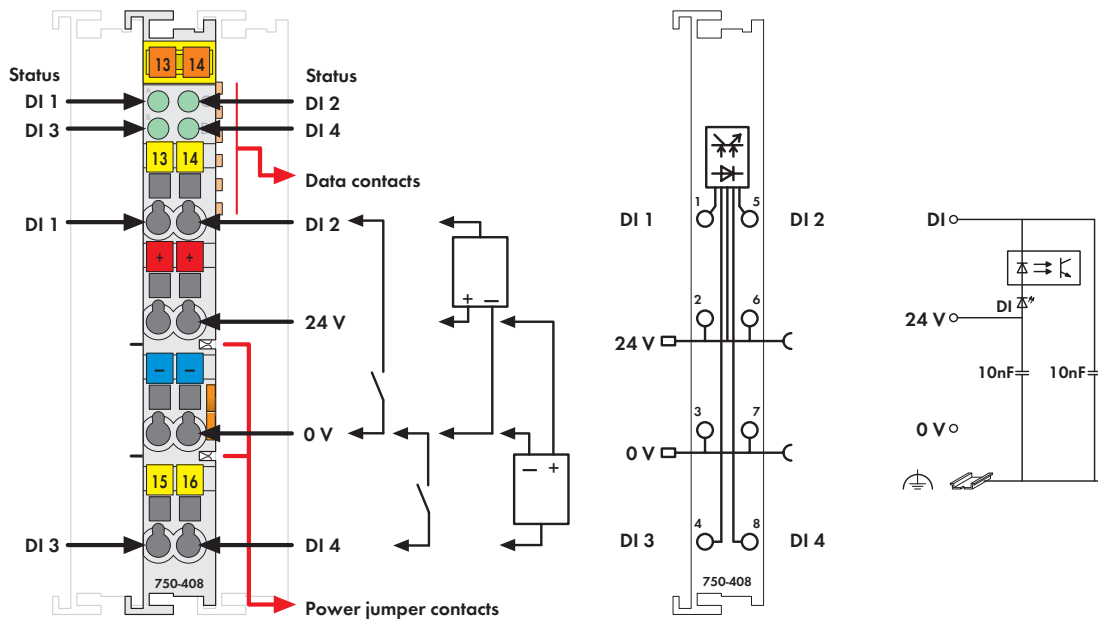



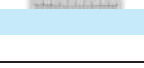






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input modules receive the control signal from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

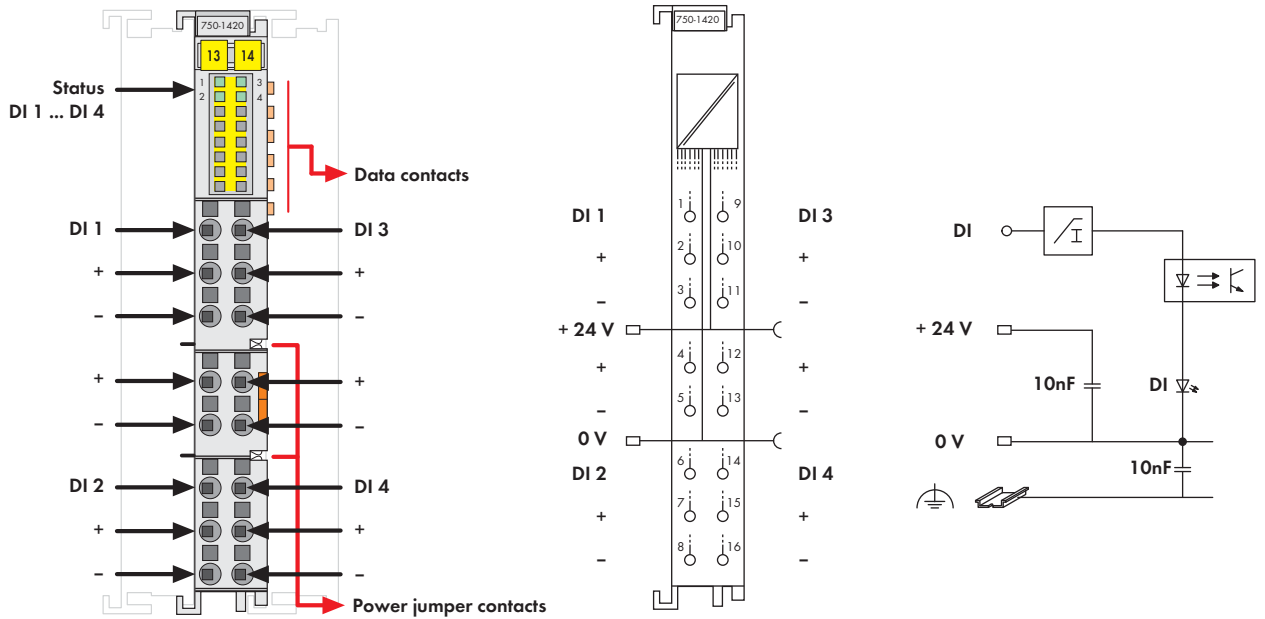
An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms, low-side switching	750-408	10 ¹⁾
4DI 24V DC 3.0ms, low-side switching/T	750-408/025-000	1
(Operating temperature -20 °C ... +60 °C)		
4DI 24V DC 0.2ms, low-side switching	750-409	10 ¹⁾
4DI 24V DC 3.0ms, low-side switching	753-408	1
(without connector)		
4DI 24V DC 0.2ms, low-side switching	753-409	1
(without connector)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	pending for 75x-408	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-408, -409
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-408, -409
 EN 61241-0, -1		

Technical Data	
Number of inputs	4
Current consumption (internal)	5 mA
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Signal voltage (0)	(V _V - 5 V DC) ... V _V
Signal voltage (1)	-3 V DC (V _V - 15 V)
Input filter	3.0 ms (750-408 / 753-408)
	0.2 ms (750-409 / 753-409)
Input current (typ.)	7 mA
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

4-Channel Digital Input Module 24 V DC

High-side switching, 3-conductor connection



The digital input module provides 4 channels in 3-wire connection at a width of just 12mm (0.47in).

It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).


CAGE CLAMP®S terminations provide direct insertion of solid conductors.

Each input channel has a noise-rejection RC filter with a 3.0/0.2ms time constant.

A green LED indicates the switched status of each channel.

An optocoupler provides electrical isolation between the bus and the field side.

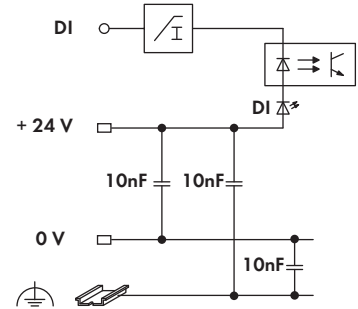
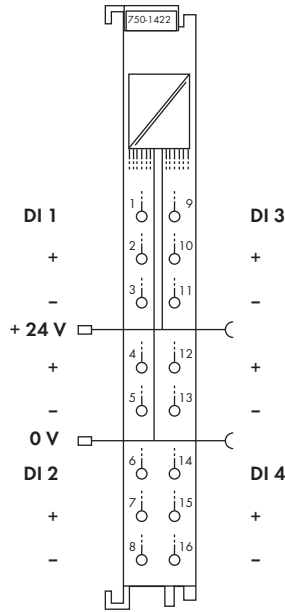
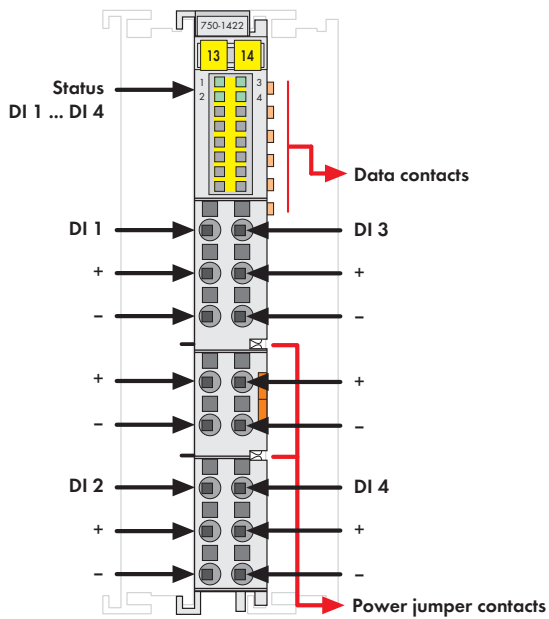
210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP®S.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms, 3-conductor	750-1420	1
4DI 24V DC 0.2ms, 3-conductor	750-1421	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Number of inputs	4
Current consumption (internal)	4 mA
Current consumption typ. (field side)	2 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC (Type 1/3)
Signal voltage (1)	+11 V ... +30 V DC (Type 3)
Input filter	3.0 ms (750-1420) 0.2 ms (750-1421)
Input current (typ.)	+1.6 mA (at -3 V ... +5 V DC) +4.3 mA ... +4.6 mA (at +11 V ... +32 V)
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

1 4-Channel Digital Input Module 24 V DC

Low-side switching, 3-conductor connection




The digital input module provides 4 channels in 3-wire connection at a width of just 12mm (0.47in).

It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).

CAGE CLAMP®S terminations provide direct insertion of solid conductors. Each input channel has a noise-rejection RC filter with a 3.0/0.2ms time constant.

A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP®S.

Description	Item No.	Pack. Unit
4DI 24V DC 3.0ms, low-side switching, 3-conductor	750-1422	1
4DI 24V DC 0.2ms, low-side switching, 3-conductor	750-1423	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Number of inputs	4
Current consumption (internal)	7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	($V_V - 5$ V DC) ... V_V
Signal voltage (1)	-3 V DC ... ($V_V - 15$ V)
Input filter	3.0 ms (750-1422) 0.2 ms (750-1423)
Input current (typ.)	-0.6 mA (at -3 V ... +5 V DC) -2.3 mA ... -2.7 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	50 g

8-Channel Digital Input Module 24 V DC

1-conductor connection; high-side switching

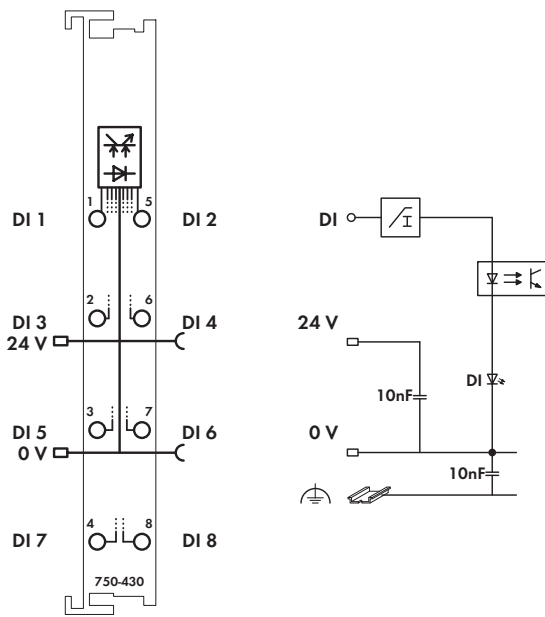
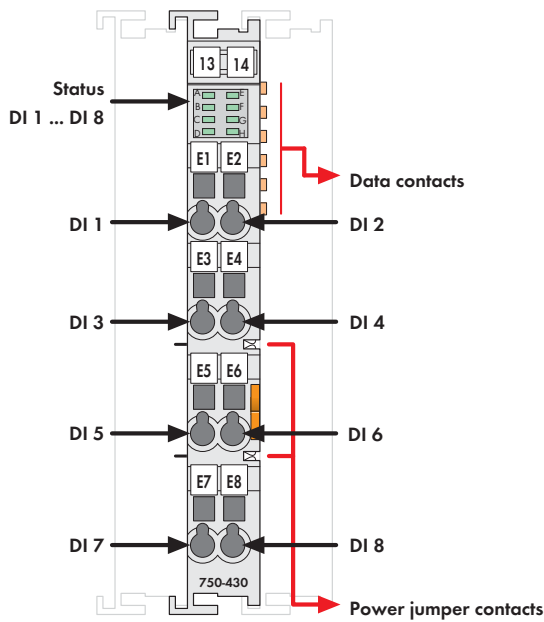










Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers. 750/753 Series marking see pages 10 ... 11 / 12 ... 13

NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital input modules provide 8 channels maintaining a width of only 12mm. They receive control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

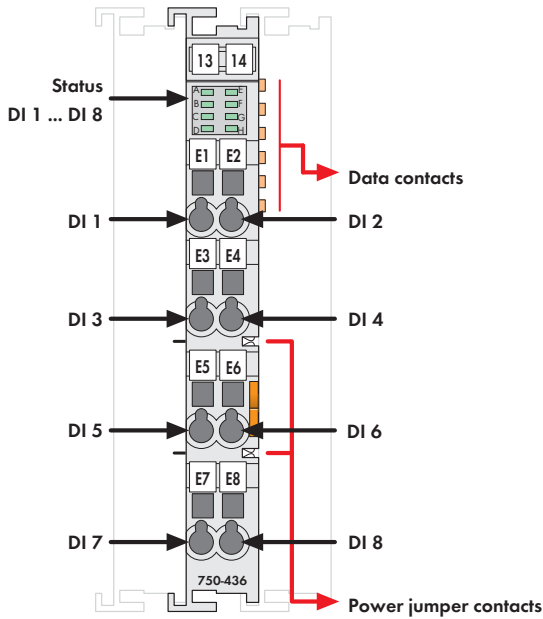
An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 24V DC, 3.0ms	750-430	1
8DI 24V DC, 3.0ms/T	750-430/025-000	1
[Operating temperature -20 °C ... +60 °C]		
8DI 24V DC, 0.2ms	750-431	1
8DI 24V DC, 3.0ms (without connector)	753-430	1
8DI 24V DC, 0.2ms (without connector)	753-431	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-430, -431
 IEC 60079-0, -15	BR-Ex nA II T4	750-430, -431
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-430, -431
EN 61241-0, -1		

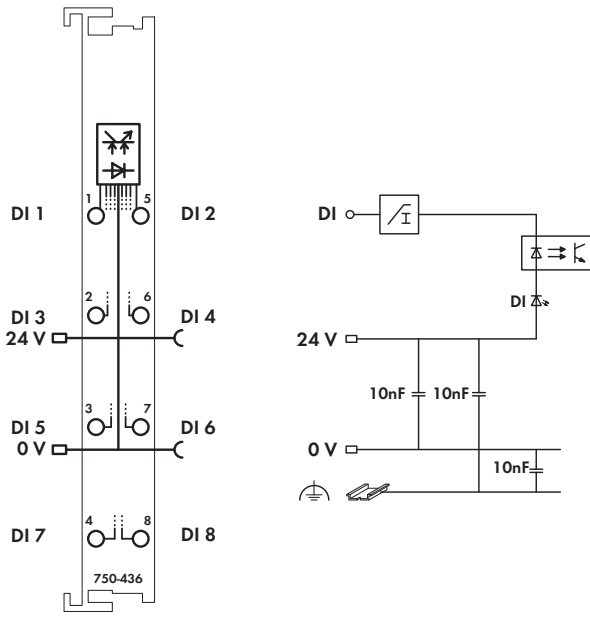
Technical Data	
Number of inputs	8
Current consumption (internal)	17 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-430 / 753-430) 0.2 ms (750-431 / 753-431)
Input current (typ.)	2.8 mA
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 8-Channel Digital Input Module 24 V DC

1-conductor connection; low-side switching



Delivered without miniature WSB markers











NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital input module provides 8 channels maintaining a width of only 12mm. It receives control signals from the digital field devices (sensors, etc.).

Each input module has a noise-rejection filter. This filter is available with different time constants.

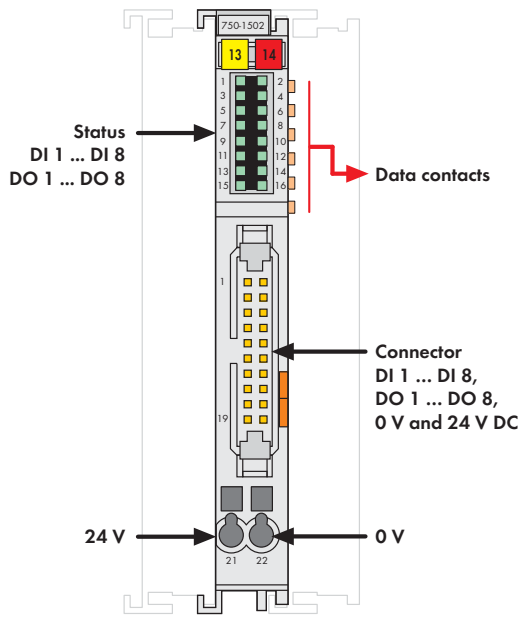
Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
8DI 24V DC 3.0ms	750-436	1
8DI 24V DC 0.2ms	750-437	1
8DI 24V DC 3.0ms (without connector)	753-436	1
8DI 24V DC 0.2ms (without connector)	753-437	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

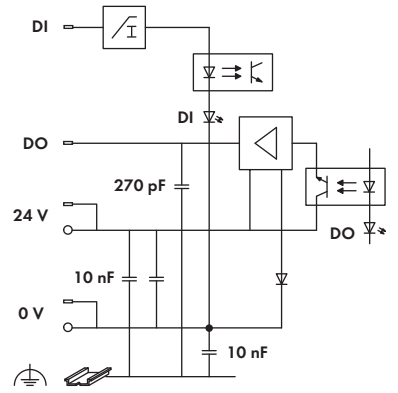
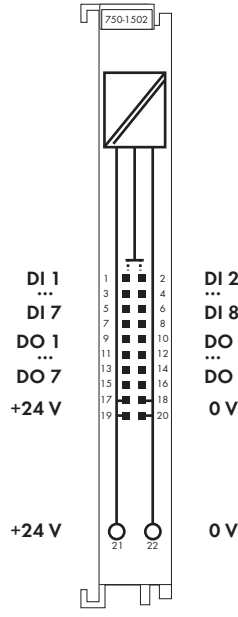
Technical Data	
Number of inputs	8
Max. current consumption (internal)	13 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	15 V ... 30 V DC
Signal voltage (1)	-3 V ... +5 V DC
Input filter	3.0 ms (750-436 / 753-436) 0.2 ms (750-437 / 753-437)
Input current (typ.)	2.8 mA
Isolation	500 V system/supply
Internal bit width	8 bits in
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Input/Output Module 24 V DC

Ribbon cable, high-side switching



Delivered without miniature WSB markers



The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in.).


It receives binary control signals from digital field devices and transmits them to the connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The module connects electronic modules via a 20-pole flat cable.

The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.

A green LED indicates the switched status of each channel.

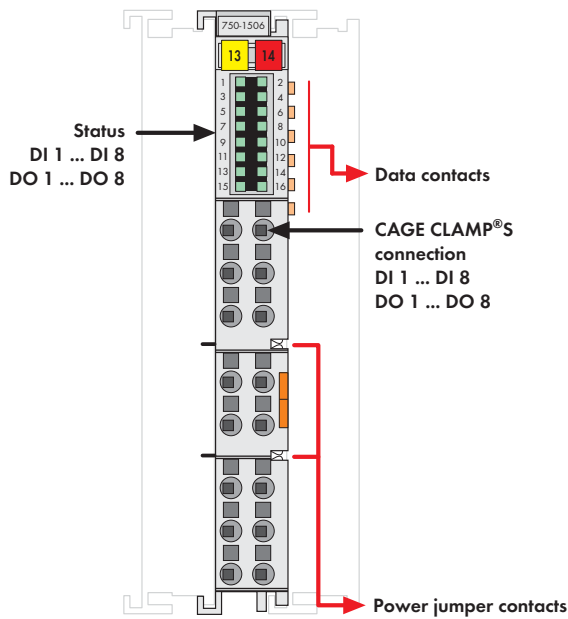
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A, ribbon cable	750-1502	1
Interference-free for use in safety functions (see manual)		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Cable and interface modules	see section 10	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

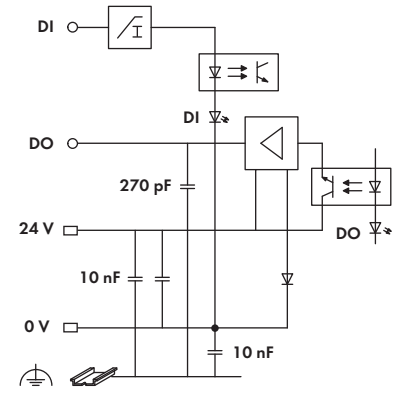
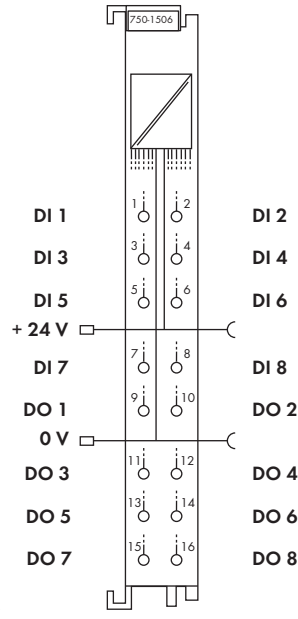
Technical Data	
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC) +2.2 mA ... +2.5 mA (at 15 V ... +32 V)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16mA
General Specifications	
Voltage supply	24 V DC (-25 % ... +30 %)
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	44 g

8-Channel Digital Input/Output Module 24 V DC

High-side switching



Delivered without miniature WSB markers




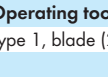
The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in.).

An optocoupler provides electrical isolation between the bus and the field side.

It receives binary control signals from digital field devices and transmits them to the connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The module has CAGE CLAMP®S connections enabling solid conductors to be inserted directly.

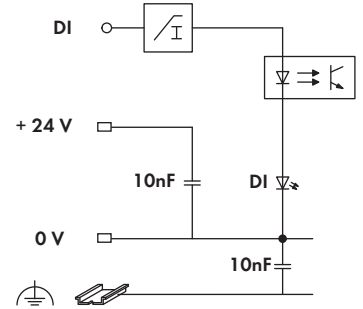
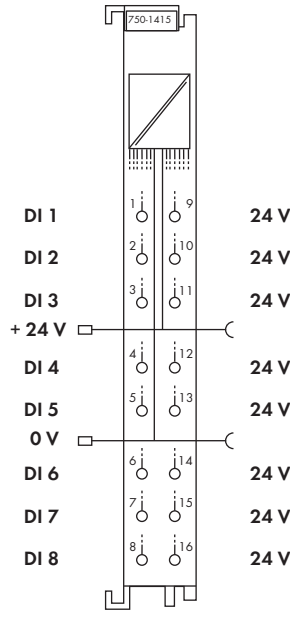
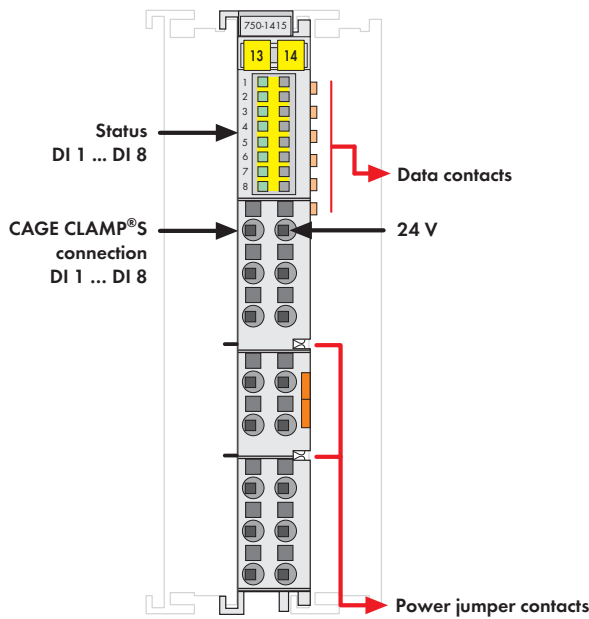
A green LED indicates the switched status of each channel.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A	750-1506	1
Interference-free for use in safety functions (see manual)		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508	UL 508	

Technical Data	
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC) +2.2 mA ... +2.5 mA (at 15 V ... +32 V)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16mA
General Specifications	
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
	fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g

8-Channel Digital Input Module 24 V DC

High-side switching, 2-conductor connection



The digital input module provides 8 channels in 2-wire connection at a width of just 12mm (0.47in).

It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches).


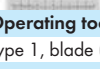
CAGE CLAMP®S terminations provide direct insertion of solid conductors.

Each input channel has a noise-rejection RC filter with a 3.0/0.2ms time constant.

A green LED indicates the switched status of each channel.

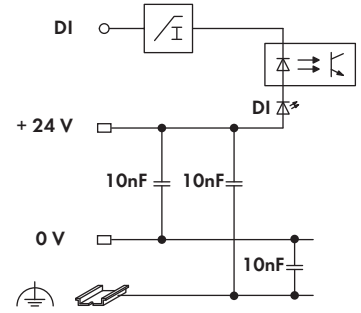
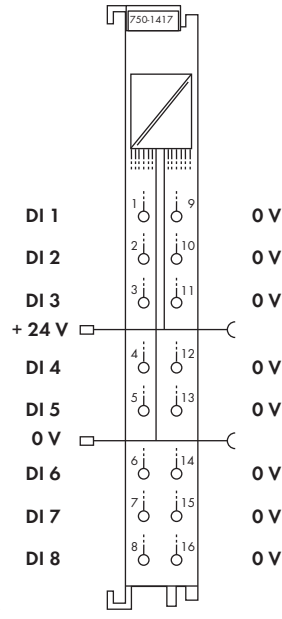
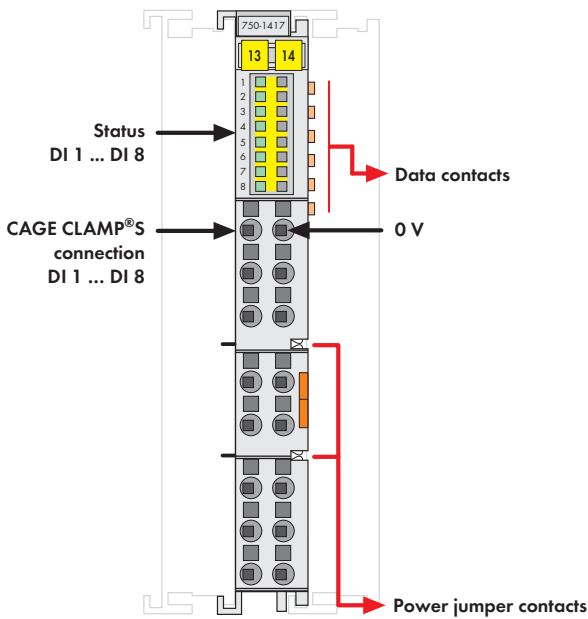
An optocoupler provides electrical isolation between the bus and the field side.

210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP®S.


Description	Item No.	Pack. Unit
8DI 24V DC 3.0ms, 2-conductor	750-1415	1
8DI 24V DC 0.2ms, 2-conductor	750-1416	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Number of inputs	8
Current consumption (internal)	6 mA
Current consumption typ. (field side)	2 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC (Type 1/3)
Signal voltage (1)	+11 V ... +30 V DC (Type 3)
Input filter	3.0 ms (750-1415) 0.2 ms (750-1416)
Input current (typ.)	+1.6 mA (at -3 V ... +5 V DC) +4.3 mA ... +4.6 mA (at +11 V ... +32 V)
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	45 g

1 8-Channel Digital Input Module 24 V DC
Low-side switching, 2-conductor connection



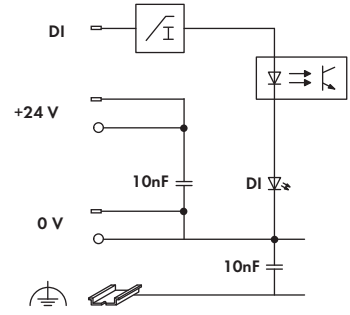
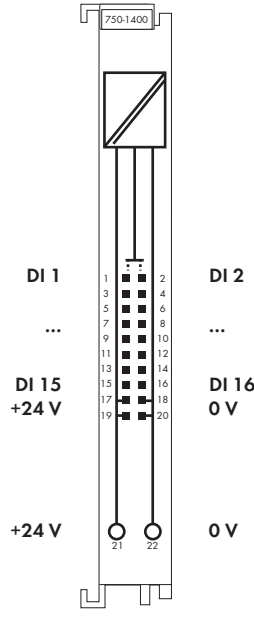
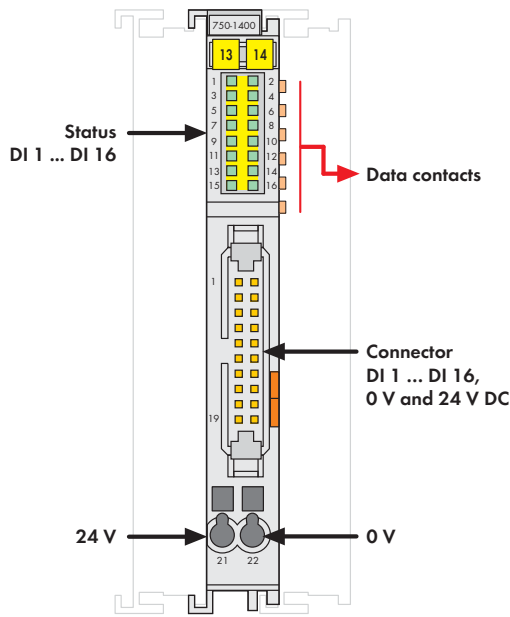
The digital input module provides 8 channels in 2-wire connection at a width of just 12 mm (0.47 in). It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches). CAGE CLAMP®S terminations provide direct insertion of solid conductors. Each input channel has a noise-rejection RC filter with a 3.0/0.2 ms time constant. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side. 210-719 operating tool (2.5 mm blade) is required to open the CAGE CLAMP®S.

Description	Item No.	Pack. Unit
8DI 24V DC 3.0ms, low-side switching, 2-conductor	750-1417	1
8DI 24V DC 0.2ms, low-side switching, 2-conductor	750-1418	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Number of inputs	8
Current consumption (internal)	12 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	(V _V - 5 V DC) ... V _V
Signal voltage (1)	-3 V DC ... (V _V - 15 V)
Input filter	3.0 ms (750-1417) 0.2 ms (750-1418)
Input current (typ.)	-0.6 mA (at -3 V ... +5 V DC) -2.3 mA ... -2.7 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	45 g


16-Channel Digital Input Module 24 V DC

Ribbon cable, high-side switching



Delivered without miniature WSB markers

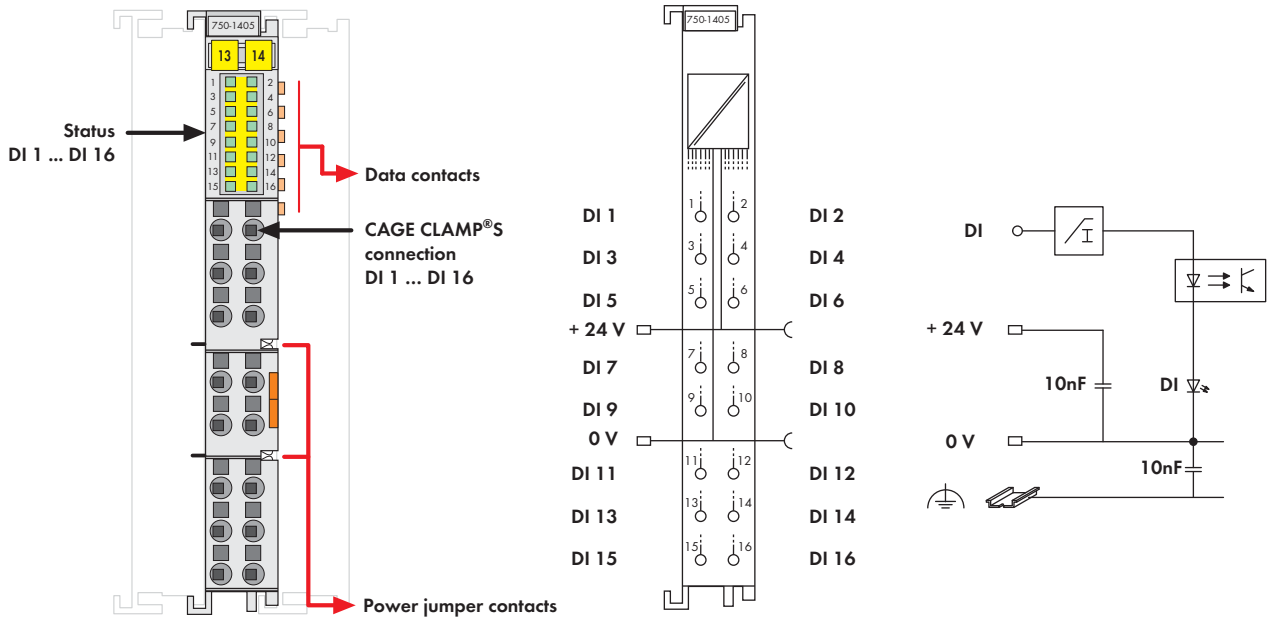
The digital input module provides 16 channels at a width of just 12mm (0.47in). It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches). The 750-1400 connects to electronic modules via 20-pole ribbon cable. The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals. Each input channel has a noise-rejection RC filter with a 3.0ms time constant. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24V DC 3.0ms, ribbon cable	750-1400	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Cable and interface modules	see section 10	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Number of inputs	16
Current consumption (internal)	25 mA
Voltage supply	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC) +2.2 mA ... +2.5 mA (at 15 V ... +32 V)
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	42.6 g


16-Channel Digital Input Module 24 V DC

High-side switching



Delivered without miniature WSB markers

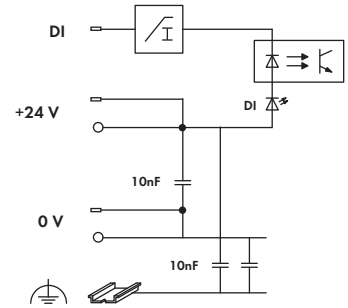
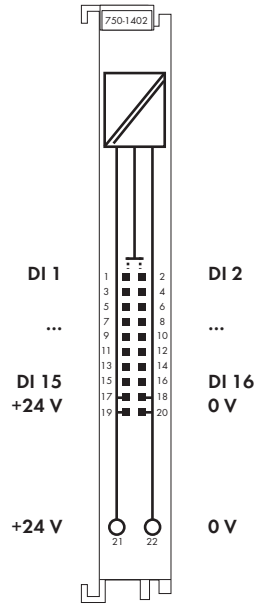
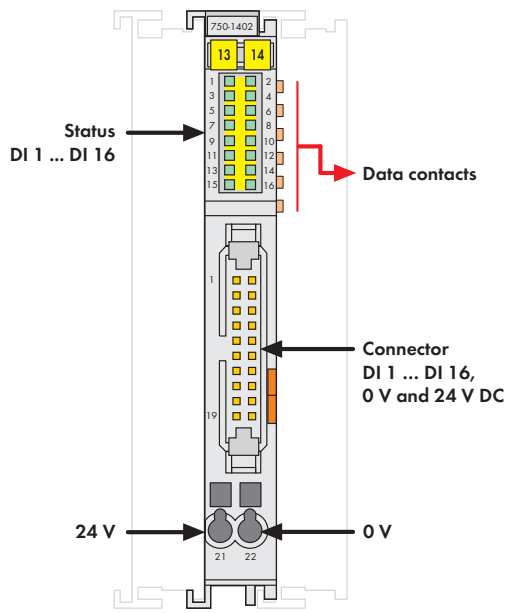
The digital input module provides 16 channels at a width of just 12mm (0.47in). It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches). CAGE CLAMP®S terminations provide direct insertion of solid conductors. Each input channel has a noise-rejection RC filter with a 3.0/0.2ms time constant. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24V DC 3.0ms	750-1405	1
16DI 24V DC 0.2ms	750-1406	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS*, DNV*, GL, KR*	
	*750-1406, pending	
UL 508		

Technical Data	
Number of inputs	16
Current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms (750-1405) 0.2 ms (750-1406)
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC) +2.1 mA ... +2.4 mA (at 15 V ... +32 V)
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g


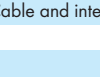
16-Channel Digital Input Module 24 V DC

Ribbon cable, low-side switching



Delivered without miniature WSB markers

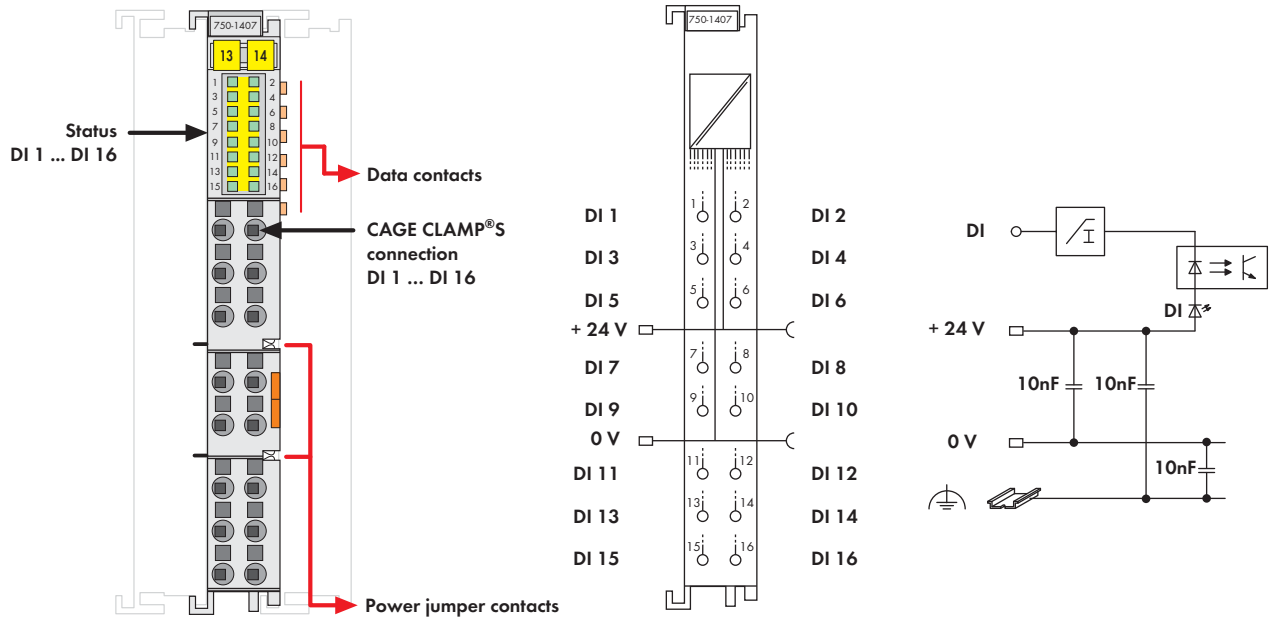
The digital input module provides 16 channels at a width of just 12mm (0.47in). It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches). The 750-1402 connects to electronic modules via 20-pole ribbon cable. The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals. Each input channel has a noise-rejection RC filter with a 3.0ms time constant. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24V DC 3.0ms, ribbon cable, low-side switching	750-1402	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Cable and interface modules	see section 10	
Approvals		
Conformity marking	Also see "Approvals Overview" in Section 1	
Shipbuilding	CE	
UL 508	ABS, DNV, GL, KR	

Technical Data	
Number of inputs	16
Current consumption (internal)	25 mA
Voltage supply	24 V DC (-25 % ... +30 %)
Signal voltage (0)	(V _V - 5 V DC) ... V _V
Signal voltage (1)	-3 V DC ... (V _V - 15 V)
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC)
	+2.2 mA ... +2.5 mA (at 15 V ... +32 V)
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	41.5 g


16-Channel Digital Input Module 24 V DC

Low-side switching



Delivered without miniature WSB markers

The digital input module provides 16 channels at a width of just 12mm (0.47in). It receives binary control signals from digital field devices (e.g., sensors, encoders, switches or proximity switches). CAGE CLAMP®S terminations provide direct insertion of solid conductors. Each input channel has a noise-rejection RC filter with a 3.0ms time constant. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DI 24V DC 3.0ms, low-side switching	750-1407	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Number of inputs	16
Current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal voltage (0)	($V_V - 5$ V DC) ... V_V
Signal voltage (1)	-3 V DC ... ($V_V - 15$ V)
Input filter	3.0 ms
Input current (typ.)	-0.6 mA (at -3 V ... +5 V DC) -2.1 mA ... -2.4 mA (at 15 V ... +32 V DC)
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g

4-Channel Digital Input Module 24 V AC/DC

2-conductor connection

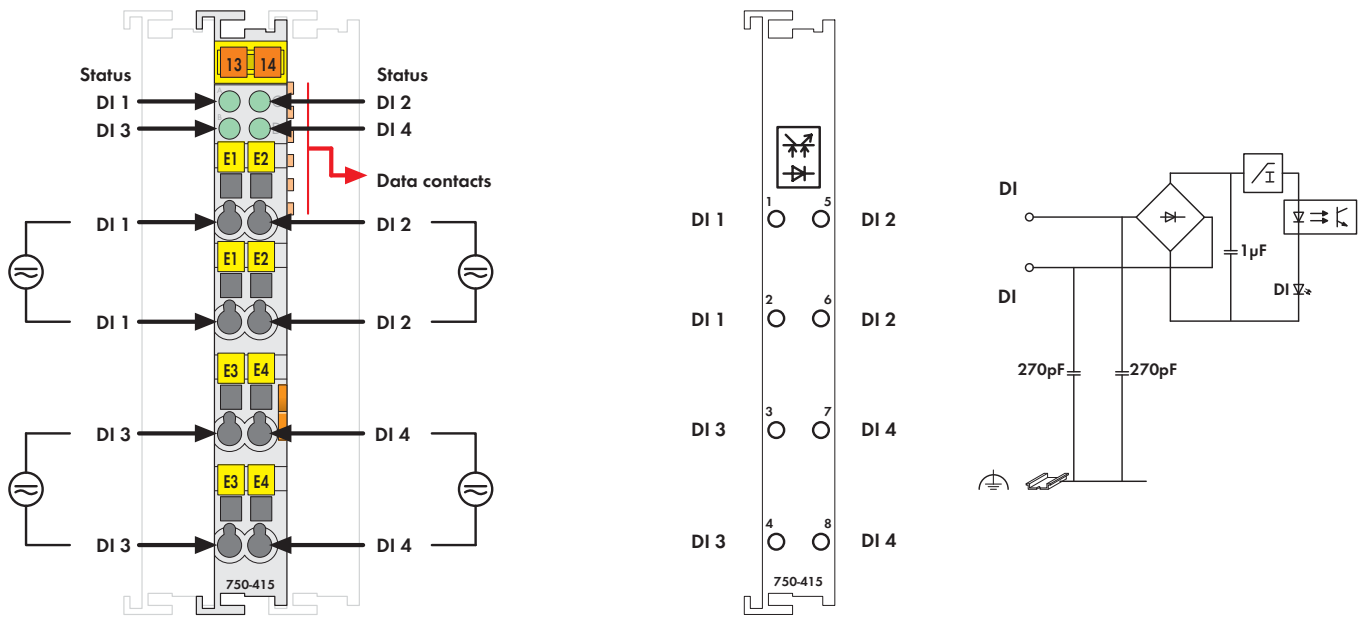


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




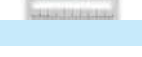
The digital input module receives control signals from digital field devices (sensors, etc.).

For AC/DC operation, the inputs have a bridge rectifier, a capacitor and a current limitation.

Each input has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

All inputs are isolated.

Description	Item No.	Pack. Unit
4DI 24V AC/DC 20ms	750-415	1
4DI 24V AC/DC 20ms (without connector)	753-415	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508	UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1	EN 61241-0, -1	

Technical Data	
Number of inputs	4
Current consumption (internal)	10 mA
Signal voltage (0)	-3 V ... +5 V DC; 0 V .. 5 V AC
Signal voltage (1)	11 V ... 30 V DC; 10 V .. 27 V AC
Input filter	20 ms
Input current (typ.)	7.5 mA DC; 9.5 mA AC
Isolation	500 V system/supply ; 50 V channel/channel
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 24 V AC/DC

2- to 3-conductor connection; with power jumper contacts

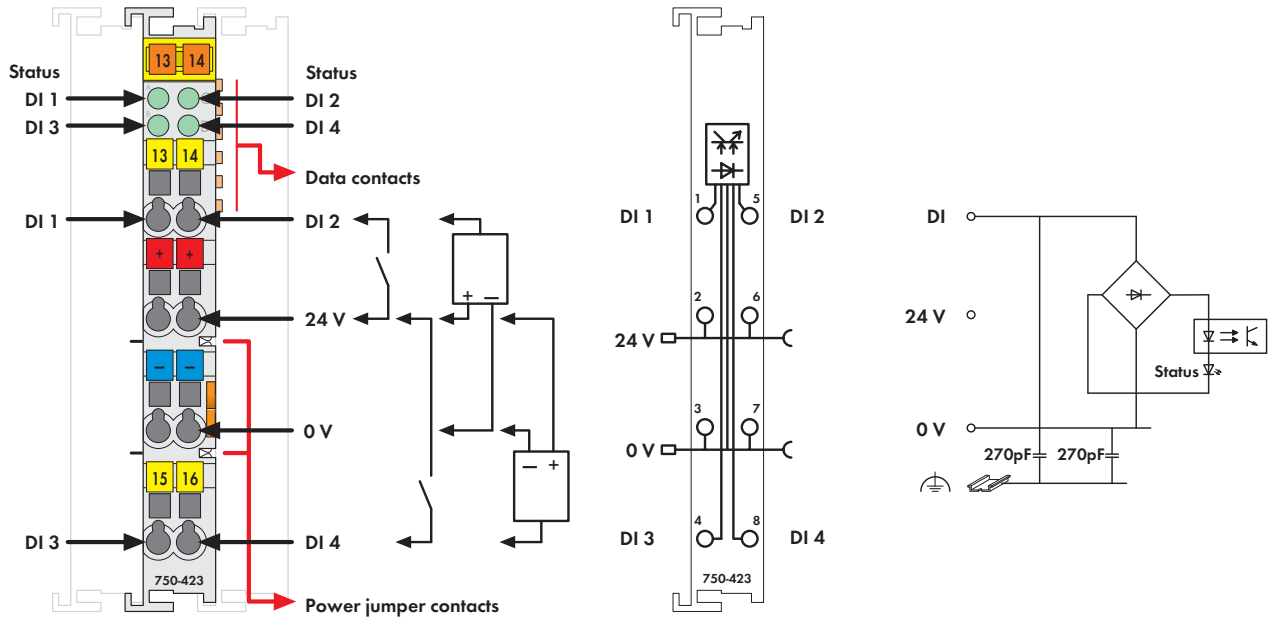


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13





The digital input module receives control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:

An additional supply module must be added for operation with 24VAC.

Description	Item No.	Pack. Unit
4DI 24V AC/DC, 50ms, power contacts	750-423	1
4DI 24V AC/DC, 50ms, power contacts (without connector)	753-423	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR, PRS*, RINA* *753 Series, pending	
UL 508	-	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1	-	

Technical Data	
Number of inputs	4
Current consumption (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC; 0 V .. 5 V AC
Signal voltage (1)	11 V ... 30 V DC; 10 V .. 27 V AC
Input filter	50 ms
Input current (typ.)	7.5 mA DC; 9.5 mA AC
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	65 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 42 V AC/DC

2-conductor connection

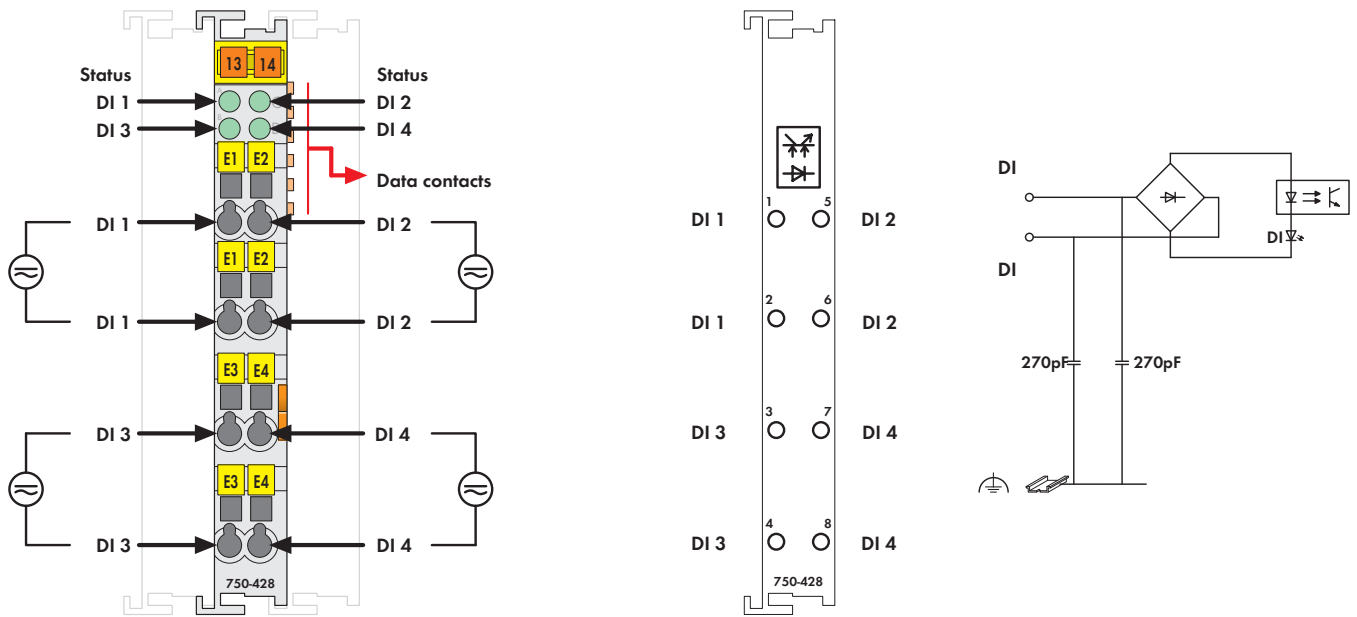





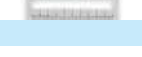
Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input module receives control signals from digital field devices (sensors, etc.).

Each input module has a noise-rejection filter with a time constant.

An optocoupler is used for electrical isolation between the bus and the field side.

All inputs are isolated.

Description	Item No.	Pack. Unit
4DI 42V AC/DC 20ms	750-428	1
4DI 42V AC/DC 20ms (without connector)	753-428	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	4
Current consumption (internal)	5 mA
Signal voltage (0)	-3 V ... +10 V DC; 0 V ... 10 V AC
Signal voltage (1)	30 V ... 53 V DC; 30 V ... 53 V AC
Input filter	20 ms
Input current (typ.)	3.6 mA DC; 6.0 mA AC
Isolation	500 V AC system/supply; 500 V AC channel/channel
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 2-Channel Digital Input Module 48 V DC

2- to 4-conductor connection; high-side switching

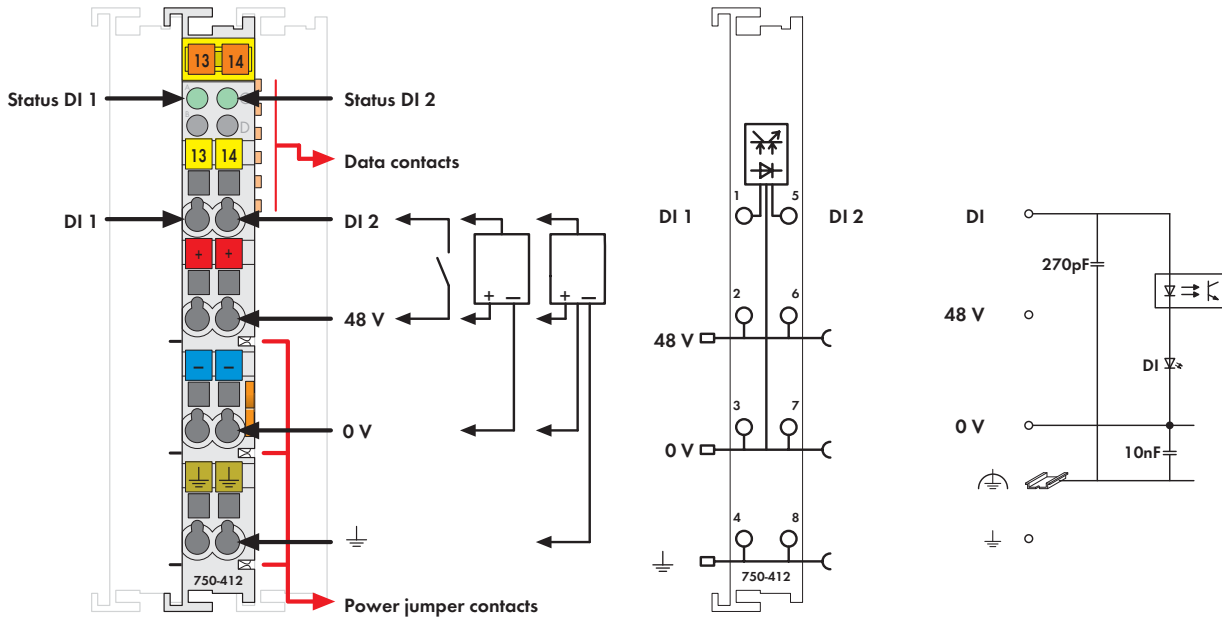


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




The digital input module receives control signals from digital field devices (sensors, etc.).

Notice:
An additional supply module must be added for operation with 48VDC.

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter with a time constant.

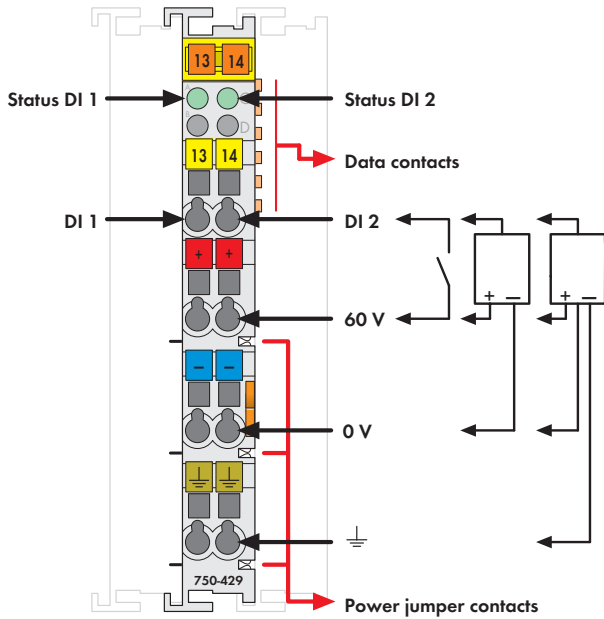
An optocoupler is used for electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
2DI 48V DC 3.0ms	750-412	1
2DI 48V DC 3.0ms without power jumper contacts	750-412/000-001	1
2DI 48V DC 3.0ms (without connector)	753-412	1
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

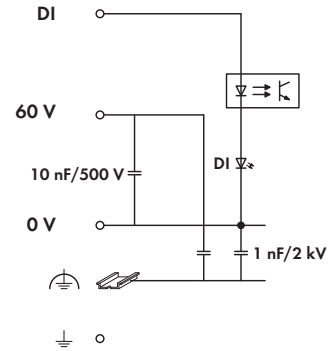
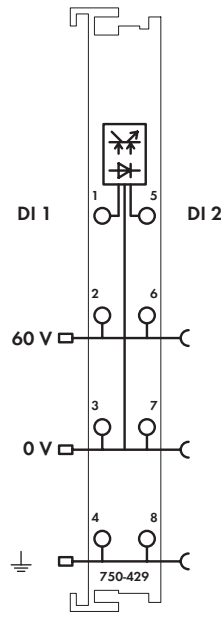
Technical Data	
Number of inputs	2
Current consumption (internal)	2.5 mA
Voltage via power jumper contacts	48 V DC (-1.5 % ... +20 %)
Signal voltage (0)	-6 V ... +10 V DC
Signal voltage (1)	3.4 V ... 60 V DC
Input filter	3.0 ms
Input current (typ.)	3.8 mA
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	46.5 g
EMC: CE - immunity to interference	acc. to EN 50082-2 (1996)
EMC: CE - emission of interference	acc. to EN 50081-1 (1993)

2-Channel Digital Input Module 60 V DC

2- to 4-conductor connection; high-side switching



Delivered without miniature WSB markers



The digital input module receives control signals from digital field devices (sensors, etc.).




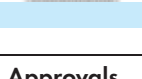
The module is a 2-channel, 4-conductor device; sensors with a ground (earth) wire may be directly connected to the module.

Each input module has a noise-rejection filter with a time constant.

Field and system levels are electrically isolated.

NOTICE:

An additional supply module (750-612) must be added for operation with 60VDC.

Description	Item No.	Pack. Unit
2DI 60V DC 3.0ms (without connector)	753-429	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		

Technical Data	
Number of inputs	2
Max. current consumption (internal)	2.5 mA
Voltage via power jumper contacts	60 V DC (-20 % ... +25 %)
Signal voltage (0)	-7.5 V ... +12 V DC
Signal voltage (1)	44 V ... 75 V DC
Input filter	3.0 ms
Input current (typ.)	2.9 ms
Isolation	500 V system/field
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2006)

2-Channel Digital Input Module 110 V DC

Configurable high-side or low-side switching

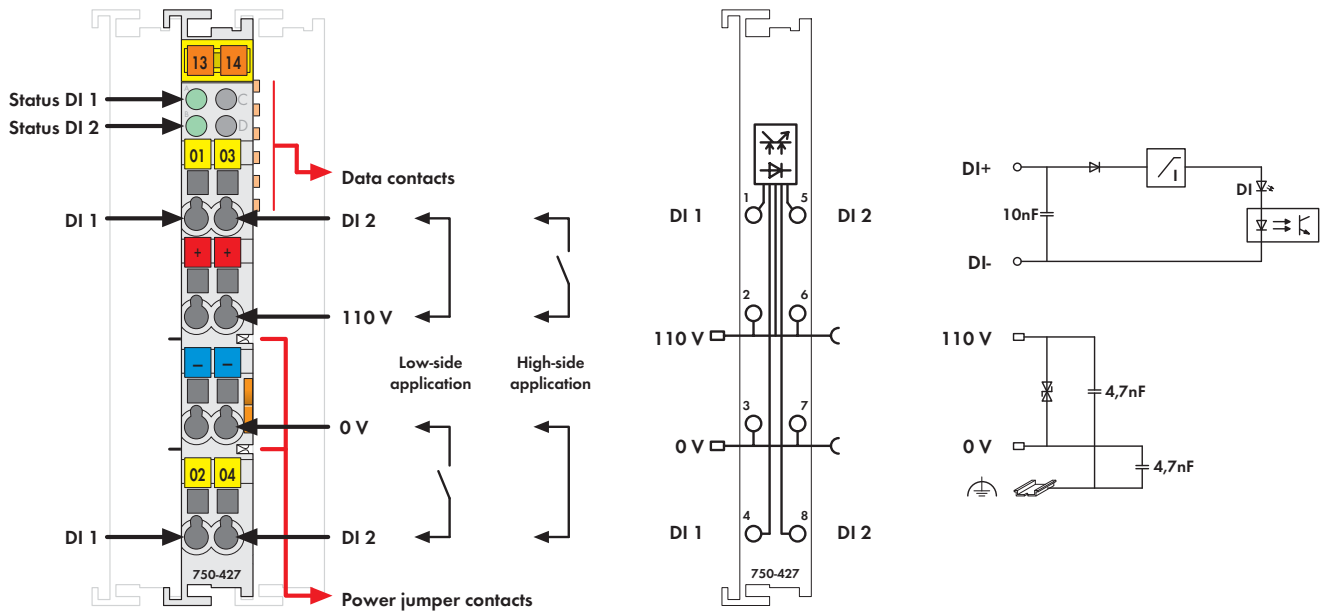






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel device. Each channel can function as a low-side switch or high-side switch input. The type of input depends on the external wiring.

An optocoupler is used for electrical isolation between the bus and the field side.

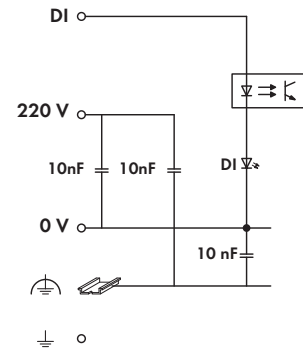
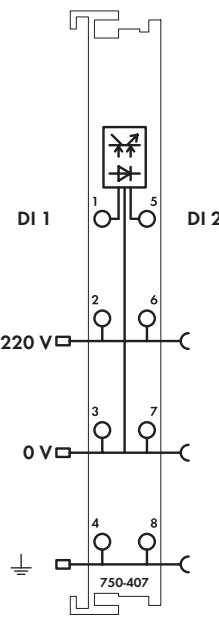
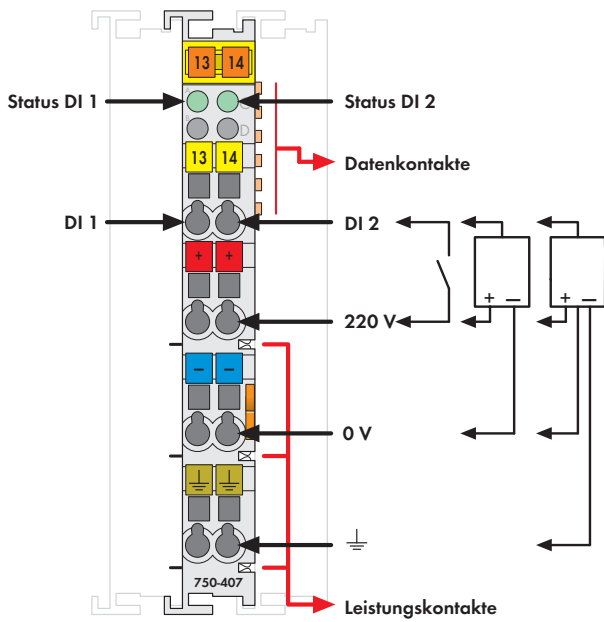
Notice:
An additional supply module must be added for operation with 110VDC.

Description	Item No.	Pack. Unit
2DI 110V DC	750-427	1
2DI 110V DC (without connector)	753-427	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Current consumption (internal)	2.5 mA
Voltage via power jumper contacts	110 V DC (-20 % ... +25 %)
Signal voltage (0)	< 50V
Signal voltage (1)	> 70V
Input filter	3.0 ms
Input current (typ.)	2.5 mA
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	47.2 g
EMC: CE - immunity to interference	acc. to EN 50082-2 (1996)
EMC: CE - emission of interference	acc. to EN 50081-1 (1993)

2-Channel Digital Input Module 220 V DC

2- to 4-conductor connection; high-side switching




Delivered without miniature WSB markers

The digital input module receives control signals from digital field devices (e.g., sensors).

The module is a 4-conductor device allowing direct connection of sensors with ground wire.

Each input module has a 3.0 ms noise-rejection filter.

An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
2DI 220V DC 3.0ms	750-407	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		

Technical Data	
Number of inputs	2
Current consumption (internal)	5 mA
Voltage via power jumper contacts	220 V DC (-20 % ... +25 %)
Signal voltage (0)	-3 V ... +100 V DC
Signal voltage (1)	160 V ... 286 V DC
Input filter	3.0 ms
Input current (typ.)	1.2 mA at 220 V
Isolation	2.5 kV system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2007)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

2-Channel Digital Input Module 120 V AC

2- to 4-conductor connection; high-side switching

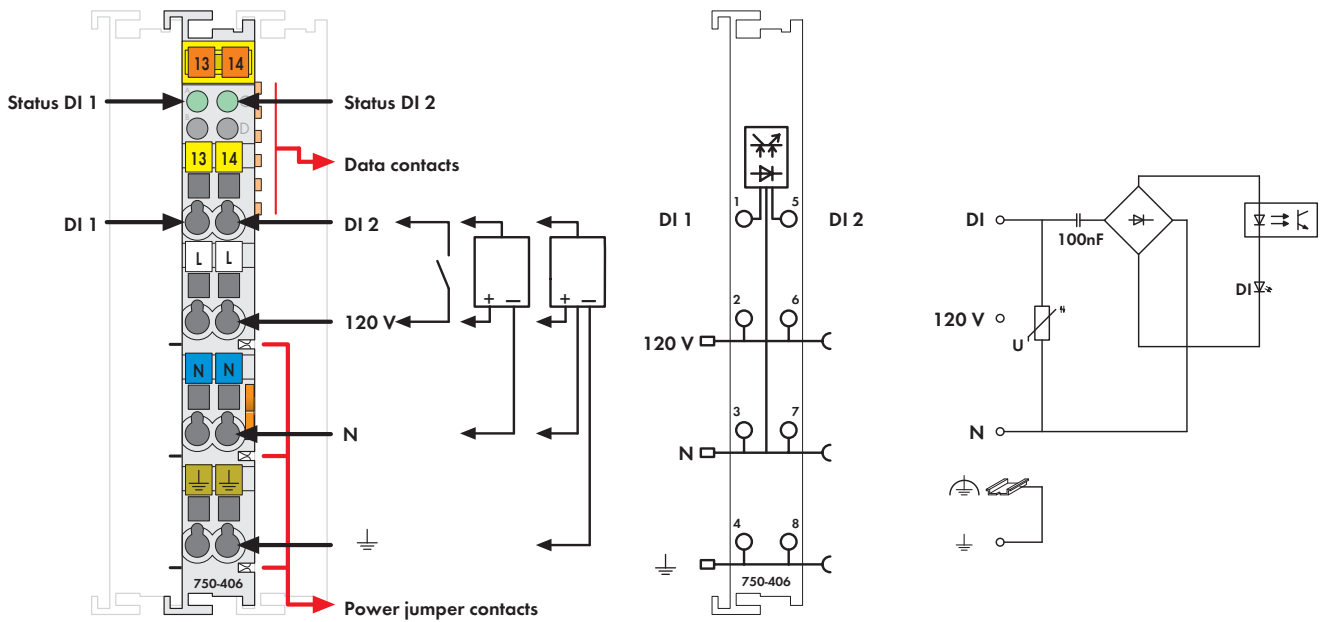


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13









The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:

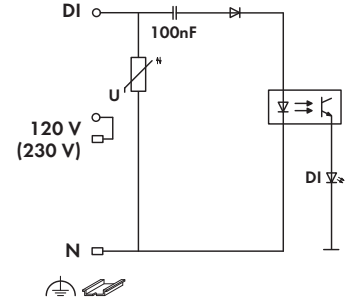
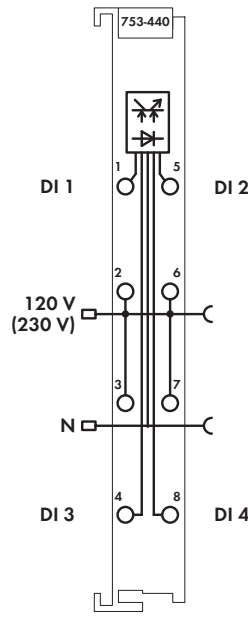
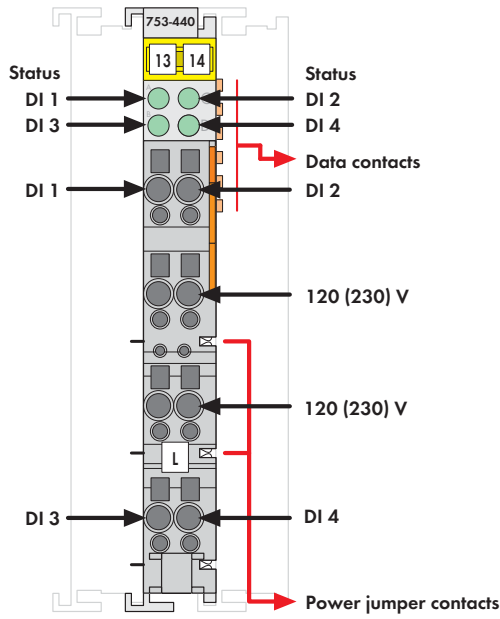
An additional supply module must be added for operation with 120VAC.

Description	Item No.	Pack. Unit
2DI 120V AC	750-406	10 ¹⁾
2DI 120V AC (without connector)	753-406	1
1) Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
	UL 508	
	ANSI/ISA 12.12.01 Class I, Div. 2, Grp. ABCD, T4	
	EN 60079-0, -15 I M2 / II 3 GD Ex nA IIC T4	
	EN 61241-0, -1	

Technical Data	
Number of inputs	2
Current consumption (internal)	2 mA
Voltage via power jumper contacts	230 V AC (-15 % ... +20 %); (± 20 % 1.5 s)
Signal voltage (0)	0 V ... 20 V AC
Signal voltage (1)	79 V AC ... 1.1 V _N
Input filter	10 ms
Input current (typ.)	4.5 mA
Input frequency	f (nominal) ± 10 % 50 Hz ± 10 % 60 Hz ± 10 %
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	37.1 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Input Module 120 (230) V AC

2-conductor connection; high-side switching



Delivered without miniature WSB markers





The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 4-channel, 2-conductor device and four sensors may be directly connected to the module.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:

An additional supply module must be added for operation with 120 (230)VAC.

Description	Item No.	Pack. Unit
4DI 120 (230)V AC 10ms (without connector)	753-440	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	4
Current consumption (internal)	15 mA
Voltage via power jumper contacts	90 V ... 230 V AC (-15 % ... +10 %)
Signal voltage (0)	0 V ... 40 V AC
Signal voltage (1)	79 V ... 230 V AC (-15 % ... +10 %)
Input filter	10 ms
Overvoltage protection	AC 275 V varistor
Input current (typ.)	2.3 mA at 120 V; 4.7 mA at 230 V
Input frequency	f (nominal) ± 10 %; 50 Hz ± 10 % at 230 V; 60 Hz ± 10 % at 120 V
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	61 g
EMC: CE - immunity to interference	acc. to EN 61131-2 (2003)
EMC: CE - emission of interference	acc. to EN 61131-2 (2003)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module 230 V AC

2- to 4-conductor connection; high-side switching

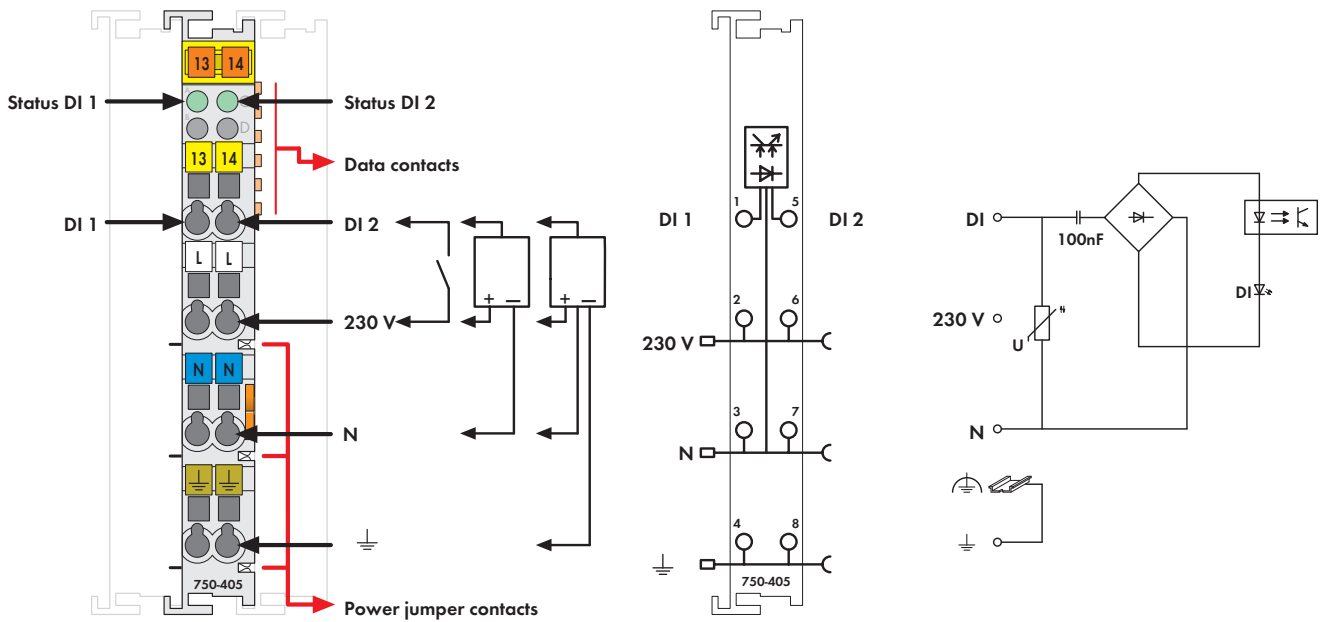


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13





The digital input module receives control signals from digital field devices (sensors, etc.).

The module is a 2-channel, 4-conductor device and sensors with a ground (earth) wire may be directly connected to the module.

An optocoupler is used for electrical isolation between the bus and the field side.

Notice:

An additional supply module must be added for operation with 230VAC.

Description	Item No.	Pack. Unit
2DI 230V AC	750-405	10
2DI 230V AC (without connector)	753-405	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA*	
	*753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Current consumption (internal)	2 mA
Voltage via power jumper contacts	230 V AC (-15 % ... +20 %); (± 20 % 1.5 s)
Signal voltage (0)	0 V ... 40 V AC
Signal voltage (1)	164 V AC ... 1.1 V _N
Input filter	10 ms
Input current (typ.)	6.5 mA
Input frequency	f (nominal) ± 10 % 50 Hz ± 10 % 60 Hz ± 10 %
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Input Module NAMUR

Proximity switch acc. to DIN EN 50227

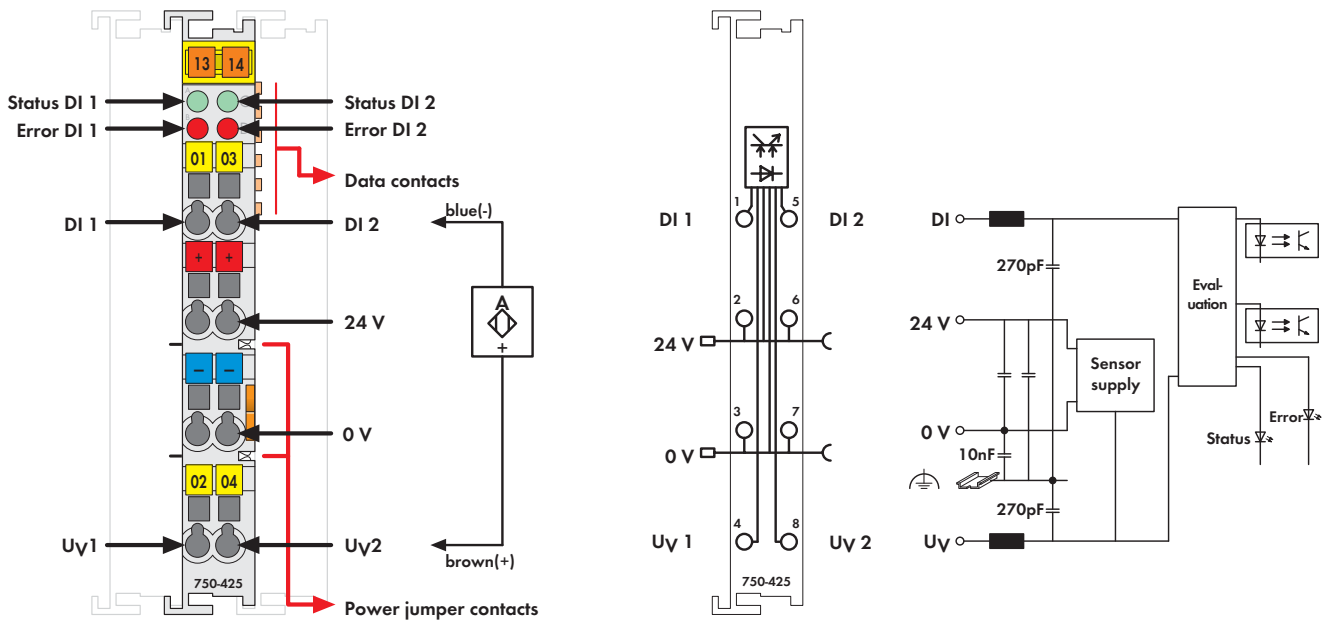


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13



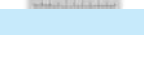

The digital input module receives control signals from NAMUR proximity sensors (acc. to DIN 19234 and DIN 50227) from the field side.

The voltage supply of each channel of the sensors is delivered by a short circuit proof 8.2 V voltage source. A short circuit or a line break is indicated in the process image (1 bit) and via the red LED.

The green LED indicates the input status:

- Signal current (0) LED off
- Signal current (1) LED on

Field and system level are electrically isolated.

Description	Item No.	Pack. Unit
2DI NAMUR	750-425	1
2DI NAMUR (without connector)	753-425	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	5 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Input filter	3.0 ms
Switching hysteresis	0.2 mA
Open-circuit voltage	DC 8.2 V
Input resistance	1 kΩ
Input pulse duration	≥ 5 ms
Input pulse separation	≥ 3 ms
Short-circuit current	≤ 8.2 mA
Short circuit monitoring	> 6.5 mA
Line break monitoring	< 0.2 mA
Sensor supply V_V	DC 8.2 V
Isolation	500 V system/supply
Internal bit width	4 bits in, 2 bits data, 2 bits error (short circuit/line break)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Intruder Detection

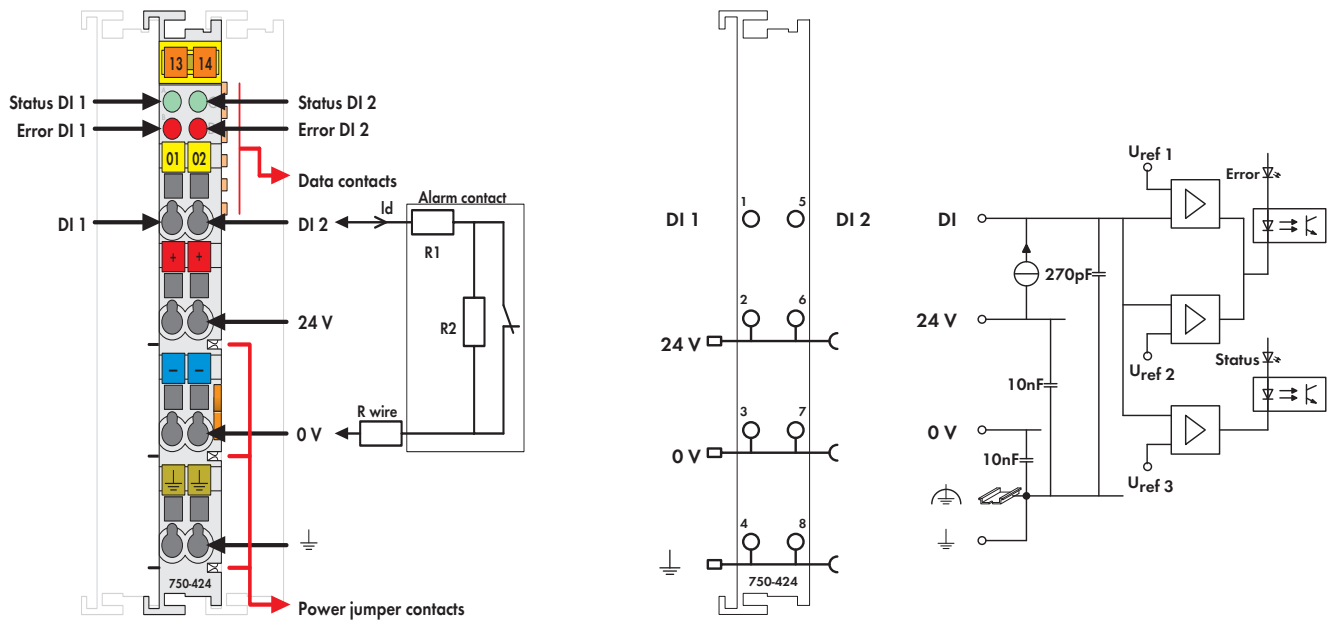











Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

This input module incorporates a current loop which makes it possible to monitor alarm contacts with a fixed resistance ratio (R1, R2), for intruder detection.

The module indicates the current status of the contact via LEDs and via status bits in the process image.

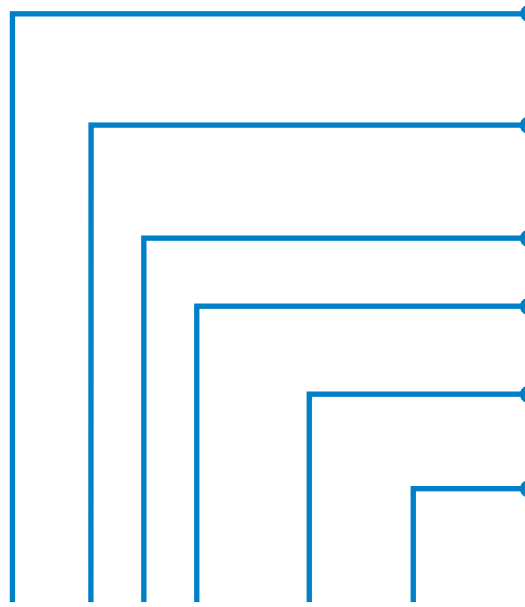
Description	Item No.	Pack. Unit
2DI 24V DC Intruder Detection	750-424	1
2DI 24V DC Intruder Detection (without connector)	753-424	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 IEC 60079-0, -15	BR-Ex nA II T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	6 mA
Current consumption max. (field side)	16 mA / 24 V DC
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Loop current typ. (I _d)	1 mA
R1	1.5 kΩ (± 5 %)
R2	2.2 kΩ (± 5 %)
R wire (max.)	200 Ω
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	36 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Digital Output Modules

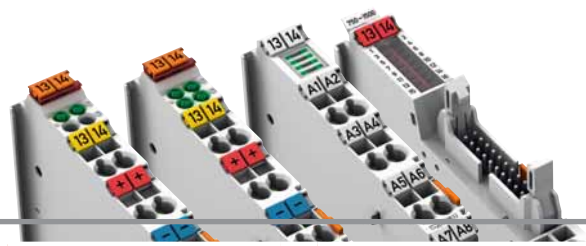


- **2-Channel Relay Output Modules**
- 0 ... 230 V AC/DC
- 2 make contacts/2 changeover contacts, isolated outputs/non-floating
- **2-Channel Digital Output Modules**
- 24 VDC
- 0.5 A/2 A, diagnostics (broken wire/short circuit)
- 230 VAC, SSR, 3.0 A, diagnostics
- **2-Channel Digital Specialty Modules**
- Pulse width (PWM) output module
- **4-Channel Digital Output Modules**
- 24 VDC, 0.5 A, 0 ... 230 VAC, 0.25 A
- NPN/PNP, diagnostics
- **8-Channel Digital Output Modules**
- 5 ... 14 VDC, 1 A, 24 VDC, 0.5 A
- NPN/PNP, diagnostics
- **16-Channel Digital Output Modules**
- CAGE CLAMP®S, 24 VDC, 0.5 A
- Ribbon cable, 24 VDC, 0.5 A



Modular I/O System Overview

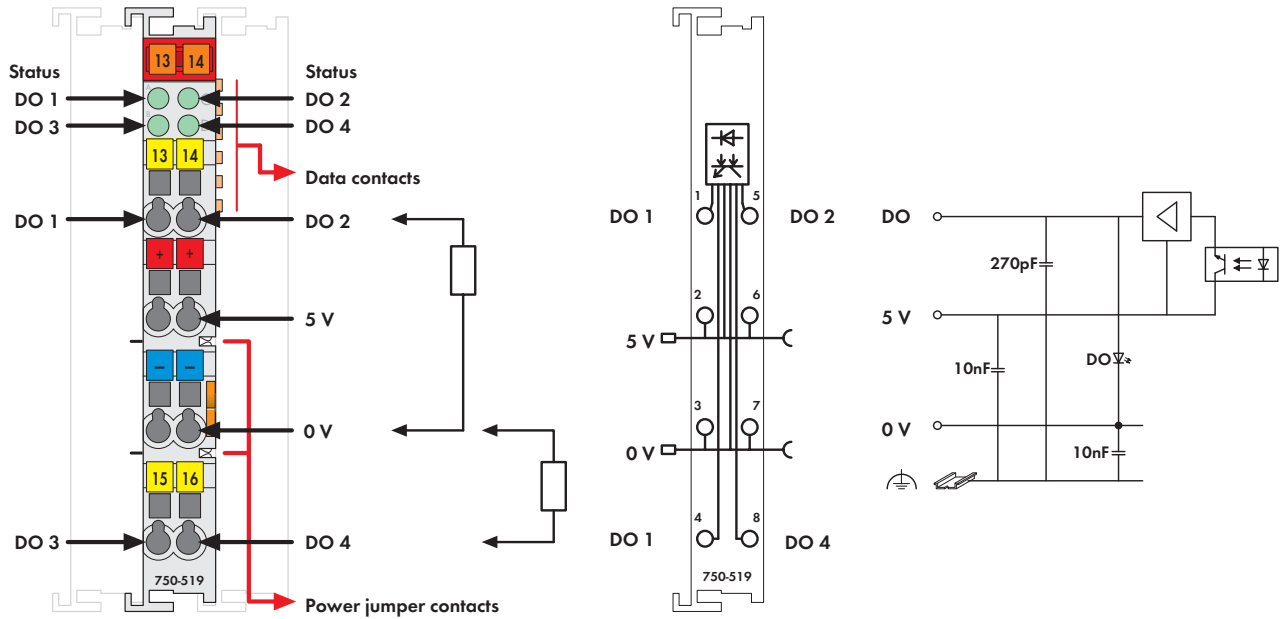
Digital Outputs



Function	2-Channel Digital Output	Page	4-Channel Digital Output	Page	8-Channel Digital Output	Page	16-Channel Digital Output	Page
5 VDC			750-519 Highside switch.	196				
5/12 VDC					753-534 (5 ... 14 VDC) 1 A, short-circuit protec., high-side switch.	197		
24 VDC	750-501 / 753-501 0.5 A, short-circuit protec., high-side switch.	198	750-504 / 753-504 0.5 A, short-circuit protec., highside switch.	202	750-530 / 753-530 0.5 A, short-circuit protec., high-side switch.	206	750-1500 0.5 A, high-side switch., ribbon cable	213
	750-502 / 753-502 2.0 A, short-circuit protec., high-side switch.	199	750-531 / 753-531 (2-conductor) 0.5 A, short-circuit protec., highside switch.	203	750-536 / 753-536 0.5 A, short-circuit protec., low-side switch.	207	750-1504 0.5 A, high-side switch.	214
	750-506 / 753-506 0.5 A with diagnos- tics, short-circuit protec., high-side switch.	200	750-516 / 753-516 Short-circuit protec., lowside switch.	204	750-537 0.5 A with diagnostics short- circuit protec., high-side switch.	208	750-1501 0.5 A, low-side switch., ribbon cable	215
	750-508 / 753-508 2.0 A with diagnos- tics, short-circuit protec., high-side switch.	201	750-532 / 753-532 (2-conductor) 0.5 A with diagnostics, short-circuit protec., highside switch.	205	750-1515 0.5 A, high-side switch.	211	750-1505 0.5 A, low-side switch.	216
					750-1516 0.5 A, low-side switch.	212		
					8-Channel Digital Input/Output			
					750-1502 0.5 A, high-side switch., ribbon cable	209		
					750-1506 0.5 A, high-side switch.	210		
120/230 VAC			753-540 (120 ... 230 VAC) 0.25 A, high-side switch.	217				
230 V AC/DC	750-509 / 753-509 0.3 A, solid state relay	218						
230 VAC	750-522 0.5 A, solid state relay (3 A < 30 ms)	219						
Relay Modules	750-514 / 753-514 (2 changeover contacts) potential free, 125 VAC, 0.5 A	220						
	750-517 / 753-517 (2 changeover contacts) potential free, 230 VAC, 1 A	221						
	750-512 / 753-512 (2 make contacts) non-floating, 230 VAC, 2 A	222						
	750-513 / 753-513 (2 make contacts) potential free, 230 VAC, 2 A	223						
	1-Channel Digital Output							
	750-523 (Relay with manual operation) potential free, 1 make contact, 230 VAC, 16 A	224						
Functional Safety			see pages 296 ... 303					
Ex i Modules			see pages 304 ... 325					

4-Channel Digital Output Module 5 V DC

Short-circuit protected; high-side switching



Delivered without miniature WSB markers


Control signals are transmitted from the automation device to connected actuators via the digital output module.

All outputs are electronically short-circuit-protected.

Field and system levels are electrically isolated.

Notice:

An additional supply module must be added for operation with 5VDC!

Description	Item No.	Pack. Unit
4DO 5V DC 20mA	750-519	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 50021	II 3 GD EEx nA II T4	
EN 50281-1-1		

Technical Data	
No. of outputs	4
Max. current consumption (internal)	10 mA
Voltage via power jumper contacts	5 V DC
Type of load	resistive, inductive, lamps
Max. switching frequency	5 kHz
Output current (max.)	20 mA short-circuit protected
Current consumption typ. (field side)	14 mA
Isolation	500 V system/supply
Internal bit width	4 bits in; 4 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	80 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Output Module 5 ... 14 V DC

Short-circuit protected; high-side switching

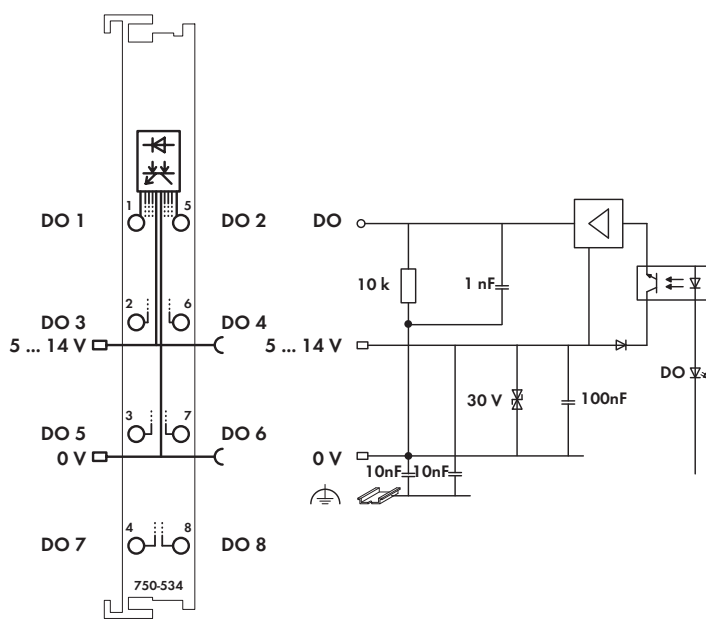
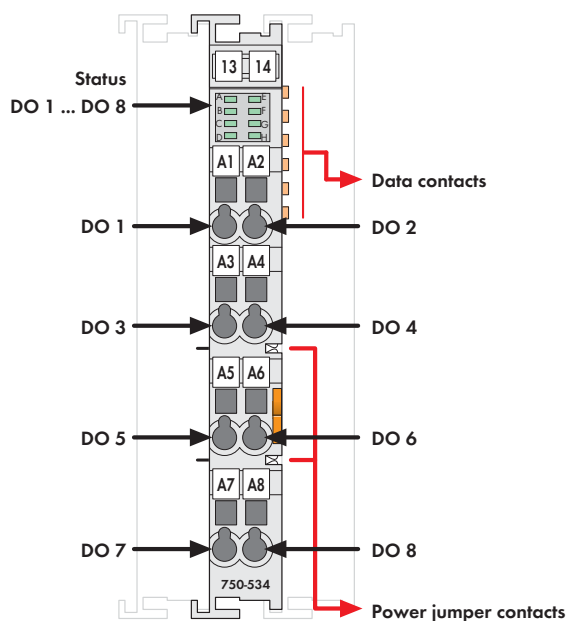


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers. 750/753 Series marking see pages 10 ... 11 / 12 ... 13

NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment



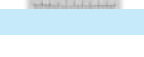

The digital output modules provide 8 channels maintaining a width of only 12mm. The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

Field and system levels are electrically isolated.

Notice:

An additional supply module must be added for operation with 5-14VDC.

Description	Item No.	Pack. Unit
8DO 5 (14) V DC 1A	750-534	1
8DO 5 (14) V DC 1A (without connector)	753-534	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		
ANSI/ISA 12.12.01	Class I Div2 ABCD T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	8
Current consumption (internal)	20 mA
Voltage via power jumper contacts	5 V ... 14 V DC (-15 % ... +20 %)
Type of load	resistive, inductive
Max. switching frequency	2kHz
Output current	1 A, short-circuit-protected
Inductive load switch off energy dissipation W (max.)	0.26 J; $L_{max} = 2 \times W_{max} / I^2$
Current consumption typ. (field side)	25 mA / module + load
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC: CE - immunity to interference	acc. to EN 61131-2 (2003)
EMC: CE - emission of interference	acc. to EN 61131-2 (2003)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

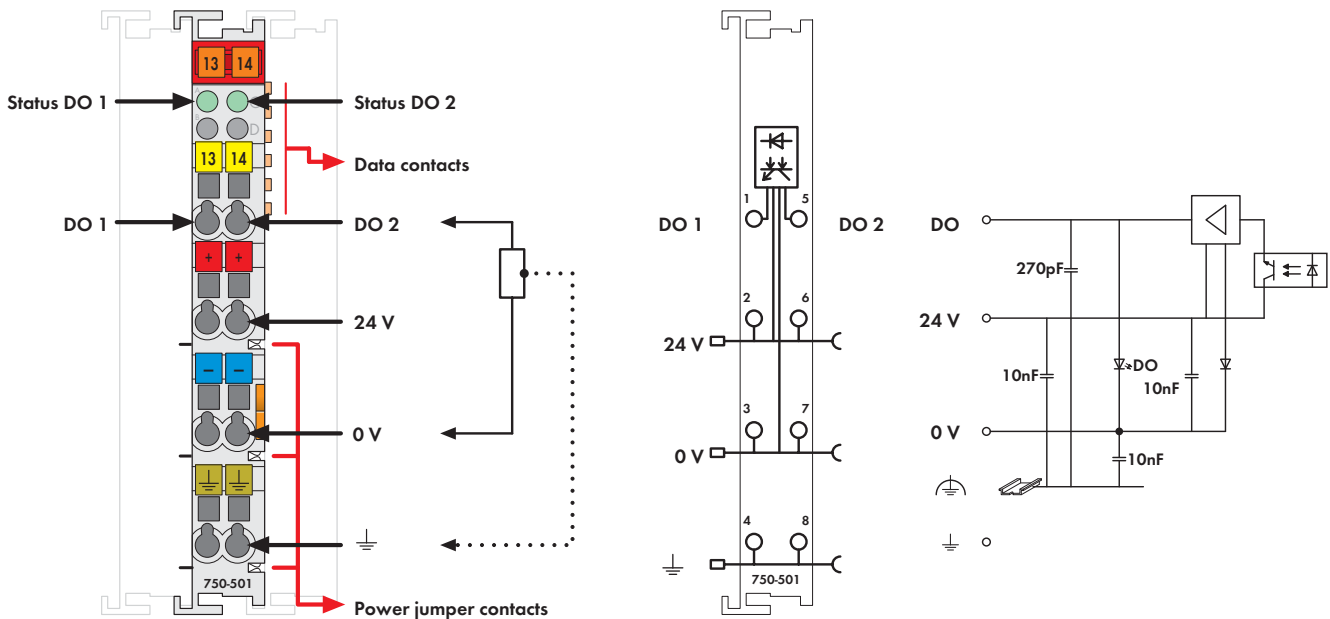





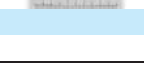




Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output (relay contacts) from the control system.

All outputs are electronically short-circuit-protected.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 0.5A	750-501	10 ¹⁾
2DO 24V DC 0.5A/R*	750-501/000-800	1
2DO 24V DC 0.5A (without connector)	753-501	1
* /R: Interference-free for safety function applications (see manual)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	3.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	5 kHz
Output current (max.)	0.5 A
Inductive load switch off energy	
dissipation W (max.)	0.5 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	46.2 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

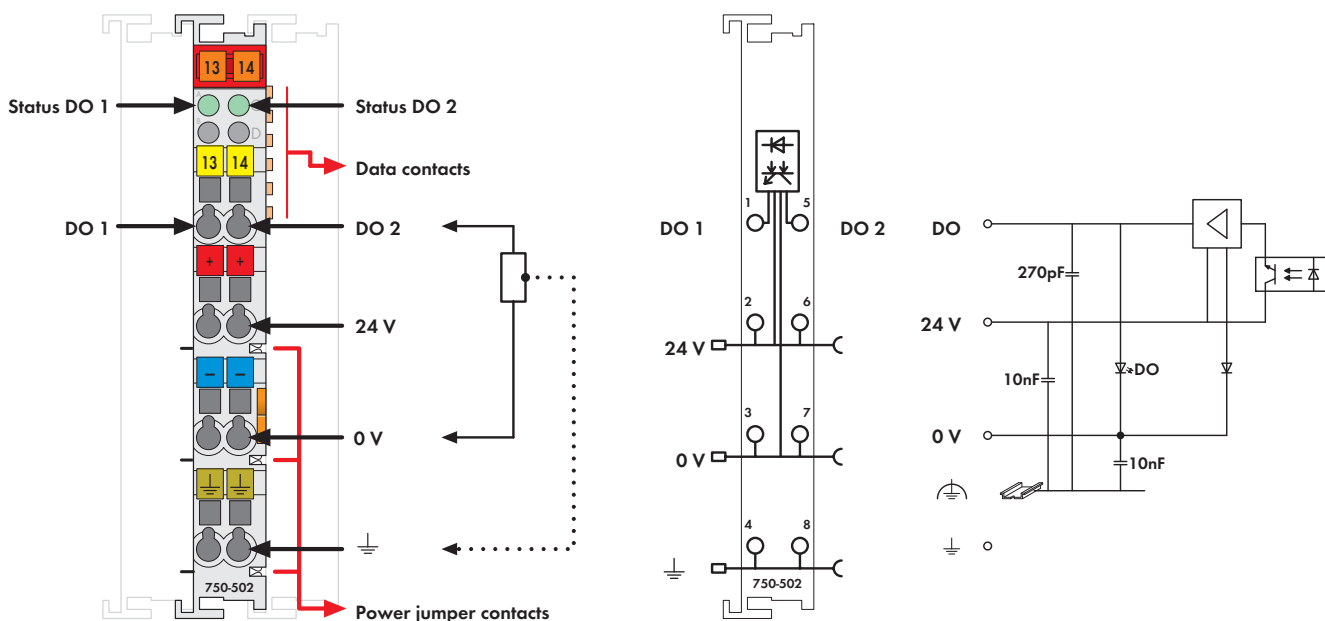




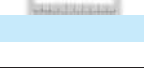
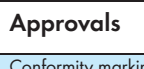






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 2.0A	750-502	10 ¹⁾
2DO 24V DC 2.0A/R*	750-502/000-800	1
2DO 24V DC 2.0A (without connector)	753-502	1
* /R: Interference-free for safety function applications (see manual)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-502/000-800
 EN 61241-0, -1		753-502
 EN 60079-0, -11, -15	I M2 Ex d I	750-502*
 EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-502*
	II 3 D Ex tD A22 IP6X T135°C	750-502*
	* Permissible operating temperature: 0°C ... +60°C	

Technical Data	
No. of outputs	2
Current consumption (internal)	3.5 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	2.5 kHz
Output current (max.)	2 A
Short-circuit limitation (typ.) Pwm	35 A (44 A peak)
Inductive load switch off energy	
dissipation W (max.)	1.7 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics

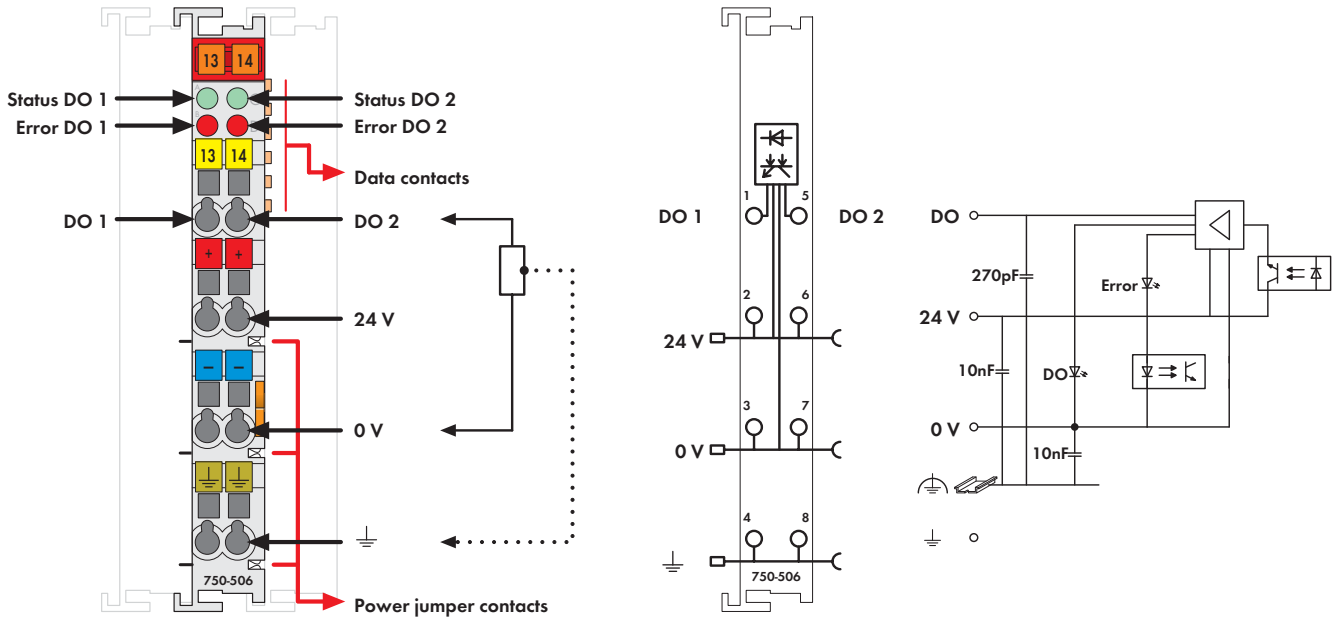


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




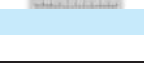
The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The error is visually indicated by error LEDs and a bit is set in the process image.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 0.5A/ diagnostics	750-506	10 ¹⁾
2DO 24V DC 0.5A/ diagnostics/R*	750-506/000-800	1
2DO 24V DC 0.5A/ diagnostics (without connector)	753-506	1
* /R: Interference-free for safety function applications (see manual)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	15 mA
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	5 kHz
Reverse voltage protection	no
Output current (max.)	0.5 A
Short-circuit limitation (typ.) Pwm	1.5 A
Open-circuit detection	< 9.5 mA
Diagnostics	Open circuit, overload and short-circuit
Inductive load switch off energy dissipation W (max.)	0.2 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits in, 4 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics

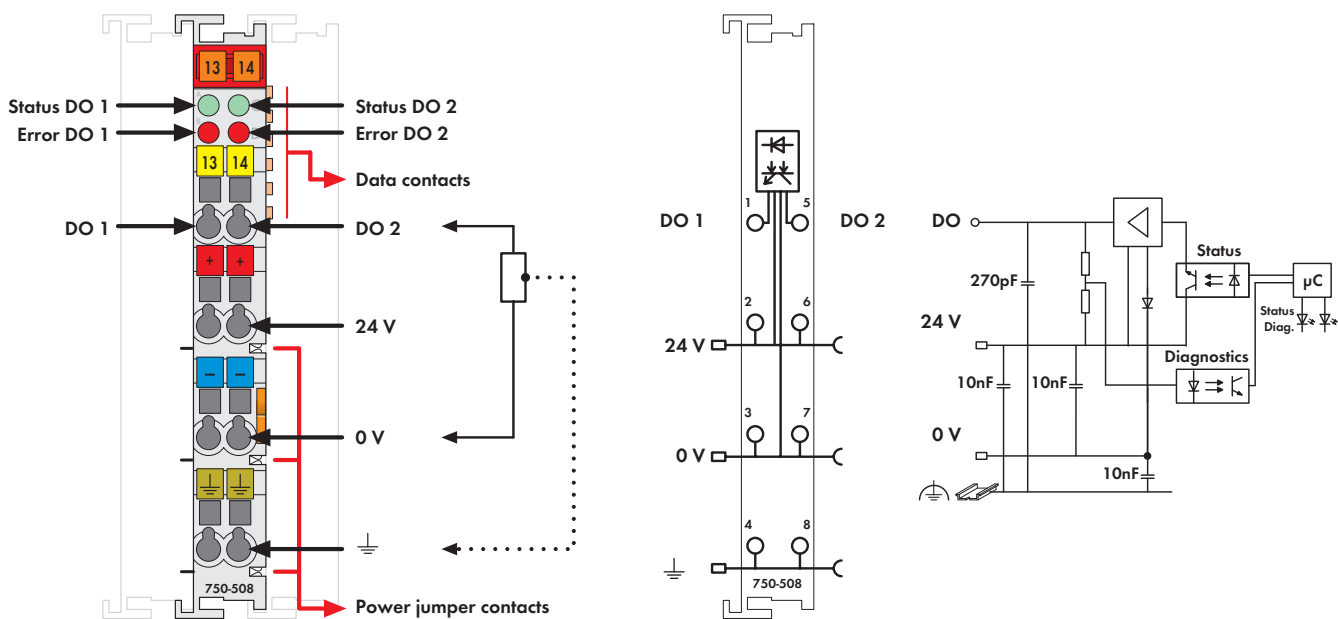


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13



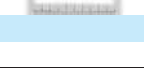
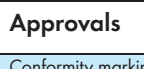
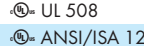

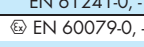
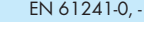
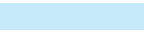
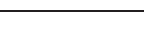
The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The error is visually indicated by error LEDs and a bit is set in the process image.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
2DO 24V DC 2.0A, diagnostics	750-508	10 ¹⁾
2DO 24V DC 2.0A/ diagnostics/R*	750-508/000-800	1
2DO 24V DC 2.0A/ diagnostics (without connector)	753-508	1
* /R: Interference-free for safety function applications (see manual)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA*	
	*753 Series, pending	
	UL 508	
	Class I, Div. 2, Grp. ABCD, T4	
	I M2 / II 3 GD Ex nA IIC T4	750-508/000-800
		753-508
	I M2 Ex d I	750-508*
	II 3 G Ex nA IIC T4	750-508*
	II 3 D Ex tD A22 IP6X T135°C	750-508*
	* Permissible operating temperature: 0°C ... +60°C	

Technical Data	
No. of outputs	2
Current consumption (internal)	14 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Reverse voltage protection	yes
Output current (max.)	2A
Short-circuit limitation (typ.) Pwm	15A / 2s
Open-circuit detection	< 0.2 mA
Diagnostics	Open circuit, overload and short-circuit
Current consumption typ. (field side)	7 mA / module + charge
Isolation	500 V system/supply
Internal bit width	2 bits in; 2 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	56.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

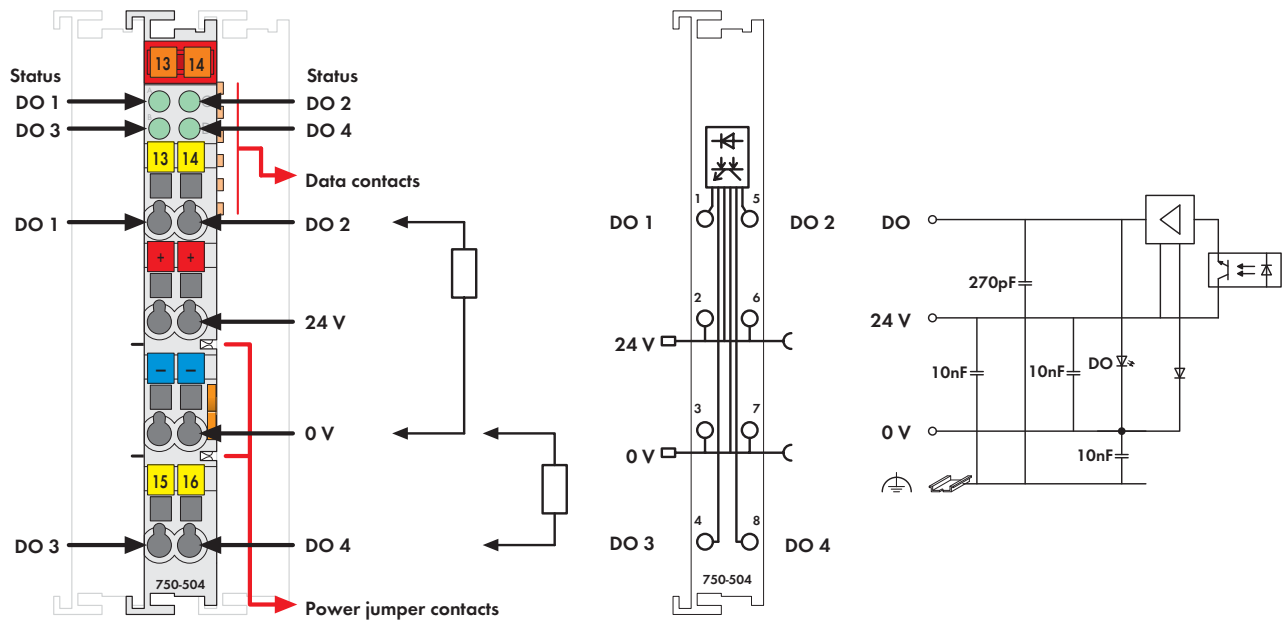



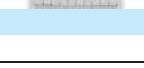






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A	750-504	1 ¹⁾
4DO 24V DC 0.5A/R*	750-504/000-800	1
4DO 24V DC 0.5A/T	750-504/025-000	1
(Operating temperature -20 °C ... +60 °C)		
4DO 24V DC 0.5A/T/R*	750-504/025-800	1
(Operating temperature -20 °C ... +60 °C)		
4DO 24V DC 0.5A (without connector)	753-504	1
* /R: Interference-free for safety function applications (see manual)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-504, 750-504/000-800
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-504, 750-504/000-800
 EN 61241-0, -1		

Technical Data	
No. of outputs	4
Current consumption (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Inductive load switch off energy	
dissipation W (max.)	0.3 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	15 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

2-conductor connection; short-circuit-protected; high-side switching

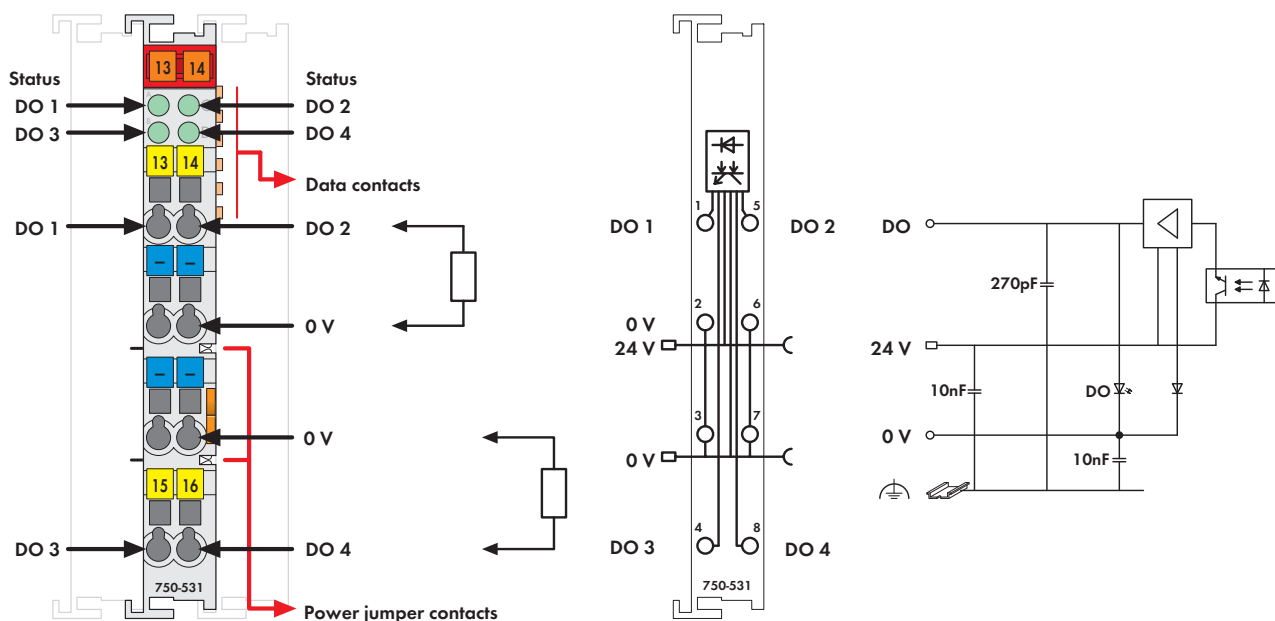




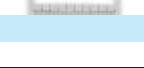
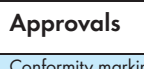
Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output from the control system.

The module is a 4-output channel, 2-conductor device. Due to its four 0V connections, four actuators may be directly connected to the module.

All outputs are electronically short-circuit-protected.

Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A/ 2-conductor	750-531	1
4DO 24V DC 0.5A/ 2-conductor/R*	750-531/000-800	1
4DO 24V DC 0.5A/ 2-conductor (without connector)	753-531	1
* /R: Interference-free for safety function applications (see manual)		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-531/000-800
EN 61241-0, -1		753-531
EN 60079-0, -11, -15	I M2 Ex d I	750-531*
	II 3 G Ex nA IIC T4	750-531*
EN 61241-0, -1, -11	II 3 D Ex tD A22 IP6X T135°C	750-531*
	* Permissible operating temperature: 0°C ... +60°C	

Technical Data	
No. of outputs	4
Max. current consumption (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Reverse voltage protection	yes
Output current (max.)	0.5 A short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.3 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	30 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

Short-circuit protected; low-side switching

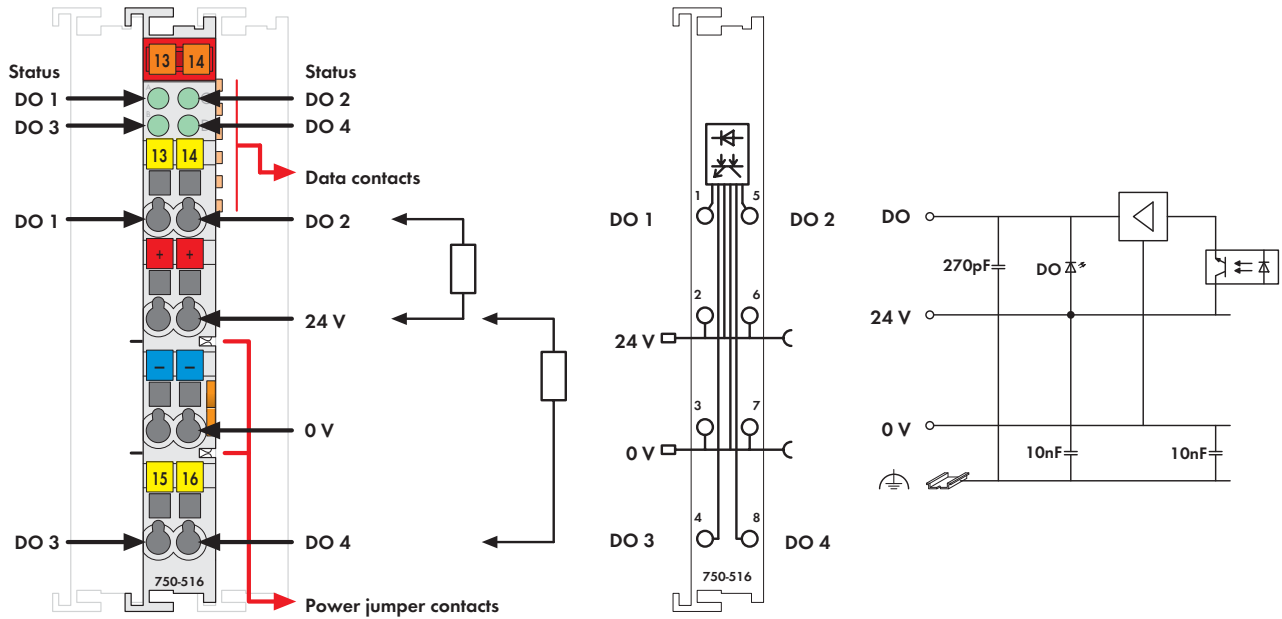










Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

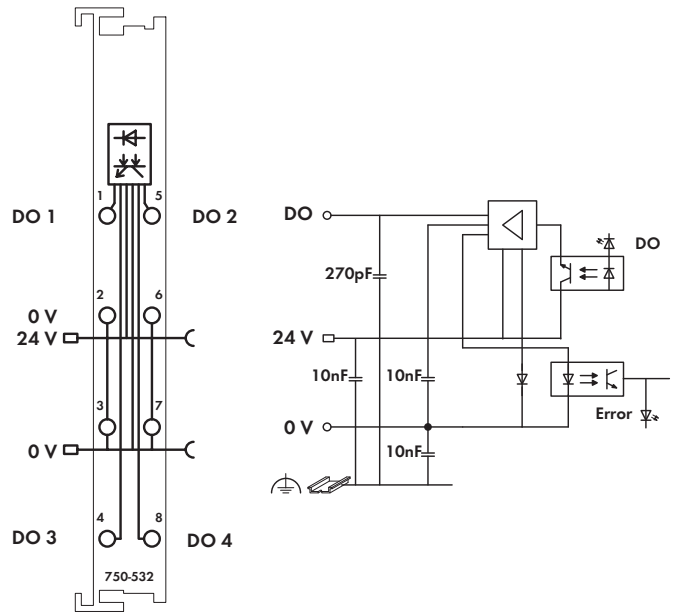
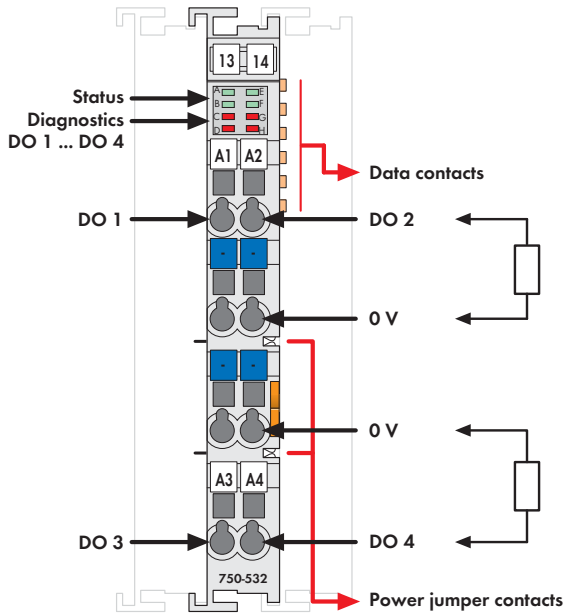
Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A/ low-side switching	750-516	1
4DO 24V DC 0.5A/ low-side switching (without connector)	753-516	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 IEC 60079-0, -15	BR-Ex nA II T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	4
Current consumption (internal)	7 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	5 kHz
Output current (max.)	0.5 A short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.55 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	30 mA / module + charge
Isolation	500 V system/supply
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics



Delivered without miniature WSB markers

Control signals are transmitted from the automation device to connected actuators via the digital output module.

All outputs are short-circuit proof.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The status is transmitted to the fieldbus couplers and indicated by LEDs.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
4DO 24V DC 0.5A, diagnostics	750-532	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	4
Max. current consumption (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	2 kHz
Reverse voltage protection	yes
Output current	0.5 A, short-circuit protected
Short-circuit limitation (typ.) Pwm	6A
Open-circuit detection	< 0.9 mA
Diagnostics	Open-circuit, overload and short-circuit
Inductive load switch off energy dissipation W (max.)	0.125 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	13 mA / module + load
Isolation	500 V system/supply
Internal bit width	4 bits out, 4 bits in (diagnostics)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

8-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching

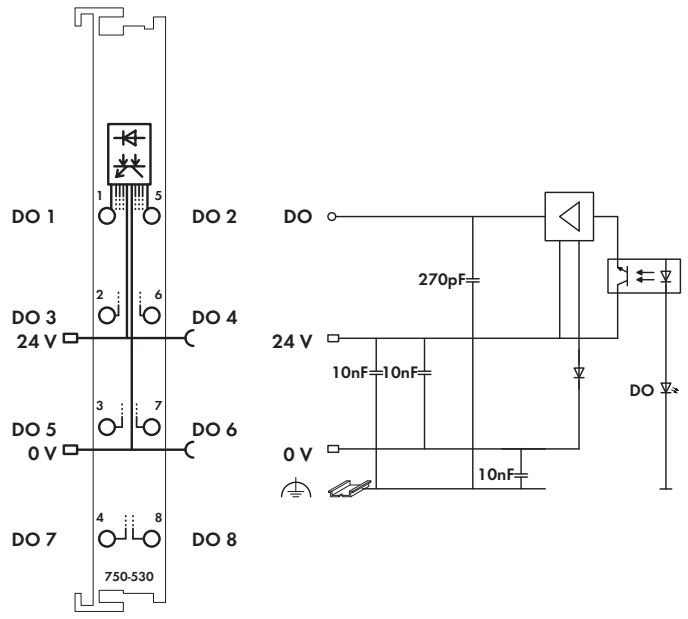
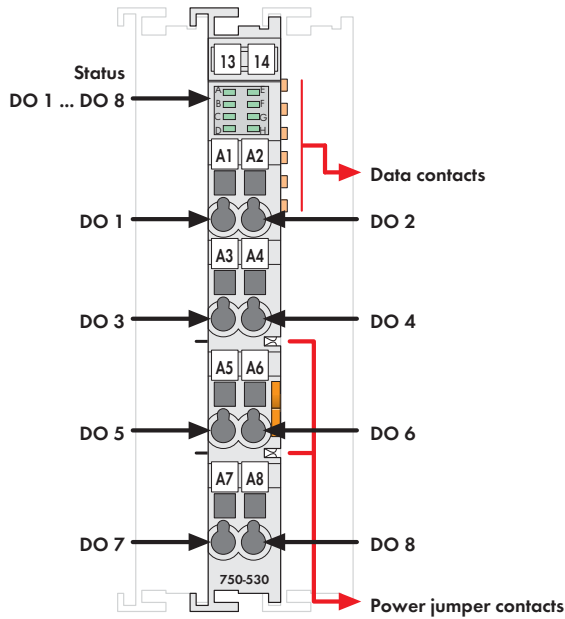










Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers. 750/753 Series marking see pages 10 ... 11 / 12 ... 13

NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital output modules provide 8 channels maintaining a width of only 12mm. The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

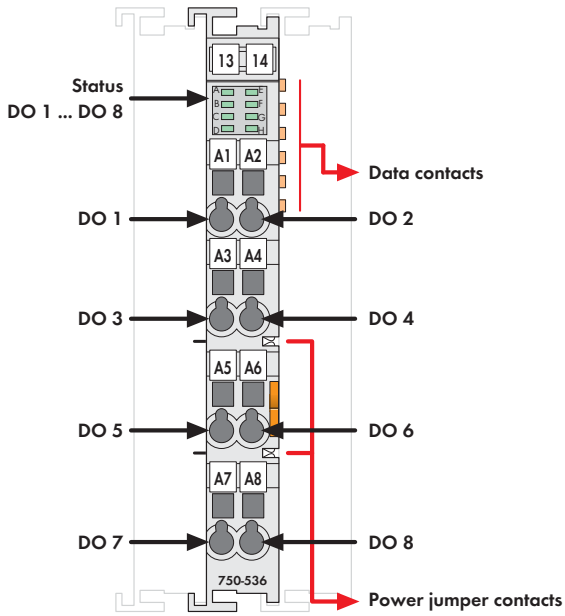
Each output is electrically isolated from the bus by use of optocouplers.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A	750-530	1
8DO 24V DC 0.5A/T	750-530/025-000	1
(Operating temperature -20 °C ... +60 °C)		
8DO 24V DC 0.5A (without connector)	753-530	1
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-530
 IEC 60079-0, -15	BR-Ex nA II T4	750-530
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-530
EN 61241-0, -1		

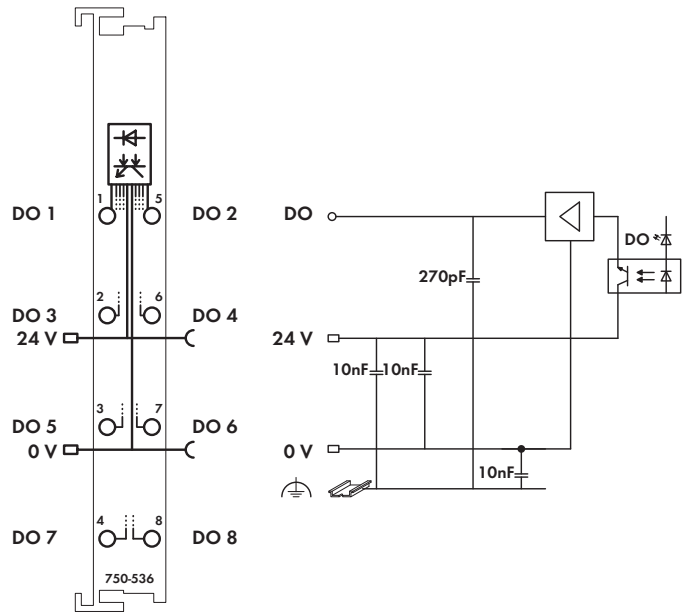
Technical Data	
No. of outputs	8
Current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	2 kHz
Output current (max.)	0.5 A, short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.9 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	15 mA + charge
Isolation	500 V system/supply
Internal bit width	8 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Output Module 24 V DC

Short-circuit protected; low-side switching



Delivered without miniature WSB markers




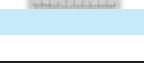


NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment

The digital output modules provide 8 channels maintaining a width of only 12mm. The connected load is switched via the digital output from the control system.

All outputs are electronically short-circuit-protected.

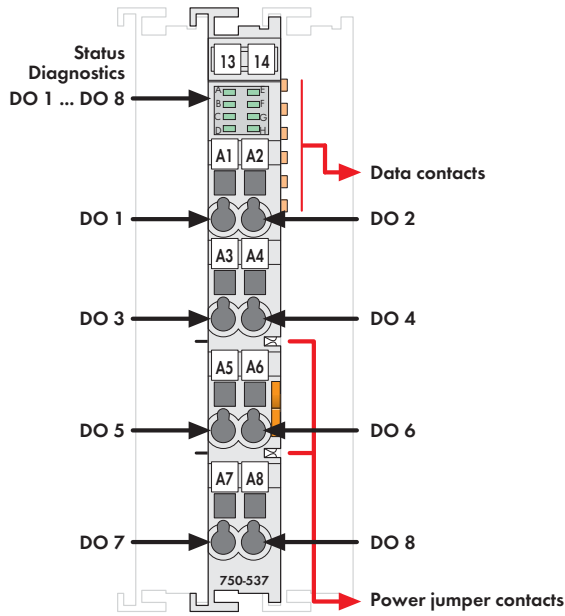
Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A	750-536	1
8DO 24V DC 0.5A (without connector)	753-536	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

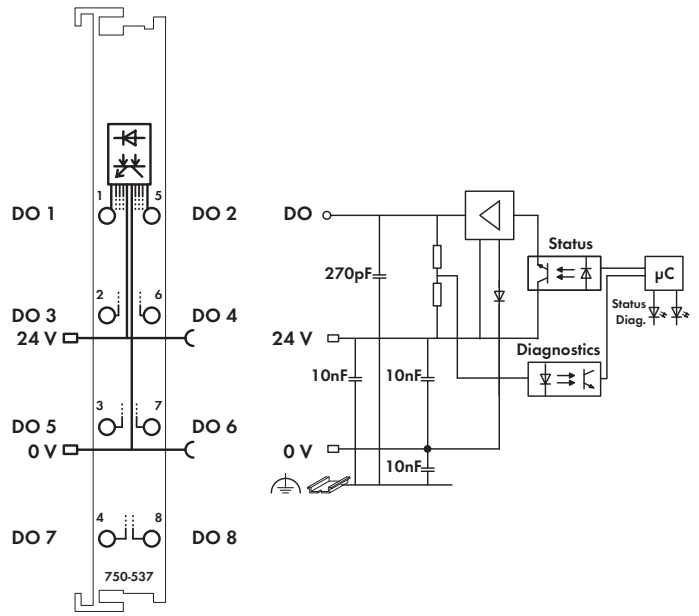
Technical Data	
No. of outputs	8
Max. current consumption (internal)	25 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	2 kHz
Output current	0.5 A, short-circuit protected
Reverse voltage protection	yes
Output current	0.5 A, short-circuit protected
Inductive load switch off energy dissipation W (max.)	0.5 J; $L_{max} = 2 \times W_{max} / I^2$
Current consumption typ. (field side)	12 mA / module + load
Isolation	500 V system/supply
Internal bit width	8 bit out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Output Module 24 V DC

Short-circuit protected; high-side switching; with diagnostics



Delivered without miniature WSB markers



NOTE: Connection point marking (i.e., 1 ... 8) does not refer to channel assignment


Control signals are transmitted from the automation device to connected actuators via the digital output module.

All outputs are short-circuit proof.

In addition to the functions that can be fulfilled by the standard output modules, these output modules can recognize a short circuit or an open circuit. The status is transmitted to the fieldbus couplers and indicated by LEDs.

The module is an 8-channel device and eight actuators may be connected to it.

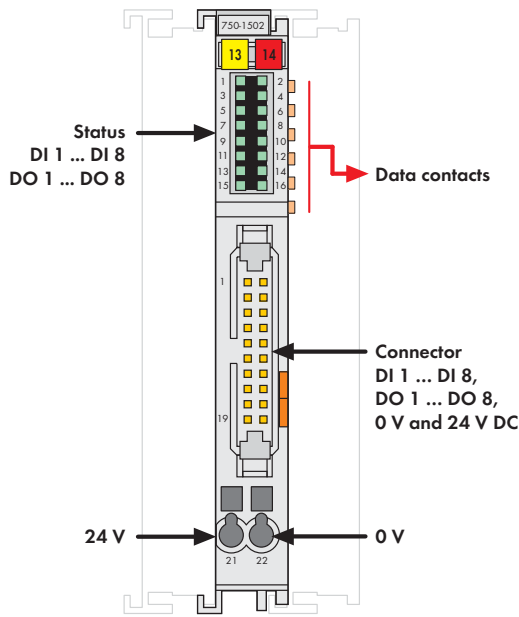
Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A, diagnostics	750-537	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

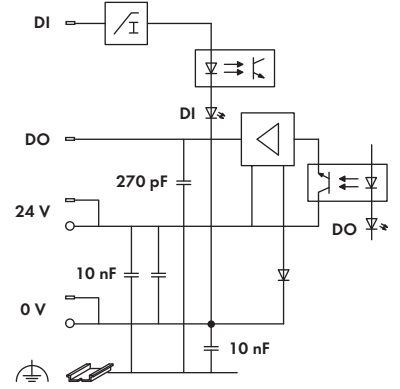
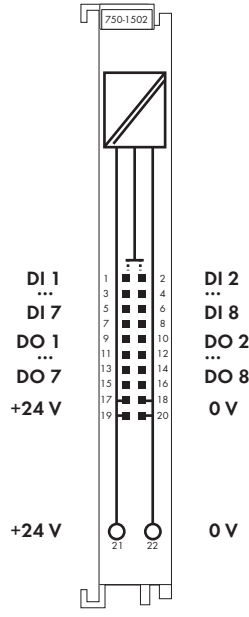
Technical Data	
No. of outputs	8
Max. current consumption (internal)	50 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Reverse voltage protection	yes
Output current	0.5 A, short-circuit protected
Short-circuit limitation (typ.) Pwm	12A
Open-circuit detection	< 0.1 mA
Diagnostics	Open-circuit, overload and short-circuit
Inductive load switch off energy dissipation W (max.)	0.1 J; L max = 2 x W max / I ²
Current consumption typ. (field side)	16 mA / module + load
Isolation	500 V system/supply
Internal bit width	8 bits out, 8 bits in (diagnostics)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

8-Channel Digital Input/Output Module 24 V DC

Ribbon cable, high-side switching



Delivered without miniature WSB markers



The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in.).


It receives binary control signals from digital field devices and transmits them to the connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The module connects electronic modules via a 20-pole flat cable.

The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals.

A green LED indicates the switched status of each channel.

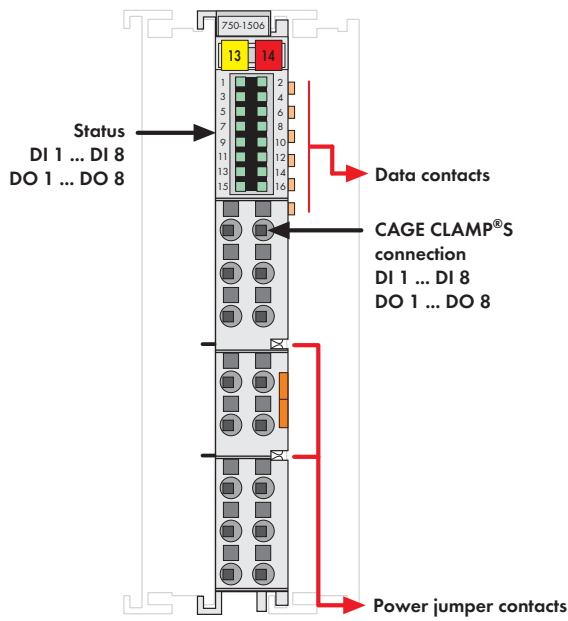
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A, ribbon cable	750-1502	1
Interference-free for use in safety functions (see manual)		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Cable and interface modules	see section 10	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

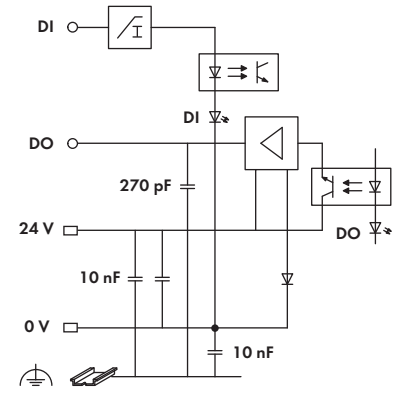
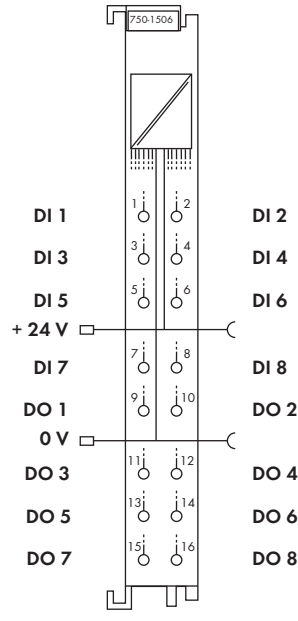
Technical Data	
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC) +2.2 mA ... +2.5 mA (at 15 V ... +32 V DC)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16mA
General Specifications	
Voltage supply	24 V DC (-25 % ... +30 %)
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	44 g

8-Channel Digital Input/Output Module 24 V DC

High-side switching



Delivered without miniature WSB markers





The digital input/output module provides 8 inputs and 8 outputs at a width of just 12mm (0.47in.).

An optocoupler provides electrical isolation between the bus and the field side.

It receives binary control signals from digital field devices and transmits them to the connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The module has CAGE CLAMP®S connections enabling solid conductors to be inserted directly.

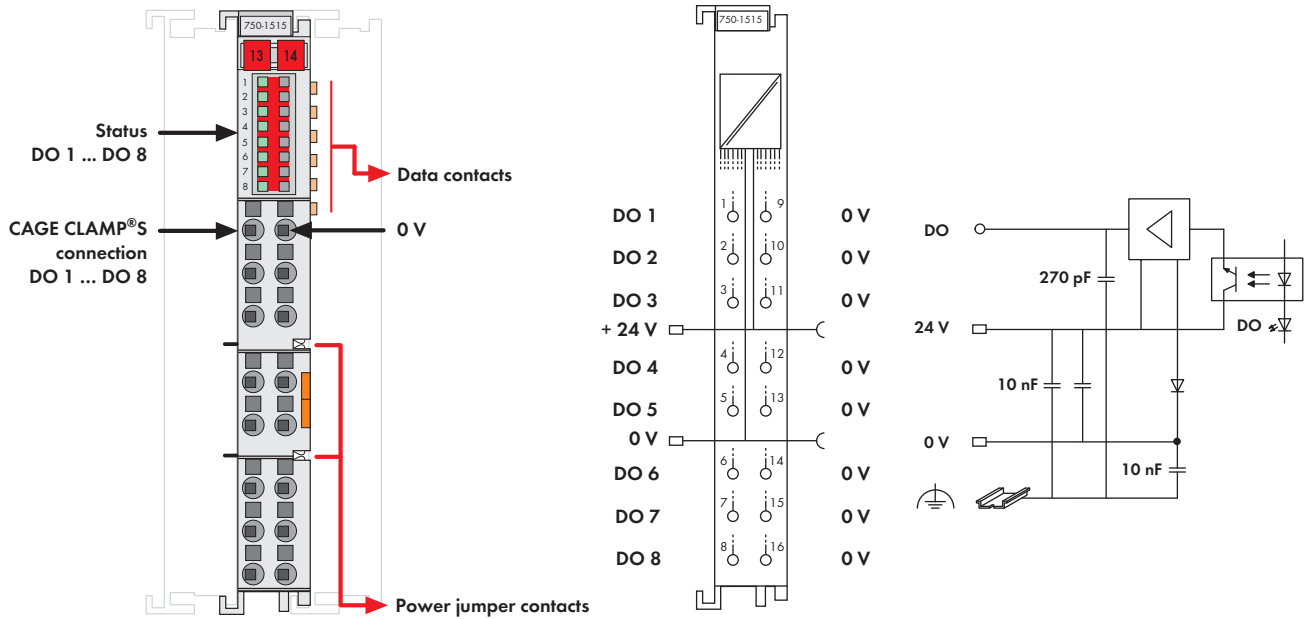
A green LED indicates the switched status of each channel.

Description	Item No.	Pack. Unit
8DI 8DO 24V DC 0.5A	750-1506	1
Interference-free for use in safety functions (see manual)		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
 UL 508		

Technical Data	
Digital inputs:	
Number of inputs	8
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	3.0 ms
Input current (typ.)	+0.6 mA (at -3 V ... +5 V DC) +2.2 mA ... +2.5 mA (at 15 V ... +32 V)
Digital outputs:	
No. of outputs	8
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	16mA
General Specifications	
Current consumption (internal)	30 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
	fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g

8-Channel Digital Output Module 24 V DC

High-side switching, 2-conductor connection




The digital output module provides 8 channels in 2-wire connection at a width of just 12mm (0.47in).

It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

CAGE CLAMP[®]S terminations provide direct insertion of solid conductors. A green LED indicates the switched status of each channel.

An optocoupler provides electrical isolation between the bus and the field side.

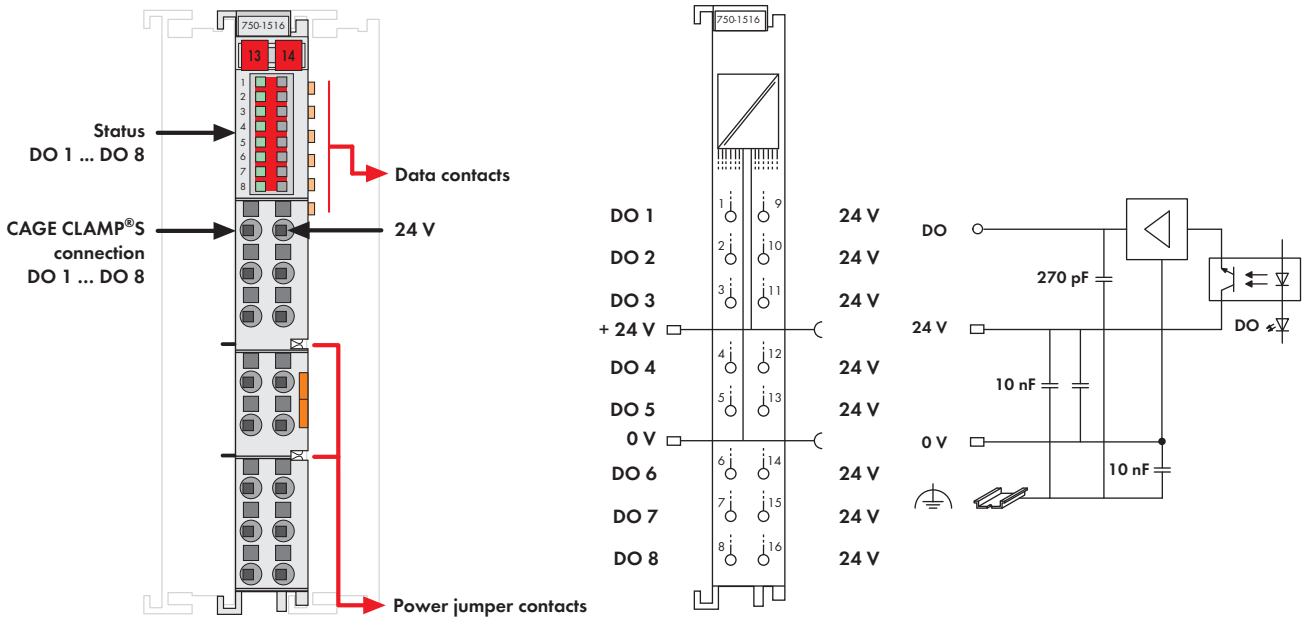
210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP[®]S.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A, 2-conductor Interference-free for use in safety functions (see manual)	750-1515	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm		
	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
No. of outputs	8
Max. current consumption (internal)	20 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	15 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP [®] S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g


8-Channel Digital Output Module 24 V DC

Low-side switching, 2-conductor connection



The digital output module provides 8 channels in 2-wire connection at a width of just 12mm (0.47in). It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads). CAGE CLAMP[®]S terminations provide direct insertion of solid conductors. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

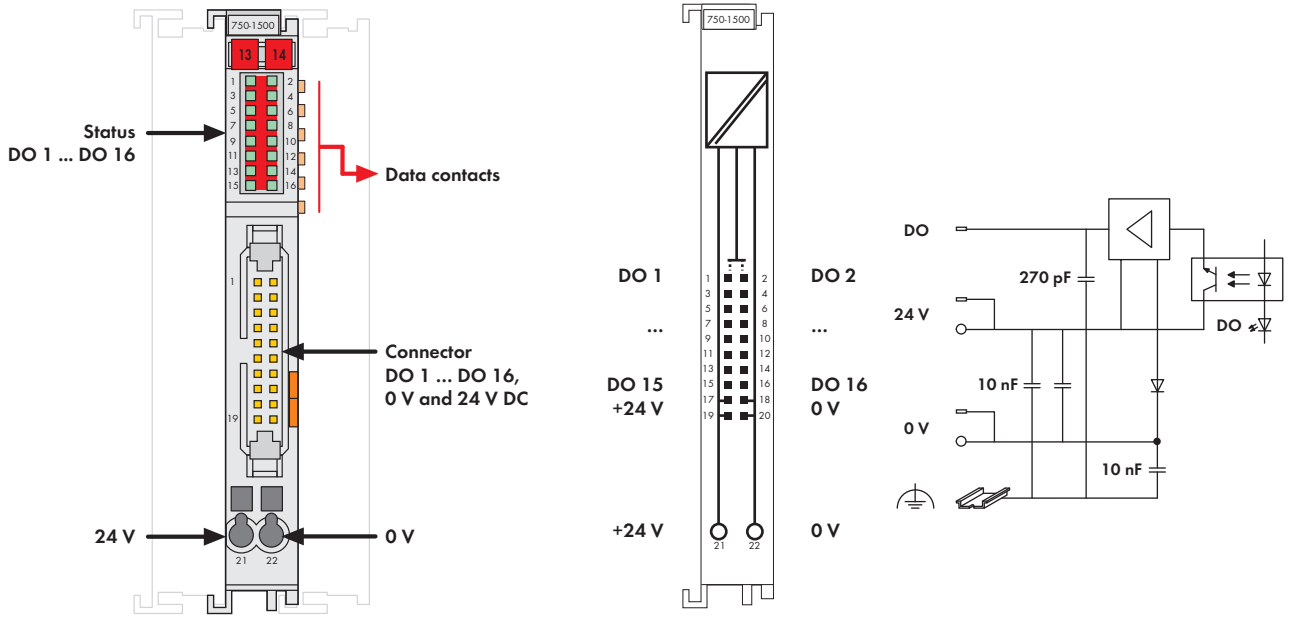
210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP[®]S.

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A, low-side switching, 2-conductor	750-1516	1
Interference-free for use in safety functions (see manual)		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
No. of outputs	8
Max. current consumption (internal)	20 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	8 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP [®] S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g


16-Channel Digital Output Module 24 V DC

Ribbon cable, high-side switching



Delivered without miniature WSB markers

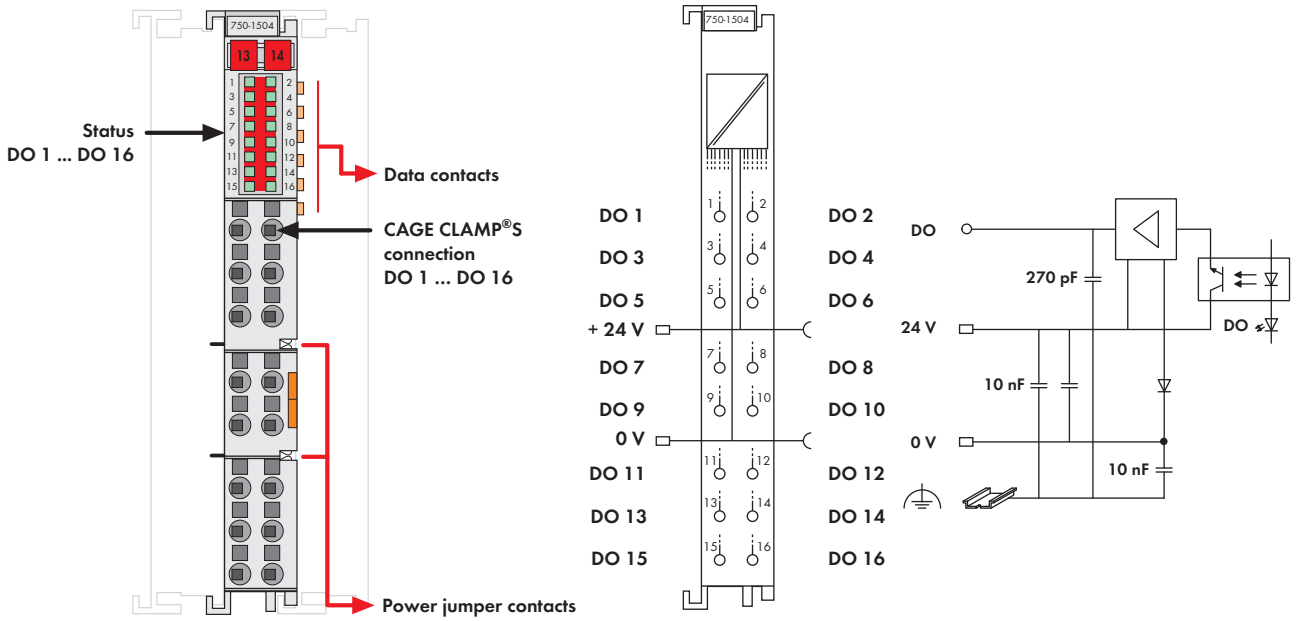
The digital output module provides 16 channels at a width of just 12mm (0.47in). It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads). The 750-1500 connects to electronic modules via 20-pole ribbon cable. The 24V power is fed to the electronic modules via two CAGE CLAMP® terminals. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24V DC 0.5A, ribbon cable Interference-free for use in safety functions (see manual)	750-1500	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Cable and interface modules	see section 10	
Approvals		
Conformity marking	Also see "Approvals Overview" in Section 1	
Shipbuilding	CE	
UL 508	ABS, DNV, GL, KR	

Technical Data	
No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage supply	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	29mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP®
Cross sections CAGE CLAMP®	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	46.1 g



16-Channel Digital Output Module 24 V DC

High-side switching



Delivered without miniature WSB markers

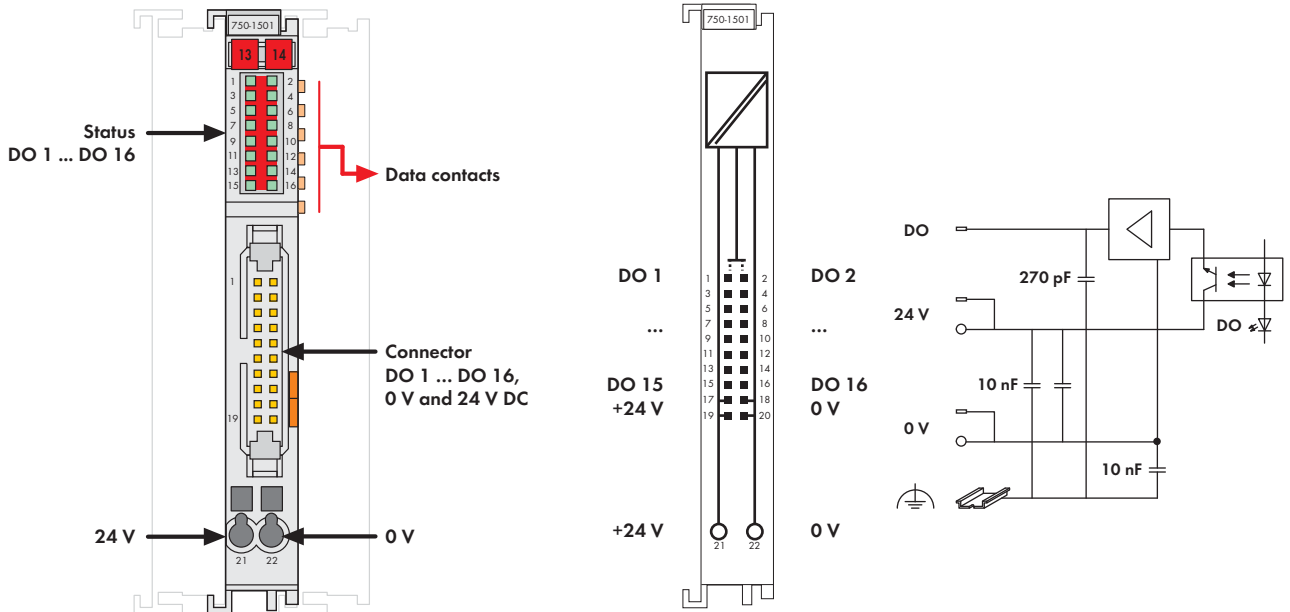
The digital output module provides 16 channels at a width of just 12mm (0.47in). It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads). CAGE CLAMP®S terminations provide direct insertion of solid conductors. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24V DC 0.5A Interference-free for use in safety functions (see manual)	750-1504	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
 UL 508		

Technical Data	
No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	29mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm² ... 1.5 mm² / AWG 28 ... 16 fine-stranded: 0.25 mm² ... 1.5 mm² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g

16-Channel Digital Output Module 24 V DC

Ribbon cable, low-side switching



Delivered without miniature WSB markers


The digital output module provides 16 channels at a width of just 12 mm (0.47 in).

It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads).

The 750-1501 connects to electronic modules via 20-pole ribbon cable. The 24 V power is fed to the electronic modules via two CAGE CLAMP[®] terminals.

A green LED indicates the switched status of each channel.

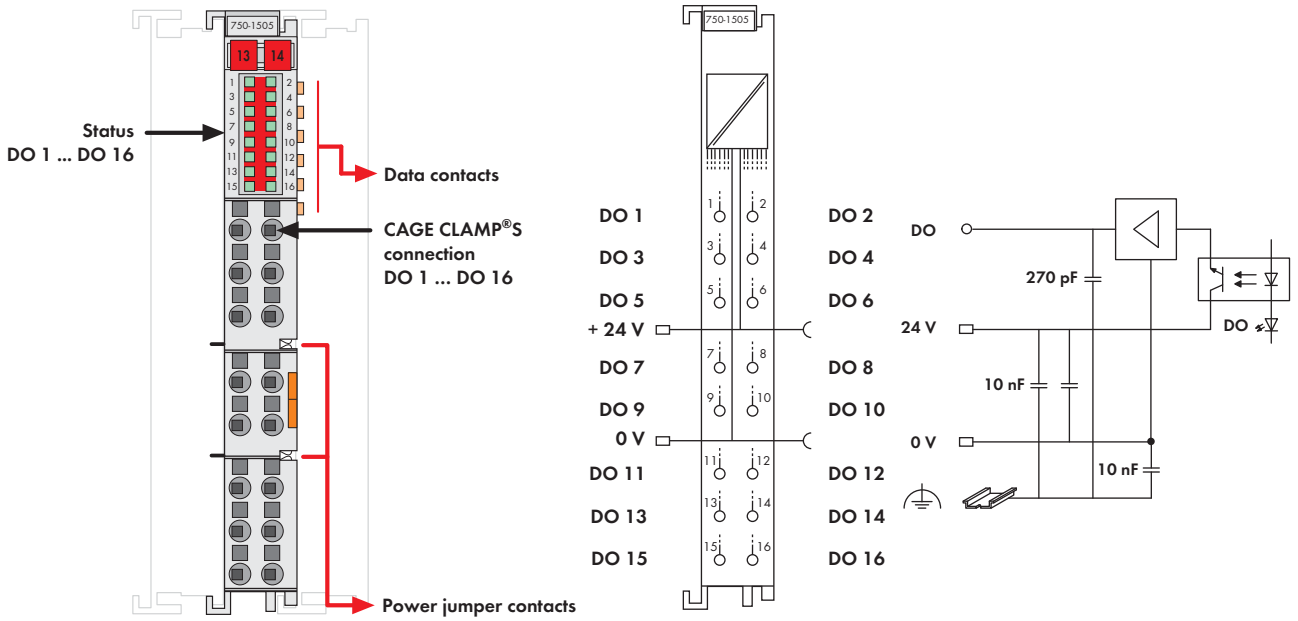
An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24V DC 0.5A, ribbon cable, low-side switching	750-1501	1
Interference-free for use in safety functions (see manual)		
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Cable and interface modules		
see section 10		
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage supply	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	11 mA
Isolation	500 V system/field
Wire connection	20-pole male connector / CAGE CLAMP [®]
Cross sections CAGE CLAMP [®]	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Dimensions (mm) W x H x L	12 x 73 x 100
	Height from upper-edge of DIN 35 rail
Weight	43.4 g


16-Channel Digital Output Module 24 V DC

Low-side switching



Delivered without miniature WSB markers

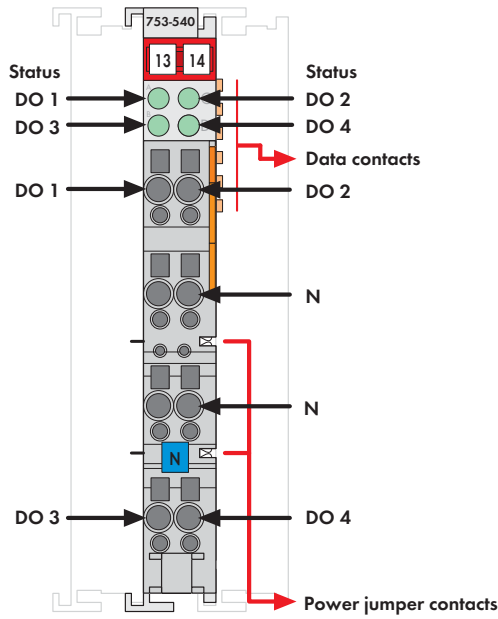
The digital output module provides 16 channels at a width of just 12mm (0.47in). It transmits binary control signals from the automation device to connected actuators (e.g., magnetic valves, contactors, transmitters, relays or other electrical loads). CAGE CLAMP®S terminations provide direct insertion of solid conductors. A green LED indicates the switched status of each channel. An optocoupler provides electrical isolation between the bus and the field side.

Description	Item No.	Pack. Unit
16DO 24VDC 0.5A, low-side switching Interference-free for use in safety functions (see manual)	750-1505	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

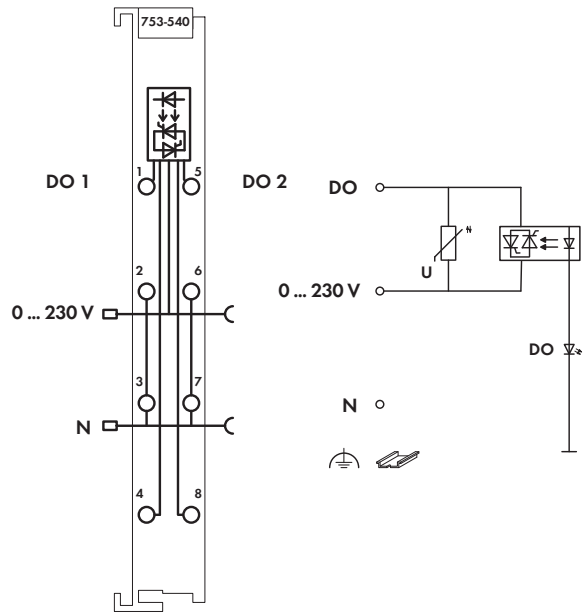
Technical Data	
No. of outputs	16
Max. current consumption (internal)	40 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output current (max.)	0.5 A, short-circuit protected
Current consumption typ. (field side)	11 mA
Isolation	500 V system/field
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g

4-Channel Digital Output Module 120 (230) V AC

Short-circuit protected; high-side switching



Delivered without miniature WSB markers



Notice:




An additional supply module must be added for operation with 120 (230) VAC!

Control signals are transmitted from the automation device to connected actuators via the digital output module.

The module has four output channels and four actuators may be connected to it.

The switched status of the outputs is shown by an LED.

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
4DO 120 (230)V AC 0.25A (without connector)	753-540	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		
ANSI/ISA 12.12.01	Class I Div2 ABCD T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	4
Current consumption (internal)	18 mA
Voltage via power jumper contacts	0 V ... 230 V AC (+10 %)
Overvoltage protection	275 V AC varistor
Type of load	resistive, inductive
Short-circuit current	max. 10 A (16 ms)
Response time/Drop-out time (max.)	10 ms at 50 Hz (zero crossing switch)
ON voltage difference L-DO max.	1.2 V
Output current	0.25 A, short-circuit-protected
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	4 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	42.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 230 V AC/DC

with solid state relay 0.3 A

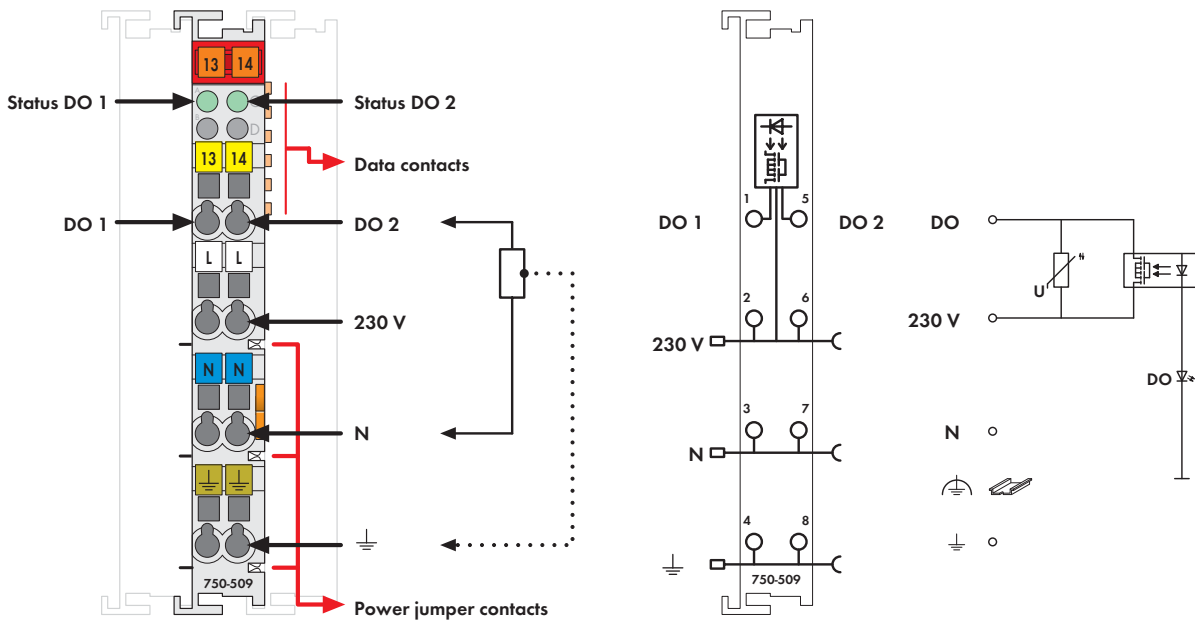


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13





The connected load is switched via the digital output (SSR) from the control system.

Notice:
An additional supply module must be added for operation with 230VAC/DC.

The semiconductor output is electrically isolated from the control side. Note that the power jumper contacts supply both "N" (common point) and switched output voltages.

The switched status of the outputs is shown by a LED.

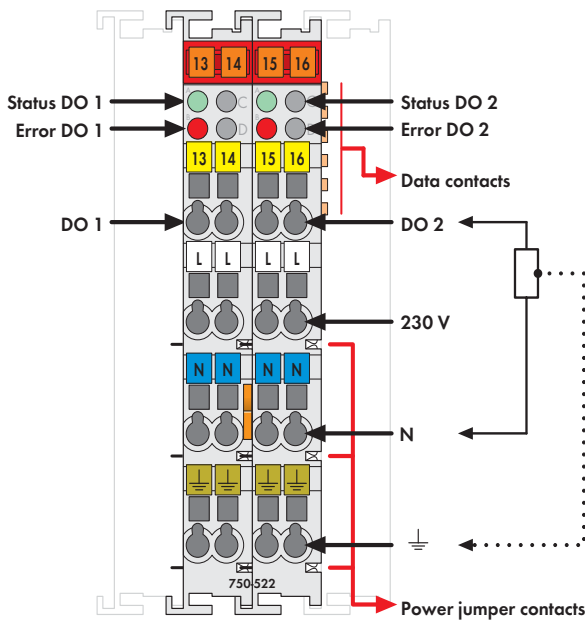
The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 230V AC 0.3A/SSR	750-509	1
2DO 230V AC 0.3A/SSR (without connector)	753-509	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

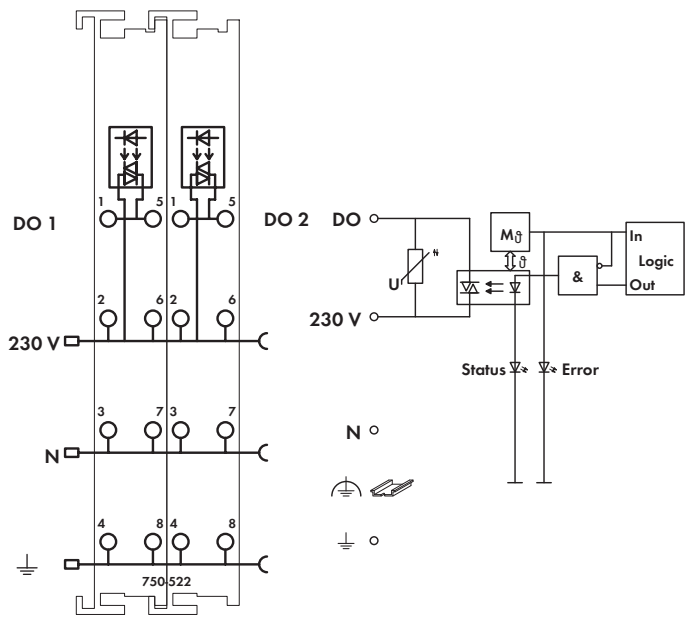
Technical Data	
No. of outputs	2
Current consumption (internal)	10 mA
Max. switching voltage	0 V ... 230 V AC/DC
Switching current	300 mA
Peak current	0.5 A (20 s); 1.5 A (0.1 s)
Max. switching frequency	5 Hz (24 V 0.3 A DF = 50 %); 0.5 Hz (230 V 0.3 A DF = 50 %)
Pull-in time (typ.)	4 ms
Pull-in time (max.)	10 ms
Drop-out time (typ.)	0.1 ms
Drop-out time (max.)	3 ms
R ON (typ.)	2.1 Ω
R ON (max.)	3.2 Ω
Overvoltage protection	275 V AC (varistor)
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Digital Output Module 230 V AC

with solid state relay 3.0 A for 30 s



Delivered without miniature WSB markers



The digital output module controls actuators via semiconductor outputs. The bus module receives the control signal via a fieldbus coupler.

The control of the outputs is fully isolated. The outputs are switched at the zero cross. Power supply for the outputs is provided via the power jumper contacts.

Each output has its own overload protection which is realized via an internal temperature limit. In case of an overload, the bus module switches off the output. After the output connection has cooled down, it triggers the output again. The error bit reports the overload in the process image.

The module is a 4-conductor device and actuators with ground (earth) connection may be directly connected to it.

Notice:
An additional supply module must be added for operation with 230VAC!

Description	Item No.	Pack. Unit
2DO 230V AC 3.0A/30s/SSR	750-522	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	2 make contacts
Current consumption typ. (internal)	40 mA
Max. switching voltage	35 V ... 230 V AC
Switching current (nom.)	0.5 A per channel
Min. switching current	50 mA
Max. switching current	3 A (< 30 s operating time) each channel
Peak current	18 A (100 ms); 30 A (10 ms)
Max. switching frequency	50 Hz
Overvoltage protection	275 V AC (varistor)
Operating speed (typ.)	1.65 ms
Operating speed (max.)	15 ms
Leakage current when turned off	< 2.3 mA
Isolation	3 kV system/supply
Internal bit width	2 bits in, 2 bits out
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	115 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 125 V AC, 30 V DC

Isolated outputs; 2 changeover contacts

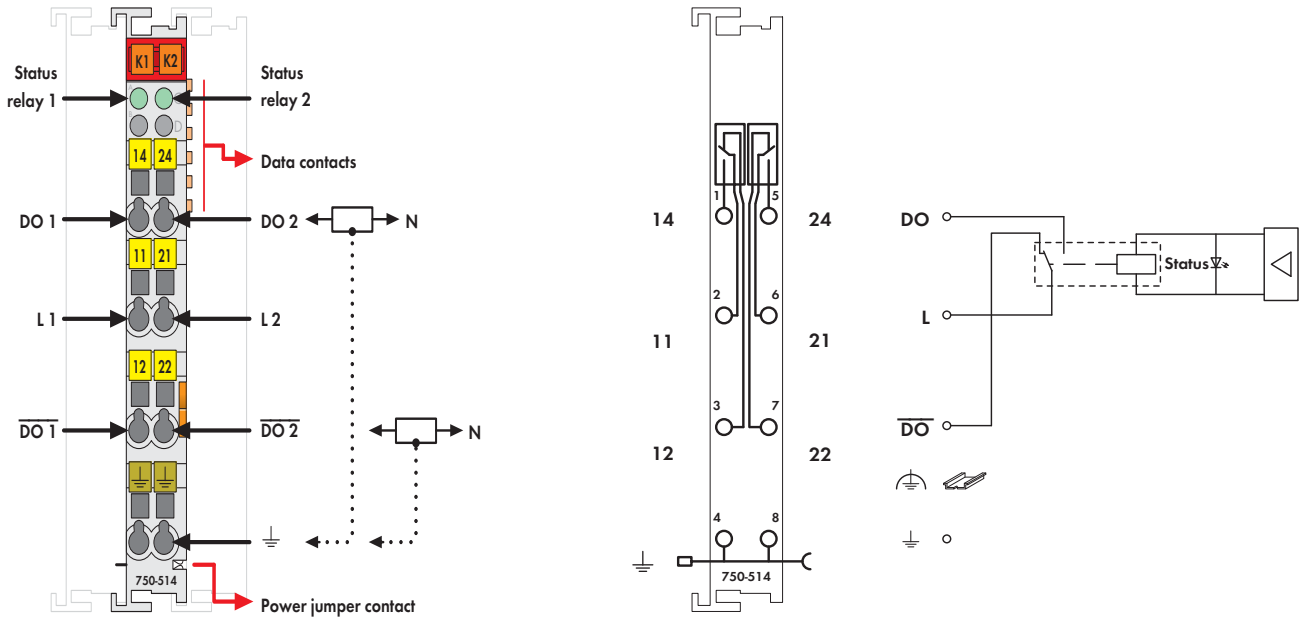


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




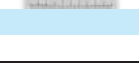
The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relay.

The NO contacts are electrically isolated.

The switched status of the relay is shown by a LED.

Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 125V AC 0.5A/ Relay 2CO/ Potential Free	750-514	10 ¹⁾
2DO 125V AC 0.5A/ Relay 2CO/ Potential Free (without connector)	753-514	1
1) Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR, PRS*, RINA* *753 Series, pending	
UL 508		
EN 50021	II 3 G EEx nC IIC T4	

Technical Data	
No. of outputs	2 changeover contacts
Current consumption typ. (internal)	70 mA
Max. switching voltage	125 V AC / 30 V DC
Switching power	62.5 VA / 30 W
Min. switching current	0.01 mA / 10 mV DC
Max. switching current	0.5 A AC / 1 A DC
Max. switching frequency	20/min
Pull-in time (max.)	4 ms
Drop-out time (max.)	4 ms
Contact material	Silver alloy, gold-plated
Mechanical life	1 x 10 ⁸ switching operations
Electrical life	1 x 10 ⁵ (0.5 A / 125 V AC) 2 x 10 ⁵ (1 A / 30 V DC)
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	49.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 230 V AC, 300 V DC

Isolated outputs; 2 changeover contacts

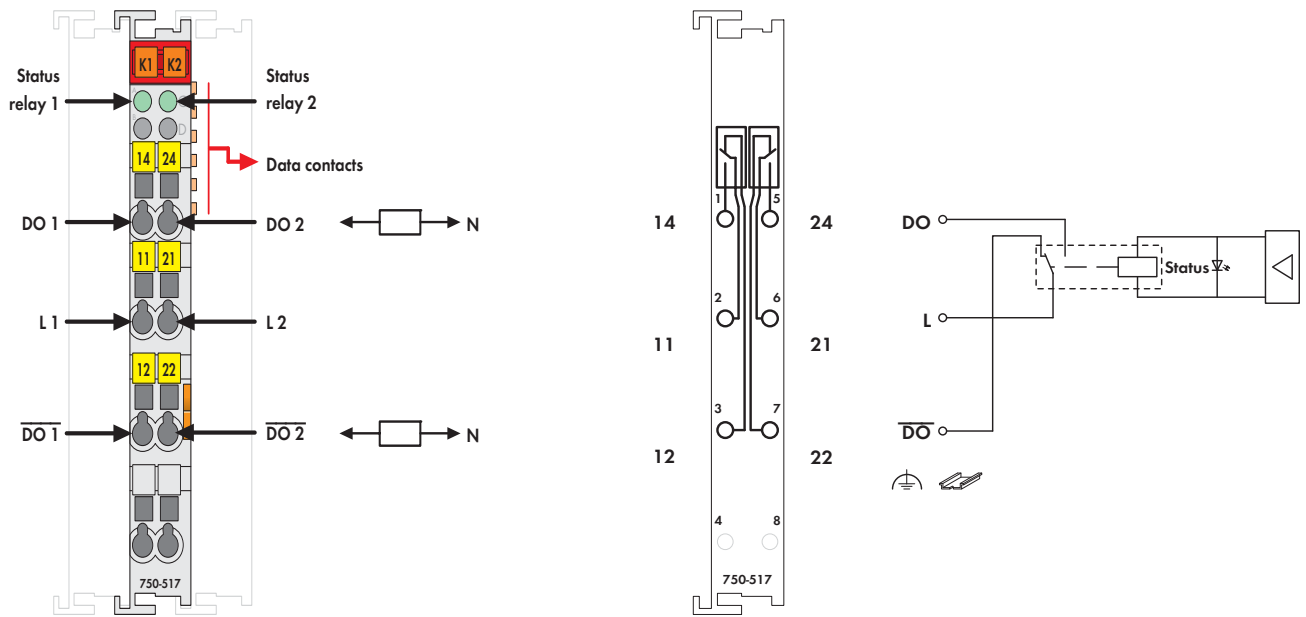





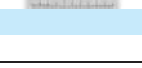
Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relay.

The SPDT contacts are electrically isolated.

The switched status of the relay is shown by a LED.

Description	Item No.	Pack. Unit
2DO 230V AC 1.0A/ Relay 2CO/ Potential Free	750-517	1
2DO 230V AC 1.0A/ Relay 2CO/ Potential Free (without connector)	753-517	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
EN 50021	II 3 G EEx n IIC T4	

Technical Data	
No. of outputs	2 changeover contacts
Max. current consumption (internal)	90 mA
Max. switching voltage	250 V AC / 300 V DC
Min. switching current	100 mA / 12 V DC
Max. switching current	1A AC; 1 A at 40 V DC; 0.15 A at 300 V DC
Max. switching frequency	6/min (at nominal load)
Pull-in time (max.)	8 ms
Drop-out time (max.)	4 ms
Contact material	Silver alloy
Mechanical life	5 x 10 ⁶ switching operations
Electrical life	1 x 10 ⁶ switching operations (1 A / 250 V AC)
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2001)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 230 V AC, 30 V DC

Non-floating; 2 make contacts

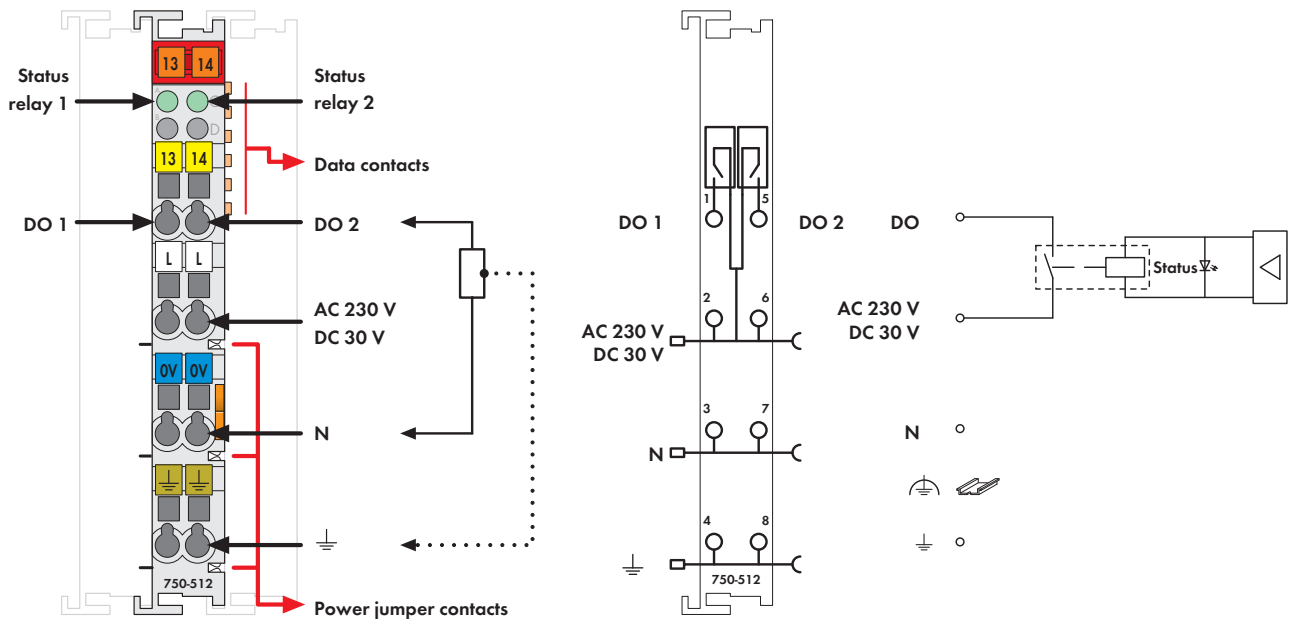


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The connected load is switched via the digital output (relay contacts) from the control system.

Notice:
An additional supply module must be added for operation with 250VAC/30VDC.

The internal system voltage is used to trigger the relays.

Note that the power jumper contacts supply both "N" (common point) and switched output voltages (this may be DC or AC).

The switched status of the relay is shown by a LED.

The module is a 2-channel, 4-conductor device and actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 230V AC 2.0A/ Relay 2NO	750-512	10 ¹⁾
2DO 230V AC 2.0A/ Relay 2NO (without connector)	753-512	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508	-	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nC IIC T4	753-512
EN 61241-0, -1		
EN 60079-0, -11, -15	I M2 Ex d I	750-512*
EN 61241-0, -1, -11	II 3 G Ex nA nC IIC T4	750-512*
	II 3 D Ex tD A22 IP6X T135°C	750-512*
	* Permissible operating temperature: 0°C ... +60°C	

Technical Data	
No. of outputs	2 make contacts
Max. current consumption (internal)	100 mA
Max. switching voltage	250 V AC / 30 V DC
Switching power	500 VA / 60 W (resistive load) cos φ max. = 0.4; L/R max = 7 ms
Min. switching current	10 mA / 5 V DC
Max. switching current	2 A AC/DC
Max. switching frequency	30/min (at nominal load)
Pull-in time (max.)	10 ms
Bounce time (typ.)	1.2 ms
Drop-out time (max.)	10 ms
Contact material	Silver alloy
Mechanical life	2 x 10 ⁷ switching operations
Electrical life	3 x 10 ⁵ switching operations (2 A / 250 V AC) or (2 A / 30 V DC)
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Relay Output Module 230 V AC, 30 V DC

Isolated outputs; 2 make contacts

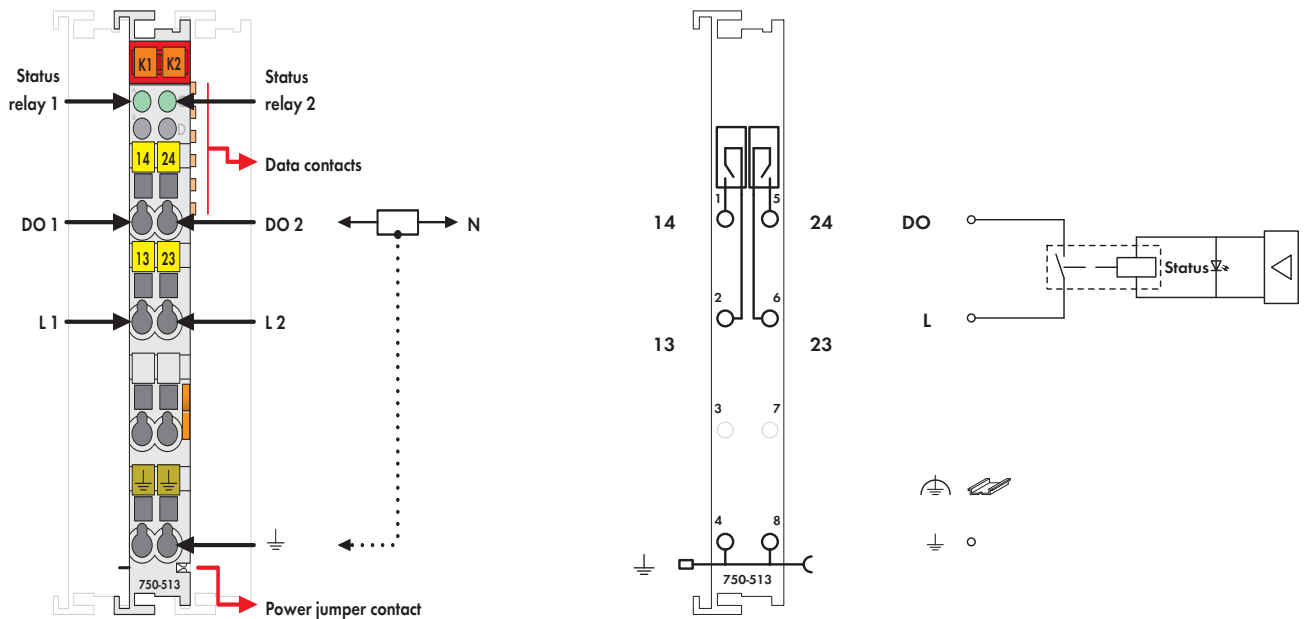


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13









The connected load is switched via the digital output (relay contacts) from the control system.

The internal system voltage is used to trigger the relay.

The NO contacts are electrically isolated.

The switched status of the relay is shown by a LED.

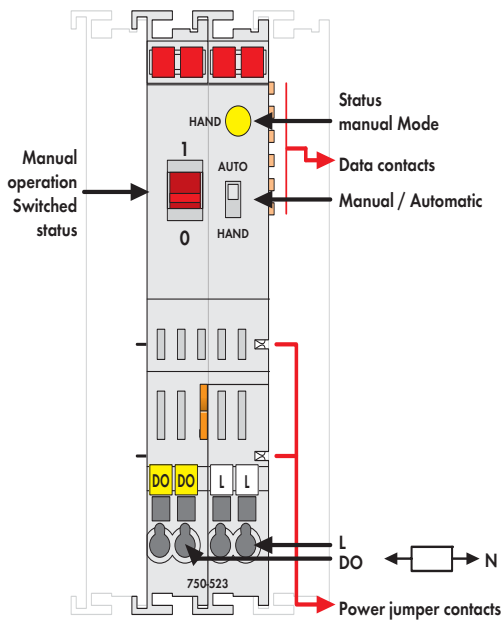
Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 230V AC 2.0A/ Relay 2NO/ Potential Free	750-513	10 ¹⁾
2DO 230V AC 2.0A/ Relay 2NO/ Potential Free / without power jumper	750-513/000-001	1
2DO 230V AC 2.0A/ Relay 2NO/ Potential Free (without connector)	753-513	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nC IIC T4	
 EN 61241-0, -1		

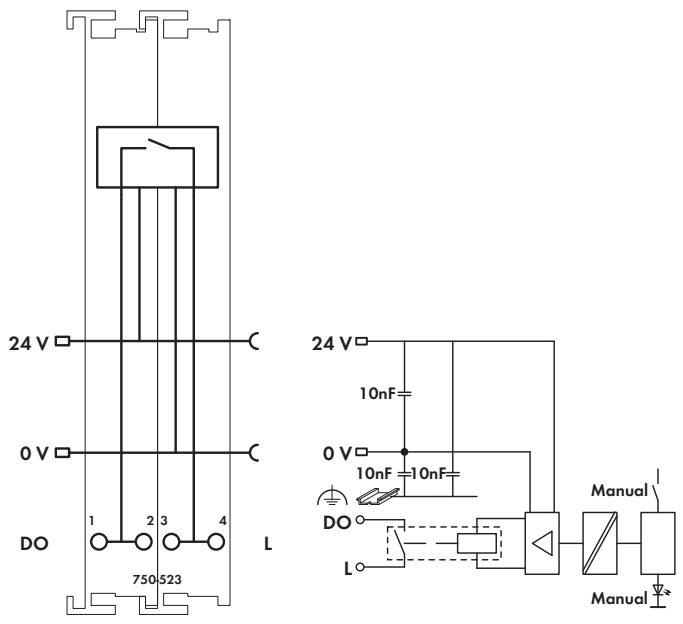
Technical Data	
No. of outputs	2 make contacts
Max. current consumption (internal)	100 mA
Max. switching voltage	250 V AC / 30 V DC
Switching power	500 VA / 60 W (resistive load) cos ϕ max. = 0.4; L/R max = 7 ms
Min. switching current	10 mA / 5 V DC
Max. switching current	2 A AC/DC
Max. switching frequency	30/min (at nominal load)
Pull-in time (max.)	10 ms
Bounce time (typ.)	1.2 ms
Drop-out time (max.)	10 ms
Contact material	Silver alloy
Mechanical life	2 x 10 ⁷ switching operations
Electrical life	3 x 10 ⁵ switching operations (2 A / 250 V AC) or (2 A / 30 V DC)
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 60000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1-Channel Relay Output Module 230 V AC, 16 A

Isolated output; 1 make contact; bistable; manual operation

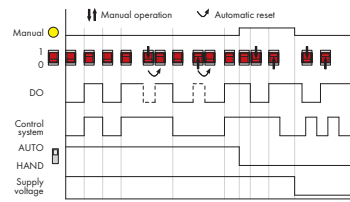


Delivered without miniature WSB markers



A connected actuator or load is switched via the relay output module. The 24VDC supply is derived from the power jumper contacts to trigger the relays. The switched status of the relay is shown by the manual switch (1/0). The operating mode can be set using a manual/automatic selector switch. The mode status is indicated by an LED and via status bits in the process image.
Manual: Coil triggering is interrupted. Actuation only via the red manual operating switches.
Auto: The relay is operated via the control system. Manual status changeover via manual operating switch is canceled by the control system in less than 500ms.
 The manual switch can also be used without 24V supply to switch the output ON.

The relay meets both international standards of IEC and DIN EN 61810 part 1 /VDE 0435 part 201 as well as overload and short circuit requirements of IEC and DIN EN 61036 /61037.



Description	Item No.	Pack. Unit
1DO 230V AC 16A Relay 1a/ Potential Free	750-523	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR, PRS, RINA	
UL 508		
Technical Data		
Switchable lamp loads 100000 operations / 30000 operations		
Incandescent lamp	1.25 kW / 2.5 kW	
Fluorescent lamp, not compensated	1.2 kW / 2.5 kW	
Fluorescent lamp, parallel compensated	650 W / 70 µF / 1.3 kW / 140 µF	
Fluorescent lamp, dual circuit	2 x 1.2 kW / 2 x 2.5 kW	
Halogen lamp (AC 230 V)	1.2 kW / 2.5 kW	
Low voltage halogen lamp with transf.	500 VA / 500 VA	
Mercury arc/Sodium discharge lamp, not compensated	1 kW / 2 kW	
Mercury arc/Sodium discharge lamp, parallel compensated	1 kW / 70 µF / 2 kW / 140 µF	
Dulux lamp, not compensated	800 W / 1.6 kW	
Dulux lamp, parallel compensated	560 W / 70 µF / 1.1 kW / 140 µF	

Technical Data	
No. of outputs	1 make contact
Max. current consumption (internal)	5 mA
Max. switching voltage	440 V AC
Switching power	max. 5 kVA
Max. switching current	16 A AC
Contact material	AgSnO2
Mechanical life	10 ⁶
Current consumption max. (field side)	80 mAs (peak current)
Isolation	1.5 kV eff. (field/system)*; * 2.5 kV rated surge voltage; Overvoltage category III
Bit width	2 bits in (Manual status, -); 2 bits out (DO, -)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	105 g
EMC: CE - immunity to interference	acc. to EN 50082-2 (1996)
EMC: CE - emission of interference	acc. to EN 50081-1 (1993)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Analog Input Modules



- **1-Channel Analog Input Modules**
 - Resistor bridges (strain gauge)
- **2-Channel Analog Input Modules**
 - Differential/single-ended input
 - Measurement input (electrical isolation)
 - 12-/14-/16-bit resolution
 - 0(4) ... 20 mA, 0 ... 1(5) A AC/DC
 - 0 ... 10 V, ±10 V, 0 ... 30 V DC
 - Diagnostics
- **4-Channel Analog Input Modules**
 - Single-ended input
 - 0(4) ... 20 mA,
 - 0 ... 10 V, ±10 V
- **Analog Specialty Modules**
 - HART protocol support
 - RTD measurement module (adjustable)
 - Thermocouple measurement module, diagnostics



Modular I/O System Overview

Analog Inputs



Function	2-Channel Analog Input	Page	4-Channel Analog Input	Page			
0 – 20 mA	750-452 / 753-452 Differential inputs	228	750-453 / 753-453 Single-ended (S.E.)	232			
	750-465 / 753-465 Single-ended (S.E.)	229					
	750-470 Single-ended (S.E.), short-circuit protec.	230					
	750-472 / 753-472 Single-ended (S.E.), 16 bits	231					
	750-480 / 753-480 Differential measurement inputs	233					
	4 – 20 mA	750-454 / 753-454 Differential inputs	228	750-455 / 753-455 Single-ended (S.E.)	232		
750-466 / 753-466 Single-ended (S.E.)		229					
750-473 Single-ended (S.E.), short-circuit protec.		230					
750-474 / 753-474 Single-ended (S.E.), 16 bits		231					
750-492 / 753-492 Differential measurement inputs		234					
750-482 / 753-482 Single-ended (S.E.), 16 bits, HART		235					
0 – 1 A		750-475 / 753-475 Differential inputs	236				
		0 – 10 V	750-477 / 753-477 Differential inputs	237	750-468 Single-ended (S.E.)	239	
750-467 / 753-467 Single-ended (S.E.)	238		750-459 / 753-459 Single-ended (S.E.)	241			
750-478 / 753-478 Single-ended (S.E.), 16 bits	240						
± 10 V	750-456 / 753-456 Differential inputs	242	750-457 / 753-457 Single-ended (S.E.)	241			
	750-479 / 753-479 Differential measurement inputs	243					
	750-476 / 753-476 Single-ended (S.E.), 16 bits	240					
0 – 30 V	750-483 / 753-483 Differential measurement inputs	244					
Modules for RTDs	750-461 / 753-461 PT100 / RTD / NTC 20kΩ	245	750-460 Pt100 / RTD	246			
			750-463 4AI RTD (Building Automation)	247			
			750-464 NTC, Configurable	248			
Thermocouples	750-469 / 753-469 Sensor types: J, K, B, E, N, R, S, T, U, L	249					
Analog Special Functions	750-493 3-Phase Power Measurement Module	251					
	1-Channel Analog Input						
	750-491 Resistor Bridges (Strain Gauge)	250					
Exi Modules	see pages 304 ... 325						

2-Channel Analog Input Module 0/4-20 mA

Differential inputs

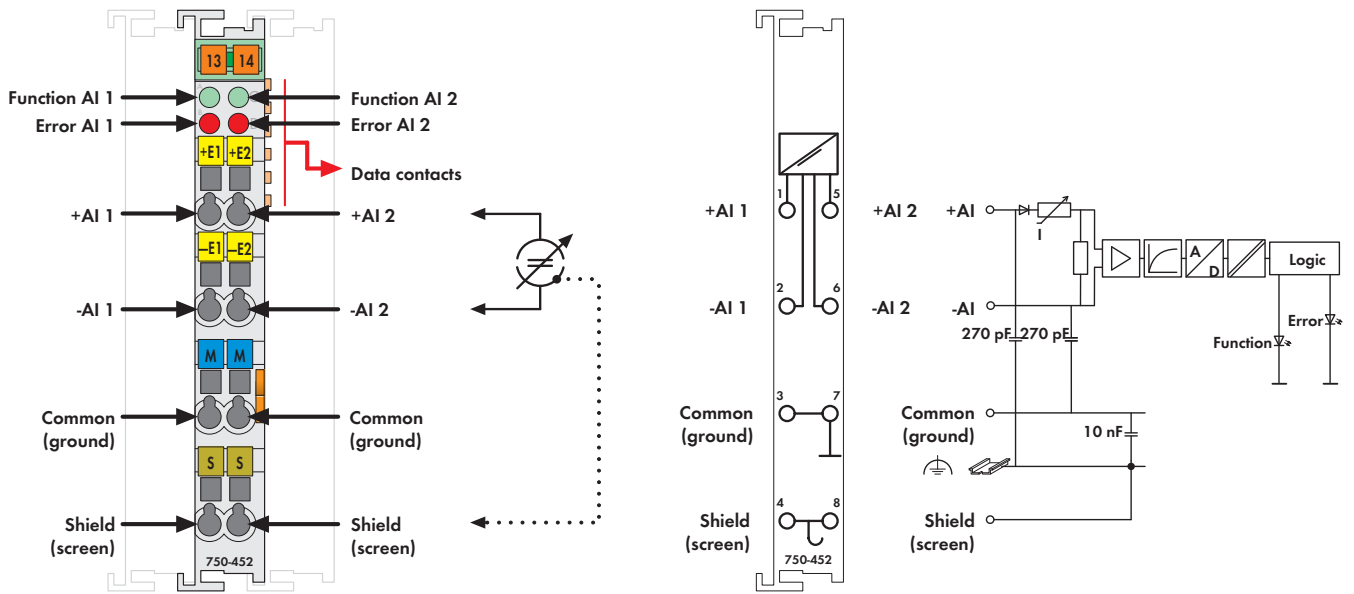


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




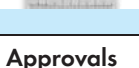




The analog input module processes signals of a standard magnitude 0–20mA.

The input signal is electrically isolated and is transmitted with a resolution of 12 bits.

The internal system supply is used for the power supply of the module.

The input channels are differential inputs.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-20mA Diff.	750-452	10 ¹⁾
2AI 0-20mA Diff./S5 ²⁾	750-452/000-200	1
2AI 4-20mA Diff.	750-454	10 ¹⁾
2AI 4-20mA Diff./S5 ²⁾	750-454/000-200	1
2AI 4-20mA Diff./T	750-454/025-000	1
[Operating temperature -20 °C ... +60 °C]		
2AI 0-20mA Diff. (without connector)	753-452	10 ¹⁾
2AI 4-20mA Diff. (without connector)	753-454	10 ¹⁾
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-452, -454 750-45x/000-200
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-452, -454
 EN 61241-0, -1		750-45x/000-200

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	70 mA
Common mode voltage (max.)	35 V DC
Signal current	0 - 20mA (750-452, 753-452) 4 - 20mA (750-454, 753-454)
Input resistance	< 220Ω / 20mA
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25°C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.)

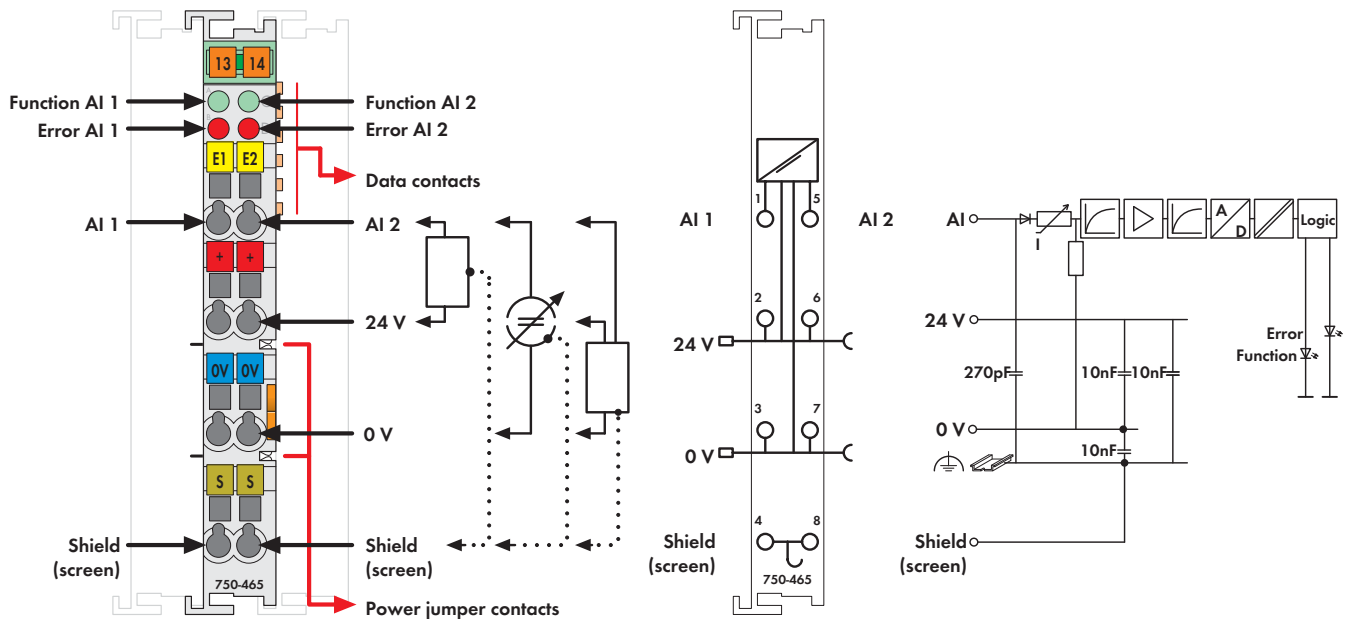





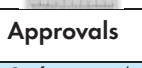




Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module powers the transducers, receives transmitted analog signals, and with electrical isolation, transmits the signals to the fieldbus.

The 24V supply for the field is derived from the module's power jumper contacts.

The shield (screen) is directly connected to the DIN rail.

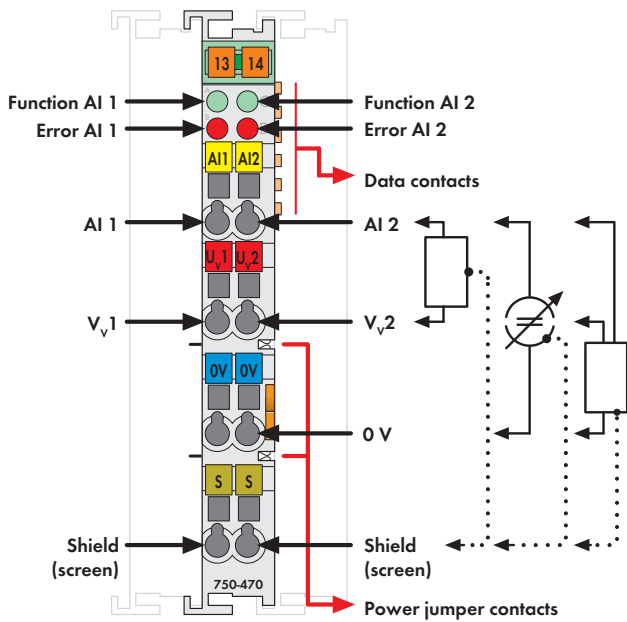
This input module can supply the voltage for 2-wire transducers.

Description	Item No.	Pack. Unit
2AI 0-20mA S.E.	750-465	10 ¹⁾
2AI 0-20mA S.E. S5 ²⁾	750-465/000-200	1
2AI 0-20mA S.E./T	750-465/025-000	1
[Operating temperature -20 °C ... +60 °C]		
2AI 4-20mA S.E.	750-466	10 ¹⁾
2AI 4-20mA S.E. S5 ²⁾	750-466/000-200	1
2AI 4-20mA S.E./T	750-466/025-000	1
[Operating temperature -20 °C ... +60 °C]		
2AI 0-20mA S.E. (without connector)	753-465	1
2AI 4-20mA S.E. (without connector)	753-466	1
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-465, -466, 750-46x/000-200
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-465, 753-466, 750-46x/000-200
 EN 60079-0, -11, -15	I M2 Ex d I	750-466*
	II 3 G Ex nA IIC T4	750-466*
	II 3 D Ex tD A22 IP6X T135°C	750-466*
* Permissible operating temperature: 0°C ... +60°C		

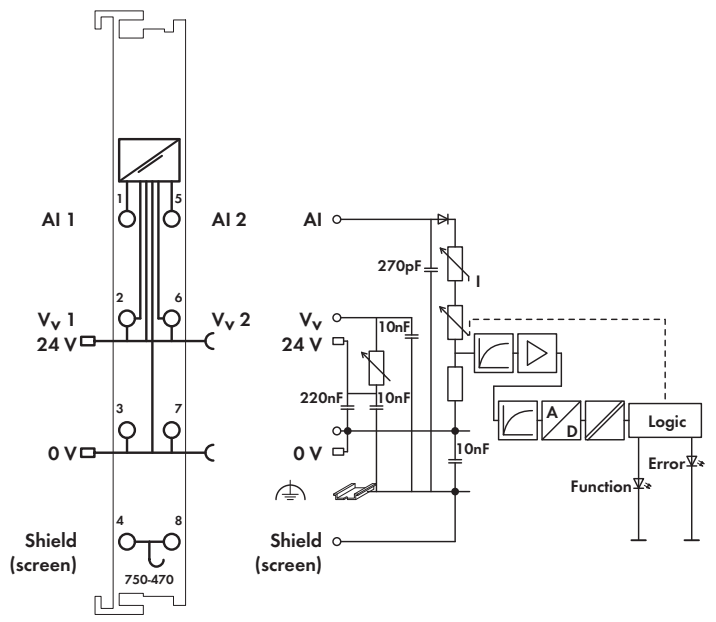
Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption (internal)	75 mA
Input voltage (max.)	10V
Signal current	0 - 20mA (750-465, 753-465) 4 - 20mA (750-466, 753-466)
Input resistance	< 220Ω / 20mA
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25°C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.), short-circuit protected



Delivered without miniature WSB markers



The analog input module processes signals of a standard magnitude 0-20mA.

A short circuit to power is indicated as an error/fieldbus failure and a message is sent to the supervisory control.



The input signal is electrically isolated and is transmitted with a resolution of 12 bits.

The 24V supply for the field is derived from the module's power jumper contacts.

The shield (screen) is directly connected to the DIN rail.

This module can supply the short-circuit-proof voltage for 2-wire transducers.

Description	Item No.	Pack. Unit
2AI 0-20mA, S.E., S. C. Protec.	750-470	1
2AI 0-20mA, S.E., S. C. Protec., 60 Hz	750-470/005-000	1
2AI 4-20mA, S.E., S.C.Protoc.	750-473	1
2AI 4-20mA, S.E., S. C. Protec., 60 Hz	750-473/005-000	1

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	

Approvals	Also see "Approvals Overview" in Section 1
Conformity marking	CE
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4
EN 61241-0, -1	

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	100 mA
Signal current	0 - 20mA (750-470) 4 - 20mA (750-473)
Input voltage	non-linear, overload protected $V = 1.2 V + 100 \Omega \times I \text{ meas.}$
Input resistance (typ.)	< 160Ω / 20mA
Resolution	12 bits
Conversion time (typ.)	80 ms
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V field/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Input filter	50Hz (750-470, 750-473) 60Hz (750-470/005-000, 750-473/005-000)
Noise rejection at sampling frequency	< -100 dB
Noise rejection above sampling frequency	< -40 dB
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	55.5 g
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.)

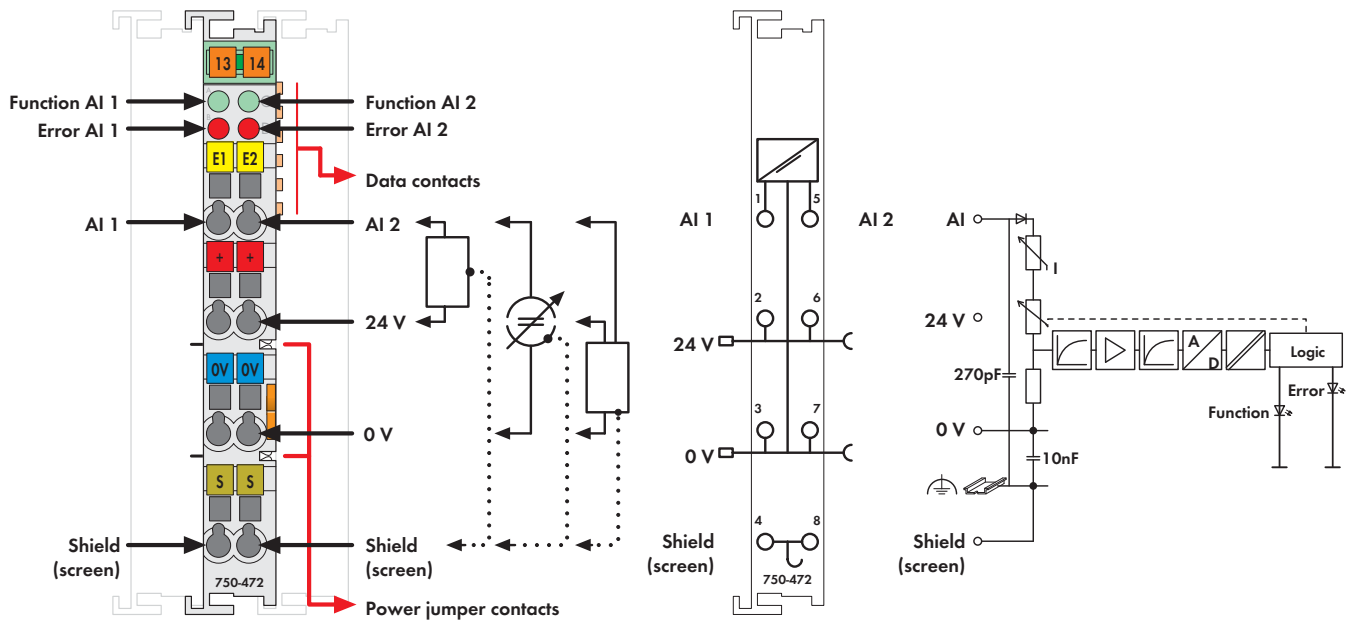


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module powers the transducers, receives transmitted analog signals, and with electrical isolation, transmits the signals to the fieldbus.

This input module can supply the voltage for 2-wire transducers.

The 24V supply for the field is derived from the module's power jumper contacts.

The shield (screen) is directly connected to the DIN rail.

At approx. 25mA, the overload protection switches the measurement input to a high-resistance state. Under normal operating conditions it will automatically switch back.

Description	Item No.	Pack. Unit
2AI 0-20mA 16 Bit S.E.	750-472	1
2AI 0-20mA 16 Bit S.E. S5 ¹⁾	750-472/000-200	1
2AI 0-20mA 16 Bit S.E. 60Hz	750-472/005-000	1
2AI 4-20mA 16 Bit S.E.	750-474	1
2AI 4-20mA 16 Bit S.E. S5 ¹⁾	750-474/000-200	1
2AI 4-20mA 16 Bit S.E. 60Hz	750-474/005-000	1
2AI 0-20mA 16 Bit, S.E. (without	753-472	1
2AI 4-20mA 16 Bit, S.E. (without	753-474	1

¹⁾ Data format for S5 control with FB 251

Accessories	Item No.	Pack. Unit
753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	

Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-472, -474
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption (internal)	75 mA
Input voltage (max.)	24V
Input voltage	non-linear, overload protected $V = 1.2 V + 100 \Omega \times I_{meas.}$
Signal current	0 - 20mA (750-472, 753-472) 4 - 20mA (750-474, 753-474)
Input resistance	220Ω / 20mA
Overvoltage protection	30 V polarity reversal protection
Resolution	15 bits
Conversion time (typ.)	80 ms
Input filter	50Hz
Noise rejection at sampling frequency	< -100 dB
Noise rejection above sampling frequency	< -40 dB
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	55.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Analog Input Module 0/4-20 mA

Single-ended (S.E.)

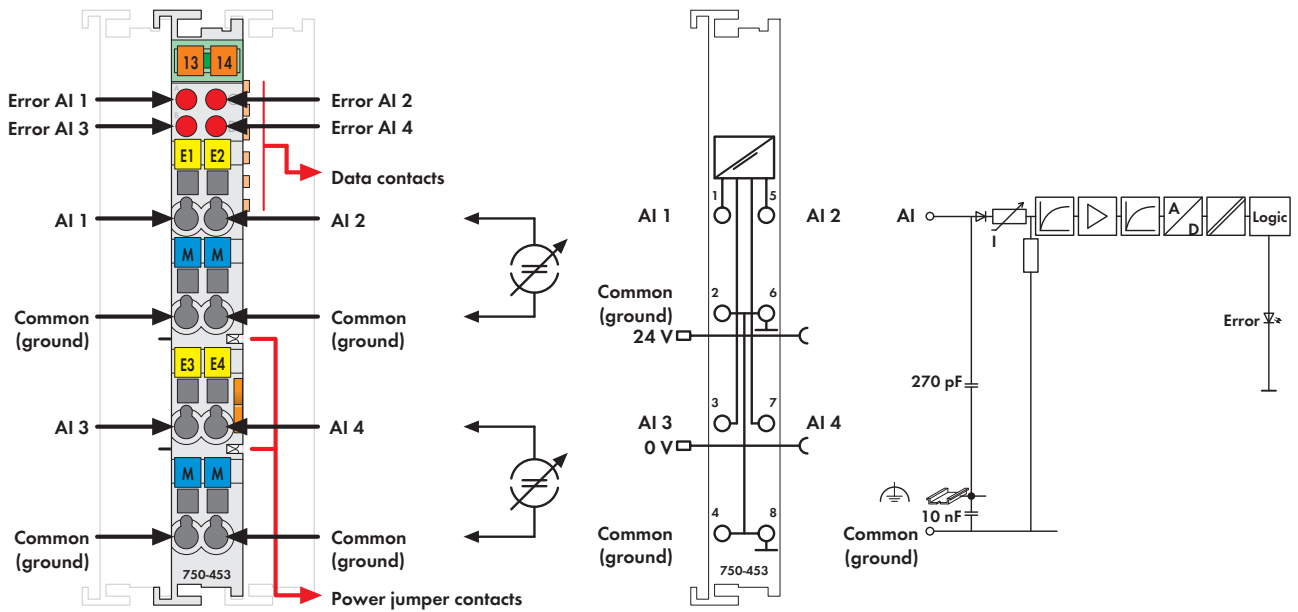





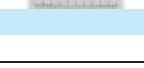




Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module processes signals of a standard magnitude 0-20mA.

The input signal is electrically isolated and is transmitted with a resolution of 12 bits.

The internal system supply powers the module.

The input channels of the module have one common ground potential.

Description	Item No.	Pack. Unit
4AI 0-20mA S.E.	750-453	10 ¹¹
4AI 4-20mA S.E.	750-455	10 ¹¹
4AI 4-20mA S.E./T	750-455/025-000	1
[Operating temperature -20 °C ... +60 °C]		
4AI 0-20mA S.E. (without connector)	753-453	10 ¹¹
4AI 4-20mA S.E. (without connector)	753-455	10 ¹¹
1) Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-453, -455
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-453, -455
 EN 61241-0, -1		

Technical Data	
Number of inputs	4
Power supply	via system voltage DC/DC
Current consumption (internal)	65 mA
Input voltage (max.)	32V
Signal current	0 - 20mA (750-453, 753-453) 4 - 20mA (750-455, 753-455)
Input resistance	< 100Ω / 20mA
Resolution	12 bits
Conversion time (typ.)	10 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data 4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module 0-20 mA

Differential inputs

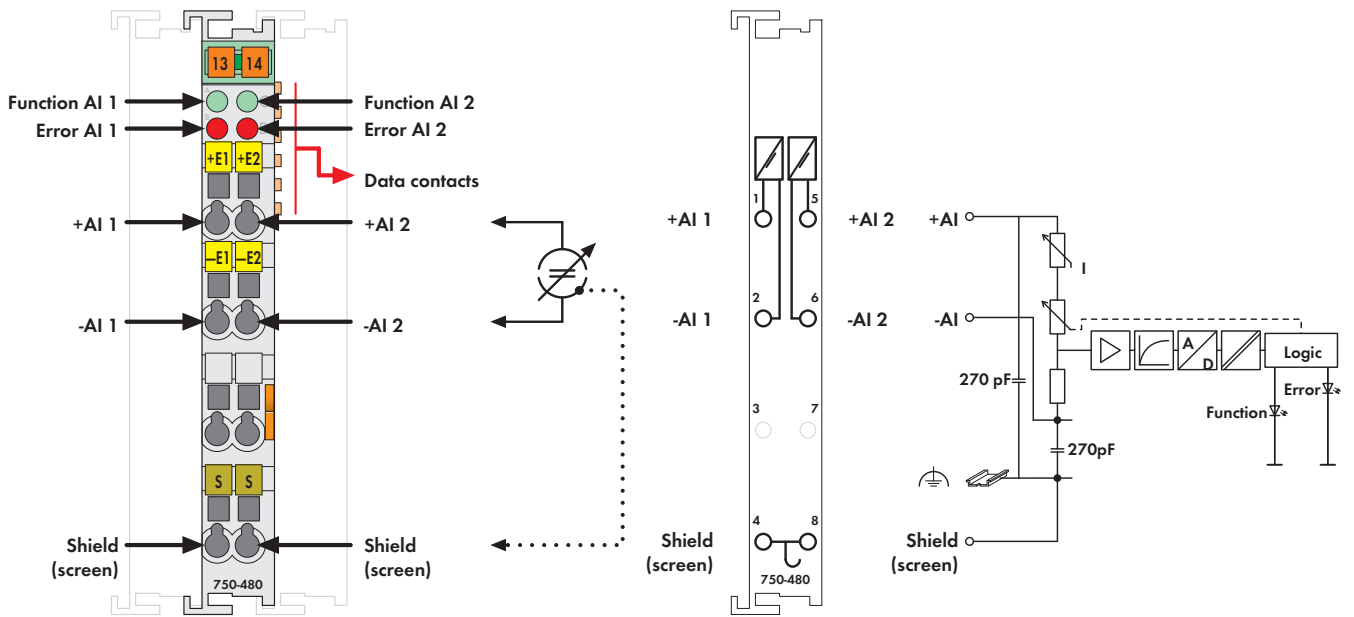






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The 2-channel analog input module processes differential signals of a magnitude 0-20mA.
The input signal of each channel is electrically isolated and is transmitted with a resolution of 13 bits.
The internal system supply powers the module.
The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Measuring range overflow/underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: non-linear limiting

Technical data for the 750-480/000-001 model:

- Measured-value acquisition time synchronous (in connection with synchronized sampling of the slave, 750-303 Fieldbus Coupler (as from version 0101))
- Overrange / measuring range underflow status byte, status bits, measured value and LED (min./max. limiting values can also be set according to customers' specifications)
- Sampling delay (instruction/conversion) < 50µs
- Operating mode triggered

Description	Item No.	Pack. Unit
2AI 0-20mA Differential Input	750-480	1
2AI 0-20mA Differential Input	750-480/000-001	1
Synchronous		
Differing technical data see text		
2AI 0-20mA Differential Input (without connector)	753-480	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-480
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2, electrically isolated from each other
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Signal current	0 ... 20 mA
Input resistance	< 270Ω / 20mA
Input filter	low pass first order, f _c = 5 kHz
Resolution of the A/D converter	14 bits
Monotonicity without missing codes	yes
Resolution of measured value	13 bits
Value of a LSB (least significant bit)	2.4 µA
Measuring error (25°C)	< ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	≤ 0.4 % over whole temperature range
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 µs
Sampling duration	≤ 5 µs
Admissible continuous overload	30 V
Dielectric strength	500 V DC channel/channel or channel/system
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 4-20 mA

Isolated differential inputs

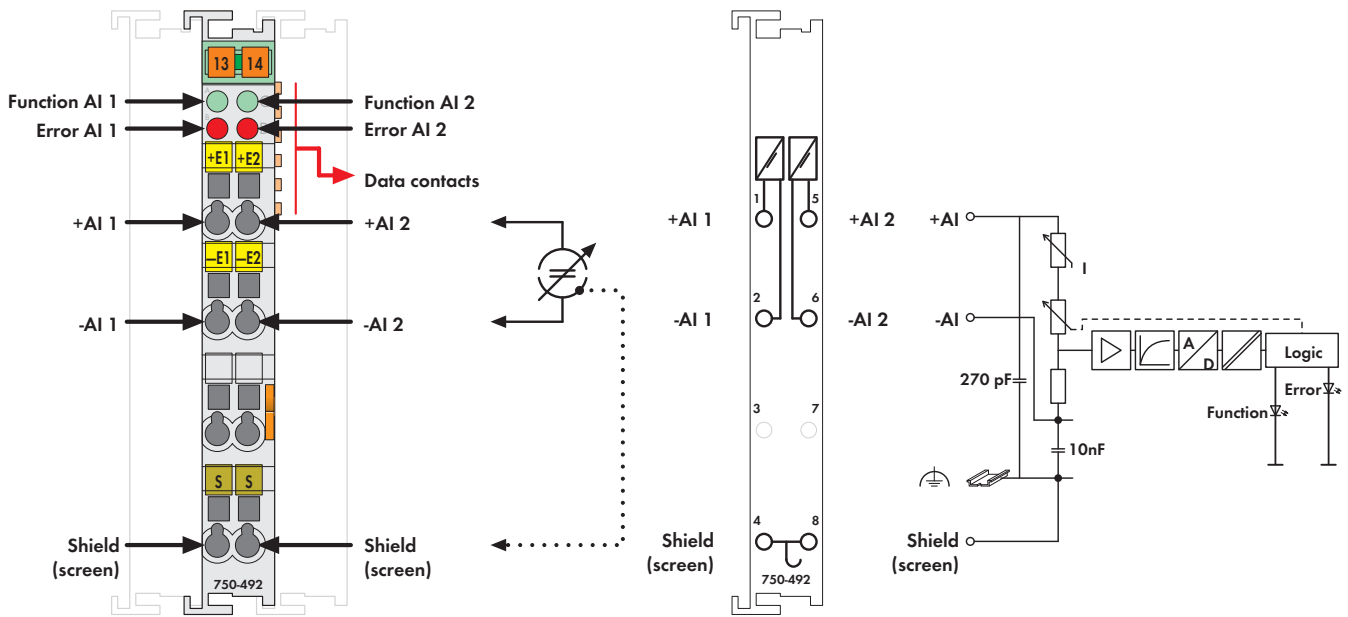


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13





The 2-channel analog input module processes differential signals of a magnitude 4–20mA.

The input signal of each channel is electrically isolated and is transmitted with a resolution of 13 bits.

The internal system supply powers the module.

The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Measuring range overflow/underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: non-linear limiting

Description	Item No.	Pack. Unit
2AI 4-20mA Differential Input	750-492	1
2AI 4-20mA Differential Input (without connector)	753-492	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-492
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2, electrically isolated from each other
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Signal current	4 ... 20 mA
Input resistance	< 270Ω / 20mA
Input filter	low pass first order, $f_c = 5$ kHz
Resolution of the A/D converter	14 bits
Monotonicity without missing codes	yes
Resolution of measured value	13 bits
Value of a LSB (least significant bit)	2.4 μA
Measuring error (25°C)	< ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	< 0.4 % over whole temperature scale
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 μs
Sampling duration	≤ 5 μs
Admissible continuous overload	30 V
Dielectric strength	500 V DC channel/channel or channel/system
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 4-20 mA HART

Single-ended (S.E.)

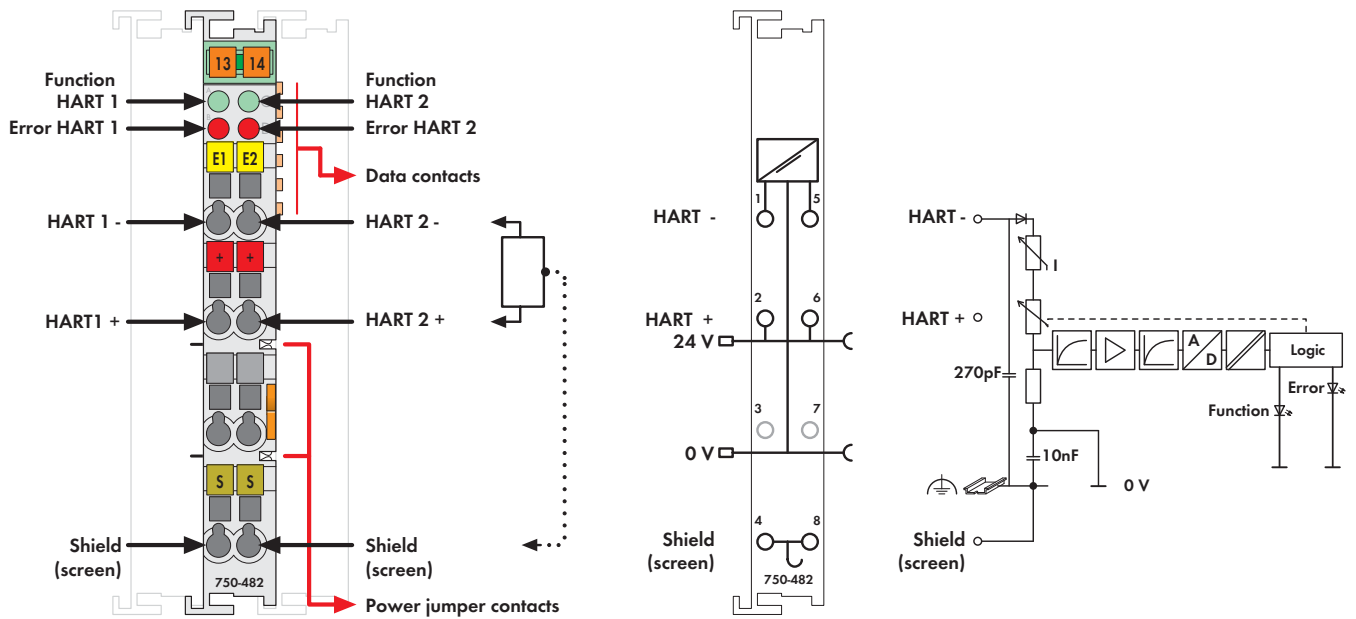



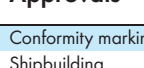


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module powers the transducers, receives transmitted analog signals, and with electrical isolation, transmits the signals to the fieldbus.

The 24V supply for the field is derived from the module's power jumper contacts. The shield (screen) is directly connected to the DIN rail. At approx. 25mA, the overload protection switches the measurement input to a high-resistance state. Under normal operating conditions it will automatically switch back. This input module can supply the voltage for 2-wire transducers.

Up to 4 HART dynamic variables (PV, SV, TV, QV) per channel can be mapped in the cyclic process image of the coupler or controller (configurable). For HART communication with connected intelligent HART field devices, the HART protocol can be mapped in the cyclic process image of the coupler or controller (configurable). FDT/DTM device drivers are available for select (programmable) couplers, allowing HART tool routing to the connected HART device.

Description	Item No.	Pack. Unit
2AI 4-20mA 12 Bit S.E. HART	750-482	1
2AI 4-20mA 12 Bit S.E. HART/T	750-482/025-000	1
[Operating temperature -20 °C ... +60 °C]		
2AI 4-20mA 12 Bit S.E. HART (without connector)	753-482	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	pending	
UL 508		
ANSI/ISA 12.12.01	pending	
EN 60079-0, -15	pending	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC, ~ 10 mA without sensor supply
Current consumption (internal)	< 65mA
Input voltage (max.)	24V
Input voltage drop	(I _{meas} < 28 mA): not linear, as protected against overload U = 0.9 V + 270 Ω x I meas
Signal current	4 mA ... 20 mA
Line break detection	I meas < 3.10 mA
Short circuit detection	I meas > 22 mA
Overvoltage protection	30 V, reverse polarity protected
Resolution of the A/D converter	12 bits
Conversion time (typ.)	10 ms
Input filter	parameterizable
Measuring error (25 °C)	0.1 % of upper range value (non-linearity)
Temperature coefficient	< ± 0.01 % / K of full scale value
Isolation	500 V system/supply
Bit width	2 x 2 bytes data 2 x 2 bytes data + 2n x 4 bytes data (n = number of dynamic variables) 2 x 2 bytes data + 6 bytes mailbox
Diagnostics	Wire break, measuring range overflow
Sensor connection	2-wire
HART devices per channel	1 device (single-drop, no multi-drop)
HART modems per channel	1 modem (no multiplex)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

2-Channel Analog Input Module 0-1 A AC/DC

Differential inputs

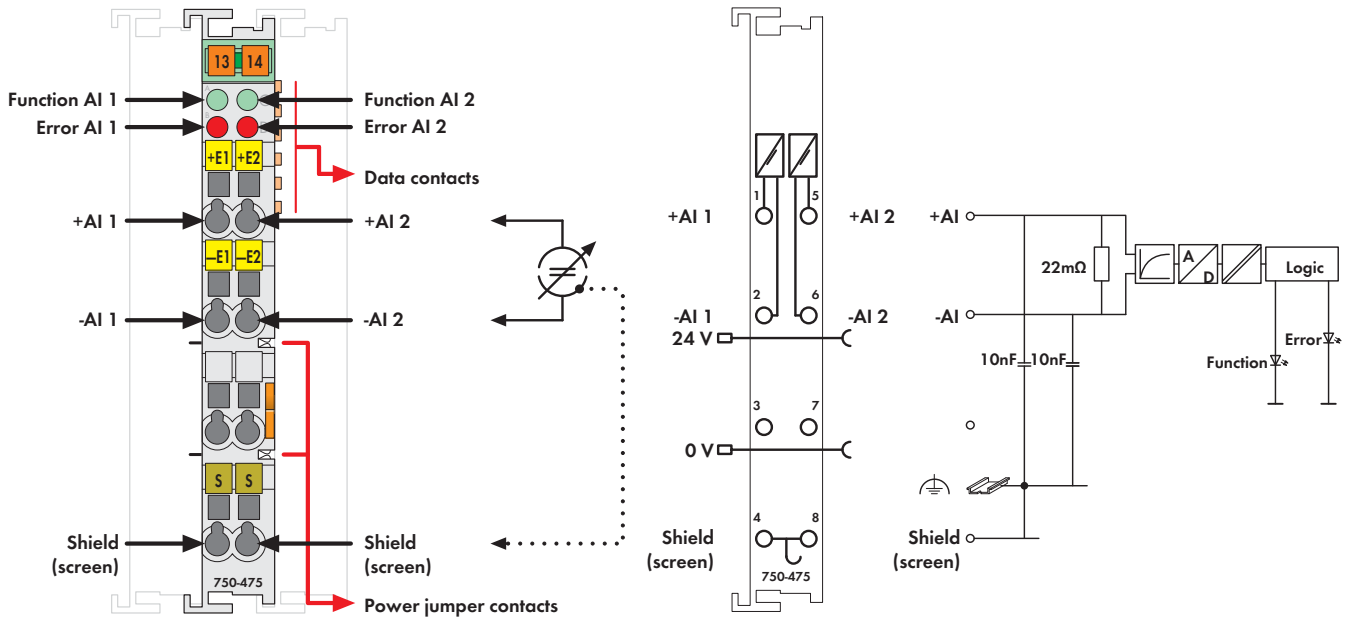


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module processes AC and DC currents within a range of 0 to 1 A (rms).

Technical data for the 750-475/020-000 model:
Signal current: 0A ... 6A eff
Process data: 0.0 A is 0x0000; 6.0 A is 0x7FFF

The module measures the rms value of the current and displays it with a resolution of 100µA.

- The maximum current must not exceed 2A.
- The differential inputs are electrically isolated.
- The fieldside and internal system are electrically isolated.
- System voltage is used for voltage supply.
- The input channels are differential inputs.
- The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-1A AC/DC Differential Input	750-475	1
2AI 0-5A AC/DC Differential Input	750-475/020-000	1
Differing technical data see text		
2AI 0-1A AC/DC Differential Input (without connector)	753-475	1
Accessories		
753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon)	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-475
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption (internal)	80 mA
Input voltage (max.)	24V AC/DC (-20% ... +20%)
Signal current	0 A ... 1 A eff. (peak value 2.0 A)
Load impedance	22 mΩ
Resolution	16 bits internal (1 LSB = 100 µA)
Conversion time	200 ms
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 110 ppm / K of the full scale value
Error in complete temperature range	≤ ± 0.6 % of the full scale value
Dielectric strength	500 V DC channel/channel or channel/system
Voltage via power jumper contacts	24 V DC
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Process data	0.0 A is 0x0000; 2.0 A DC is 0x4E20
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	47 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module 0-10 V AC/DC

Differential inputs

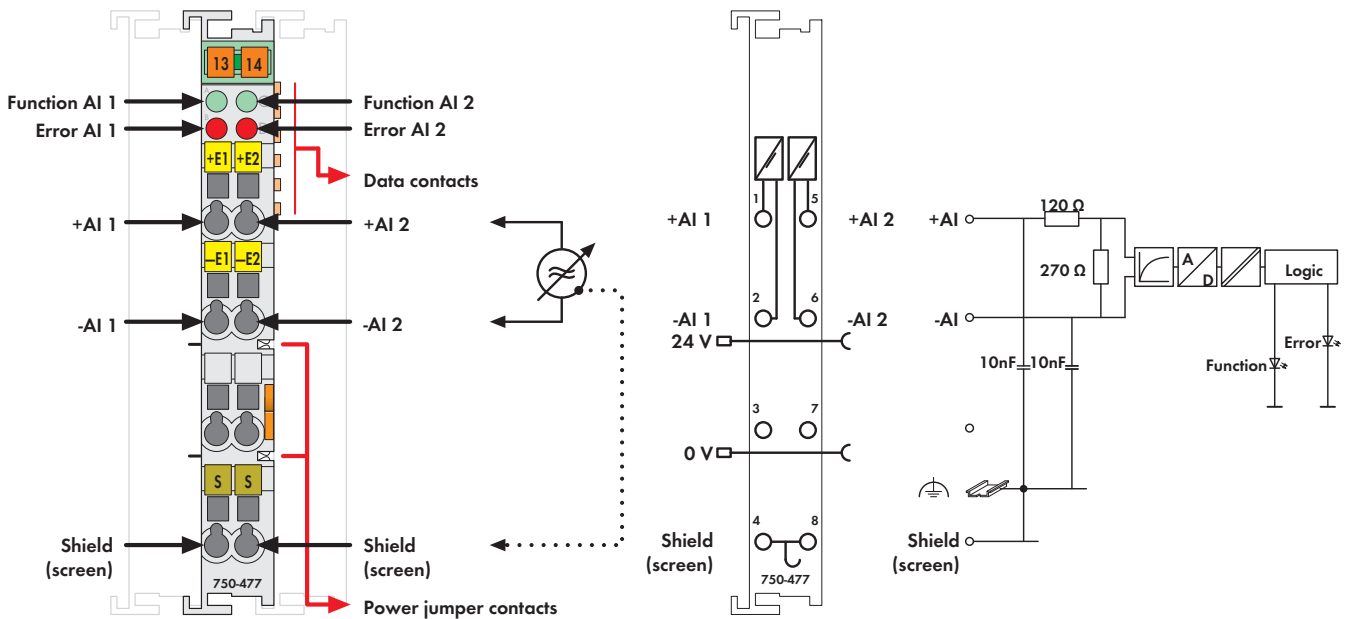






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module processes AC and DC voltage within a range of 0 to 10V (rms).

The module measures the rms value of the voltage and displays it with a resolution of 1 mV.

- The maximum voltage must not exceed 20V.
- The differential inputs are electrically isolated.
- The fieldside and internal system are electrically isolated.
- System voltage is used for voltage supply.
- The input channels are differential inputs.
- The shield (screen) is connected directly to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-10V AC/DC Differential Input	750-477	1
2AI 0-10V AC/DC Diff. (without connector)	753-477	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption (internal)	80 mA
Signal voltage	0 V ... 10 V eff. (peak value 20 V)
Internal resistance	120 kΩ
Resolution	16 bits internal (1 LSB = 1 mV)
Conversion time	200 ms
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 110 ppm / K of the full scale value
Error in complete temperature range	≤ ± 0.6 % of the full scale value
Dielectric strength	500 V DC channel/channel or channel/system
Voltage via power jumper contacts	24 V DC
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Process data	0.0 V is 0x0000; 20 V DC is 0x4E20
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	47 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 2-Channel Analog Input Module 0-10 V

Single-ended (S.E.)

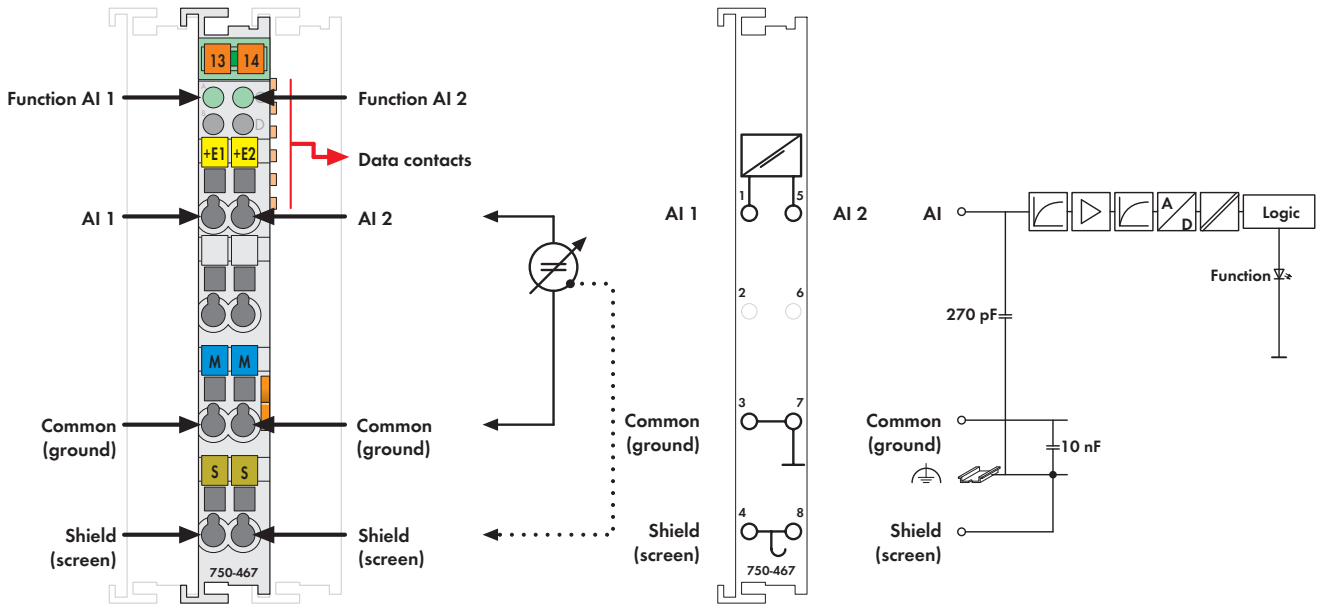










Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

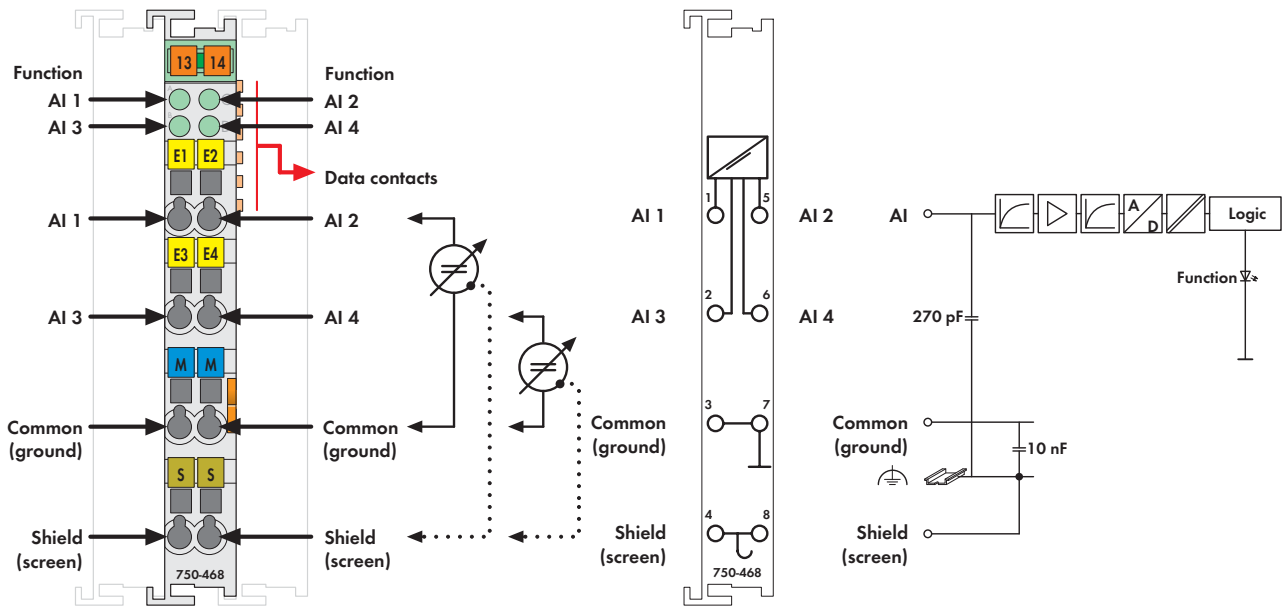
- The analog input module processes signals of a standard magnitude 0–10V.
- The input signal is electrically isolated and is transmitted with a resolution of 12 bits.
- The internal system supply powers the module.
- The input channels of the module have one common ground potential.
- The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI 0-10V DC S.E.	750-467	10 ¹⁾
2AI 0-10V DC S.E. S5 ²⁾	750-467/000-200	1
2AI 0-10V DC S.E. (without connector)	753-467	10 ¹⁾
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	60 mA
Input voltage (max.)	35V
Signal voltage	0 ... 10 V
Internal resistance	130 kΩ
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25°C)	≤ ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)


4-Channel Analog Input Module 0-10 V

Single-ended (S.E.)



Delivered without miniature WSB markers

The analog input module receives signals with the standardized values of 0-10V.
 The input signal is electrically isolated and will be transmitted with a resolution of 12 bits.
 The internal system voltage supply is used for the power supply of the module.
 The input channels of a module have one common ground potential.
 The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
4AI 0-10V DC S.E.	750-468	1
4AI 0-10V DC S.E. S5 ²⁾	750-468/000-200	1
4AI 0-10V DC S.E./T	750-468/025-000	1
(Operating temperature -20 °C ... +60 °C)		
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	
Shipbuilding (versions upon)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I Div2 ABCD T4	750-468, 750-468/000-200
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-468, EN 61241-0, -1
		750-468/000-200

Technical Data	
Number of inputs	4
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	60 mA
Input voltage (max.)	35V
Signal voltage	0 ... 10 V
Internal resistance	133 kΩ
Resolution	12 bits
Conversion time (typ.)	4 ms
Measuring error (25 °C)	± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data 4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52.5 g 52 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

2-Channel Analog Input Module ±10 V/0-10 V Single-ended (S.E.)

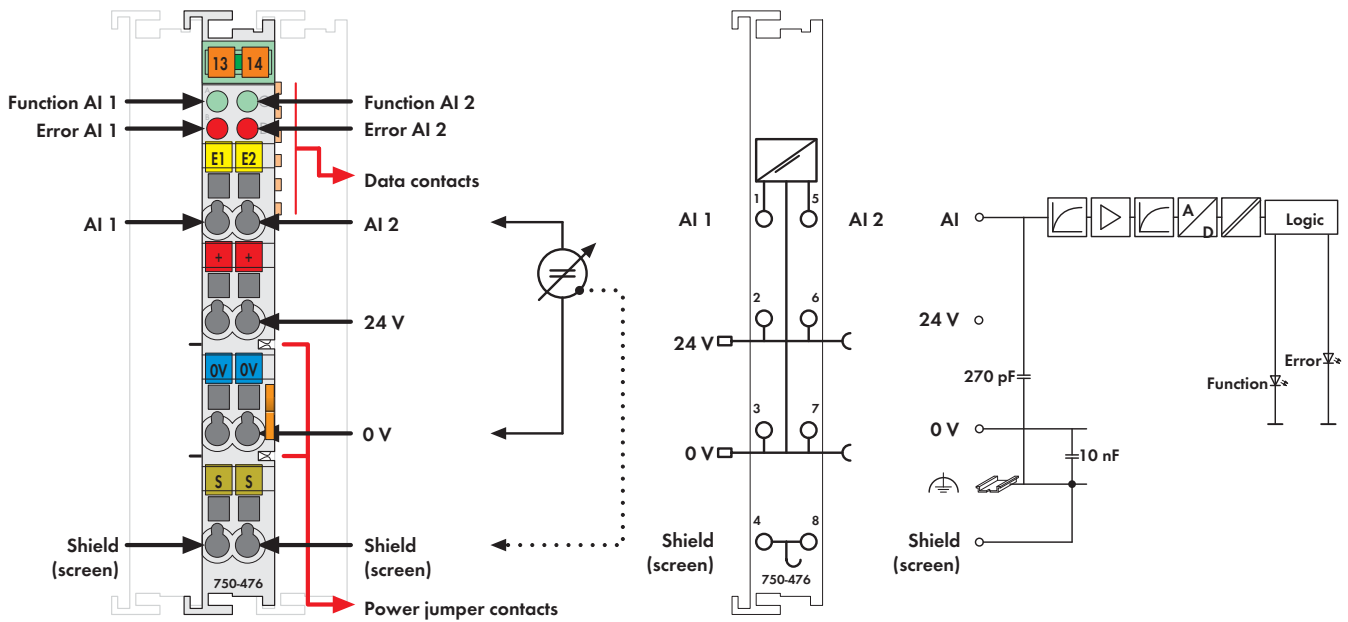






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

- The analog input module processes signals of a standard magnitude ±10V.
- The input signal is electrically isolated and is transmitted with a resolution of 16 bits.
- The internal system supply powers the module.
- The input channels of the module have one common ground potential.
- The 24V supply is derived from the power jumper contacts.
- The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI ±10V DC 16 Bit S.E.	750-476	1
2AI ±10V DC 16 Bit S.E. 60Hz S5-466	750-476/000-200	1
2AI ±10V DC 16 Bit S.E. 60Hz	750-476/005-000	1
2AI 0-10V DC 16 Bit S.E.	750-478	1
2AI 0-10V DC 16 Bit S.E. 60Hz	750-478/005-000	1
2AI ±10V DC 16 Bit S.E. (without connector)	753-476	1
2AI 0-10V DC 16 Bit S.E. (without connector)	753-478	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-476, -478
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption (internal)	75 mA
Input voltage (max.)	24V
Signal voltage	± 10V (750-476, 753-476) 0 - 10V (750-478, 753-478)
Internal resistance	130 kΩ
Resolution	15 bits + sign bit
Conversion time (typ.)	80 ms
Input filter	50Hz
Noise rejection at sampling frequency	< -100 dB
Noise rejection above sampling frequency	< -40 dB
Measuring error (25 °C)	± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel Analog Input Module ±10 V/0-10 V

Single-ended (S.E.)

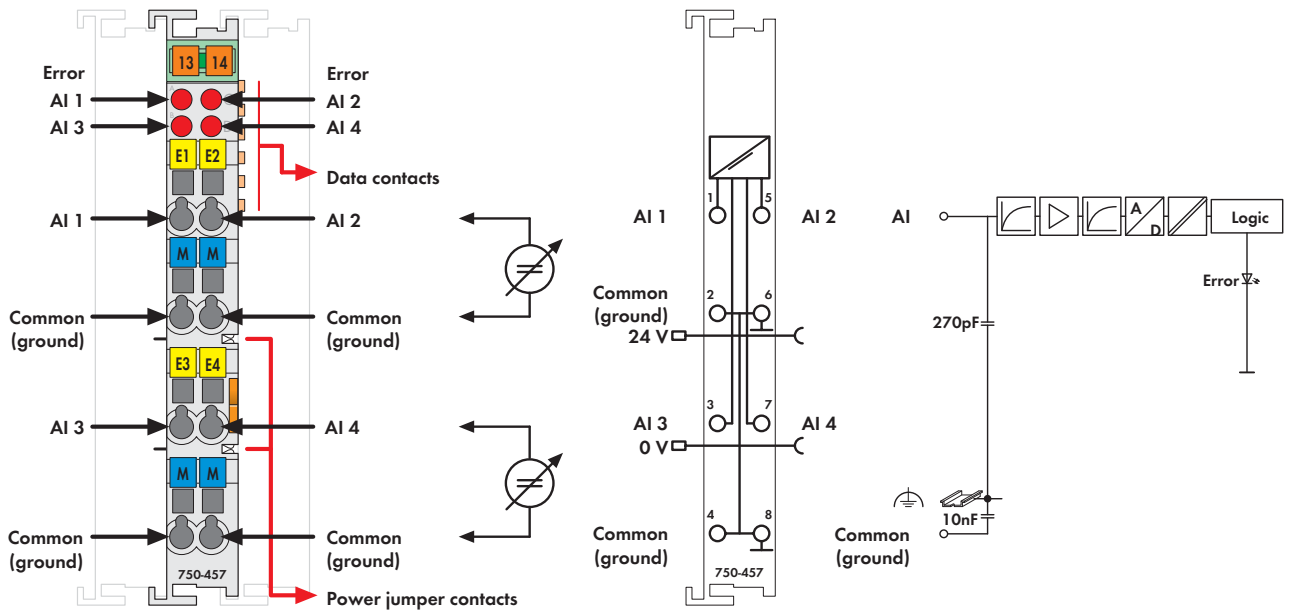





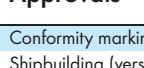




Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog input module processes signals of a standard magnitude ±10V.

The input signal is electrically isolated and is transmitted with a resolution of 12 bits.

The internal system supply powers the module.

The input channels of the module have one common ground potential.

Description	Item No.	Pack. Unit
4AI ±10V DC S.E.	750-457	10 ¹⁾
4AI ±10V DC S.E./T	750-457/025-000	1
[Operating temperature -20 °C ... +60 °C]		
4AI 0-10V DC S.E.	750-459	10 ¹⁾
4AI ±10V DC S.E. (without connector)	753-457	10 ¹⁾
4AI 0-10V DC S.E. (without connector)	753-459	10 ¹⁾
1) Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-457, -459
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-457, -459
 EN 61241-0, -1		

Technical Data	
Number of inputs	4
Power supply	via system voltage DC/DC
Current consumption (internal)	65 mA
Input voltage (max.)	± 40V
Signal voltage	± 10 V (750-457, 753-457) 0 V ... 10 V (750-459, 753-459)
Input resistance	> 100kΩ
Resolution	12 bits
Conversion time (typ.)	10 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data 4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 2-Channel Analog Input Module ±10 V

Differential inputs

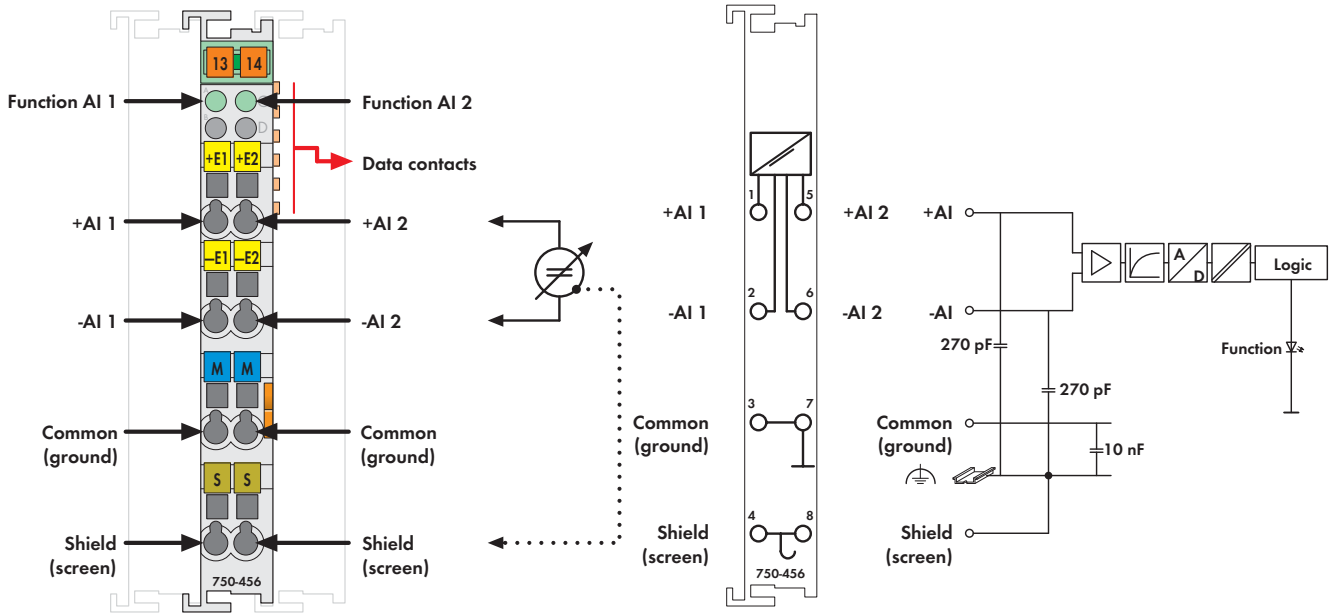



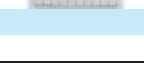






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

- The analog input module processes signals of a standard magnitude ±10V.
- The input signal is electrically isolated and is transmitted with a resolution of 12 bits.
- The internal system supply powers the module.
- The input channels are differential inputs.
- The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
2AI ±10V DC	750-456	10 ¹⁾
2AI ±10V DC S5 ²⁾	750-456/000-200	1
2AI ±10V DC (without connector)	753-456	10 ¹⁾
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
	UL 508	
	Class I, Div. 2, Grp. ABCD, T4	
	I M2 / II 3 GD Ex nA IIC T4	
	EN 61241-0, -1	

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Common mode voltage (max.)	35V
Signal voltage	± 10 V
Internal resistance	typ. 570 kΩ
Resolution	12 bits
Conversion time (typ.)	2 ms
Measuring error (25°C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.015 % / K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Input Module ±10 V

Differential measurement input

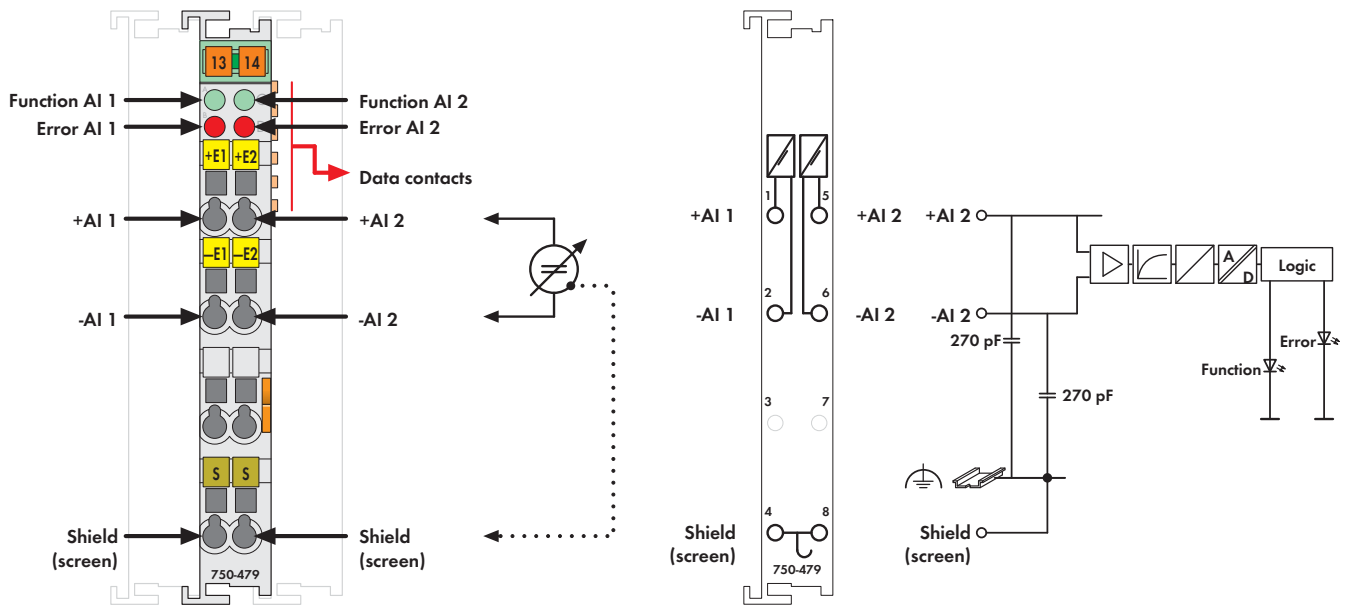





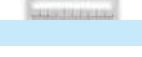
Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The 2-channel analog input module processes differential signals of a magnitude ±10VDC. The input signal of each channel is electrically isolated and is transmitted with a resolution of 13 bits. System voltage is used for voltage supply. The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Measuring range overflow/underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: RC circuit

Technical data for the 750-479/000-001 model:

- Measured-value acquisition time synchronous (in connection with synchronized sampling of the slave, 750-303 Fieldbus Coupler (as from version 0101))
- Overrange / measuring range underflow status byte, status bits, measured value and LED (min./max. limiting values can also be set according to customers' specifications)
- Sampling delay (instruction/conversion) < 50µs
- Operating mode triggered

Description	Item No.	Pack. Unit
2AI ±10V DC Diff. Measur. Inp.	750-479	1
2AI ±10V DC Differential Input	750-479/000-001	1
Synchronous		
Differing technical data see text		
2AI ±10V DC Differential Input (without connector)	753-479	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA*	
	*753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-479
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2, electrically isolated from each other
Power supply	via system voltage DC/DC
Current consumption (internal)	100 mA
Signal voltage	± 10 V
Internal resistance	1 MΩ
Input filter	low pass first order, f _c = 5 kHz
Resolution of the A/D converter	14 bits
Monotonicity without missing codes	yes
Resolution of measured value	13 bits + sign bit
Value of a LSB (least significant bit)	1.2 mV
Measuring error (25°C)	≤ ± 0.05 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring error	≤ 0.4 % over whole temperature scale
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 µs
Sampling duration	≤ 5 µs
Admissible continuous overload	60 V
Dielectric strength	500 V DC channel/channel or channel/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in; 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	54.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine app. - immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine app. - emission of interference	acc. to Germanischer Lloyd (2003)

1 2-Channel Analog Input Module 0-30 V

244 Differential measurement input

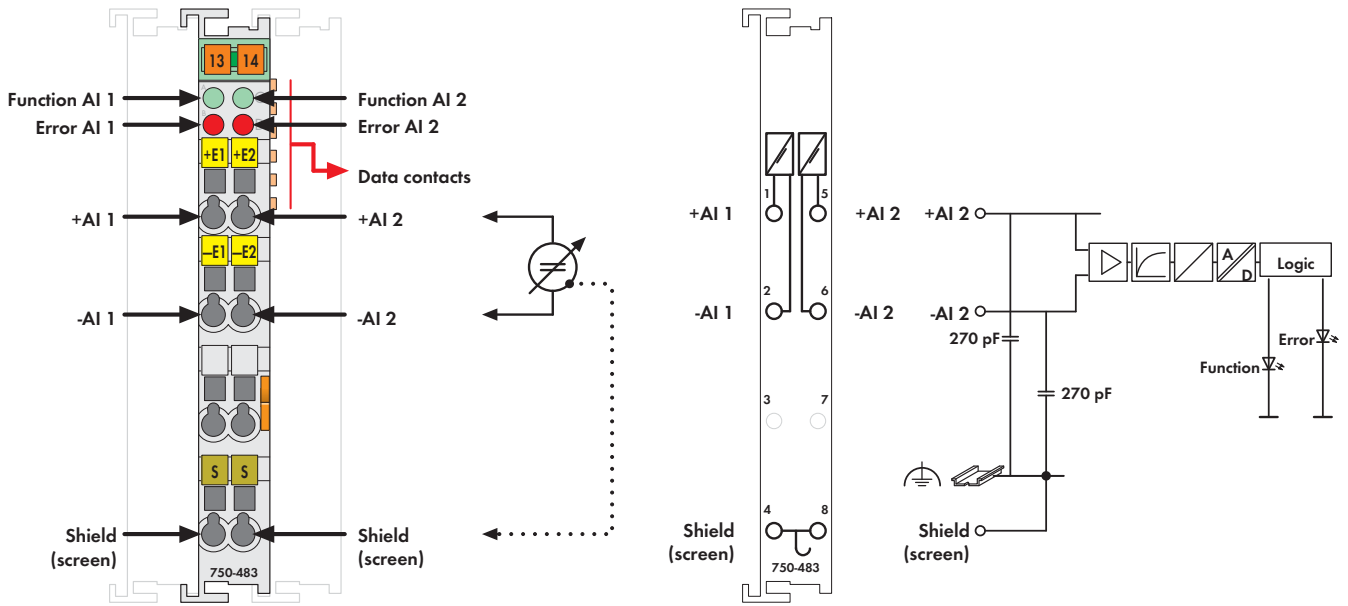


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




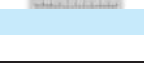
The 2-channel analog input module processes differential signals of a standard magnitude 0-30VDC.

The input signal of each channel is electrically isolated and is transmitted with a resolution of 14 bits.

System voltage is used for voltage supply.

The shield (screen) is directly connected to the DIN rail.

- Measured-value acquisition: time synchronous (both inputs)
- Measuring range overflow/underflow: status byte and LED
- Method of conversion: SAR (Successive Approximation Register)
- Operating mode: continuously sampling (preset)
- Protection: RC circuit

Description	Item No.	Pack. Unit
2AI 0-30V DC Diff. Measur. Inp.	750-483	1
2AI 0-30V DC Diff. Measur. Inp. (without connector)	753-483	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA*	
	*753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2, electrically isolated from each other
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Signal voltage	0 - 30V
Internal resistance	1 MΩ
Input filter	low pass first order, $f_c = 5$ kHz
Resolution of the A/D converter	14 bits
Monotonicity without missing codes	yes
Resolution of measured value	14 bits
Value of a LSB (least significant bit)	1.8 mV
Measuring error (25°C)	$\leq \pm 0.05$ % of the full scale value
Temperature coefficient	$< \pm 0.01$ % / K of the full scale value
Measuring error	≤ 0.4 % over whole temperature scale
	≤ 0.1 % of upper range value (non-linearity)
Crosstalk attenuation	≥ 80 dB
Sampling time of repetition	1 ms
Sampling delay (module)	1 ms
Sampling delay (channel/channel)	≤ 1 μs
Sampling duration	≤ 5 μs
Admissible continuous overload	60 V
Dielectric strength	500 V DC channel/channel or channel/system
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in; 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	55 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine app. - immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine app. - emission of interference	acc. to Germanischer Lloyd (2003)

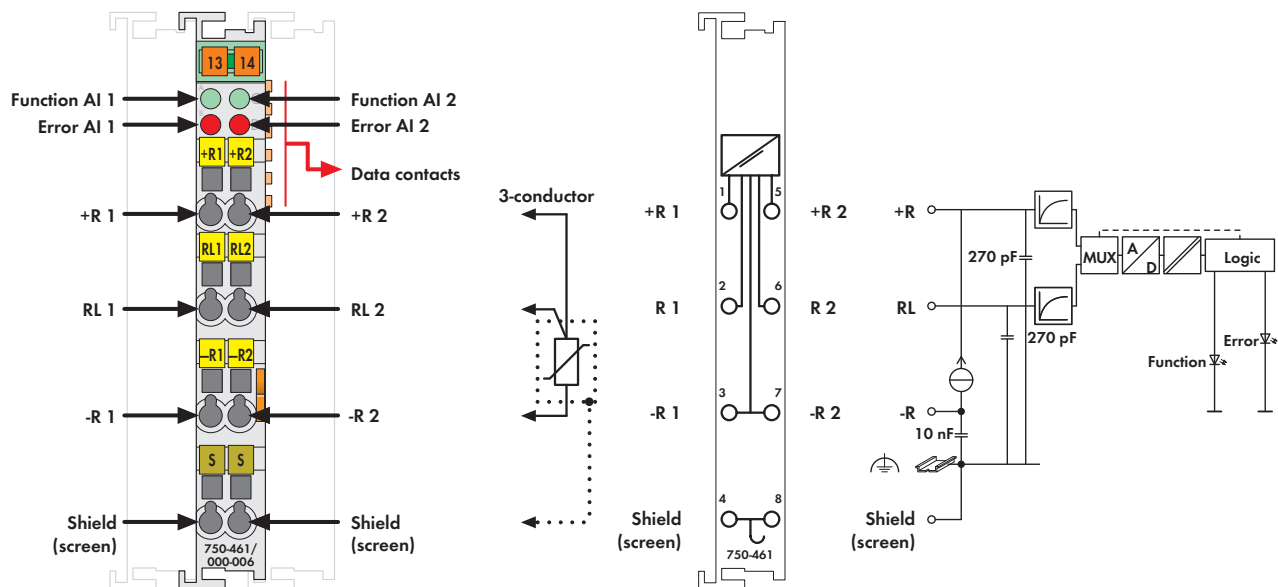


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The input module directly connects to Pt resistance sensors. The connection of 2- or 3-conductor sensors is possible. The module automatically linearizes the entire temperature range. A sensor error is indicated by a red LED. A green LED indicates readiness for operation and error-free communication with the buscoupler. The shield (screen) is directly connected to the DIN rail.

Technical data for the 750-461/020-000 model:

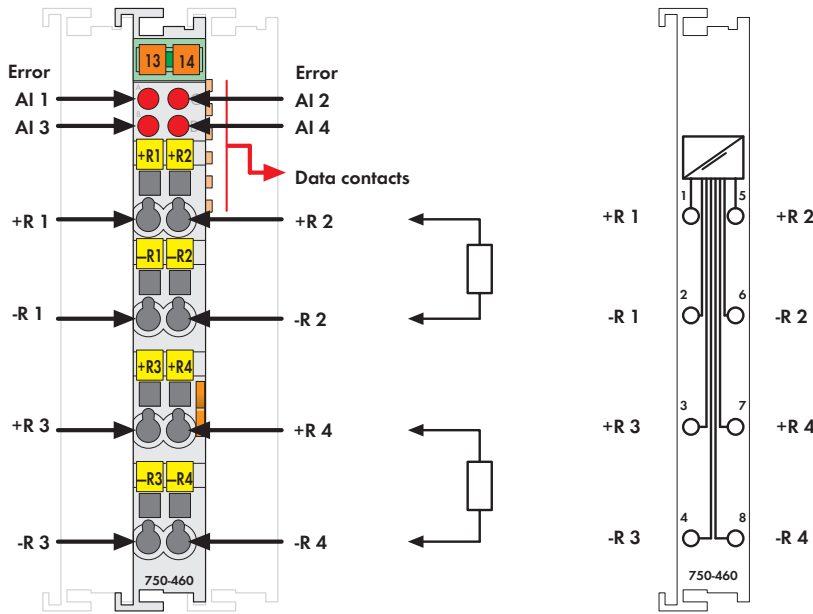
- Current consumption max (internal): 65 mA
- Sensor types: NTC 20 kOhm
- Temperature range: -30 °C ... +130 °C
- Measuring error: 0.5 K ... 3.0 K (dependent on temperature)
- Temperature coefficient: < +/- 0.002 %/K of full scale value
- Measured current typ.: 0.05 mA at 25 °C

All listed sensor types are supported by the configurable variation. Set-up via WAGO-I/O-CHECK software.

Description	Item No.	Pack. Unit
2AI Pt 100/RTD	750-461	10 ¹⁾
2AI Resistance Measur. 10R-1k2	750-461/000-002	10 ¹⁾
2AI Pt 1000/RTD	750-461/000-003	10 ¹⁾
2AI Ni 100/RTD	750-461/000-004	10 ¹⁾
2AI Ni 1000 TK6180/ RTD	750-461/000-005	10 ¹⁾
2AI Resistance Measur. 10R-5k0	750-461/000-007	10 ¹⁾
2AI Ni 1000 TK5000/ RT	750-461/000-009	1
2AI Pt 100/RTD S5 ²⁾	750-461/000-200	10 ¹⁾
2AI Pt 100/free configurable	750-461/003-000	10 ¹⁾
2AI NTC 20k	750-461/020-000	1
Differing technical data see text		
2AI Pt 100/RTD/T	750-461/025-000	1
(Operating temperature -20 °C ... +60 °C)		
2AI Pt 100/RTD (without connector)	753-461	1
2AI Pt 100/free configurable (without connector)	753-461/003-000	1
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508	UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	750-461/0x0-xxx 753-461, -461/...
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-461/0x0-xxx 753-461, -461/...
EN 61241-0, -1	I M2 Ex d I	750-461*
EN 60079-0, -11, -15	II 3 G Ex nA IIC T4	750-461*
EN 61241-0, -1, -11	II 3 D Ex tD A22 IP6X T135 °C	750-461*
* Permissible operating temperature: 0 °C ... +60 °C		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	80 mA
Sensor types	Pt 100 (basic variation), optional variations available for Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 1000, resistance measuring
Sensor connection	3-wire connection (factory preset) or 2-wire
Temperature range	-200 °C ... + 850 °C (Pt) -60 °C ... +250 °C (Ni)
Resolution (over entire range)	0.1 °C
Conversion time	320 ms (per channel)
Response time (max.)	4 s
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Isolation	500 V system/supply
Measuring current (typ.)	0.5 mA
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	52.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine app. - immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine app. - emission of interference	acc. to Germanischer Lloyd (2003)
Accessories	753 Series Connectors, Coding elements Miniature WSB Quick marking system

4-Channel Analog Input Module for RTDs





Delivered without miniature WSB markers

The input module directly connects to Pt resistance sensors.

Only 2-conductor sensors can be connected.

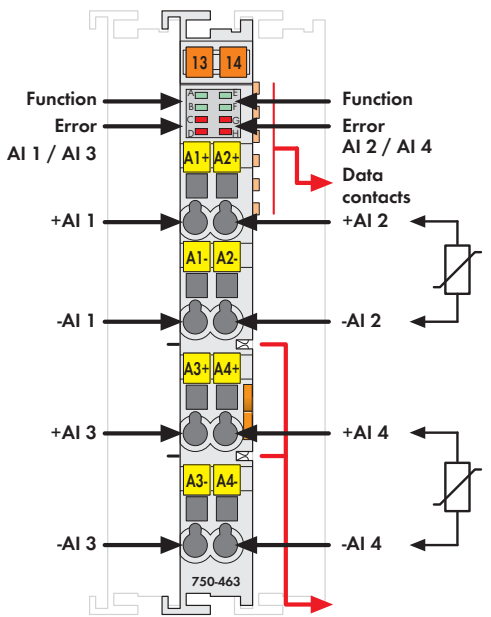
The module automatically linearizes the entire temperature range. A sensor error is indicated by a red LED.

Description	Item No.	Pack. Unit
4AI Pt 100/RTD	750-460	10 ¹⁾
4AI Pt 1000/RTD	750-460/000-003	1
4AI Ni 1000 TK6180/ RTD	750-460/000-005	1
1) Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
 UL 508		

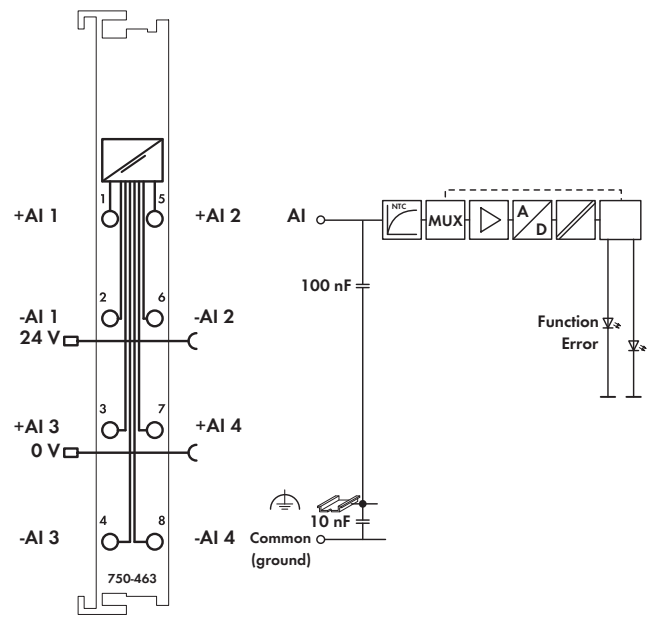
Technical Data	
Number of inputs	4
Power supply	via system voltage DC/DC
Max. current consumption (internal)	65 mA
Sensor types	Pt 100 (basic variation), optional variations available for Pt 1000 and Ni 1000
Sensor connection	2-wire connection
Temperature range	-200 °C ... + 850 °C (Pt) -60 °C ... +250 °C (Ni)
Resolution (over entire range)	0.1 °C
Conversion time	250 ms
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of full scale value
Isolation	500 V system/supply
Measuring current (typ.)	0.5 mA
Bit width	4 x 16 bits data 4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

4-Channel Analog Input Module for Resistance Sensors


Temperature Range: -30 °C ... +150 °C



Delivered without miniature WSB markers

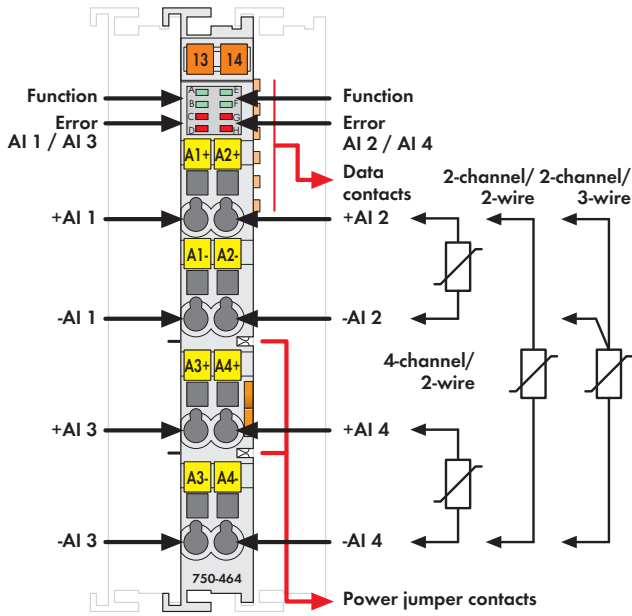


The input module directly connects to selected Pt or Ni resistance sensors. It can only be operated as a 4-channel (2-conductor technology) module. Its temperature range is restricted to -30 °C to +150 °C. The module automatically linearizes the entire temperature range. A sensor error is indicated by a red LED. The module can be configured via WAGO-I/O-CHECK or GSD files. The module features multiple setting options and high accuracy.

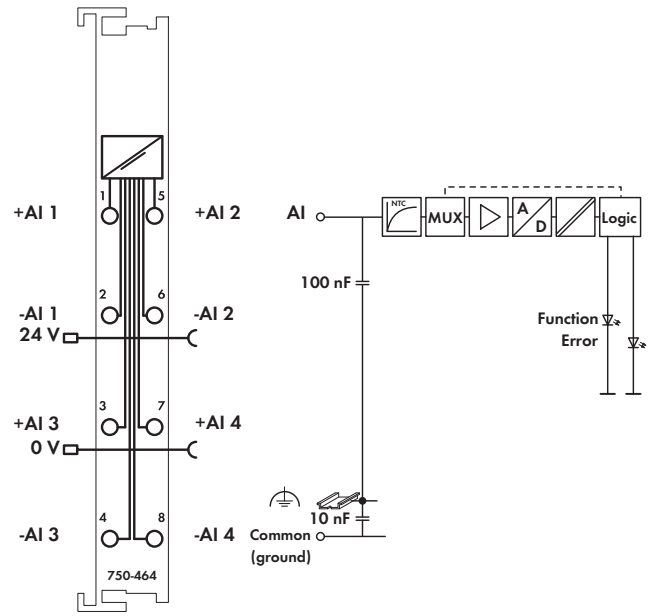
Description	Item No.	Pack. Unit
4 AI RTD/-30 °C ... +150 °C	750-463	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	

Technical Data	
Number of inputs	4
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	50 mA
Sensor types	Pt1000 (default setting), Ni1000, Ni1000 TK5000, KTY81 110, KTY81 210
Sensor connection	2-conductor
Temperature range	-30 °C ... +150 °C
Resolution (over entire range)	0.1 °C
Measurement repetition rate (standard)	1.1 s
Measurement repetition rate (2-channel/ 2-conductor)	0.63 s
Response time (max.)	4 s
Measuring error (25 °C)	≤ 0.5 K for temperature range: -30 °C ... +150 °C
Temperature coefficient	≤ 20 ppm/K
Isolation	500 V system/field
Measuring current (typ.)	≤ 350 µA
Bit width	4 x 16 bits data 4 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	47.3 g
EMC: CE - immunity to interference	acc. to EN 61000-6-1 (2007), EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

2/4-Channel Analog Input Module for RTDs






Delivered without miniature WSB markers



The input module allows the direct connection of Pt or Ni resistance sensors and potentiometers. It can be operated as a 2-channel (2- and 3-conductor technology) or 4-channel (2-conductor technology) module. The module automatically linearizes the entire temperature range. A sensor error is indicated by a red LED. The module can be configured via WAGO-I/O-CHECK or GSD files. The module stands out thanks to its multiple setting options and high accuracy.

Technical data for the 750-464/020-000 model:

- Number of inputs: 4
- Sensor types: NTC 10 kOhm, NTC 20 kOhm, NTC 10 kOhm (Thermokon)
- Sensor connection: 2-conductor
- Temperature range: -30 °C ... +120 °C
- Measuring error: ≤ 2 K over the entire temperature range

Description	Item No.	Pack. Unit
2/4 AI RTD, configurable	750-464	1
4 AI NTC, configurable	750-464/020-000	1
Differing technical data see text		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon)	ABS, DNV, GL, KR	
UL 508	pending	
ANSI/ISA 12.12.01	pending	
EN 60079-0, -15	pending	
EN 61241-0, -1		

Technical Data	
Number of inputs	2 / 4 (default setting)
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	50 mA
Sensor types	Pt 100 (default setting), Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 1000, Potentiometer, 10 Ohm ... 1.2 kOhm, 10 Ohm ... 5 kOhm
Sensor connection	2-conductor (default setting), 3-conductor (2-channel operation)
Temperature range	-200 °C ... +850 °C (Pt100), -60 °C ... +300 °C (Ni 100, Ni 1000), -60 °C ... +250 °C (Ni 1000 TK5000), -80 °C ... +260 °C (Ni 120)
Resolution (over entire range)	0.1 °C
Measurement repetition rate (standard)	1.1 s
Measurement repetition rate (2-channel/2-conductor)	0.63 s
Response time (max.)	4 s
Measuring error (25 °C)	≤ 1 K in the entire temp. range, ≤ 0.5 K in the restricted temp. range* * -30 °C ... +120 °C, Pt 1000
Temperature coefficient	≤ 20ppm/K
Isolation	500 V system/supply
Measuring current (typ.)	≤ 350 µA
Bit width	4 (2) x 16 bits data 4 (2) x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	60 g
EMC: CE - immunity to interference	acc. to EN 61000-6-1 (2007), EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

2-Channel Analog Input Module for Thermocouples

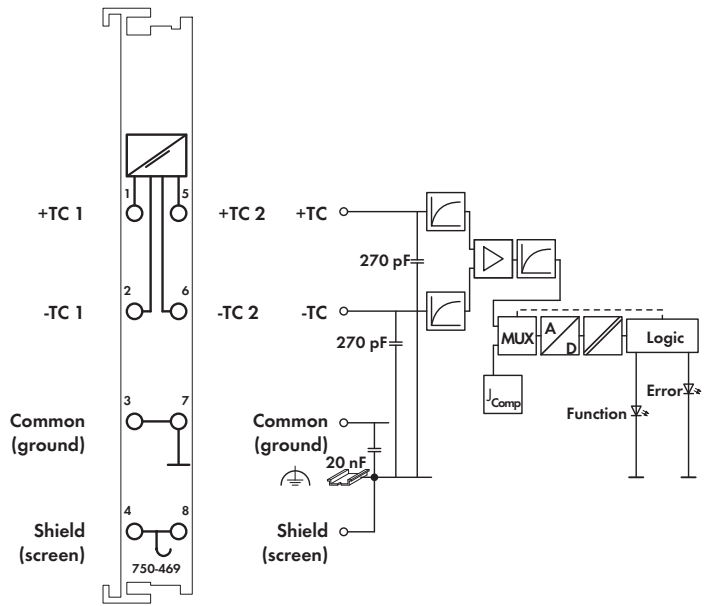
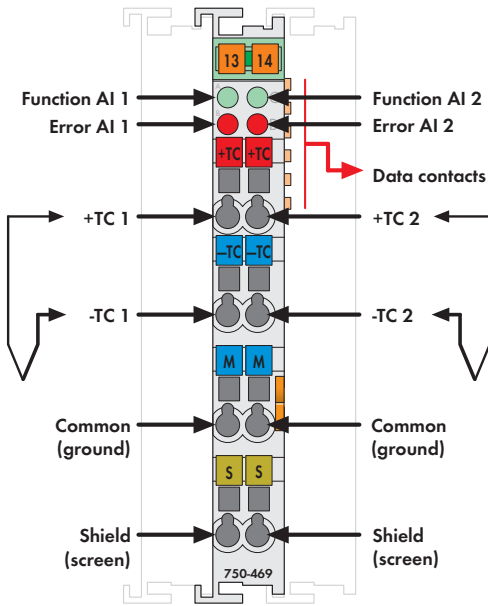


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

This input module allows the direct connection of two thermocouples. Internal electrical isolation allows operation of grounded sensors. The module automatically linearizes the entire temperature range. Cold junction compensation is utilized to compensate for the clamping unit offset voltage over the 0-55 °C operating range. A line break is indicated by a red LED. A green LED indicates readiness for operation and error-free communication with the buscoupler. The shield (screen) is directly connected to the DIN rail.

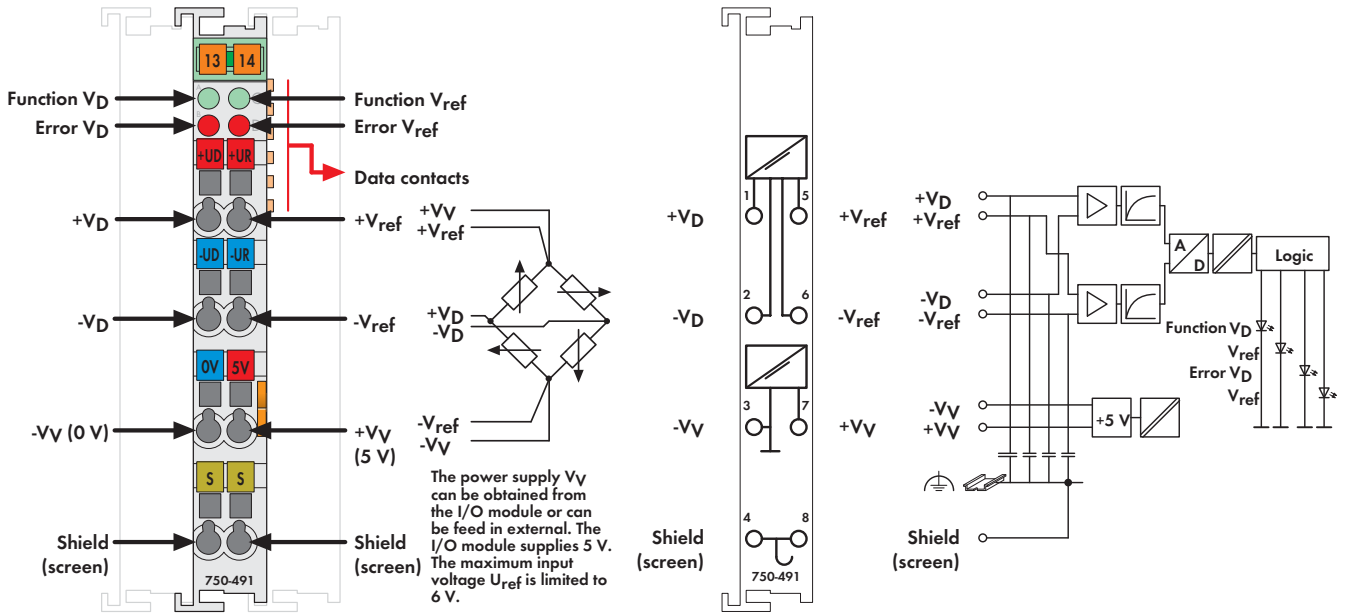
- -100 °C ... +1370 °C; type K
- -50 °C ... +1700 °C; type S
- -100 °C ... +400 °C; type T
- -100 °C ... +1200 °C; type J
- -100 °C ... +1000 °C; type E
- -100 °C ... +900 °C; type L

All listed sensor types are supported by the configurable variation. Set-up using the WAGO-I/O-Check 2 software. Other variations are available upon request: 600 °C ... +1800 °C; type B, -100 °C ... +1300 °C; type N, 0 °C ... +1700 °C; type R, -25 °C ... +600 °C; type U, -120 mV ... +120 mV.

Description	Item No.	Pack. Unit
2AI Thermocouple/K/Diagn.	750-469	1
2AI Thermocouple/S/Diagn.	750-469/000-001	1
2AI Thermocouple/T/Diagn.	750-469/000-002	1
2AI ±120mV Diagn.	750-469/000-003	1
2AI Thermocouple/J/Diagn.	750-469/000-006	1
2AI Thermocouple/E/Diagn.	750-469/000-008	1
2AI Thermocouple/L/Diagn.	750-469/000-012	1
2AI Thermocouple/K/Diagn./S5 ¹⁾	750-469/000-200	1
2AI Thermocouple/J/Diagn./S5 ¹⁾	750-469/000-206	1
2AI Thermocouple/Free Config.	750-469/003-000	1
2AI Thermocouple/K/Diagn. (without connector)	753-469	1
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Number of inputs	2
Power supply	via system voltage DC/DC
Max. current consumption (internal)	65 mA
Sensor types	Type K; -100°C ... +1370°C (basic variation), optional variations available for type J, B, E, N, R, S, T, U and L
Internal resistance	1 MΩ
Cold junction compensation	at each pair of terminal blocks
Resolution (over entire range)	0.1 °C
Conversion time	320 ms (each channel)
Measuring error (25°C)	< ± 6 K (volt. input < ± 2 K, cold junct. < ± 4 K)
Temperature coefficient	< ± 0.2 K/K
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1-Channel Analog Input Module for Resistor Bridges (Strain Gauge)



Delivered without miniature WSB markers

The I/O module enables the direct connection of a resistor measurement bridge. The bridge voltage V_D and supply voltage V_{ref} of the bridge are digitized with a resolution of 16 bits.

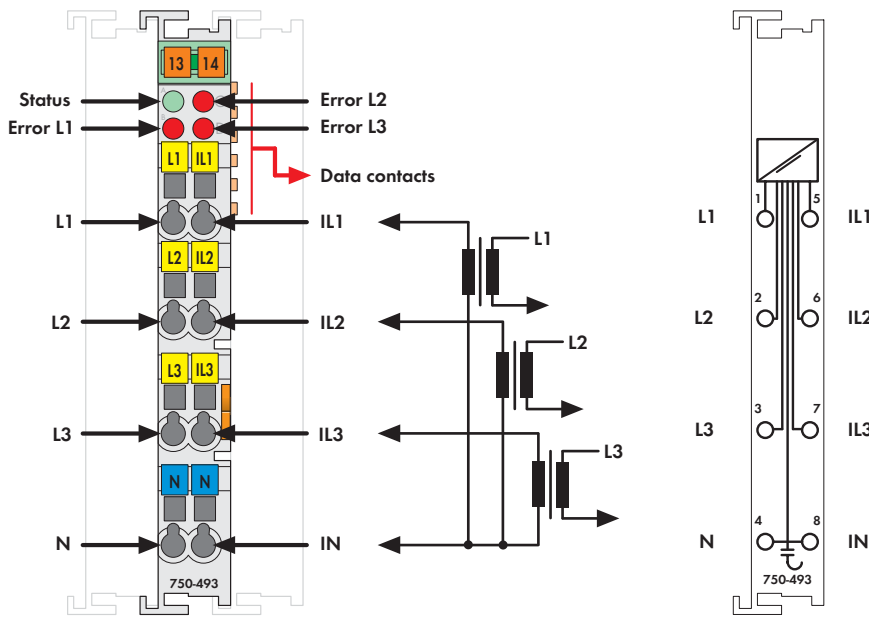
The two input channels for the resistor bridge are available as two 16 bit values for further processing. The result of measurement can be calculated by the formula: Measured value = V_D / V_{ref} .

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit	
1AI for Resistor Bridges	750-491	1	
1AI for Resistor Bridges/ 125ms	750-491/000-001	1	
Conversion time 125 ms, Filter 200 Hz			
Accessories	Item No.	Pack. Unit	
Miniature WSB Quick marking system			
	plain	248-501	5
	with marking	see pages 352 ... 353	
Approvals			
Conformity marking	CE		

Technical Data	
Number of inputs	2, for one resistor bridge
Power supply	via system voltage DC/DC
Current consumption typ. (internal)	65 mA
Signal voltage V_D	-15mV ... +15mV
Signal voltage V_{ref}	+2V ... +6V
Internal resistance	> 200 kΩ (V_{ref}), > 1 MΩ (V_D)
Voltage supply V_V	5 V DC, 20 mA
Resolution	16 bits
Conversion time	500ms
Measuring error	V_D : ± 30 μV; V_{ref} : ± 10 mV
Filter	50 Hz
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

3-Phase Power Measurement Module



Delivered without miniature WSB markers


The 3-phase power measurement module measures the electrical data in a three-phase supply network.

The voltage is measured via network connection to L1, L2, L3 and N.

The current of the three phases is fed to IL1, IL2, IL3 and IN via current transformers.

The 3-phase power measurement module transmits the root mean square values into the process image without requiring high computing power from the controller. For each phase, the effective power (P) and the energy consumption (W) are calculated by the 3-phase power measurement module using the root mean square values for all measured voltages (V) and currents (I). For example, both the apparent power (S) and phase shift angle (ϕ) can be easily derived from these values.

Therefore, the 3-phase power measurement module provides comprehensive network analysis via fieldbus. By means of values such as voltage, current, effective and apparent power consumption or load condition, the operator is able to optimally regulate the supply to a drive or machine and protect the installation from damage and failure.

Description	Item No.	Pack. Unit
3-Phase Power Measurement Module (1 A)	750-493	1
3-Phase Power Measurement Module (5 A)	750-493/000-001	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		

Technical Data	
Number of inputs	6 (3 voltage inputs, 3 current inputs)
Measuring voltage (max.)	500 VAC 3~
Input resistance voltage path (typ.)	500 kΩ
Measuring current (max.)	1 A (750-493)
	5 A (750-493/000-001)
Input resistance current path (typ.)	33 mΩ (750-493)
	6.8 mΩ (750-493/000-001)
Resolution	16 bits
Frequency range with activated DC filter	10 - 500Hz
Frequency range with deactivated DC	0 - 500Hz
Max. operating frequency	approx. 2 kHz
Signal form	any (in consideration of the frequency range and max. operating frequency)
Measuring error for current and voltage	0.5 % (of the upper range value)
Measuring procedure	True RMS with 64,000 samples/s
Measuring cycle time	configurable, preset at 50 ms per measured value
Measured values	Effective power, energy, power factor (cos φ)
Power supply	via system voltage internal bus (5 V)
Current consumption (internal)	115 mA
Isolation	1500 V system/supply
Bit width	2 x 48 bits data
	2 x 24 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

Analog Output Modules



- 2-Channel Analog Output Modules
- 0 ... 10 V/±10 V
- 0(4) ... 20 mA
- 4-Channel Analog Output Modules
- 0 ... 10 V/±10 V
- 0(4) ... 20 mA
- Analog Specialty Modules
- 6 V ... 18 V
- 0 ... 10 V, 10 mA, diagnostics



Modular I/O System Overview

Analog Outputs



Function	2-Channel Analog Output	Page	4-Channel Analog Output	Page		
0 – 20 mA	750-552 / 753-552	254	750-553 / 753-553	256		
4 – 20 mA	750-554 / 753-554	254	750-555 / 753-555	256		
0/4 – 20 mA	750-563	255				
0 – 10 V	750-550 / 753-550	257	750-559 / 753-559	259		
	750-560 10 bits, 100 mW, 24 V	260				
± 10 V	750-556 / 753-556	257	750-557 / 753-557	259		
0 V/± 10 V	750-562	258				
Ex i Modules	see pages 304 ... 325					

1.6
AO

1 2-Channel Analog Output Module 0/4-20 mA

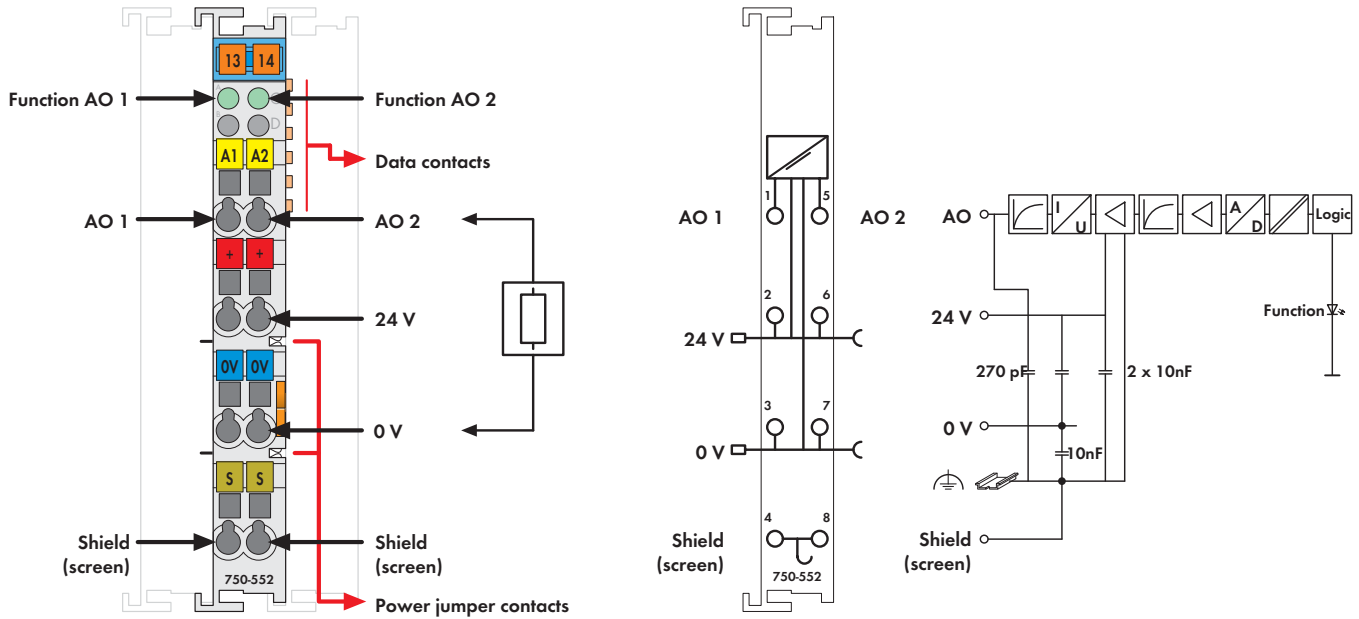


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog output module generates signals of a standard magnitude 0-20mA.

The output signal is electrically isolated and transmitted with a resolution of 12 bits.

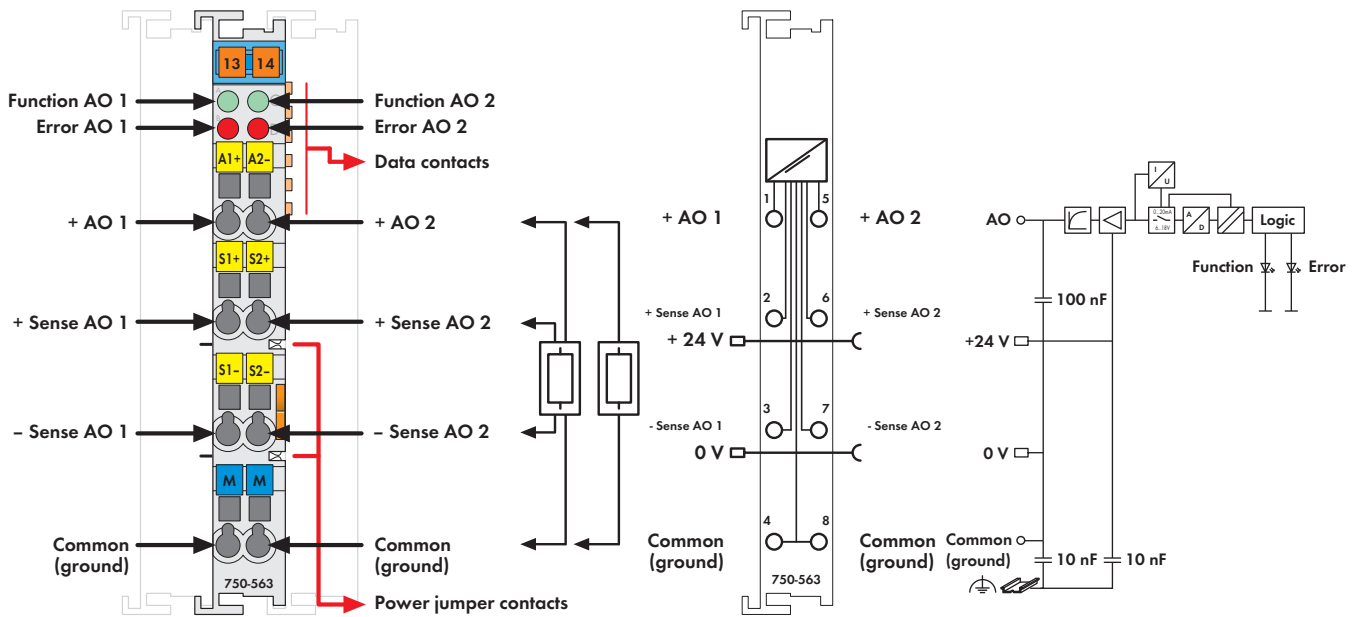
Power is derived from the field side.

Description	Item No.	Pack. Unit
2AO 0-20mA	750-552	10 ¹⁾
2AO 0-20mA/S5 ²⁾	750-552/000-200	1
2AO 0-20mA/T	750-552/025-000	1
[Operating temperature -20 °C ... +60 °C]		
2AO 4-20mA	750-554	10 ¹⁾
2AO 4-20mA/S5 ²⁾	750-554/000-200	1
2AO 4-20mA/T	750-554/025-000	
[Operating temperature -20 °C ... +60 °C]		
2AO 0-20mA (without connector)	753-552	10 ¹⁾
2AO 4-20mA (without connector)	753-554	10 ¹⁾
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-552, -554 750-55x/000-200
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-552, 753-554
EN 61241-0, -1		750-55x/000-200
EN 60079-0, -11, -15	I M2 Ex d l	750-554*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-554*
	II 3 D Ex tD A22 IP6XT135°C	750-554*
	* Permissible operating temperature: 0°C ... +60°C	

Technical Data	
No. of outputs	2
Current consumption typ. (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Signal current	0 - 20mA (750-552, 753-552)
	4 - 20mA (750-554, 753-554)
Load impedance	< 600 Ω
Linearity	± 10 µA
Resolution	12 bits
Conversion time	approx. 2 ms
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value (750-552, 753-552)
	< ± 0,015 % /K of the full scale value (750-554, 753-554)
Isolation	500 V system/supply
Bit width	2 x 16 bits data
	2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)
Accessories	753 Series Connectors, Coding elements, Miniature WSB Quick marking system

2-Channel Analog Output Module, 0/4 ... 20 mA / 6 ... 18 V DC

16 bits, configurable




Delivered without miniature WSB markers

The analog output module generates output currents ranging from 0/4 to 20mA or output voltages in the range from 6 to 18V for the field. Output ranges can be configured via WAGO-I/O-CHECK or GSD files. The module has two short circuit-proof output channels and enables direct connection of two 2-line actuators on the connections AO 1 and ground or AO2 and ground. Signals are output via AO 1 or AO 2. In addition, the sense lines from 4-line actuators can be connected to the connections Sense AO1 and +Sense AO1 or Sense AO2 and +SenseAO2.

Both output channels have a common ground potential.

The output signal is electrically isolated and transmitted with a resolution of 16 bits.

Both the internal system and the field side supply power the module.

Description	Item No.	Pack. Unit
2 AO 0/4-20mA / 6-18V DC 16 Bit	750-563	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	pending	
EN 60079-0, -15	pending	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	80 - 110mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output voltage	6 V ... 18 V (switchable)
Output current	0/4 mA ... 20 mA (switchable)
Load impedance	> 1.8 kΩ (voltage output) < 500 Ω (current output)
Resolution	16 bits
Conversion time (typ.)	5 ms
Recovery time (typ.)	< 300 μs
Measuring error (25°C)	< ± 0.05 % of the scale end value
Temperature coefficient	< ± 100ppm
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61131-2 (2003)
EMC: CE - emission of interference	acc. to EN 61131-2 (2003)

4-Channel Analog Output Module 0/4-20 mA

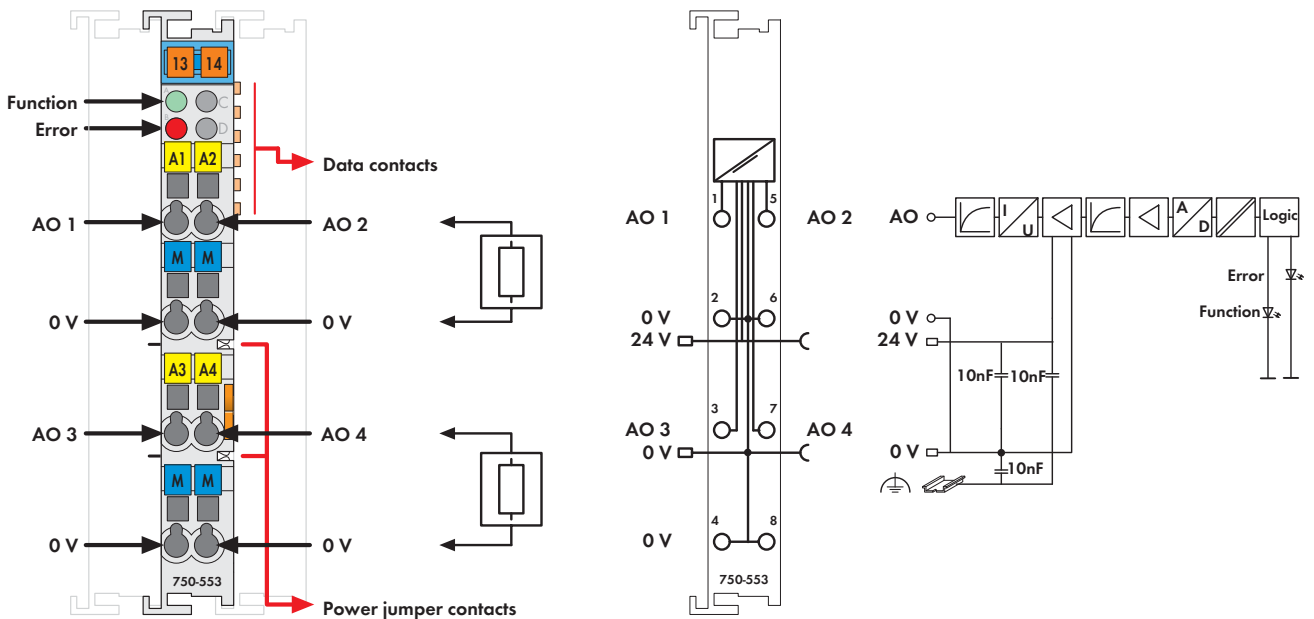










Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The analog output module generates signals of a standard magnitude 0-20mA.

The output signal is electrically isolated and transmitted with a resolution of 12 bits.

Power is derived from the field side.

The output channels of the module have a common ground potential.

Description	Item No.	Pack. Unit
4AO 0-20mA	750-553	1
4AO 4-20mA	750-555	1
4AO 0-20mA (without connector)	753-553	1
4AO 4-20mA (without connector)	753-555	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

Technical Data	
No. of outputs	4
Current consumption typ. (internal)	60 mA
Power supply	via system voltage DC/DC
Signal current	0 - 20mA (750-553, 753-553) 4 - 20mA (750-555, 753-555)
Load impedance	either 0 ... 300 Ω or 300 ... 600 Ω (use same range of impedance for all loads!)
Resolution	12 bits
Conversion time (typ.)	10 ms
Recovery time (typ.)	100 ms
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data 4 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module 0-10 V/±10V

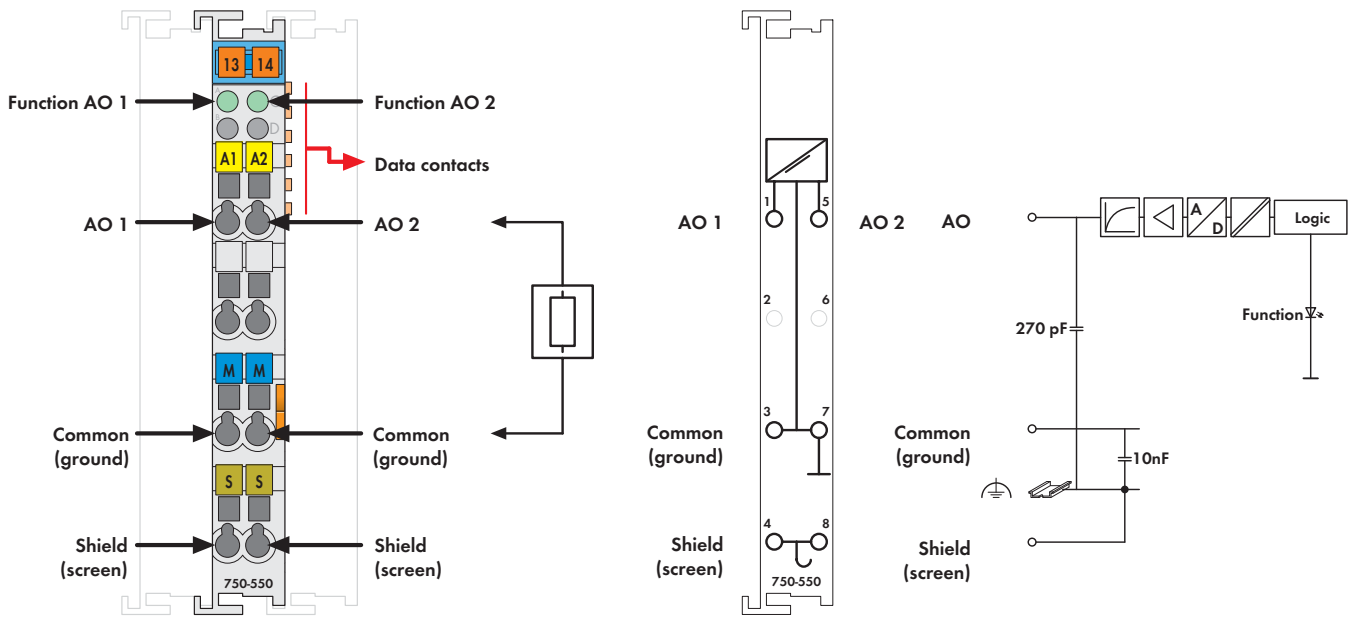


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13




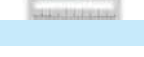
The analog output module generates signals of a standard magnitude 0–10V.

The output signal is electrically isolated and transmitted with a resolution of 12 bits.

The outputs are short-circuit proof.

The internal system supply powers the module.

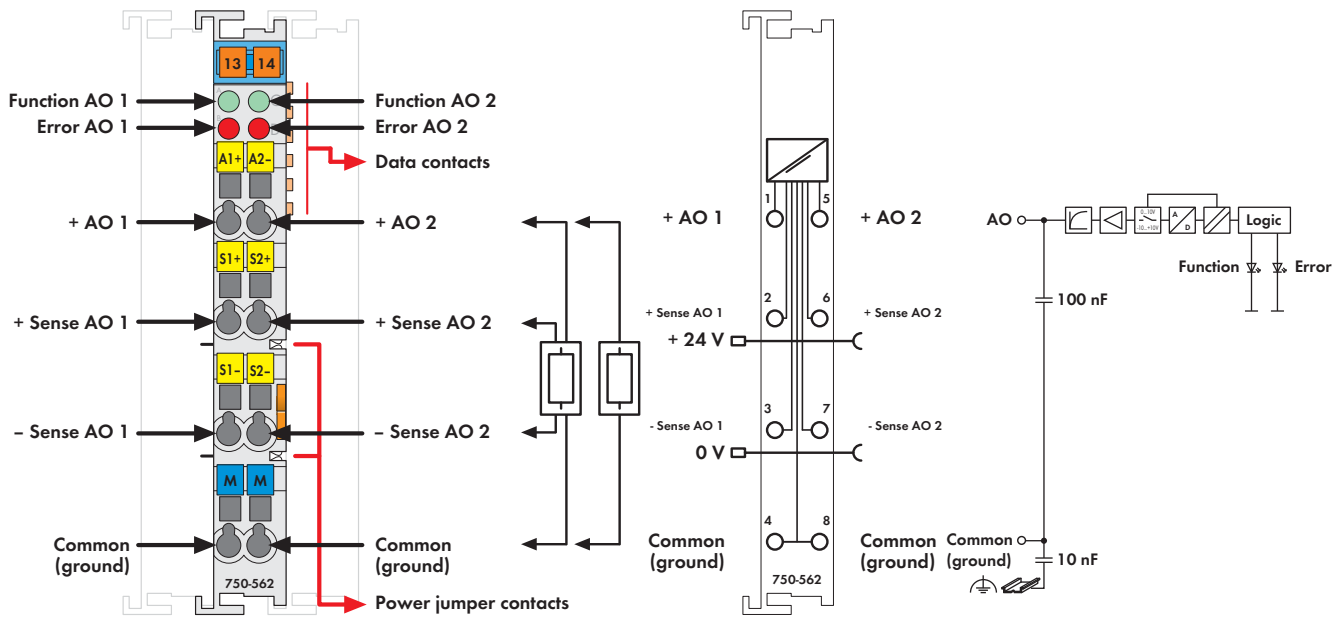
The output channels have one common ground potential.

Description	Item No.	Pack. Unit
2AO 0-10V DC	750-550	10 ¹⁾
2AO 0-10V DC/S5 ²⁾	750-550/000-200	1
2AO ± 10V DC	750-556	10 ¹⁾
2AO ±10V DC/S5 ²⁾	750-556/000-200	1
2AO 0-10V DC (without connector)	753-550	10 ¹⁾
2AO ±10V DC (without connector)	753-556	10 ¹⁾
¹⁾ Also available individually		
²⁾ Data format for S5 control with FB 251		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	65 mA
Power supply	via system voltage DC/DC
Signal voltage	0 - 10V (750-550, 753-550) ± 10V (750-556, 753-556)
Load impedance	> 5 kΩ
Linearity	±10 mV
Resolution	12 bits
Conversion time	approx. 2 ms
Recovery time (typ.)	300 μs
Measuring error (25°C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	50.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module, 0 ... 10 V / -10 ... +10 V DC

16 bits, configurable




Delivered without miniature WSB markers

The analog output module generates output voltages ranging from 0-10V or ±10V for the field.

Output ranges can be configured via WAGO-I/O-CHECK or GSD files. The module has two short circuit-proof output channels and enables direct connection of two 2-line actuators on the connections AO 1 and ground or AO2 and ground. Signals are output via AO 1 or AO 2. In addition, the sense lines from 4-line actuators can be connected to the connections Sense AO1 and +Sense AO1 or Sense AO2 and +SenseAO2.

Both output channels have a common ground potential. The output signal is electrically isolated and transmitted with a resolution of 16 bits. The internal system supply powers the module.

The field power supply is only forwarded to the downstream I/O modules.

Description	Item No.	Pack. Unit
2 AO 0/+10V DC 16 Bit	750-562	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	pending	
EN 60079-0, -15	pending	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	80 - 170mA
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Signal voltage	0 V ... 10 V (switchable) -10 V ... +10 V (switchable)
Load impedance	> 5 kΩ
Resolution	16 bits
Conversion time (typ.)	5 ms
Recovery time (typ.)	< 300 μs
Measuring error (25 °C)	< ± 0.05 % of the scale end value
Temperature coefficient	< ± 100ppm
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61131-2 (2003)
EMC: CE - emission of interference	acc. to EN 61131-2 (2003)

4-Channel Analog Output Module ±10 V/0-10 V

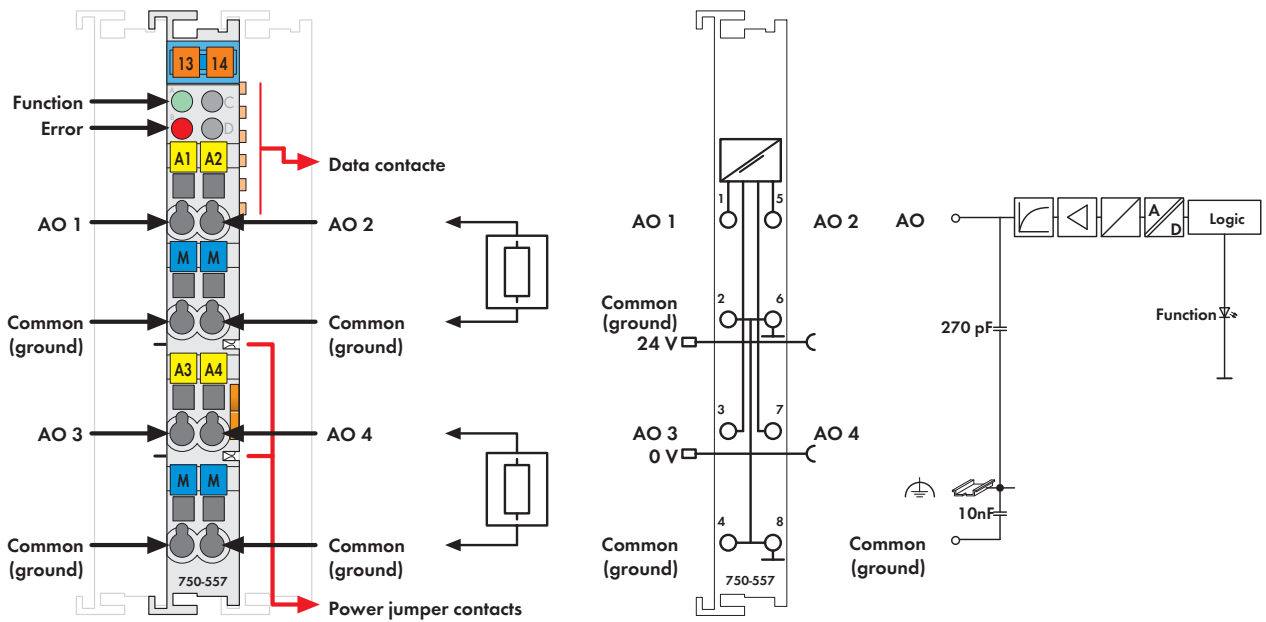



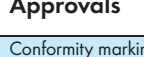


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

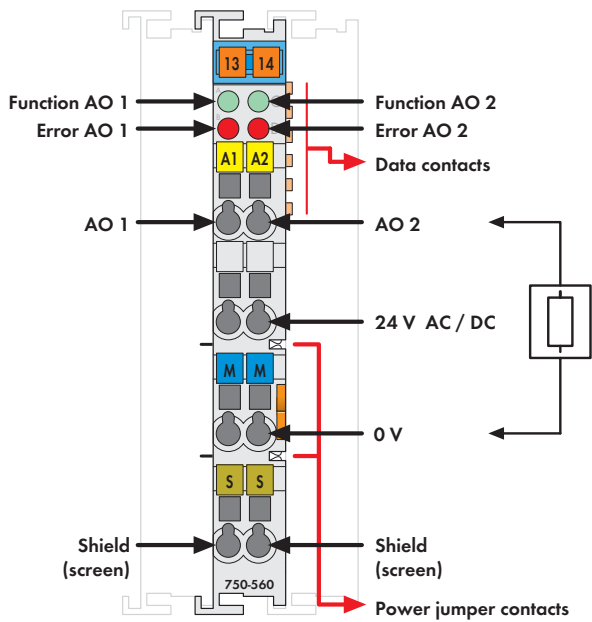
- The analog output module generates signals of a standard magnitude ±10V.
- The output signal is electrically isolated and transmitted with a resolution of 12 bits.
- The internal system supply powers the module.
- The output channels of the module have a common ground potential.

Description	Item No.	Pack. Unit
4AO ±10V DC	750-557	10 ¹⁾
4AO 0-10V DC	750-559	10 ¹⁾
4AO 0-10V DC/T	750-559/025-000	1
[Operating temperature -20 °C ... +60 °C]		
4AO ±10V DC (without connector)	753-557	10 ¹⁾
4AO 0-10V DC (without connector)	753-559	10 ¹⁾
1) Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-557, -559
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-557, -559
EN 61241-0, -1		

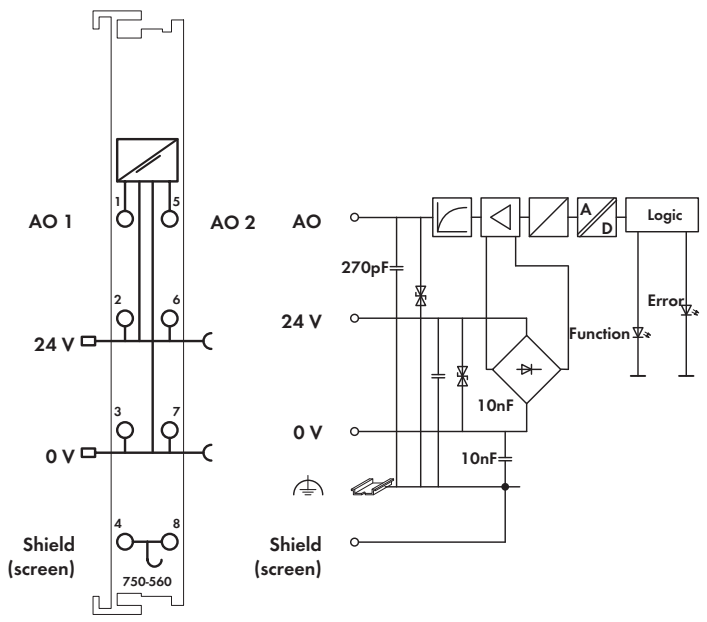
Technical Data	
No. of outputs	4
Max. current consumption (internal)	125 mA
Power supply	via system voltage DC/DC
Signal voltage	±10V (750-557, 753-557) 0 - 10V (750-559, 753-559)
Load impedance	> 5 kΩ
Resolution	12 bits
Conversion time (typ.)	10 ms
Recovery time (typ.)	100 ms
Measuring error (25 °C)	< ± 0.1 % of the full scale value
Temperature coefficient	< ± 0.01 % /K of the full scale value
Isolation	500 V system/supply
Bit width	4 x 16 bits data 4 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Analog Output Module 0-10 V

10 bits, 10 mA



Delivered without miniature WSB markers



The analog output module generates signals of a standard magnitude 0–10V.

The output signal is electrically isolated and transmitted with a resolution of 10 bits.

The outputs are short-circuit proof.


Each channel is equipped with an LED to indicate short-circuits or overloads $\geq 15\text{mA}$.

The shield (screen) is directly connected to the DIN rail.

Both the internal system and field side supply are used to power the module.

The output channels have one common ground potential.

The analog outputs and the 24V supply have one common ground potential so that actuators such as servo drives can be connected using a 3-conductor cable.

Description	Item No.	Pack. Unit
2AO 0-10 V DC 10 Bit 10mA 24V	750-560	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	pending	
EN 60079-0, -15	pending	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	16 mA
Voltage via power jumper contacts	24 V AC/DC
Signal voltage	0 V ... 10 V
Load impedance	$\geq 1 \text{ k}\Omega$
Resolution	10 bits
Conversion time	approx. 10 ms
Measuring error (25°C)	$< \pm 0.2 \%$ of the full scale value
Temperature coefficient	$< \pm 0.02 \%$ /K of the full scale value
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control/status (option)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Specialty Modules

Drive Technology



Communication and Gateway



Building Automation



- Counters
- Distance and Angle Measurement Modules
- Vibration Monitoring
- Positioning
 - Stepper controller
 - Servo stepper controller
 - DC drive controller 24 V/5 A
- DALI/DSI Master Module
- EnOcean Radio Receiver Module
- MP-Bus Master Module
- RTC Module
- KNX/EIB/TP1 Module



- IO-Link Master Module
- AS-Interface Master Module
 - Acc. to (M4) V 3.0 standard
 - Up to 62 slaves
- Radio Interface
 - Bluetooth®/RF transceiver
- Serial Interface
- DC-Drive Controller



Modular I/O System Overview

Specialty Modules



Function	Specialty Module	Page	Specialty Module	Page
Counter Modules	750-404 / 753-404 Up/Down Counter, 24 VDC, 100 kHz	264	750-638 / 753-638 , 2-Channel- Up/Down Counter, 24 VDC/16 bits /500 Hz	265
	Pulse Width Module	750-511 , 2-Channel Pulse Width Module, 24 VDC, short-circuit protec., pos. switch.	266	
Distance and Angle Measurement Modules	750-630 SSI Transmitter Interface	267	750-631/000-004 Incremental Encoder Interface	268
	750-637 , Incremental Encoder Interface	269	750-635 / 753-635 Digital Impulse Interface	270
Serial Interface	750-650 / 753-650 Serial Interface RS-232 C	271	750-653 / 753-653 Serial Interface RS-485	272
	750-651 TTY Interface 20 mA Current Loop	273	750-654 Data Exchange Module	274
	750-652 Serial Interface RS-232 C/RS-485	275		
KNX/EIB/TP1 Module	753-646 KNX/EIB/TP1 Module	276		
DALI/DSI Master Module	750-641 DALI/DSI Master Module	277		
RF Modules	750-642 EnOcean Radio Receiver Module	278	750-644 Bluetooth® RF-Transceiver	279
	MP-Bus Master Module	750-643 MP-Bus Master Module	280	
RTC Module	750-640 RTC Module, Real-Time Clock	281		
AS-Interface Master Module	750-655 AS-Interface Master	283		
IO-Link Master Module	750-657 IO-Link Master	285		
Vibration Monitoring	750-645 , 2-Channel Vibration Velocity/ Bearing Condition Monitoring VIB I/O	287		
Stepper Modules	750-670 Stepper Controller RS-422, 24 V, 20 mA	288	750-671 Stepper Controller 24 V, 1.5 A	289
	750-672 Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	290	750-673 Servo Stepper Controller 70 V, 7.5 A, 6 IN, 2 OUT	292
DC-Drive Controller	750-636 DC-Drive Controller, 24 V, 5 A	295		
PROFIsafe Modules	750-661/000-003 ; 753-661/000-003 PROFIsafe V2 iPar, 4 FDI 24 V	298	750-662/000-003 ; 753-662/000-003 PROFIsafe V2 iPar, 8 FDI 24 V	299
	750-667/000-003 ; 753-667/000-003 PROFIsafe V2 iPar, 4 FDI/4 FDO 24 V/2 A	300	750-666/000-003 ; 753-666/000-003 PROFIsafe V2 iPar, 4 FDI/2 FDO 24 V/2 A	301
	750-660/000-001 , PROFIsafe, 8 FDI 24 V	302	750-665/000-001 , PROFIsafe, 4 FDO 0.5 A, 4 FDI 24 V	303
Ex i Modules	750-438, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	310	750-435, NAMUR, Ex i Proximity switch acc. to DIN EN 50227	308
	750-535, Ex i Short-circuit protec., high-side switch.	312	750-485, Ex i 4-20 mA, Single-ended (S.E.)	314
	750-481/003-000, Ex i Pt100 / RTD	318	750-484, Ex i 4-20 mA, Single-ended (S.E.), HART	316
	750-487/003-000, Ex i TC	320	750-585, Ex i 0-20 mA	322
	750-633 Up/Down Counter, 24 VDC, 100 kHz	324	750-606; 750-625/000-001 Ex i Supply Module	306

1 Up/Down Counter 24 V DC, 100 kHz

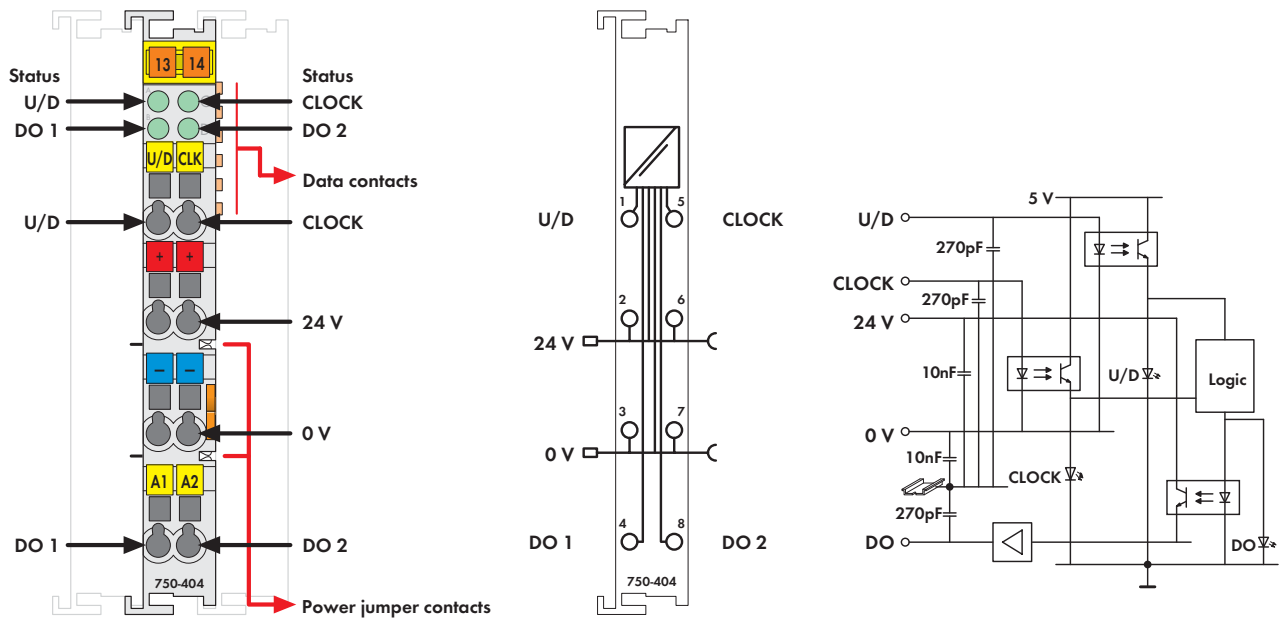


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The counter acquires 24V binary pulses and transports the counter status to the installed bus system.

The U/D input allows either Up or Down counting.

Digital outputs DO 1 and DO 2 can be set using the control byte.

The control byte sets or resets the counter.


A counter lock-out is also possible.

Differing technical data 750-404/000-003

- Measuring error $\leq \pm 0.2\%$ (measuring range 0.1 Hz ... 10 kHz)
- Measuring error $\leq \pm 1.5\%$ (measuring range 0.1 Hz ... 100 kHz)

Differing technical data 750-404/000-005

- Switching rate max. : 5 kHz
- Counter depth: 2 x 16 bits
- Internal bit width: 2 x 16 bits data

Description	Item No.	Pack. Unit
Up/Down Counter/100 kHz	750-404	1
Up Counter/Enable Input	750-404/000-001	1
Counter with enable input (Gate), U/D input serves as Gate input		
Peak Time Counter	750-404/000-002	1
Frequency measurement, U/D input serves as Gate input		
Up/Down Counter/Switch Output	750-404/000-004	1
Counter with digital outputs (output switches depending on the count of the counter)		
2 Up Counter/16 Bit / 5 kHz	750-404/000-005	1
U/D input serves as Clock input of the 2nd counter		
Up/Down Counter, 100 Hz (without connector)	753-404	1
Frequency Counter 0.1 Hz - 100 kHz (without connector)	753-404/000-003	1
Frequency measurement, U/D input serves as Gate input		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA*	
	*753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
No. of counters	1
Current consumption (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Output current	0.5 A short-circuit protected
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Max. switching frequency	100 kHz
Input current (typ.)	5 mA
Counter depth	32 bits
Isolation	500 V system/supply
Internal bit width	32 bits data
	8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	60 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

2-Channel Up/Down Counter 24 V DC, 500 Hz

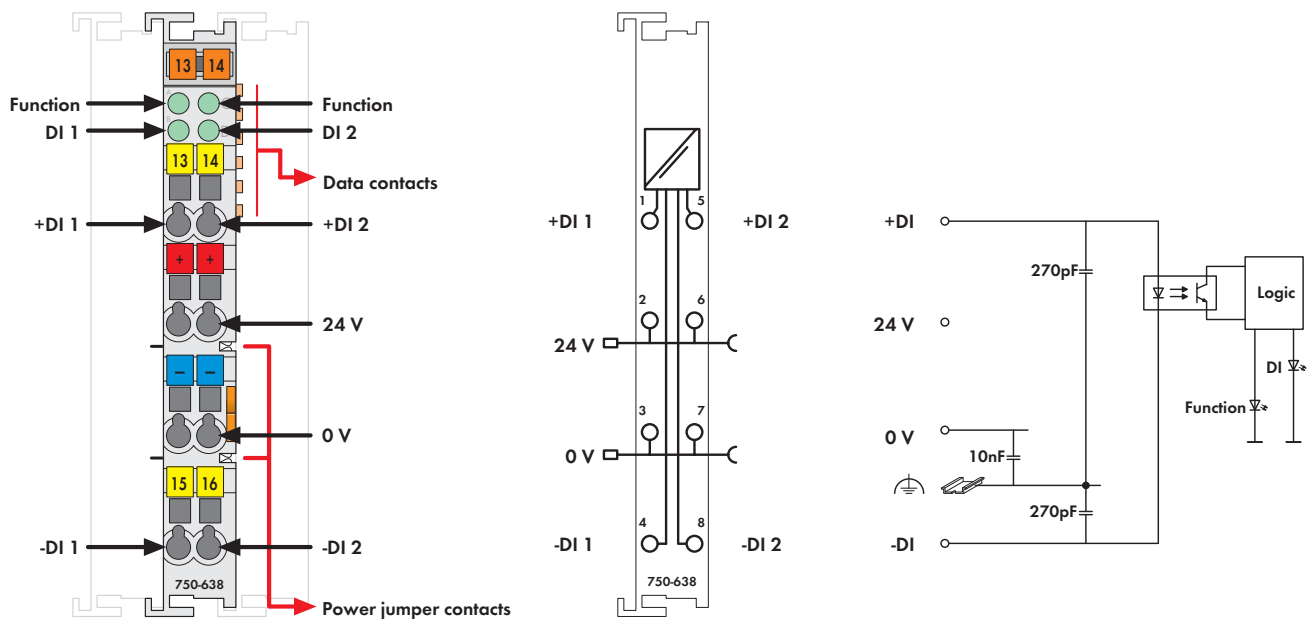



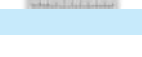






Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The I/O module has two counters that count 24VDC binary pulses independently of one another. The data is then transmitted to the control via the fieldbus.

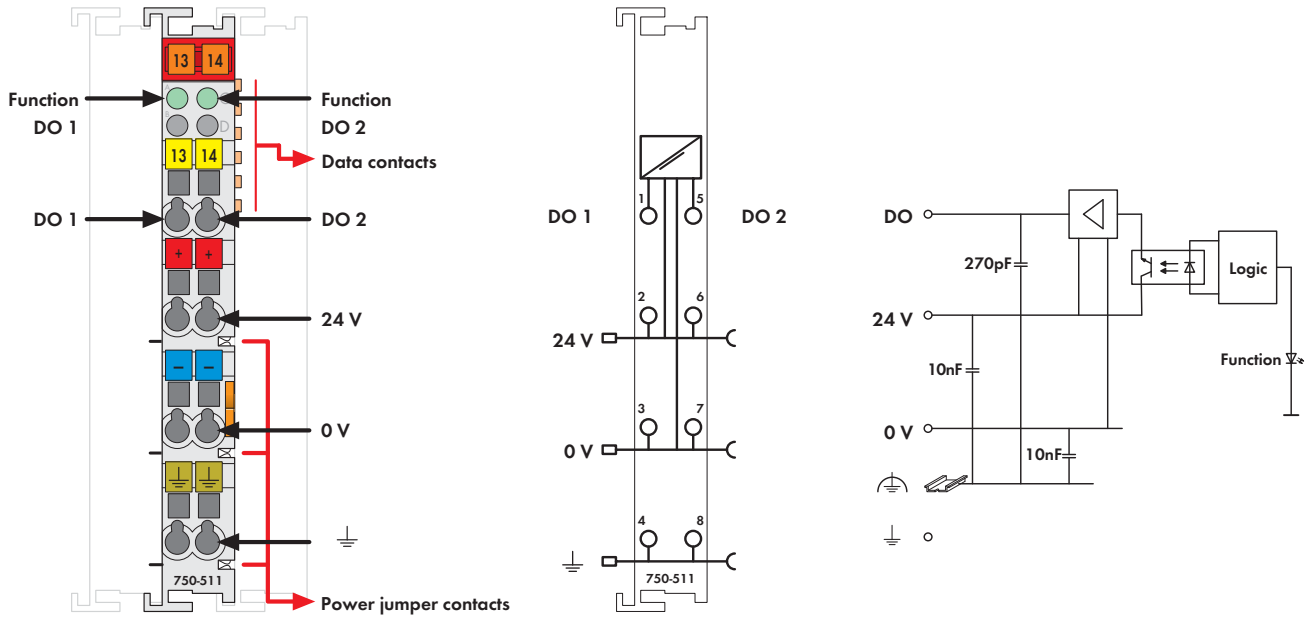
The counters can be set or reset with the control bytes. A counter lock-out is also possible.

The control bytes also determine the direction of counting.

Description	Item No.	Pack. Unit
2-Channel Up/Down Counter, 500 Hz	750-638	1
2-Channel Up/Down Counter, 500 Hz/T	750-638/025-000	
[Operating temperature -20 °C ... +60 °C]		
2-Channel Up / Down Counter, 500 Hz	753-638	1
(without connector)		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-638
 IEC 60079-0, -15	BR-Ex nA II T4	750-638
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-638
EN 61241-0, -1		

Technical Data	
No. of counters	2
Current consumption typ. (internal)	10 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Signal voltage (0)	-3 V ... +5 V DC (acc. to EN 61131 type 1)
Signal voltage (1)	15 V ... 30 V DC (acc. to EN 61131 type 1)
Common mode voltage (max.)	500 V DC
Minimum pulse width (0, 1)	1 ms
Input filter	0.2 ms
Sensor connection	differential
Max. switching frequency	500 Hz
Counter depth	16 bits
Isolation	500 V system/supply
Current consumption typ. (field side)	8 mA
Internal bit width	2 x 16 bits data
	2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	58 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 2-Channel Pulse Width Output Module 24 V DC




Delivered without miniature WSB markers

This output module is able to modulate an output with a resolution of 16 bits, with a constant frequency. The field side is electrically isolated from the bus system.

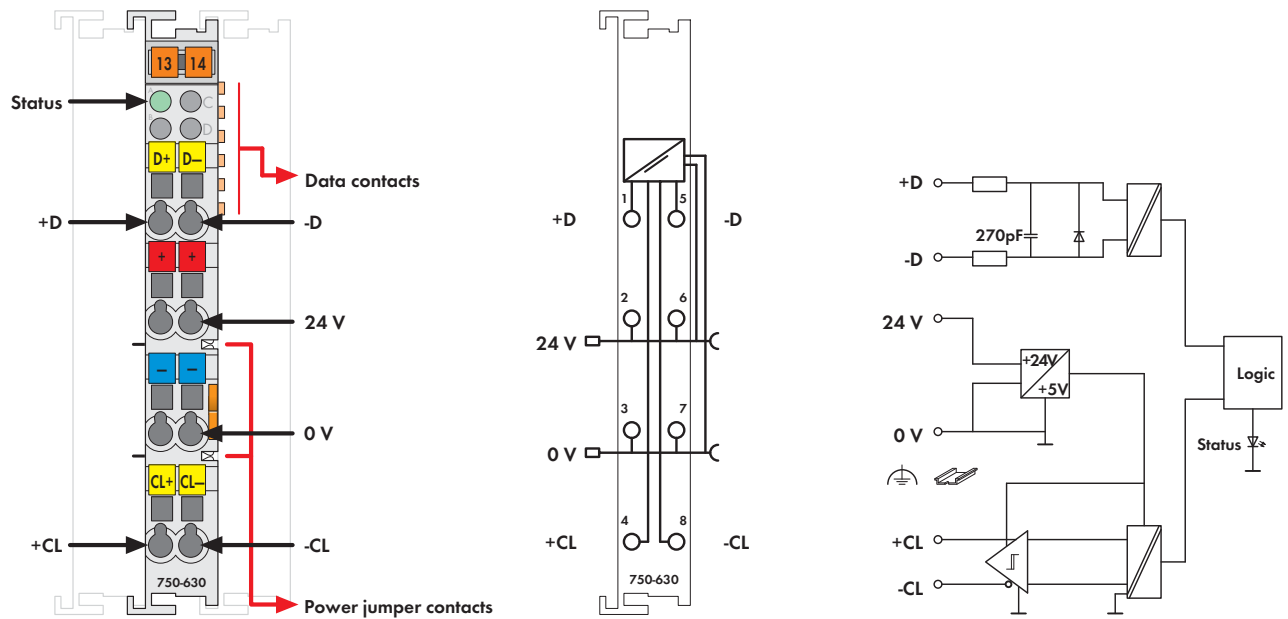
The pulse-width repetition rate is given by a 16-bit value.

The outputs are short-circuit proof.

Actuators with a ground (earth) wire may be directly connected to the module.

Description	Item No.	Pack. Unit
2DO 24V DC 0.1A/Pulse Width	750-511	1
2DO 24V DC 0.1A/Frequency/2kHz	750-511/000-001	1
Frequency counter, pulse frequency/pulse duty factor 2 Hz ... 2 kHz / 50 %		
2DO 24V DC 0.1A/Pulse Width/100Hz	750-511/000-002	1
Pulse frequency 100 Hz		
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
No. of outputs	2
Current consumption (internal)	70 mA
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Output current	0.1 A short-circuit protected
Type of load	resistive, inductive
Pulse frequency	250 Hz
Pulse duty factor	0 % ... 100 %
Resolution	10 bits
Isolation	500 V system/supply
Current consumption typ. (field side)	15 mA
Internal bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	53.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)



Delivered without miniature WSB markers

This module is an SSI interface for the direct connection to an SSI transmitter.

After the interface has given a clock pulse to the sensor, the interface reads the incoming data and transmits it directly in the form of a data word into the process image of the PLC or PC. It is possible to factory adjust different operating modes, transfer frequencies and bit widths by means of the control register.

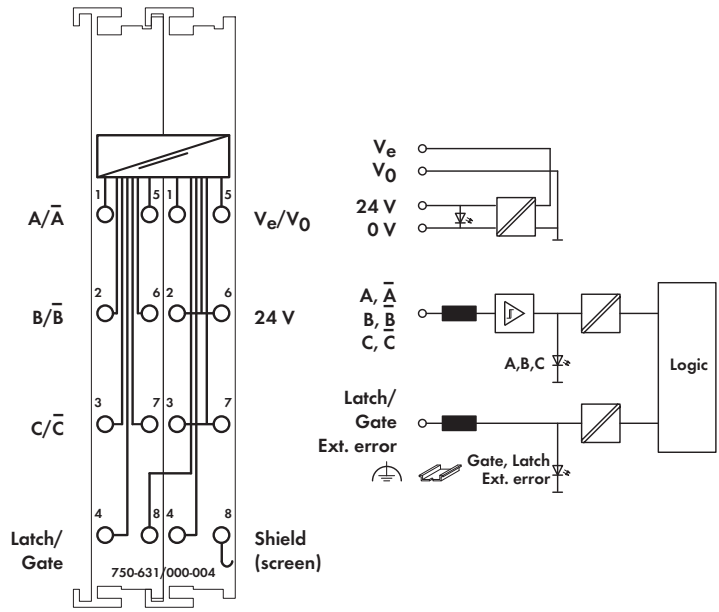
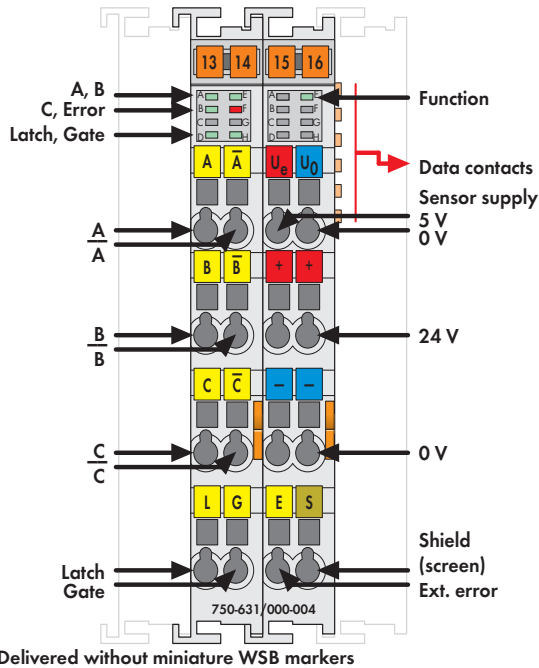
The power supply for the transmitter is derived internally from the power jumper contacts.

Description	Item No.	Pack. Unit
SSI/ 24Bit/ 125kHz/ Gray	750-630	4 ¹⁾
SSI/ 24Bit/ 125kHz/ Bin	750-630/000-001	1
SSI/ 24Bit/ 250kHz/ Bin	750-630/000-002	1
SSI/ 24Bit/ 125kHz/ Gray/ Status	750-630/000-004	1
SSI/ 15Bit/ 125kHz/ Gray/ Status	750-630/000-005	1
SSI/ 24Bit/ 250kHz/ Gray	750-630/000-006	1
SSI/ 24Bit/ 83kHz/ Gray/ Status	750-630/000-007	1
SSI/ 25Bit/ 125kHz/ Gray	750-630/000-008	1
SSI/ 13Bit/ 250kHz/ Bin	750-630/000-009	1
SSI/ 25Bit/ 125kHz/ Bin	750-630/000-011	1
SSI/ 13Bit/ 125kHz/ Gray	750-630/000-012	1
SSI/ 29Bit/ 125kHz/ Bin	750-630/000-013	1
SSI/ Configurable	750-630/003-000	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 50021	II 3 G EEx nA II T4	750-630/000-xxx
EN 60079-0, -11, -15	I M2 Ex d I	750-630/003-000*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-630/003-000*
	II 3 D Ex tD A22 IP6X T135°C	750-630/003-000*
	* Permissible operating temperature: 0°C ... +60°C	

Technical Data

Sensor connection	In + D, -D / Out + CL, -CL
Current consumption typ. (internal)	20 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Sensor supply	24 V DC via power jumper contacts
Baud rate	125 kHz (max. 1 MHz)
serial input	32 bits (bit width)
Signal output	differential signal (RS 422)
Signal input	differential signal (RS 422)
Code	Graycode
Isolation	500 V system/supply
Internal bit width	1 x 32 bits
	1 x 8 bits control/status (option)
	(24 bits data, 8 bits reserved)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	46.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 Incremental Encoder Interface



This module is an interface for connection of any incremental encoder.

A 16 bit counter with quadrature encoder interface as well as a 16 bit latch for the zero impulse can be read, set, or enabled. The count of the counter will be transmitted fast and interference-free over the fieldbus to the PC, PLC, or NC.

A counter lock-out is possible using input G.

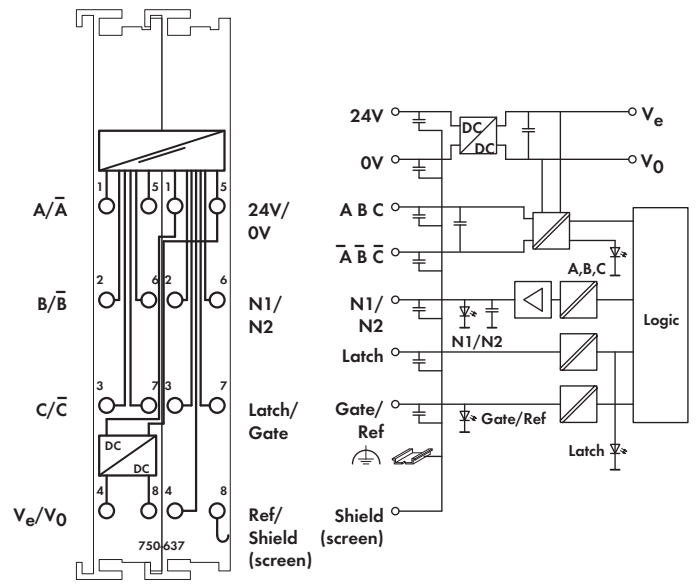
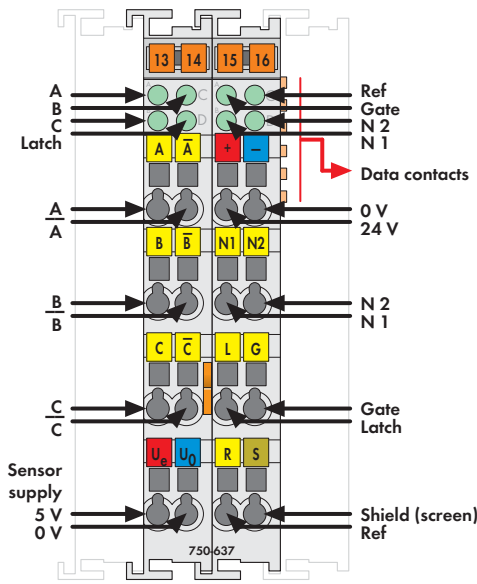
The power supply for the transmitter is derived internally from the power jumper contacts U_e/U_0 .

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
Incremental Encoder Interface RS-422	750-631/000-004	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	Also see "Approvals Overview" in Section 1	
CE	Class I, Div. 2, Grp. ABCD, T4	
ANSI/ISA 12.12.01	II 3 G EEx nA II T4	
EN 50021	II 3 G EEx nA II T4	
UL 508		

Technical Data	
Sensor connection	A, \bar{A} , B, \bar{B} , C, \bar{C}
Current consumption (internal)	50 mA
Counter	16 bits binary
Max. operating frequency	1000 kHz
Quadrature decoder	4-fold report
Zero impulse latch	16 bits
Commands	read, set, enable
Power supply	24 V DC (-15 % ... +20 %)
Current consumption (typ.)	6 mA without sensor
Operating voltage of sensor	DC5 V
Sensor max. output current	200 mA
Signal voltage (0)	$V_{ABC} = 0 V, V_{\bar{ABC}} = 5 V$ Latch, Gate $\leq 5.0 V$ Ext. error $V \geq 5.0 V$ or input open
Signal voltage (1)	$V_{ABC} = 5 V, V_{\bar{ABC}} = 0 V$ Latch, Gate $\geq 15.0 V$ Ext. error $V < 0.5 V$
Isolation	500 V system/supply
Internal bit width	1 x 32 bits data 1 x 8 bits control/status 1 x 8 bits reserved
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	100 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Incremental Encoder Interface



Delivered without miniature WSB markers

This module is an interface for any incremental encoder with an RS-422 connection.

A counter with quadrature decoder as well as a latch for the zero impulse can be read or enabled by the control. The control can set the counter or transmit the counter value to the Latch. As an alternative this can also be done using input "C" or "Latch".

The frequency data is automatically acquired and can also be transmitted to the control.

A counter lock-out is possible using input G. Input "Ref" can be used to activate the initial point "C" function.

The cam outputs N1 and N2 indicate whether the counter value is within a defined range of values. The range can be adjusted.

The module must be powered using an external 24VDC power supply, from which power to the transmitter (Ue, U1) can also be derived.

The shield (screen) is directly connected to the DIN rail.

Description	Item No.	Pack. Unit
Incremental Encoder Interface	750-637	2 ¹⁾
Incremental Encoder Interface 24 V/32 Bit differential	750-637/000-001	1
Incremental Encoder Interface 24 V/32 Bit single ended	750-637/000-002	1
Incremental Encoder Interface RS422/32Bit/Single Interpreter	750-637/000-003	1
Incremental Encoder Interface 24 V/32 Bit single ended/cam outputs	750-637/000-004	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
IEC 60079-0, -15	BR-Ex nA II T4	750-637
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-637/000-002
EN 61241-0, -1		750-637/000-004
EN 60079-0, -11, -15	I M2 Ex d I	750-637*, ...001*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-637*, ...001*
	II 3 D Ex tD A22 IP6X T135°C	750-637*, ...001*
* Permissible operating temperature: 0°C ... +60°C		

Technical Data	
Sensor connection	A, \bar{A} , B, \bar{B} , C, \bar{C}
Current consumption (internal)	110 mA
Counter	32 bits binary
Max. operating frequency	250 kHz
Quadrature decoder	4-fold report
Zero impulse latch	32 bits
Commands	read, set, enable
Power supply	24 V DC (-15 % ... +20 %)
Current consumption (typ.)	35 mA without load
Operating voltage of sensor	DC 5 V
Sensor max. output current	300 mA
Internal bit width	1 x 32 bits data
	1 x 8 bits control/status
Digital outputs (N1, N2)	
Output voltage	24 V DC
Output current (max.)	0.5 A short-circuit protected
Digital inputs (Latch, Gate, Ref)	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input current (typ.)	Latch 5 mA, Gate 7 mA, Ref. 7 mA
Wire connection	
CAGE CLAMP®	
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	100 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 Digital Impulse Interface

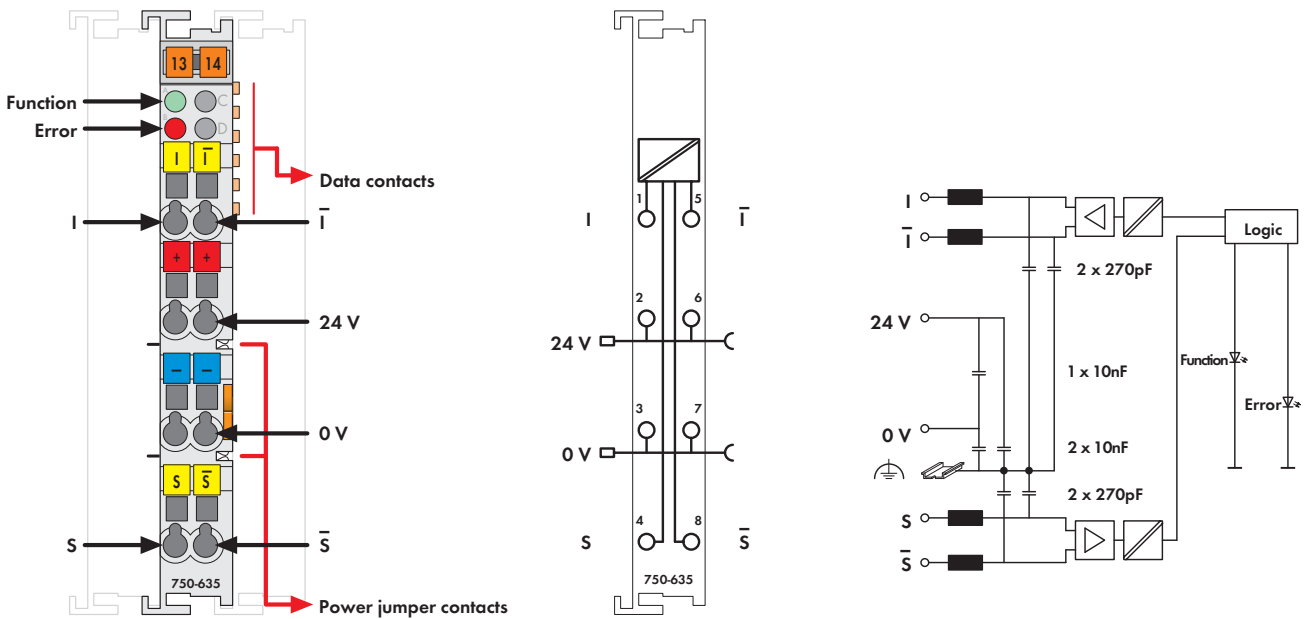


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13










The digital impulse interface is designed for the connection of magnetostrictive distance measurement sensors with a start/stop interface. After receiving a read pulse, these sensors deliver a time-delayed reply impulse. The time delay is proportional to the sensor distance.

Each sensor may have up to four position transmitters (permanent magnets). Their position data can be accessed serially by the control. The position data is stored in the process image of the fieldbus coupler as a 24-bit value.

The parameterization of the ultrasonic speed and the transmission points is done via the control byte. The parameters can be changed during operation.

The transmission of the impulses is done with RS-422 differential drivers which guarantees trouble-free data transmission.

Distance sensors with the following features can be used: Start/Stop interface with RS-422 differential signals, sensor supply 24 V, manufacturer: e.g., Balluff

Description	Item No.	Pack. Unit
Digital Impulse Interface	750-635	1
Digital Impulse Interface (without connector)	753-635	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 IEC 60079-0, -15	BR-Ex nA II T4	750-635
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
 EN 61241-0, -1		

Technical Data	
Sensor connection	Start/Stop; Init; Vv; ground connection of the shield via the housing of the sensor
Number of inputs	1
Current consumption (internal)	45 mA
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Data transmission	RS 422
Signal output	differential signal (RS-422)
Signal input	differential signal (RS-422)
Resolution	1 µm
Hysteresis	depends on the distance sensor
Update time	2 ms
Distance sensor length	≤ 4 m
Line length (max.)	500 m
Isolation	500 V system/supply
Internal bit width	1 x 24 bits data 1 x 8 bits control/status
Wire connection CAGE CLAMP®	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Serial Interface RS-232 C

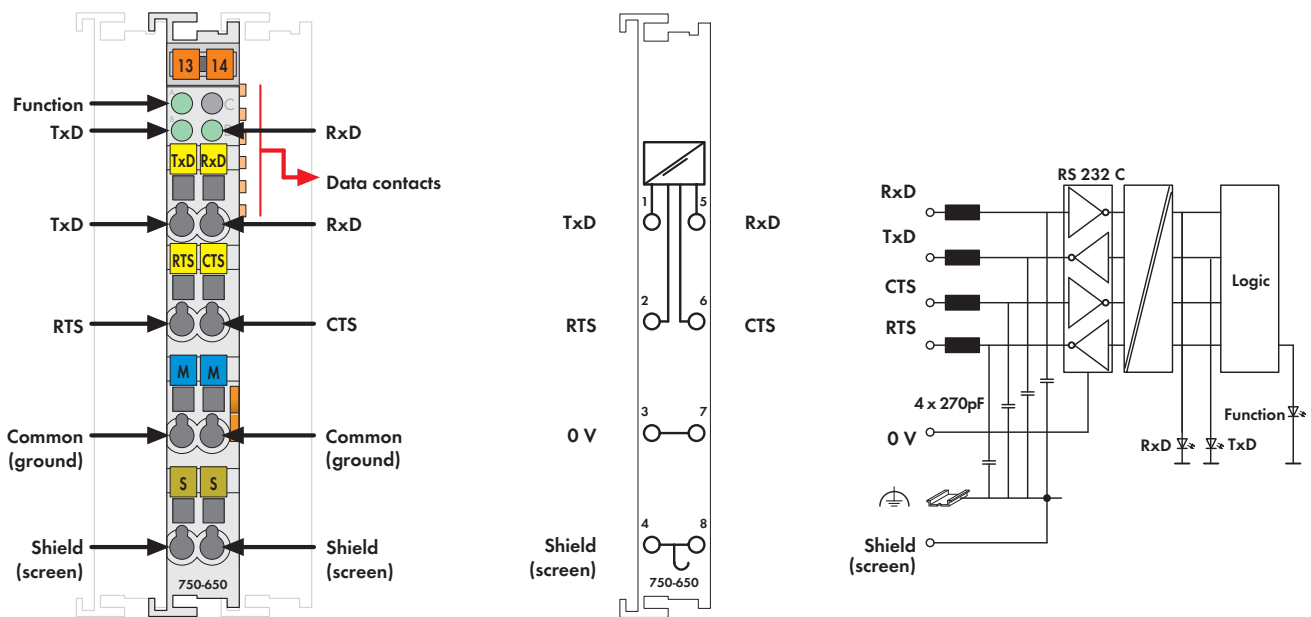


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

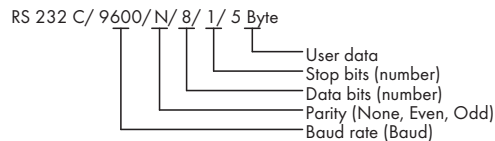
The interface integrated in the I/O module allows the connection of any device which is equipped with an RS-232 C interface.

The RS-232 C interface guarantees high interference immunity because of the electrically isolated signals.

The interface operates in accordance with the TIA/EIA-F, CCITT V.28/DIN 66259-1 standard.

The shield (screen) is directly connected to the DIN rail.

The connected device can communicate directly with the control unit via the fieldbus coupler. The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.



Description	Item No.	Pack. Unit
RS-232 C/ 9600/ N/ 8/ 1	750-650	1
RS-232 C/ 9600/ N/ 8/ 1/ 5 bytes	750-650/000-001	1
RS-232 C/ 9600/ E/ 7/ 2	750-650/000-002	1
RS-232 C/ 4800/ E/ 7/ 1	750-650/000-004	1
RS-232 C/ 9600/ E/ 8/ 1	750-650/000-006	1
RS-232 C/ 2400/ E/ 8/ 1	750-650/000-009	1
RS-232 C/ 19200/ N/ 8/ 1	750-650/000-010	1
RS-232 C/ 19200/ E/ 8/ 1	750-650/000-011	1
RS-232 C/ 2400/ N/ 8/ 1	750-650/000-012	1
RS-232 C/ 4800/ E/ 7/ 2	750-650/000-013	1
RS-232 C/ 2400/ E/ 7/ 2	750-650/000-014	1
RS-232 C/ 4800/ E/ 8/ 1	750-650/000-015	1
RS-232 C/ 9600/ O/ 7/ 2/ 5 bytes	750-650/000-016	1
RS-232 C/ Configurable	750-650/003-000	1
RS-232 C Interface (without connector)	753-650	1
RS-232 C/ Configurable (without connector)	753-650/003-000	1
Accessories	Item No.	Pack. Unit
753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Transmission channels	1 Tx/D / 1 RxD, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit skew	< 3 %
RS-232 line length (max.)	15 m
Buffer	128 bytes in/16 bytes out
Max. current consumption (internal)	55 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 Serial Interface RS-485

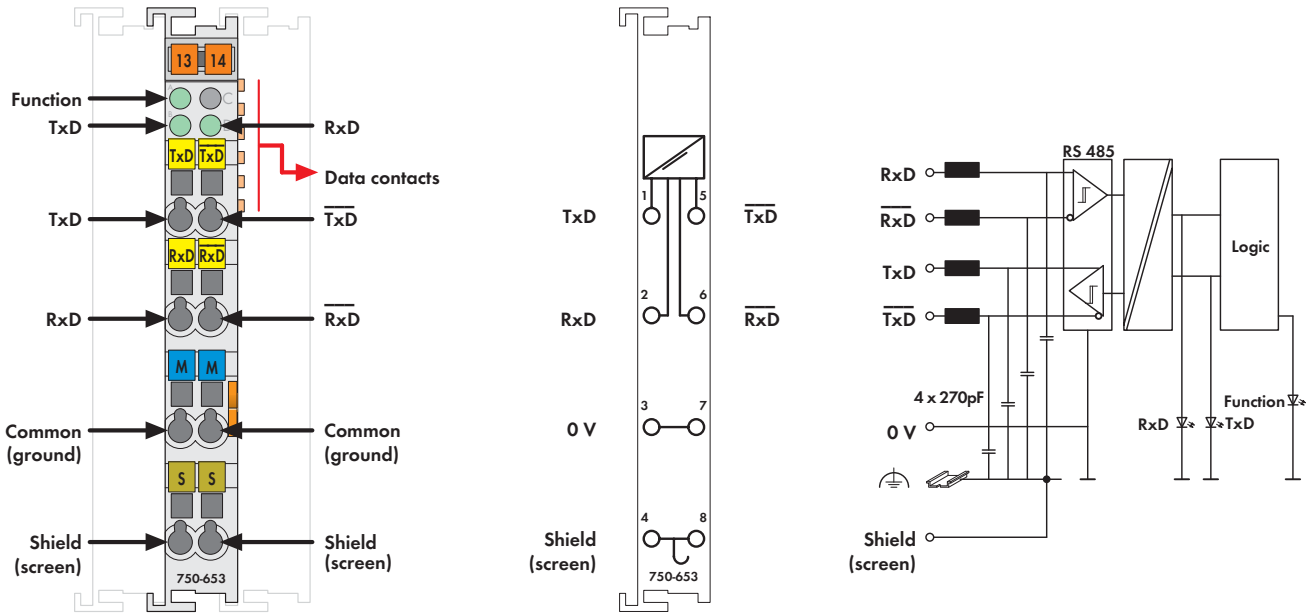


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

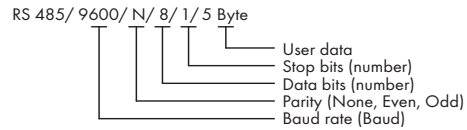
The interface integrated in the I/O module allows the connection of any device which is equipped with an RS-485 interface.


The RS-485 interface guarantees high interference immunity because of the electrically isolated signals.

The interface operates in accordance with the TIA/EIA-485-A, DIN 66259 standard.

The shield (screen) is directly connected to the DIN rail.

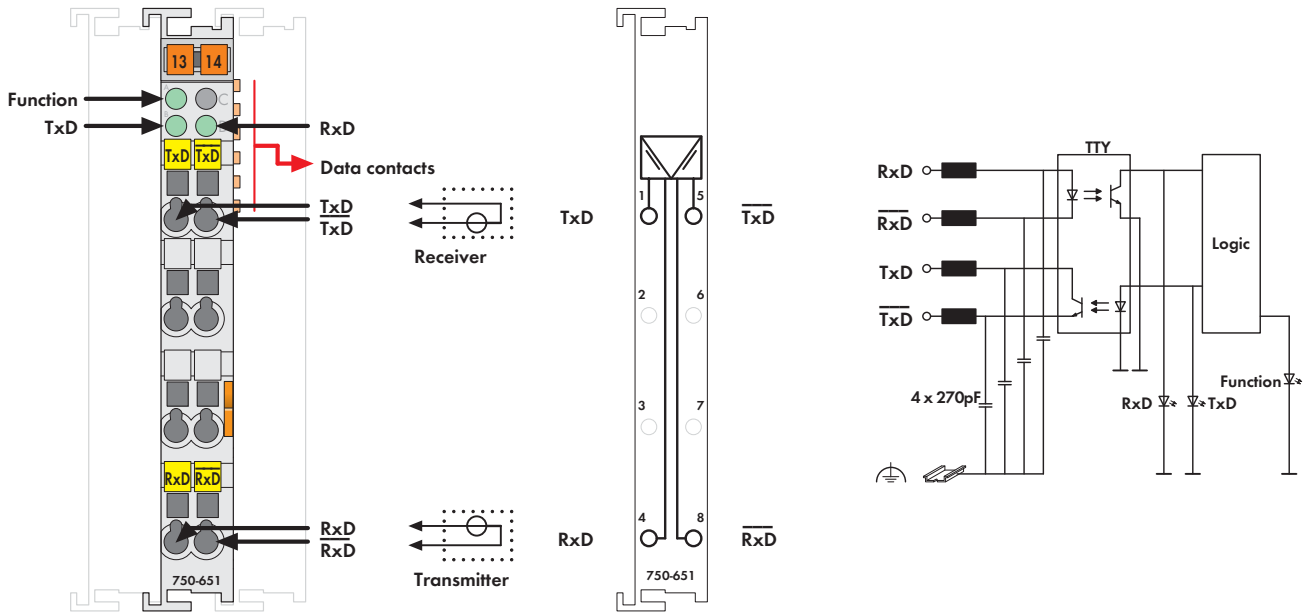
The connected device can communicate directly with the control unit via the fieldbus coupler. The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.



Description	Item No.	Pack. Unit
RS-485/ 9600/ N/ 8/ 1	750-653	1
RS-485/ 9600/ E/ 7/ 2	750-653/000-001	1
RS-485/ 9600/ E/ 8/ 1	750-653/000-002	1
RS-485/ 19200/ N/ 8/ 1/ 5 bytes	750-653/000-006	1
RS-485/ 2400/ N/ 8/ 1	750-653/000-007	1
RS-485 / configurable	750-653/003-000	1
RS-485 / Configurable/T	750-653/025-000	1
(Operating temperature -20 °C ... +60 °C)		
RS-485/ 9600/N/8/1/5 bytes/T	750-653/025-018	1
(Operating temperature -20 °C ... +60 °C)		
RS-485/ 9600/ N/ 8/ 1 (without connector)	753-653	1
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
Coding elements	753-150	100
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	75x-653 750-653/000-xxx 750-653/003-000
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	75x-653
EN 61241-0, -1		750-653/000-00x 750-653/003-000

Technical Data	
Transmission channels	1 Tx/D / 1 Rx/D, full duplex
Baud rate	9600 baud (factory preset)
	1200 ... 19200 baud
Bit transfer	ISO 8482 / DIN 66259 - 4
Line length	approx. 1000 m twisted pair
Buffer	128 bytes in/16 bytes out
Current consumption (internal)	65 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51.7 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

TTY Interface - 20 mA Current Loop



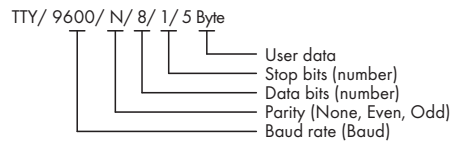
Delivered without miniature WSB markers

The interface integrated into the I/O module allows the connection of any device which is equipped with a 20mA current interface (TTY).


The TTY interface guarantees high interference immunity because of the electrical isolation and the driven loop current.

This interface is passive both at the sending and at the receiving end. It can be connected with active, semi-active or passive (with external power source) subscribers. The module communicates with the control unit via the fieldbus coupler.

The active communication channel works independently of the higher-level fieldbus system and allows full duplex operation up to 19200 baud.



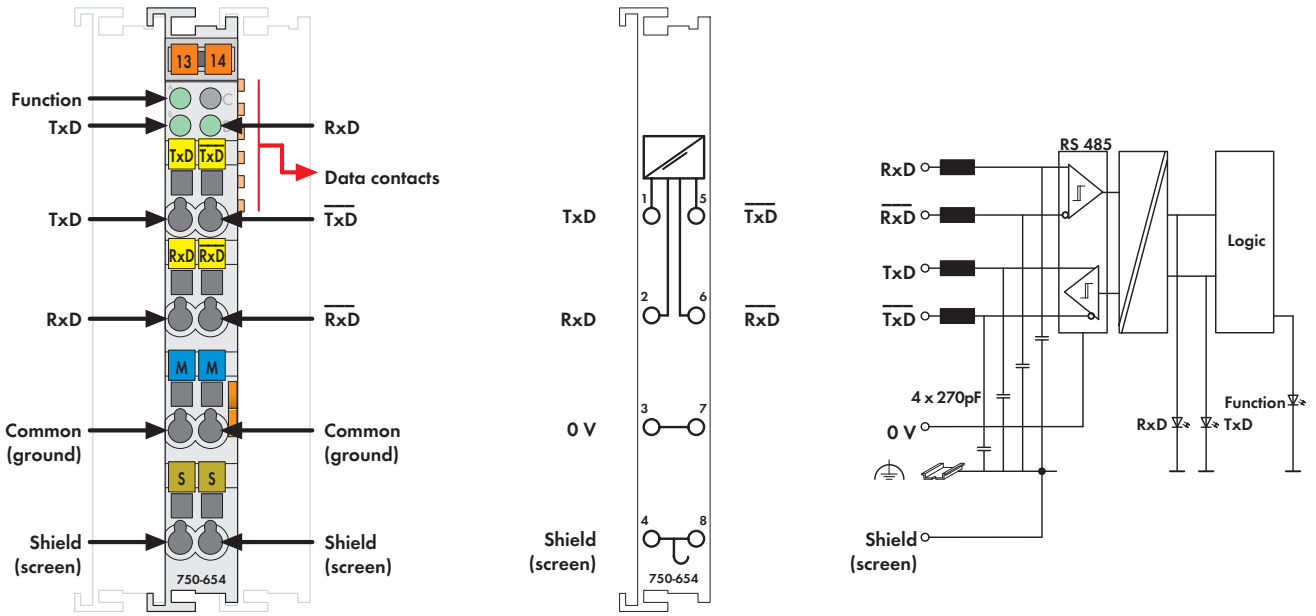
Description	Item No.	Pack. Unit
TTY/ 9600/ N/ 8/ 1	750-651	1
TTY/ 9600/ N/ 8/ 1/ 5 bytes	750-651/000-001	1
TTY/ 9600/ E/ 8/ 1	750-651/000-002	1
TTY/ 1200/ N/ 8/ 1	750-651/000-003	1

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	

Approvals	Also see "Approvals Overview" in Section 1
Conformity marking	CE
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 50021	II 3 G EEx nA II T4

Technical Data	
Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	9600 baud (factory preset) 1200 ... 19200 baud
Bit transfer	2 x 20 mA
Load impedance	< 500 Ω
Line length	approx. 1000 m twisted pair
Buffer	128 bytes in/16 bytes out
Current consumption (internal)	55 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 24 bits in/out (3 bytes user data) 1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 Data Exchange Module



Delivered without miniature WSB markers


The data exchange module allows the exchange of data between different fieldbus systems.

Two modules form a communication pair that is installed in fieldbus nodes and connected by means of two twisted wire pairs.

The data exchange is done in full duplex operation, independent of the fieldbus system used. The data of the output process image of the fieldbus coupler is transmitted to the communication partner. This module then transmits the data to the input process image of its fieldbus coupler and vice versa.

Factory preset transmission is 32 bits of input data and 32 bits of output data. Data transfer time for 32 bits of I/O is about 5ms.

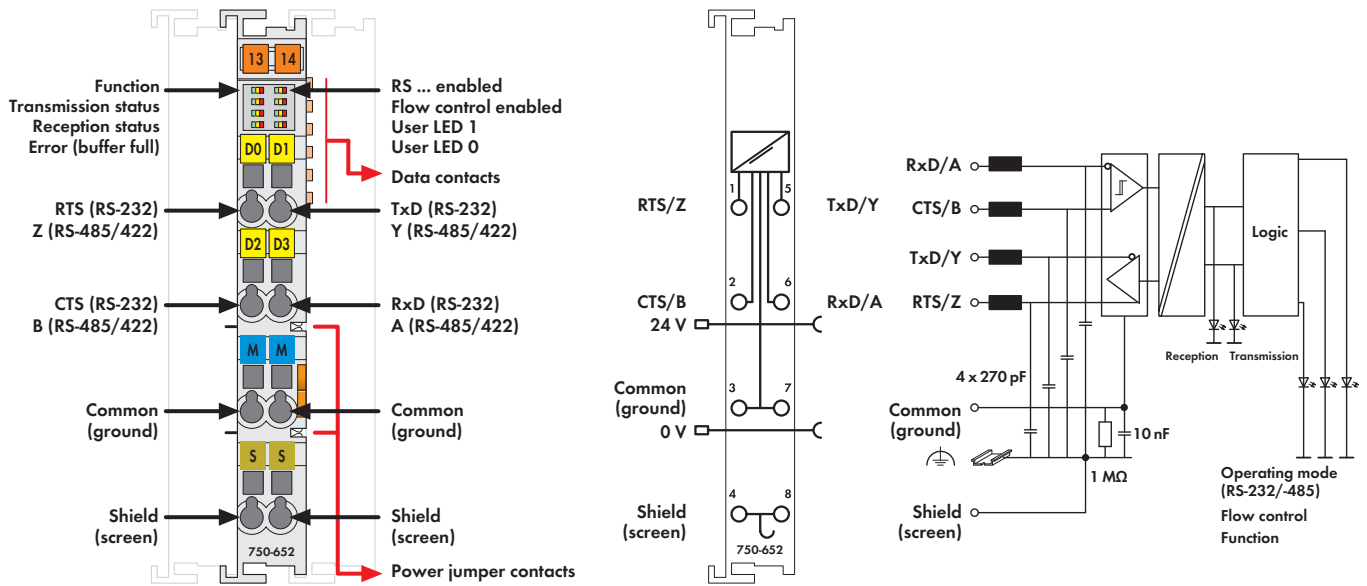
The LED "Function" indicates a data exchange with the buscoupler. The status of the data transmission is indicated by the TxD and RxD LEDs.

Description	Item No.	Pack. Unit
Data Exchange Module	750-654	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		

Technical Data	
Transmission channels	1 TxD / 1 RxD, full duplex
Baud rate	62500 baud (8 N 1)
Bit transfer	via 2 twisted pair with differential signals
Line impedance	120 Ω
Line length	approx. 1000 m twisted pair
Current consumption (internal)	65 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 32 bits in/out 1 x 8 bits control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	49.05 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Serial Interface RS-232 / RS-485

Configurable




Delivered without miniature WSB markers

The serial interface module connects RS-485/422 or RS-232 C interface devices to the WAGO-I/O-SYSTEM 750. It also provides gateways between the serial interface and the fieldbus systems supported by the WAGO-I/O SYSTEM 750. No higher protocol level is required by the module. Communication to the associated fieldbus master is completely transparent. This provides for a broader application scope for the serial interface module. If required, communication protocols can be configured via fieldbus master.

The 2560 byte input buffer provides for high data baud rates. At lower baud rates, the data received in lower priority tasks is evaluated without data loss. The 512 byte output buffer provides fast transmission of larger data strings. The module can be configured via WAGO-I/O-CHECK or GSD files. Flexible baud rate and data width selection provides perfect adaptation to the respective application.

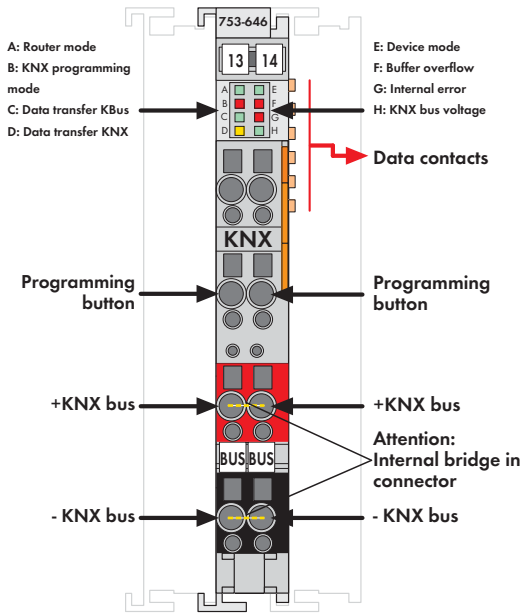
Compatibility with couplers/controllers:

See manual, Section 3 "Device Description"

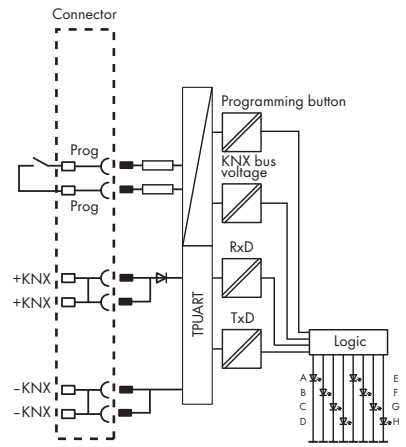
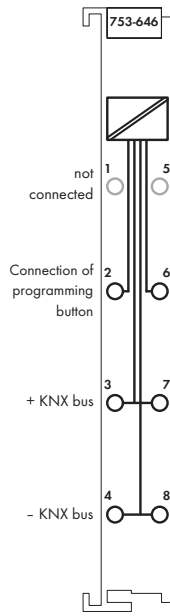
Description	Item No.	Pack. Unit
RS-232 / RS-485 configurable	750-652	1
RS-232 / RS-485 configurable/T	750-652/025-000	1
[Operating temperature -20 °C ... +60 °C]		
Accessories	Item No.	Pack. Unit
WAGO-I/O-CHECK, RS-232 kit	759-302	1
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Transmission channels	1 TxD / 1 RxD, full duplex, half duplex
Baud rate	7 or 8 bit data, 1 or 2 stop bit 9,600 baud (default setting) 300 baud ... 115,200 baud
Bit transfer	RS-485/-422: ISO 8482 / DIN 66259 - 4; RS-232: EIA/TIA-232-F
Line length	RS-485/-422: max. approx. 1000 m twisted pair, RS-232: max. 40 m
Buffer	2560 bytes in / 512 bytes out
Current consumption (internal)	85 mA
Power supply	via system voltage DC/DC
Isolation	500 V system/supply
Internal bit width	1 x 46/1 x 24/1 x 6 bytes in/out (parametrizable), 2 bytes control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51 g

1 KNX/EIB/TP1 Module






Delivered without miniature WSB markers



The KNX/EIB/TP1 I/O module 753-646 serves to connect a KNX/EIB/TP1 network. The module supports two different functions:

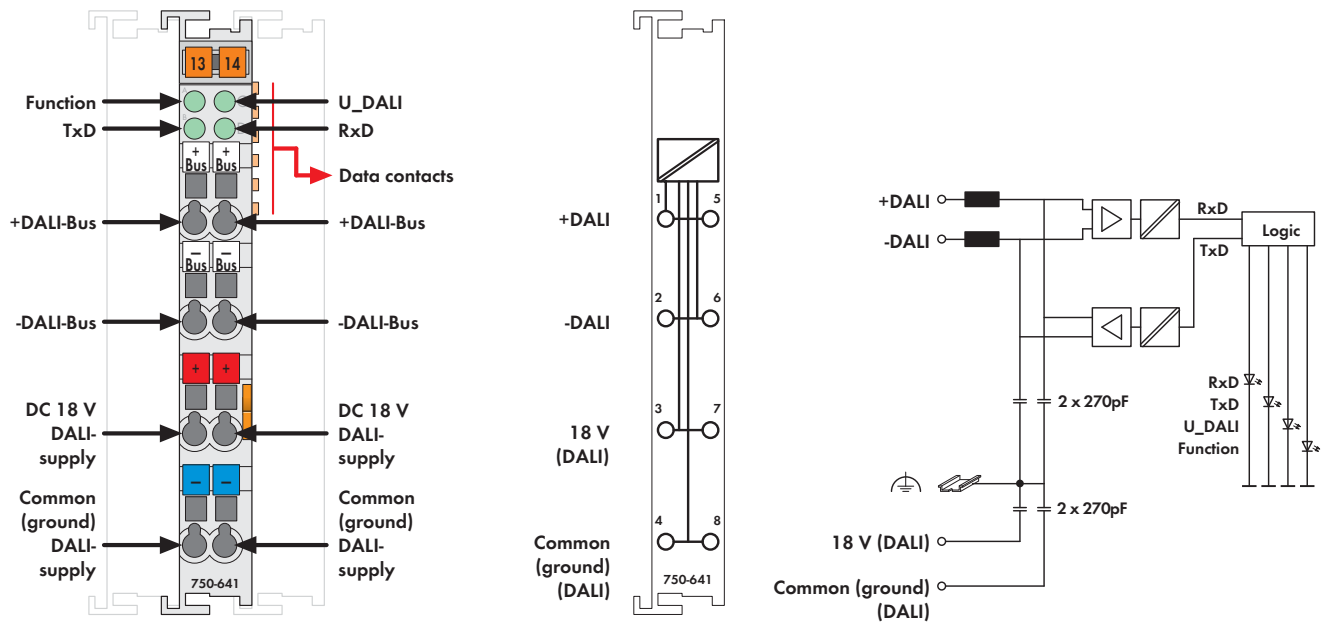
1. Device mode: With this module, all programmable controllers (* 1) that are relevant for building automation can be connected to a KNX/TP1 network. In a KNX network, the module appears as a standard KNX device and is linked using the ETS 3 Professional commissioning tool. The module supports a maximum of 253 communication objects with any DPTs, 254 group addresses and 254 associations. The application is programmed using WAGO-I/O-PRO CAA. An ETS3 plug-in, which is included in the WAGO product database, is required so that the data from the application program can be allocated to the group addresses.

* 1: See www.wago.com: Documentation WAGO-I/O-SYSTEM 753 Specialty Modules KNX/EIB/TP1 Module - Device Mode
2. Router mode: When used together with the KNX IP 750-849 controller, with the first KNX/EIB/TP1 module 753-646 connected, this module can be used as a KNXnet/IP router. The module is switched to router mode automatically. An application program is not required for operation in router mode. Additional modules that are connected to a KNX IP controller are addressed in the device mode by the application. The 753 Series connector with internally bridged contacts (3/7 and 4/8) is part of the delivery. Both an external KNX voltage supply and ETS 3.0 Professional are required to operate the KNX/EIB/TP1 I/O module.

Description	Item No.	Pack. Unit
KNX/EIB/TP1 Module	753-646	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
WAGO ETS3 plug-in (included in WAGO ETS3 product database) Download: www.wago.com : Beratung und Support → Downloads → Gebäudeautomation → ETS3 → Produktdatenbank		
Approvals Also see "Approvals Overview" in Section 1		
KNX certified		
Conformity marking		
Shipbuilding	ABS, DNV, GL*, KR	
	* Shield connection of the bus line is required for GL-complaint installation.	
UL 508		
Technical Data		
Wire connection	CAGE CLAMP®	
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14	
Stripped lengths	9 ... 10 mm / 0.37 in	
Width	12 mm	
Weight	55 g	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	
EMC: marine app. - immunity to interference	acc. to Germanischer Lloyd (2003)	
EMC: marine app. - emission of interference	acc. to Germanischer Lloyd (2003)	

Technical Data	
KNX/TP1 bus specification	1.0
Voltage supply (KNX)	via KNX power supply unit
Current consumption (KNX)	5 mA
Baud rate (KNX)	9.6 kbaud
Programming	using WAGO-I/O-PRO CAA (device mode)
Commissioning (KNX side)	with ETS3 plug-in; programming button-bridge 2/6
Diagnostic information	via FbKNX_Master_646 function block (device mode)
Fault behavior	via FbKNX_Master_646 function block (device mode)
Voltage supply (internal)	via system voltage DC/DC
Current consumption (internal)	max. 25 mA
Isolation	2.5 kV rms
Internal bit width	24 bytes
Programming button	Bridge 2/6
Device mode:	
Number of communication objects	253
Number of group addresses	254
Number of associations	254
Supported DPTs	All (*acc. to KNX Specification 03_07_02 Data Point Types V 1.0)
Router mode:	
Can be used as	
- Line coupler	yes
- Area coupler	yes
- KNX interface	yes


DALI/DSI Master Module



Delivered without miniature WSB markers

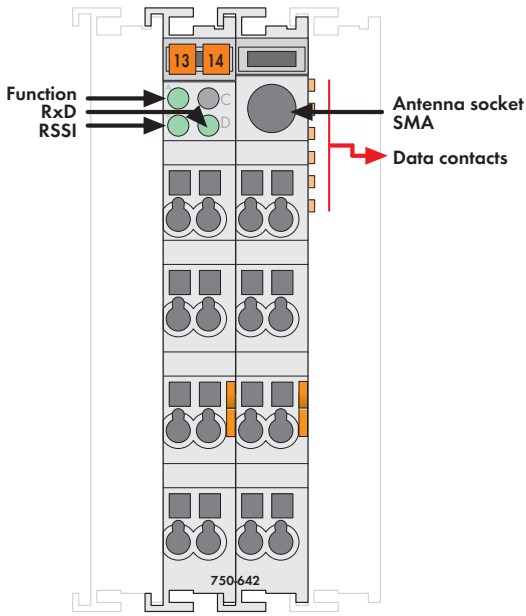
The DALI standard (IEC 60929), a protocol across all manufacturers, ensures the interoperability of electronic ballasts in lighting applications. This new standard is substitute for the 1 – 10V dimmer interface.
 The DALI/DSI Master for the WAGO-I/O SYSTEM 750 is a 12mm wide I/O module that fits all controllers of the 750 series.
 A DALI Master can control up to 64 slaves. Each slave can be assigned to 16 individual groups and 16 individual settings.
 Any combinations of DALI controls with other groups are possible with the WAGO-I/O-SYSTEM 750. Several DALI Masters can be connected to a single fieldbus node. The maximum number of modules within a controller depends on the memory requirements of the application.
 The WAGO-I/O-PRO 32 software is used to program the fieldbus nodes. WAGO supports simple application programming with pre-programmed function blocks for DALI.

The DC/DC converter 288-895 is required to supply the DALI Master. The DC/DC converter delivers up to 400mA and can supply 3 DALI lines each with up to 130mA (see also "DALI/DSI Master Module" manual in section 1.1.1.7.3 "DALI Bus Line").
 * Documentation available in German and English.
 DSI is a proprietary interface which was developed by the TRIDONIC ATCO company. As with DALI, electronic ballasts can be digitally controlled by the DSI. However, compared to DALI, the slaves of the DSI module cannot be addressed individually and no feedback signals can be sent to the master. The maximum number of slaves controlled by the module is limited to 100 participants per line (100 participants * 2 mA = 200 mA). Just as for DALI, the DC/DC converter 288-895 is required to supply the DSI.

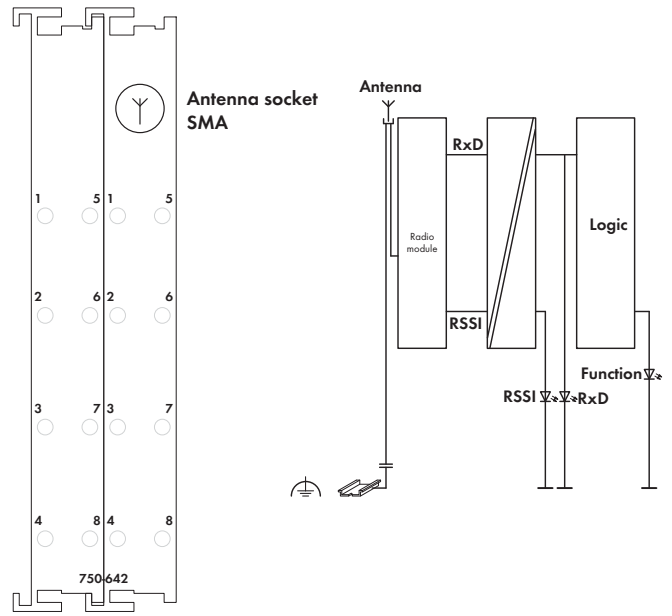
Description	Item No.	Pack. Unit
DALI/DSI Master Module	750-641	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
DALI specification	DIN IEC 60929 (VDE 0712 Part 23)
	Only in conjunction with 288-895 DC/DC Converter
DSI specification	TRIDONIC ATCO SPECIFICATION 2.0
Number of slaves (DALI)	64
Number of slaves (DSI)	100
Max. current output (DALI/DSI)	200 mA
Voltage supply (DALI/DSI)	18 V via 288-895 DC/DC Converter
Transmission channel	1
Current consumption (internal)	30 mA
Power supply	via internal system supply
Isolation	1500 V DC DALI-bus/K-bus
Internal bit width	1 byte control/status, 5 byte data
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52.2 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005) *
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007) *
	* Only in conjunction with 288-895 DC/DC Converter
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 Radio Receiver Module




Delivered without miniature WSB markers

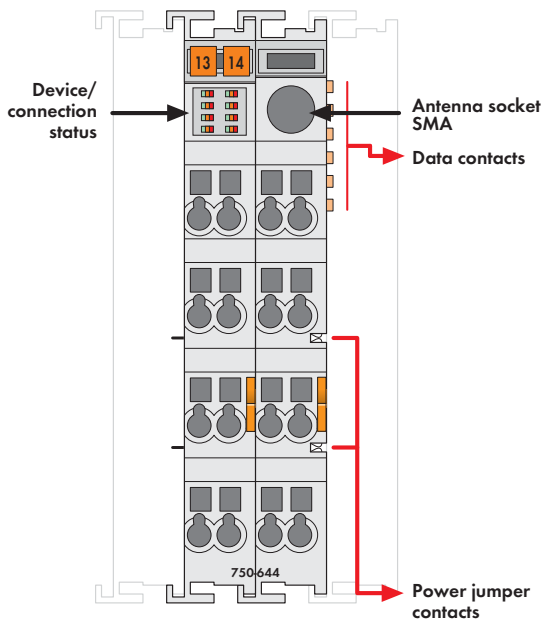


The 750-642 I/O Module receives radio telegrams from maintenance-free, battery-less and wireless switches and sensors based on EnOcean radio technology. The module can be used with any controller of the WAGO-I/O-SYSTEM 750. Preprogrammed function blocks make integration easy. The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy. The radiated energy from the transmitter modules is around one million times smaller than mobile phones. Almost any number of sensors is possible. However, the maximum number is around 100 transmitters per module, due to the increasing density of switches/sensors.

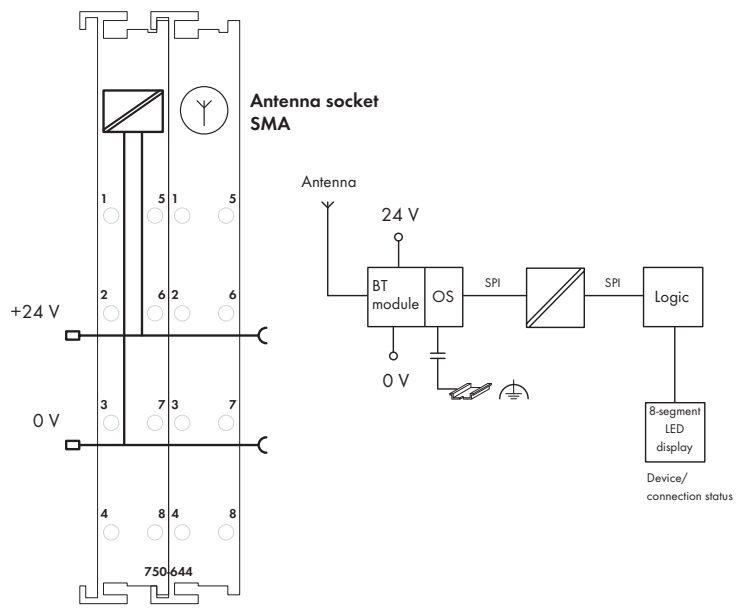
Four billion code numbers provide for clear transmitter/receiver assignment. Repeated, time-shifted transmission of the radio telegrams, at very short transmission times, results in a high level of protection against external interference. The maximum transmission range is approx. 300 meters in open field. Depending on the building materials used and on the spatial geometry, the range may be reduced to typically 30 meters (see manual for more information). The LED (RSSI) indicates a sufficient input level. *Documentation available in German and English. An SMA socket which is integrated into the housing allows the connection of an external antenna. The 758-910 external antenna has a magnetic stand and a 2.5m long coax cable with SMA plug (available as an accessory).

Description	Item No.	Pack. Unit
Radio Receiver Module	750-642	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
External antenna	758-910	1
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking RTTE	www.wago.com	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nL IIC T4	
EN 61241-0, -1		

Technical Data	
Frequency band	868.3 MHz
Transmission range	300 m in open field (typ. in buildings see manual)
Transmission protocol (radio telegram)	EnOcean
Current consumption (internal)	80 mA
Power supply	via system voltage DC/DC
Isolation	500 V antenna connection/system
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Dimensions (mm) W x H x L	24 x 64* x 100
	* + excess length of the SMA socket
Weight	80 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)



Delivered without miniature WSB markers







The 750-644 I/O Module enables wireless exchange of process data with up to seven other devices using Bluetooth® 2.0 radio technology. Interoperability with Bluetooth® devices is provided via the Bluetooth® PAN and SPP profiles and is not restricted to any one manufacturer. A special profile for time-critical applications is also available.

The I/O module can be operated with all standard fieldbus couplers/controllers from the WAGO-I/O-SYSTEM 750. Module configuration is performed locally via WAGO-I/O-CHECK.

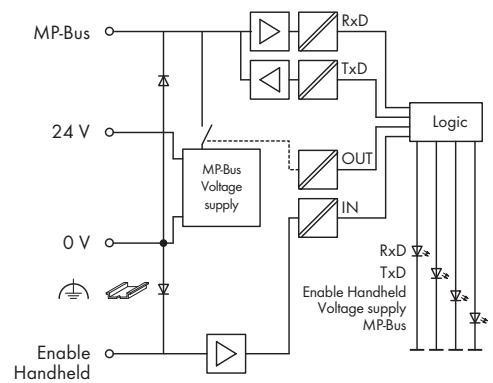
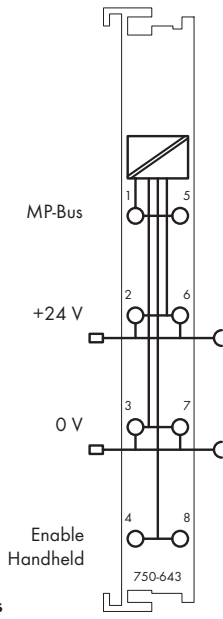
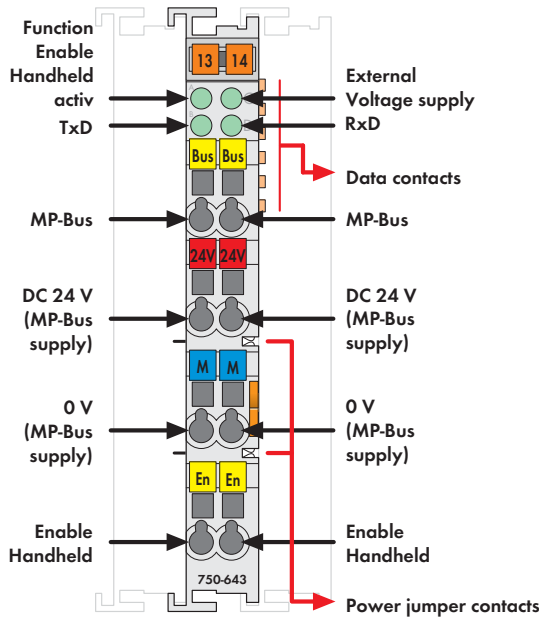
Reliable connections over distances of up to 1000m are possible using the WAGO 758-912 external antenna.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

Description	Item No.	Pack. Unit
Bluetooth®/RF Transceiver	750-644	1
Accessories		
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
External antenna	WLAN/Bluetooth 2.4 GHz	758-912 1
Approvals		
	Also see "Approvals Overview" in Section 1	
	FCC approval (This device complies with part 15 of FCC rules)	
	Bluetooth® approval	
Conformity marking	CE	
	UL 508	
Technical Data		
Dimensions (mm) W x H x L	24 x 64* x 100 * + excess length of the SMA socket	
Weight	85 g	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005), EN 61131-2 (2003)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007), EN 61131-2 (2003)	

Technical Data	
Wireless technology	Bluetooth® 2.0 + EDR
Topology	Piconet (1 master, max. 7 slaves)
Coexistence	AFH and adaptive transmission power
Profiles	SPP, PAN
Operating modes	Communication mode with ad-hoc profile for high connectivity and real-time profile for time-critical applications, as well as configuration mode
Frequency band	2402-2480 MHz (license-free ISM band)
Transmitter power	up to 20 dBm (Bluetooth® Class 1)
Receiver sensitivity	-94 dBm
Transmission range	max. 1000 m in open field, 100 m in buildings (using a WAGO external antenna, item no. 758-912)
Voltage supply (Bluetooth)	via 24 V DC field supply
Voltage supply (internal)	via system voltage DC/DC
Current consumption (Bluetooth)	approx. 8 mA, max. 35 mA
Current consumption (internal)	approx. 20 mA
Isolation	500 V antenna/system
Internal bit width	12, 24, 48 bytes configurable; incl. 1 byte control/status
Diagnostics (via visual indicator)	Device status, connection status ¹⁾
Diagnostics (via process image)	Device status, connection status ¹⁾ , time monitoring
Configuration	WAGO-I/O-CHECK and WAGO-I/O-PRO
¹⁾ Quality of radio connection, signal strength, interference	

1 MP-Bus Master Module




Delivered without miniature WSB markers

The 750-643 I/O module acts as a master for the MP bus (Multi Point Bus from Belimo/Switzerland) and allows the bus to be integrated into a higher level bus network such as Ethernet or LONWORKS®. The MP-bus controls HVAC actuators for dampers, regulator valves or VAV air volume controls. An additional product series for MP bus connection is the window ventilation system (FLS) from Belimo (MP bus connection for Belimo actuators, see Belimo documentation).

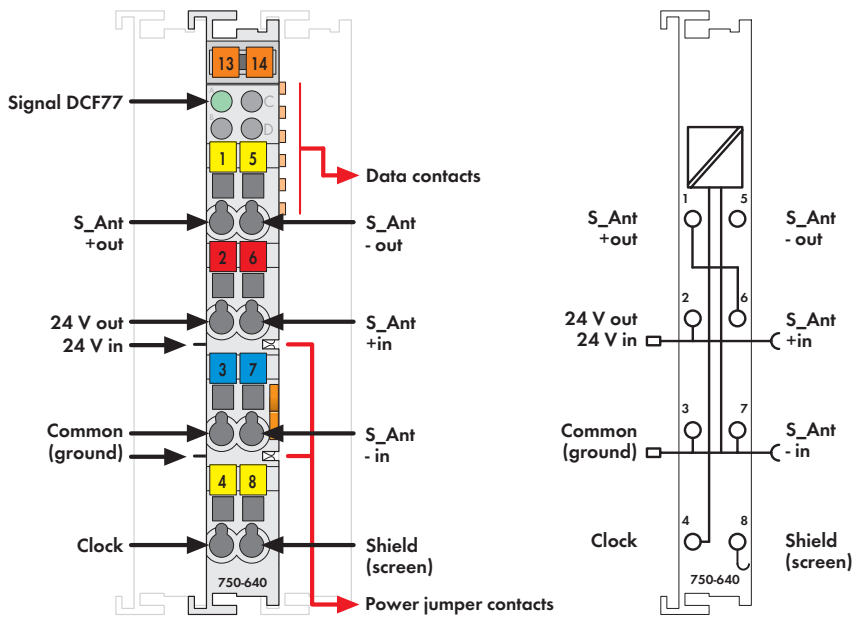
Devices that are equipped with an MP Bus connection, e.g. the Belimo MFT actuator series, can communicate with a higher level control via bus cable. The actuators have connections for active and passive sensors (temperature, humidity, ON/OFF switch, etc.), and are accessible via MP-Bus. An MP bus master, i.e., the WAGO I/O module, can manage up to 8 slaves (actuators) + 8 sensors (1 sensor can be connected to each slave) via a common bus line, which considerably reduces the wiring effort involved (for the actuators and sensors)(cable lengths for MP bus lines, see Belimo documentation*).

* Documentation available in German and English.

A Belimo parameterization unit (hand-held control unit, or Belimo PC tool) can be connected to the module to configure the Belimo actuators. The enable handheld contact can be used for this. The module deactivates its MP bus communication when the external parameterization unit is connected to this contact (or simply to the +24V power supply).

Description	Item No.	Pack. Unit
MP Bus Master module	750-643	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I Div2 ABCD T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
MP Bus specifications	PP/MP specifications V1.21 from Belimo (Valid since 1.10.2002)
No. of slaves	max. 8
Voltage supply (MP-Bus)	DC24 V
Current consumption (MP-Bus)	25 mA without motor current (for MP-Bus) if the motors are supplied via the MP-Bus module, all motor currents must be added
Current consumption (internal)	15 mA
Power supply	via system voltage DC/DC
Isolation	500 V eff MP-bus/system
Internal bit width	1 byte C/S, 7 byte data
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52.3 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2002)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2004)



Delivered without miniature WSB markers

The 750-640 RTC Module provides the higher-level control system with the actual time.

The time is buffered and continues to run in the event of a power failure.

When an external receiver is connected, the clock can be set using the time signal from DCF77, WWVB, or MSF.


By default the module is set to receive DCF77 signals.

The receiver can be supplied directly via the module.

Connecting an external receiver to operate the RTC module is not absolutely necessary.

With its 32 channels, the integrated time switch clock function makes it easier for the control unit to process time-triggered actions.

The module also counts the power-on time of the 32 channels.

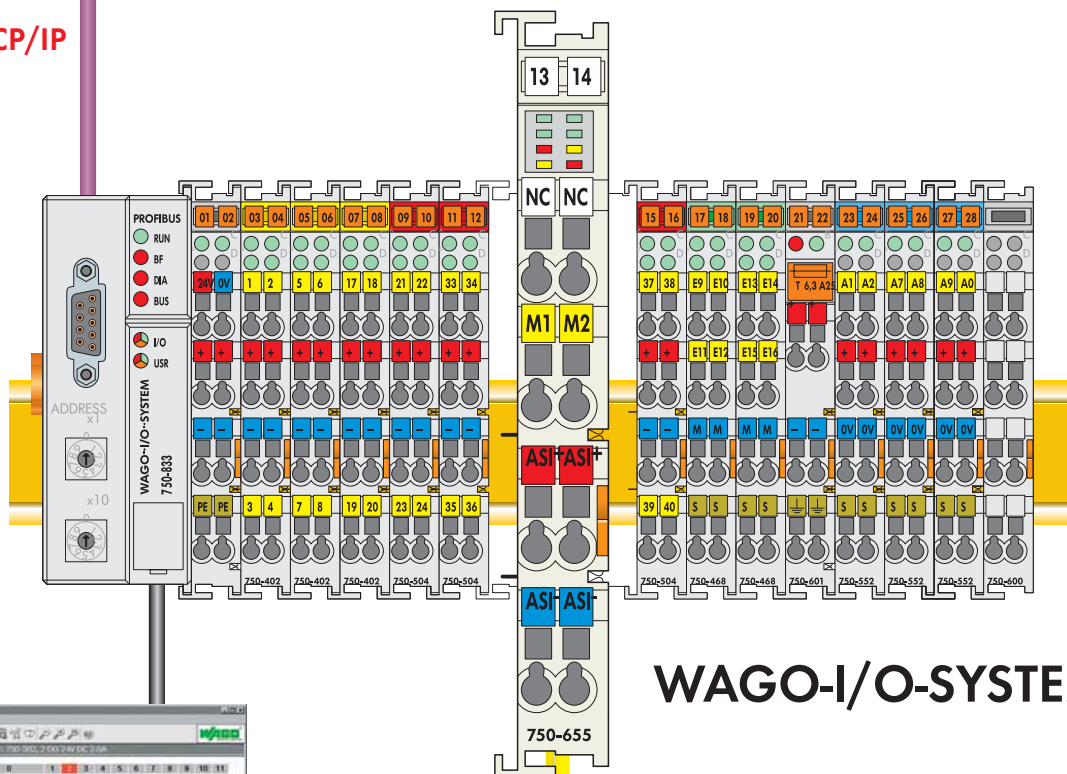
Description	Item No.	Pack. Unit
RTC module	750-640	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Current consumption (internal)	< 20 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Clock	
Accuracy (+25 °C)	< 1 min/month
Accuracy (+10 °C ... +40 °C)	< 2 min/month
Accuracy (-25 °C ... +85 °C)	< 7 min/month
Drift	< 2 min/year
Buffer length	> 6 days
Clock Timer	
Number of channels	32
Switching points	32 (per 32 channels on/off)
Signal voltage (0)	-24 V ... +1 V
Signal voltage (1)	3 V ... 24 V
Open-circuit voltage	DC 4 V
Input filter	10 ms
Input current (typ.)	< 5 mA (at 24 V)
	< 1 mA (at 5 V)
Supply S _{ant, in}	5 V ... 24 V DC
Isolation	500 V system/supply
Current consumption typ. (field side)	11 mA + load
Internal bit width	1 x 40 bits data (in/out)
	(5 bytes user data)
	1 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

WAGO AS-Interface Master

PROFIBUS
ETHERNET TCP/IP
DeviceNet
CANopen

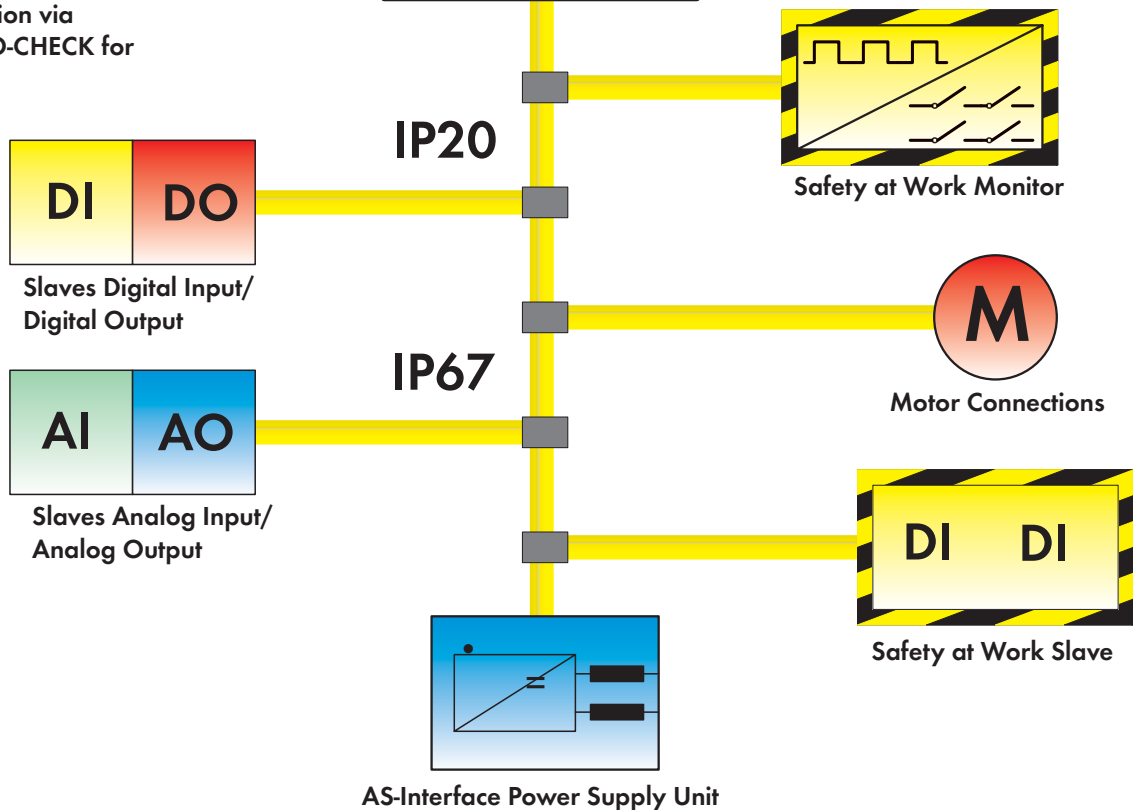
PROFIBUS DP



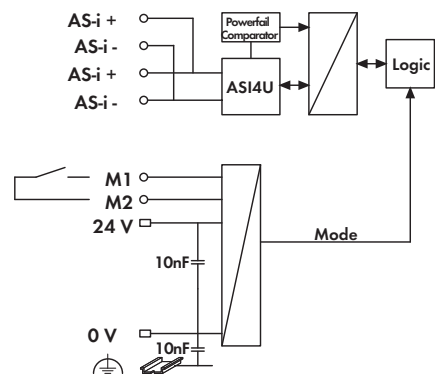
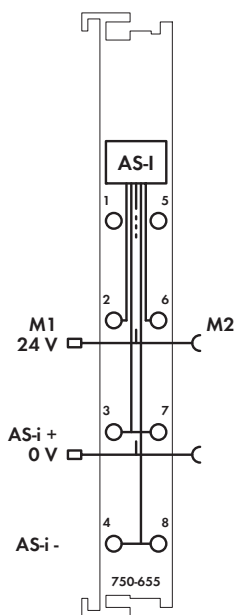
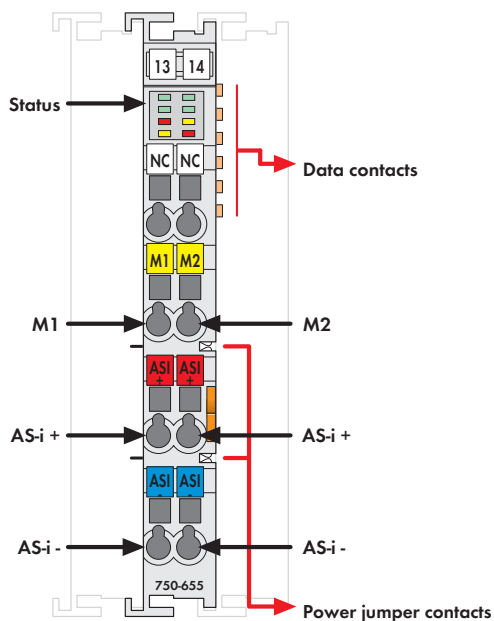
WAGO-I/O-SYSTEM



Configuration via WAGO-I/O-CHECK for example



WAGO AS-Interface Master





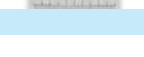

Delivered without miniature WSB markers

The 750-655 AS-I Master Module connects AS-Interface systems to a higher-level fieldbus. The module acts as a master for the AS-Interface and as a slave for the fieldbus. The 75x-655 AS-I Master Module is an M4 master per AS-Interface V3.0 Specification. This means:

- Up to 62 AS-Interface slaves can be connected per AS-I line
- Analog signal transfer is integrated in the masters
- Slave profile support complies with V3.0
- Combined 1-5 transaction types and acyclic write/read services are implemented.

The AS-I functions are provided both cyclically and acyclically via the fieldbus. In cyclic data transfer, up to 32 bytes of I/O data are transferred for the AS-I line binary data. Free cyclic process image areas can be mapped with analog values. Furthermore, analog signals and all other commands and data of the new AS-I specification can be transferred in a management channel via the fieldbus.

Diagnostics, which go far beyond the AS-I specifications, simplify the detection of both sporadic configuration errors and AS-I communication interferences. An auto-installation mode allows an AS-Interface network to be created via sequential slave installation, with no addressing tool required. Both signal transmission and operating status, as well as trouble-free internal data bus communication are indicated via LEDs.

Description	Item No.	Pack. Unit
AS-Interface Master M4 V3.0	750-655	1
AS-Interface Master M4 V3.0 (without connector)	753-655	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
AS-Interface certificate	ZU 50601	
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR, PRS* *753 Series, pending	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

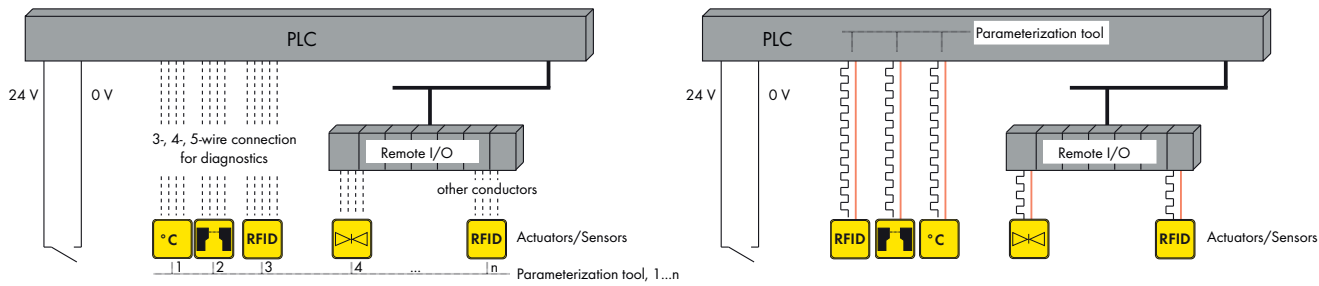
Technical Data	
AS-I specification	3.0
No. of slaves	up to 62
Current consumption (AS-I)	40 mA
Voltage supply (AS-I)	26.5 V ... 31.6 V
Max. length of AS-I cable	100 m (300 m through repeater)
Cycle time AS-I	0.3 ms ... 10 ms, depending on the number of slaves
Configuration	via process image, WAGO-I/O-CHECK
Transmission channel	1
Max. current consumption (internal)	55 mA
Voltage supply	via system voltage DC / DC
Isolation	500 V system/supply/AS-I
Bit width	max. 12 ... 48 bytes, configurable including 1 byte control/status
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	56 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)
EMC marine applications	
- Immunity to interference	acc. to Germanischer Lloyd (2003)
- Emission of interference	acc. to Germanischer Lloyd (2003)

4-Channel IO-Link Master

Automation right up to the last meter ...

Increasingly complex products, manufacturing flexibility and high demands on quality assurance require intelligent, configurable and programmable sensors. IO-Link streamlines required, varying interfaces for connecting to a control system and tooling to fulfill these demands. A 3-wire connection can communicate process data (as single bits, bytes and data blocks for input and output data). It also communicates acyclic data (for identification, configuration, parameterization and diagnostics)

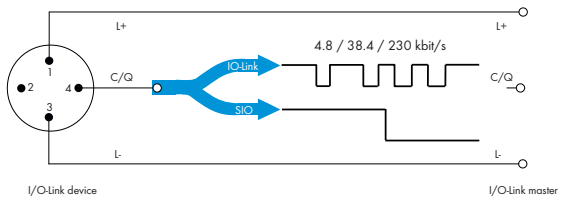
with up to 230.4 kbaud to both sensors and actuators.. The functions and performance data are defined in device description files for master and device; these are easy to customize via WAGO-I/O-CHECK. If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel. Project design, installation and operation are simplified!



Complex sensors often require different interfaces for binary or analog process value transmission, as well as for configuration and parameter setting. This requires different proprietary configuration tools.

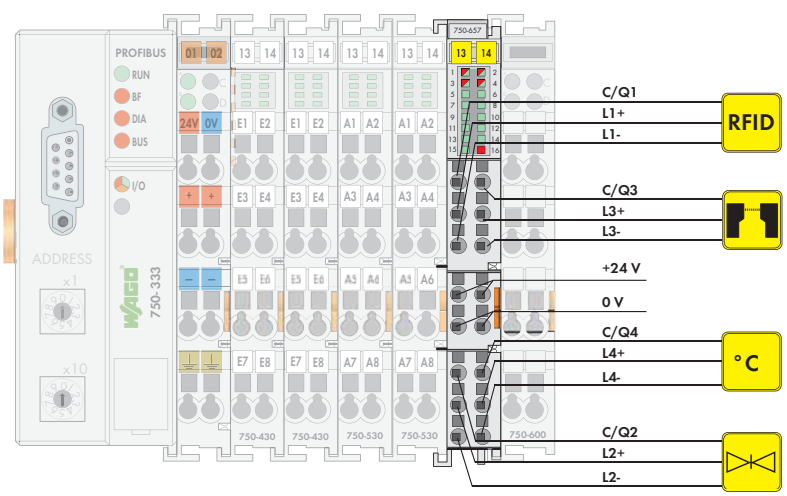
IO-Link simplifies use sensor and actuator functionalities via:
 - standardized IO Device Description (IODD) files,
 - device profiles,
 - communication.

Combined with customized tooling, this makes different cable types and time-consuming control system integration.



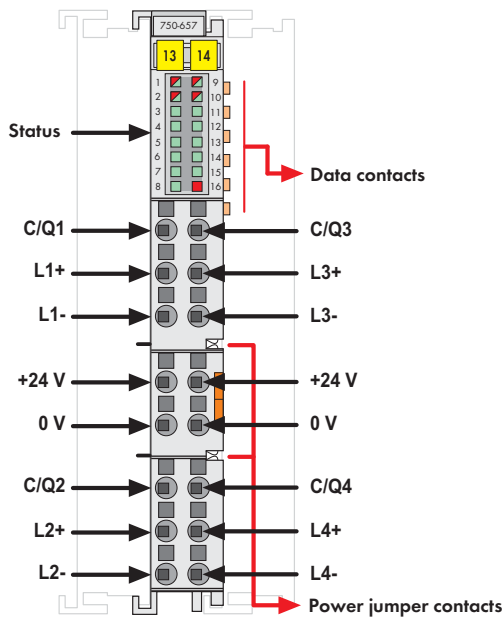
IO-Link features:

1. Cyclic process data:
1-bit to maximum 32-byte input and output data
2. Point-to-point connection
3. Acyclic data:
Addressing via index (0...32k) and subindex (0...255)
4. Events (errors, warnings and messages; 2-byte code)

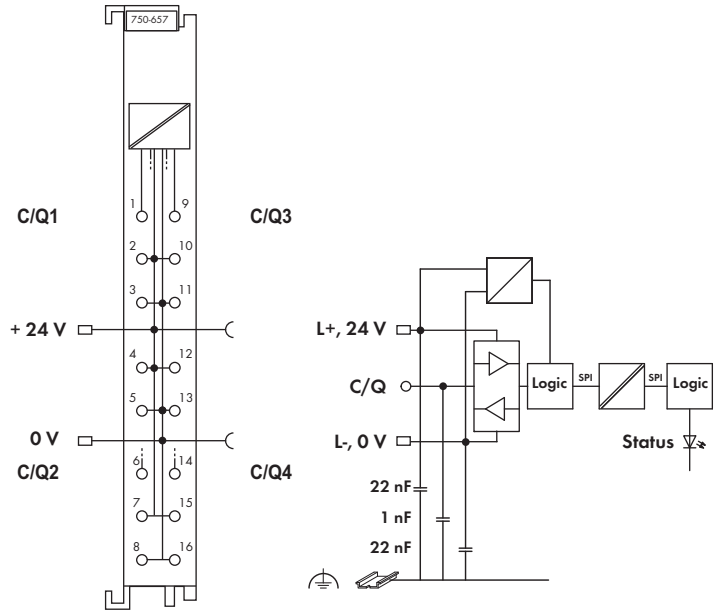


Four different IO-Link devices, or even digital standard sensors/actuators, can connect to the WAGO 750-657 IO-Link Master simultaneously. The module has 3 connections for each of the 4 channels although it is just 12mm (0.47in) wide. This provides cost-effective and convenient connection of sensors and actuators, by eliminating extensive wiring and time-consuming integration.

4-Channel IO-Link Master




Delivered without miniature WSB markers



Increasingly complex products, manufacturing flexibility and high demands on quality assurance require intelligent, configurable and programmable sensors. IO-Link streamlines required, varying interfaces for connecting to a control system and tooling to fulfill these demands. A 3-wire connection can communicate process data (as single bits, bytes and data blocks for input and output data). It also communicates acyclic data (for identification, configuration, parameterization and diagnostics) with up to 230.4 kbaud to both sensors and actuators.

The functions and performance data are defined in device description files for master and device; these are easy to customize via WAGO-I/O-CHECK. If a device must be replaced, the configuration and parameterization can be automatically restored without maintenance personnel. Project design, installation and operation are simplified!

Description	Item No.	Pack. Unit
4-Channel IO-Link Master	750-657	1
Accessories		
WAGO-I/O-CHECK	759-302	1
GSD files	Download: www.wago.com	
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Approvals		
Conformity marking	CE	
UL 508		

Technical Data	
Number of IO-Link ports	4
Voltage supply	5 V system voltage via internal data bus, 24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC (20.4 V ... 28.8 V; -15% ... +20%)
Current consumption typ. (24 V)	50 mA
Current consumption typ. (KBUS)	40 mA
Connection type	Physics 2 (3-wire)
Transmission modes	4.8 kbaud (COM 1), 28.4 kbaud (COM 2), 230.4 kbaud (COM 3)
Line length (max.)	20 m
Internal bit width	4-24 bytes, configurable
Wire connection	CAGE CLAMP [®] S
Cross sections	0.08 mm ² solid / 0.25 mm ² fine-stranded ... 1.5 mm ² / AWG 28 / 22 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	55 g
EMC CE-Immunity to interference	acc. to EN 61000-6-1 (2007), EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (01.2007), EN 61000-6-4 (2007)

Condition Monitoring

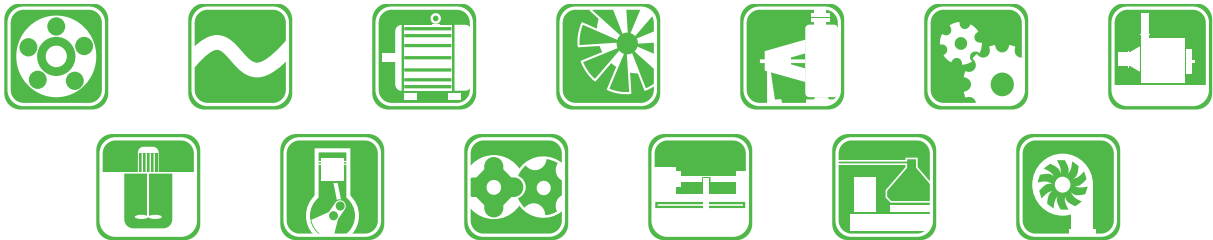
Growing cost pressure in global competition forces companies to use existing cost reduction potential and to boost efficiency to an increasing extent. Concerning service and maintenance, this implies provision of guaranteed trouble-free production processes, to avoid unplanned machine downtime and to use machine life to full capacity.

In order to achieve these goals, it is vital to implement online conditioning monitoring systems: errors can be diagnosed in time, maintenance measures can be scheduled optimally and unexpected machine breakdowns can be avoided.

Consistent machine health monitoring via fieldbus thus allows prognostic analysis and reaction before damage occurs.

WAGO offers I/O modules for use with the WAGO-I/O-SYSTEM that receive and process parameters such as current, temperature, standard signals or machine vibration.

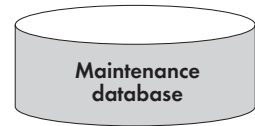
Typical application areas are in standard machines like electric motors, ventilators, pumps, air conditioning systems, etc.



Control station

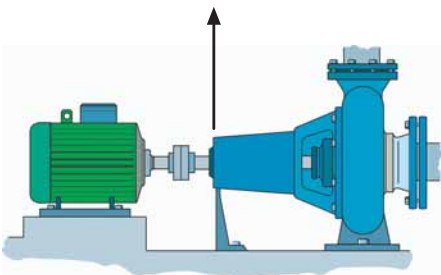
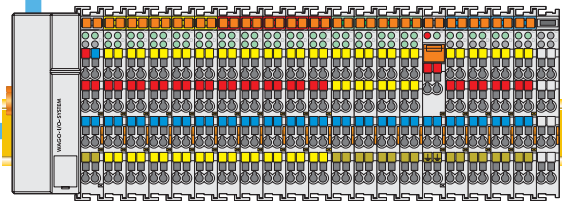
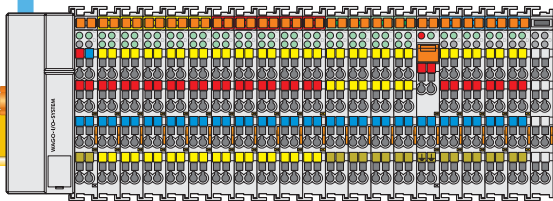


Maintenance

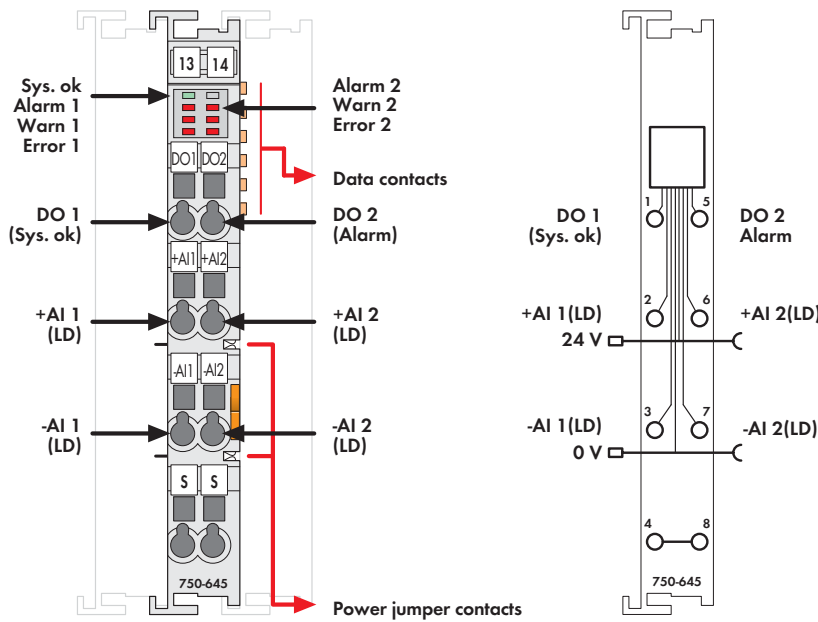


Maintenance database

Fieldbus / ETHERNET



- ↑ Vibration velocity
- ↑ Bearing condition
- ↑ Current
- ↑ Temperature
- ↑ Standard signals 0/4 ... 20 mA
- ↑ 0 ... 10 V



Delivered without miniature WSB markers

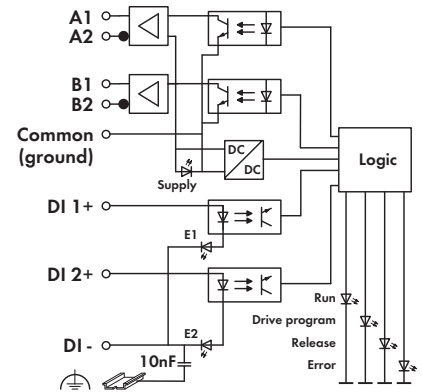
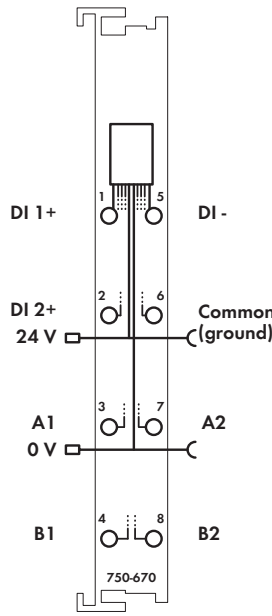
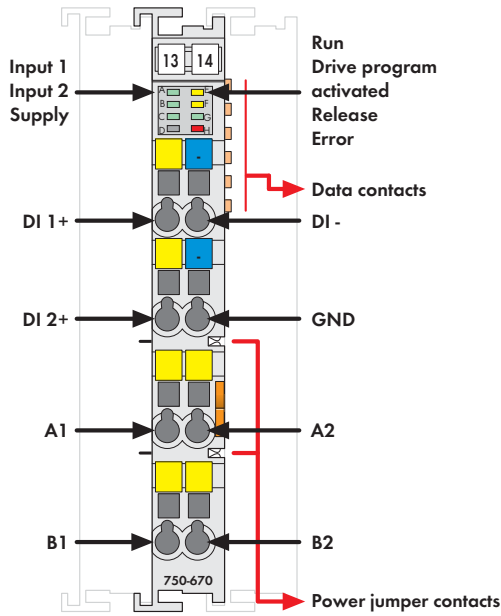
The VIB I/O module is used for online monitoring of machine vibration. The module collects the two most important parameters for machine condition analysis: Vibration velocity and shock pulse. Vibration velocity is a measure of the energy of the machine vibration and thus a good indicator of the vibration force which affects the machine. ISO 10816-3 gives guidelines for evaluation. The actual value of the measured vibration velocity is divided into four different quality categories. Evaluation of the bearing condition is based on high frequency shock pulses. Shock pulses are short pulses that are induced by mechanical damage to the rolling element or the contact surface.

The measured shock pulses are divided into three different categories that describe the bearing condition: "good", "restricted", "bad". Registration and evaluation of the measurement results in a trend curve which allows detection of damage at an early stage. The use of a special Tandem-Piezo sensor allows measurement of machine vibration and high frequency shock pulses at the same time.

Description	Item No.	Pack. Unit
2AI/2DO VIB VRMS/SPM Multi	750-645	1
Accessories		
Tandem-Piezo sensor	750-925	1
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	
UL 508		

Technical Data	
Sensor inputs	+AI1, -AI1, +AI2, -AI2
Number of inputs	2
Input ranges	
Vibration velocity	0 ... 100 mm/s
Shock pulse	-10 ... +80 db _{SV}
No. of outputs	2 (Alarm and System ok)
Configuration	Alarm and warning threshold via process image and I/O Check
Outputs	24 V DC 0.5 A short-circuit protected
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current consumption typ. (KBUS)	30 mA
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	52 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

1 Stepper Controller RS-422 / 24 V / 20 mA




Delivered without miniature WSB markers

The 750-670 is an intelligent stepper controller designed to control various power drivers with pulse/direction interface or incremental encoder input. Both RS-422 and 24V or 20mA interfaces are available. Due to the high output frequency, stepper output stages with smooth microstepping resolution can be used. In addition, the module can be used as high precision frequency or pulse width modulator. Two configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without any delay. Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics provide for a wide range of applications.

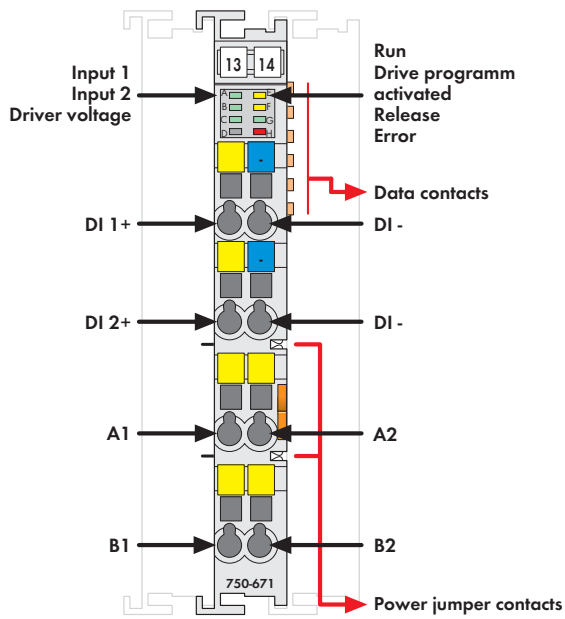
The programmer's interface is the same for all WAGO stepper controller modules. Additional operating modes:

- Pulse width modulation
- Frequency generator
- Single-Shot mode

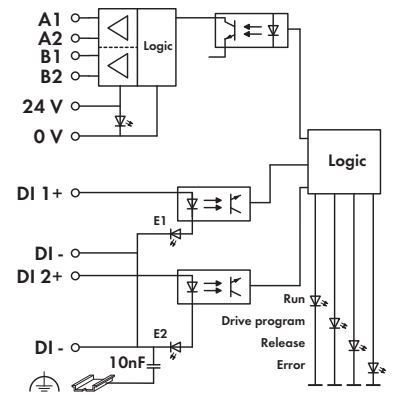
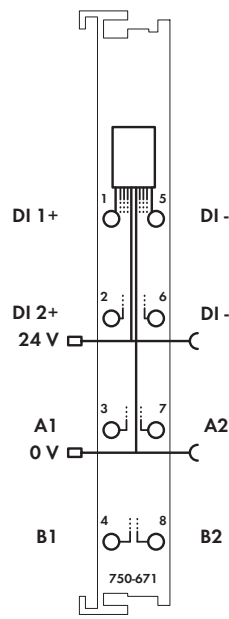
Description	Item No.	Pack. Unit
Stepper controller RS-422 / 24 V / 20 mA	750-670	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	pending	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Outputs	
No. of outputs	1 channel (2 differential outputs A1, A2, B1, B2)
Signal voltage	5 V DC internal, 5 V ... 24 V DC external
Type of load	RS 422, TTL, optocoupler
Output current (max.)	30 mA short-circuit protected
Output frequency	200 µHz ... 500 kHz
Pulse duty factor	50 % (in stepper motor mode)
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables, PWM
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Current consumption typ. (KBUS)	98 mA
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in / 12 mm
Weight	48.2 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

Stepper Controller 24 V / 1.5 A




Delivered without miniature WSB markers



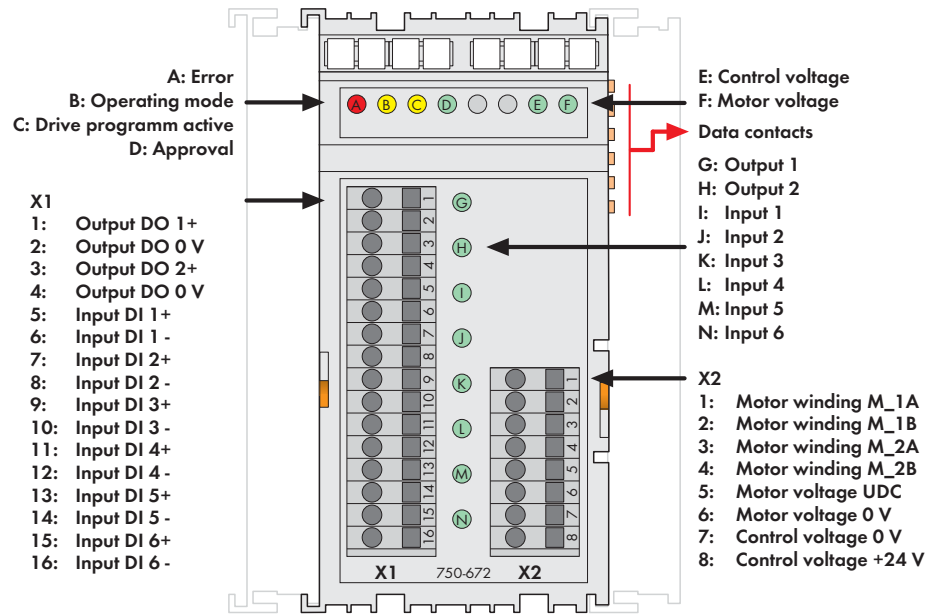
The 750-671 is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 24V/1.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and spares the mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimizing motor power dissipation. Two configurable inputs for start/stop, end-stop, reference, jog/tip, etc., are directly processed by the internal software without any delay. Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics provide for a wide range of applications.

The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper controller 24 V/1.5 A	750-671	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
ANSI/ISA 12.12.01	pending	
EN 60079-0, -1	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Outputs	
No. of outputs	1 stepper motor (2 phases/bipolar)
Max. stepper frequency	7812 Hz at 64 microstepping internal
Output current (max.)	up to 2 x 1.5 A peak value; 1 A eff.
Inputs	
Number of inputs	2 (DI 1, DI 2)
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Module	
Operation modes	Individual positioning, reference run, jog, tip, instruction tables
Functions	Positioning (absolute/relative), flying setpoint change, rotary axis, etc.
Resolution	
Distance	23 bits + sign bit
Speed	15 bits + 16 bit prescaler
Acceleration	15 bits + 16 bit prescaler
Microstepping	64 steps
Voltage via power jumper contacts	24 V DC (-25 % ... +30 %)
Voltage supply	via system voltage DC/DC
Current consumption typ. (KBUS)	85 mA
Isolation	500 V system/supply
Internal bit width	12 byte inputs/outputs
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	56 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2001)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2001)

Stepper Controller 70 V / 7.5 A 6IN, 2OUT

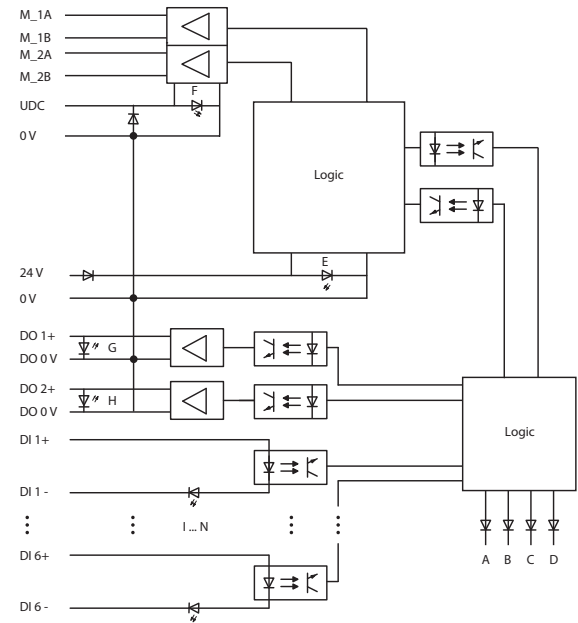
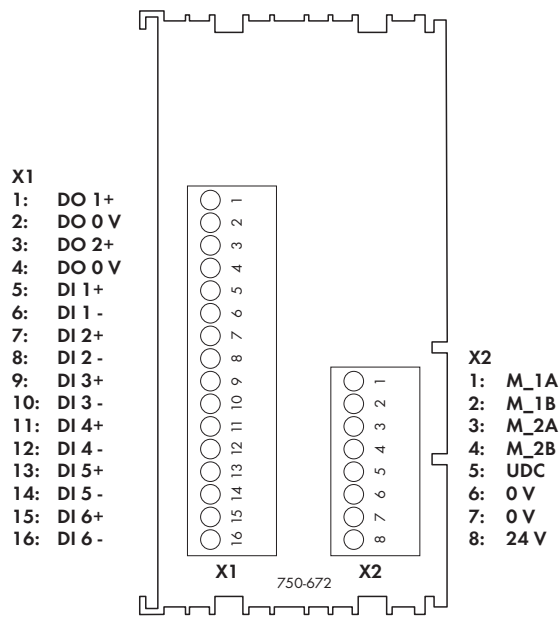


The 750-672 is an intelligent stepper controller with on-board power driver designed to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts. Adjustable current limits for stop, acceleration and constant speed help minimize motor power dissipation. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics suit a wide range of applications. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Stepper Controller 70 V / 7.5 A 6IN, 2OUT	750-672	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	

Technical Data	
Voltage supply	Control voltage: 24 V DC (-25 % ... +30 %), Closed current 120 mA + 2 x 0.5 A (DO1, DO2, load-dependent);
	Motor voltage: Nominal value 55 V DC, Absolute upper limit: 71.5 V, Absolute lower limit: 18 V, Closed current typ. = 5 mA, Protection via external fuse 5 A
Protection	Short circuit monitoring of motor connections: Winding short circuit and short circuit to 0 V and 24 V; 24 V supply: Reverse voltage protection; Motor supply: Reverse voltage protection via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK (configuration tool)



Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and from all other voltage potentials on the module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Switching frequency (max.)	5 Hz,
	inductive load to IEC947-5-1, DC13
Type of load	Resistive load, inductive load (max. 2H), lamps
Function	
	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary; derating starting at 50 °C; 2 x 5.0 A nominal current; derating starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent, overtemperature, supply voltage monitoring, motor wire break
Resolution	64 microsteps per full step
Cable length	30 m shielded cable

General Specifications

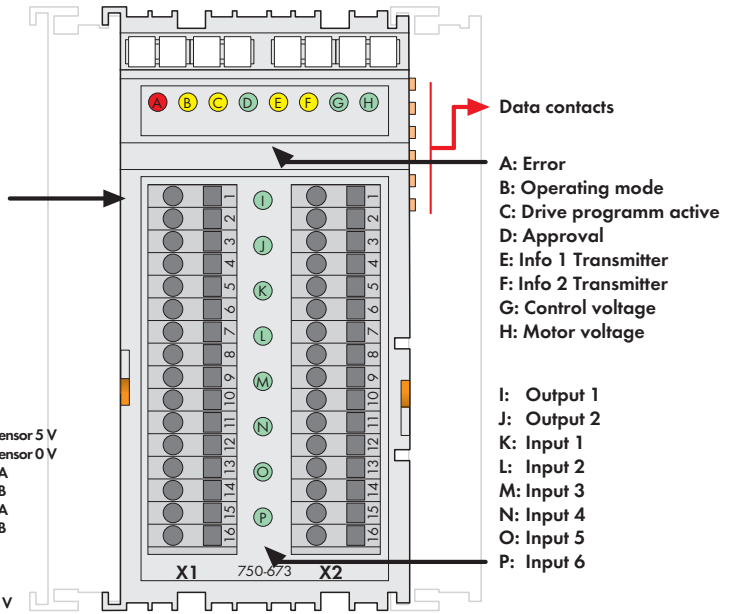
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 14 AWG 12 / 14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100
	Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC CE -Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE -Emission of interference	acc. to EN 61000-6-3 (2007)

Servo Stepper Controller 55 V / 7.5 A 6IN, 2OUT



- X1**
- 1: Output DO 1+
 - 2: Output DO 0 V
 - 3: Output DO 2+
 - 4: Output DO 0 V
 - 5: Input DI 1+
 - 6: Input DI 1-
 - 7: Input DI 2+
 - 8: Input DI 2-
 - 9: Input DI 3+
 - 10: Input DI 3-
 - 11: Input DI 4+
 - 12: Input DI 4-
 - 13: Input DI 5+
 - 14: Input DI 5-
 - 15: Input DI 6+
 - 16: Input DI 6-

- X2**
- 1: Transmitter A
 - 2: Transmitter /A
 - 3: Transmitter B
 - 4: Transmitter /B
 - 5: Transmitter Z
 - 6: Transmitter /Z
 - 7: Operating voltage of sensor 5 V
 - 8: Operating voltage of sensor 0 V
 - 9: Motor winding M_1A
 - 10: Motor winding M_1B
 - 11: Motor winding M_2A
 - 12: Motor winding M_2B
 - 13: Motor voltage UDC
 - 14: Motor voltage 0 V
 - 15: Control voltage 0 V
 - 16: Control voltage +24 V

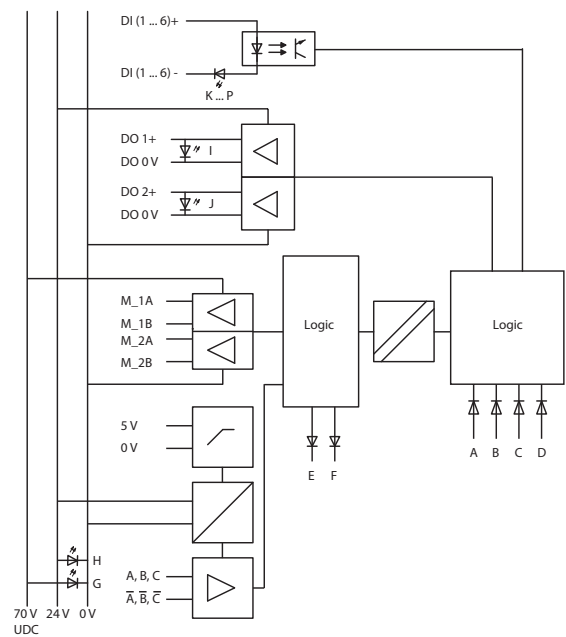
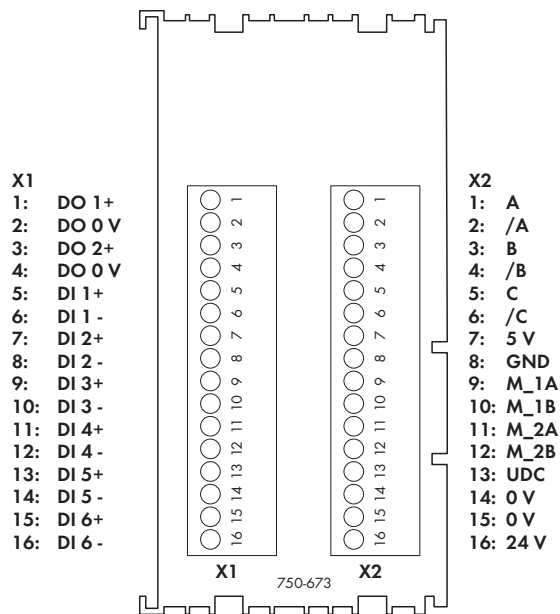


The 750-673 is an intelligent servo stepper controller with on-board power driver and incremental encoder evaluation to control 2-phase stepper motors up to 70V/7.5A. The 64 times microstepping prevents step losses due to resonance in the acceleration phases and prevents excessive wear on mechanical parts. The controller features vector control that, together with the incremental encoder, contributes to a dynamic rotational speed characteristic with high efficiency. Six configurable inputs for start/stop, end-stop, reference, jog/tip, etc., can be directly processed by the internal software without delay. Two outputs can be linked with internal functions or used freely.

Flexible functions such as positioning with various acceleration ramps, command tables, camshaft, auto reference and other event-driven characteristics suit a wide range of applications. The programmer's interface is the same for all WAGO stepper controller modules.

Description	Item No.	Pack. Unit
Servo Stepper Controller 55 V / 7.5 A 6IN, 2OUT	750-673	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	

Technical Data	
Voltage supply	Control voltage: 24 V DC (-25 % ... +30 %), Closed current 120 mA + 2 x 0.5 A (DO1, DO2, load-dependent) + approx. 100 mA (encoder); Motor voltage: Nominal value 55 V DC, Absolute upper limit: 71.5 V, Absolute lower limit: 18 V, Closed current typ. = 5 mA, Protection via external fuse 5 A
Protection	Short circuit monitoring of motor connections: Winding short circuit and short circuit to 0 V and 24 V; 24 V supply: Reverse voltage protection; Motor supply: Reverse voltage protection via external fuse
Isolation	500 V system/supply
Voltage supply (internal)	via internal data bus and control voltage
Current consumption typ. (internal)	70 mA
Internal bit width	12-byte inputs/outputs
Configuration	via PLC and WAGO-I/O-CHECK (configuration tool)



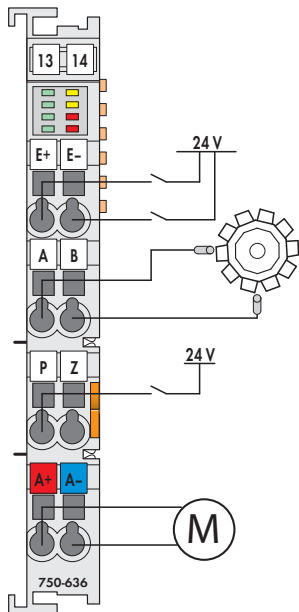
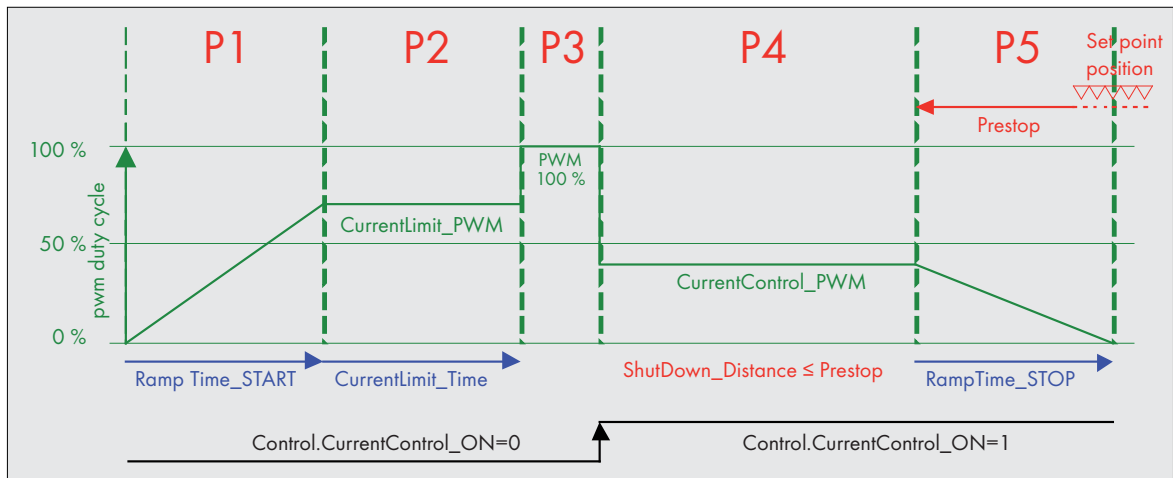
Technical Data

Inputs	
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	15 V ... 30 V DC
	Electrical isolation from each other and from all other voltage potentials on the module
Input filter	100 µs, software filter can be installed
Input current (typ.)	2.8 mA
Outputs	
No. of outputs	2 (DO1, DO2)
Output current	0.5 A, short-circuit protected
Switching frequency (max.)	5 Hz,
Type of load	inductive load to IEC947-5-1, DC13 Resistive load, inductive load (max. 2H), lamps
Function	
	Inputs (preset):
	DI 1: Drive stop,
	DI 2: Reference input,
	DI 3: Jog switch in positive direction,
	DI 4: Jog switch in negative direction,
	DI 5: Limit switch in positive direction,
	DI 6: Limit switch in negative direction,
	Outputs (preset):
	DO 1: Target reached,
	DO 2: Error,
	Inputs and outputs can be freely reconfigured.
Motor connection	
No. of outputs	1 stepper motor (2 phases)
Output current (max.)	2 x 7.5 A temporary; derating starting at 50 °C; 2 x 5.0 A nominal current; derating starting at 50 °C
Max. stepper frequency	7812 Hz full step
Diagnostics	Short circuit or ground fault overcurrent, overtemperature, supply voltage monitoring, motor wire break, wrong rotational direction incremental encoder - motor
Resolution	64 microsteps per full step

Technical Data

Cable length	30 m shielded cable
Incremental encoder	
Sensor connection	A, /A, B, /B, C, /C
Signal voltage	Compatible with RS-485/RS-422, common GND with motor voltage and control voltage
Sensor frequency	1 MHz
Terminating resistor	internal 120 Ω
Sensor supply	5 V DC, 300 mA short-circuit protected
Quadrature decoder	4-fold report
Counter	32 bits binary
Operating temperature	0 °C ... +55 °C
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 1.5 mm² / AWG 28 ... 14 AWG 12 /14: THHN, THWN
Stripped lengths	5 ... 6 mm / 0.22 in
Dimensions (mm) W x H x L	51 x 70 x 100 Height from upper-edge of DIN 35 rail
Weight	56 g
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27/29
Degree of protection	IP20
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)

DC Drive Controller 750-636 24V/5A

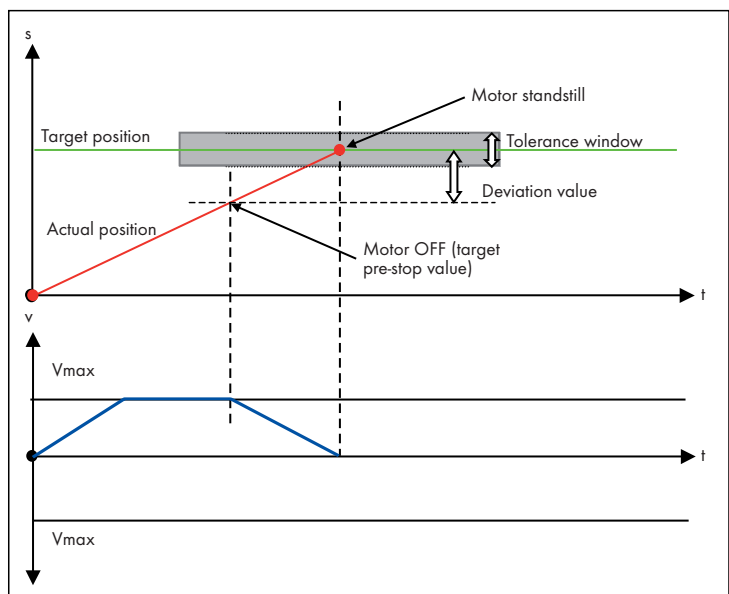


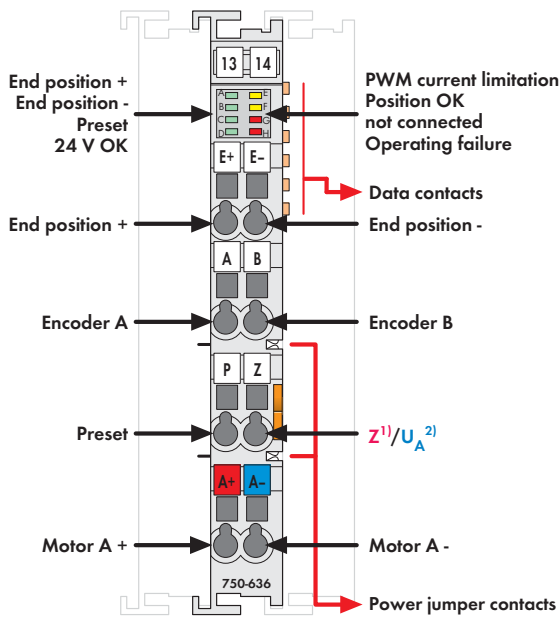
Features:

- Control of collector-based 24V/5A motors using 12mm/0.47in wide modules
- 5V/24V incremental encoder input
- Inputs for limit switch and preset (setting of reference point)
- Forward/backward run
- Inrush current up to 15A/500ms, temporary >30A
- Adaptive switch-off optimization (pre-stop distance)
- Adjustable soft start and stop
- Quick stop via coil short-circuit
- Current reduction (slow run) via PWM control
- Gear backlash compensation
- 32-bit position values
- Output stage monitoring via current and temperature monitoring (with pre-warning)
- PWM control and incremental encoder may be used independently
 - Power control for 24V loads
 - Incremental encoder module

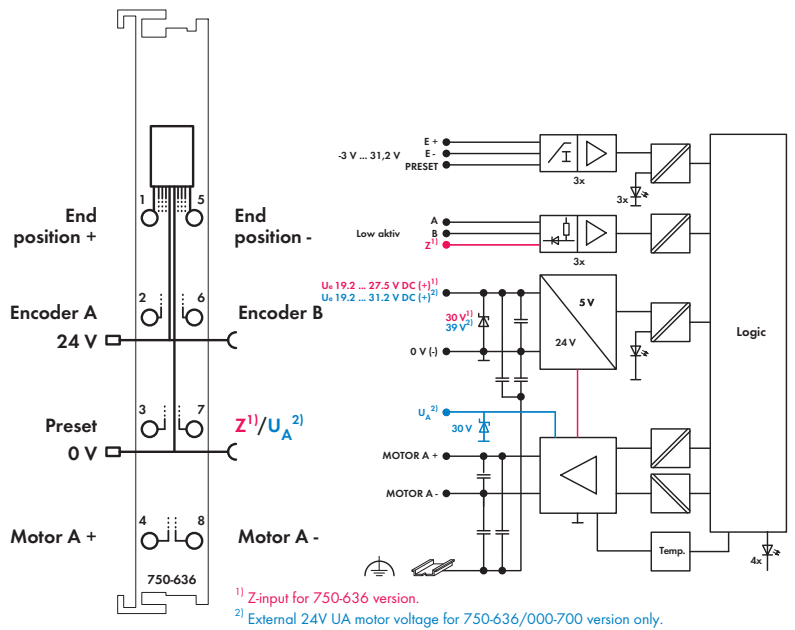
Application area:

- ▶ Control and set-up functions for:
 - ▷ Width adjustments
 - ▷ Roller pressure
 - ▷ Pusher default setting
- ▶ Metering
- ▶ Vans







Delivered without miniature WSB markers



This module is a 1-channel intelligent positioning controller for 24VDC motors up to 5A with incremental position feedback. Three 24V inputs record the limit switches and a preset signal. An incremental encoder interface evaluates the signals from the position transmitter and determines actual value. If required, the positioning optimizes the pre-stop position depending on direction and takes backlash compensation into account. Bi-directional control of the DC motor is done via short-circuit proof and temperature-monitored H-bridge. Both switched operation and soft-start/stop or current reduction are possible through PWM control.

The field-side 24V supply voltage (20-28VDC) from the power contacts, which is monitored for undervoltage/overvoltage events, is looped through to adjacent modules.

Description	Item No.	Pack. Unit
DC Drive Controller 24V/5A	750-636	1
DC-Drive-Controller 24 V/5A/UA*	750-636/000-700	1
DC Drive Controller 24V/5A/T	750-636/025-000	1
(Operating temperature -20 °C ... +60 °C)		
* UA external motor voltage		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	
Technical Data		
Wire connection	CAGE CLAMP®	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14	
Stripped lengths	8 ... 9 mm / 0.33 in	
Width	12 mm	
Weight	50 g	
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC CE-Emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Outputs	
No. of outputs	1 channel
Motor current	5 A rated current at 33% ED, 15 A / 500 ms
Motor connection	A+, A-, H-bridge output; short-circuit protected
PWM frequency (typ.)	20 kHz
Inputs	
Digital inputs (E+, E-, Preset)	Type1 acc. to IEC61131; high-side switching
Input current (typ.)	2.7 mA at 24 V
Encoder connection	A, B, Zero low-side switching; 5 V ... 24 V DC / open collector
Signal voltage (0)	-3 V ... +1.5 V DC
Signal voltage (1)	2.4 V ... 30 V DC
Input current (typ.)	-3.2 mA at +0.3 V; 0 mA at >+5 V
Max. operating frequency	50 kHz
Quadrature decoder	1-fold, 2-fold, 4-fold report
Module	
Current consumption typ. (KBUS)	55 mA
Current consumption typ. (field side)	
750-636:	12 mA + load
750-636/000-700:	10 mA (fieldside) and 2 mA + load (motor)
Supply voltage	
750-636:	19.2 V ... 27.5 V DC
750-636/000-700:	19.2 V ... 27.5 V DC (VA)
750-636/000-700:	19.2 V ... 31.2 V DC (fieldside)
Isolation	500 V system/supply
Data width process image	32 bits set/actual value; 16 bits control or status

Safe I/O for PROFIBUS and PROFINET with the WAGO-I/O-SYSTEM 750/753



The WAGO-I/O-SYSTEM 750/753 PROFIsafe modules are safe digital inputs and outputs in accordance with IEC 61508. They are designed for use with PROFIBUS using the PROFIsafe protocol. Additionally, the safe modules do not require major modifications to existing 750 Series nodes for use. PROFIsafe is a protocol for safe communication, and is certified in accordance with IEC 61784-3-3.

Both safety and non-safety I/O modules can co-exist on the same node, allowing safety sensors and actuators to be monitored and controlled locally.

Logic operations are performed using a fail-safe PLC with PROFIBUS or PROFINET interface as based on the PROFIsafe safety protocol. Evaluation of the input data, as well as the output of the safe status signals via output modules, are controlled by the fail-safe PLC/control. The modules are configured via GSD file in accordance with GSD specification V4.

This makes it possible to implement safety applications up to:

- CAT. 4 and PL_e according to EN 13849
- SIL 3 based on EN 62061

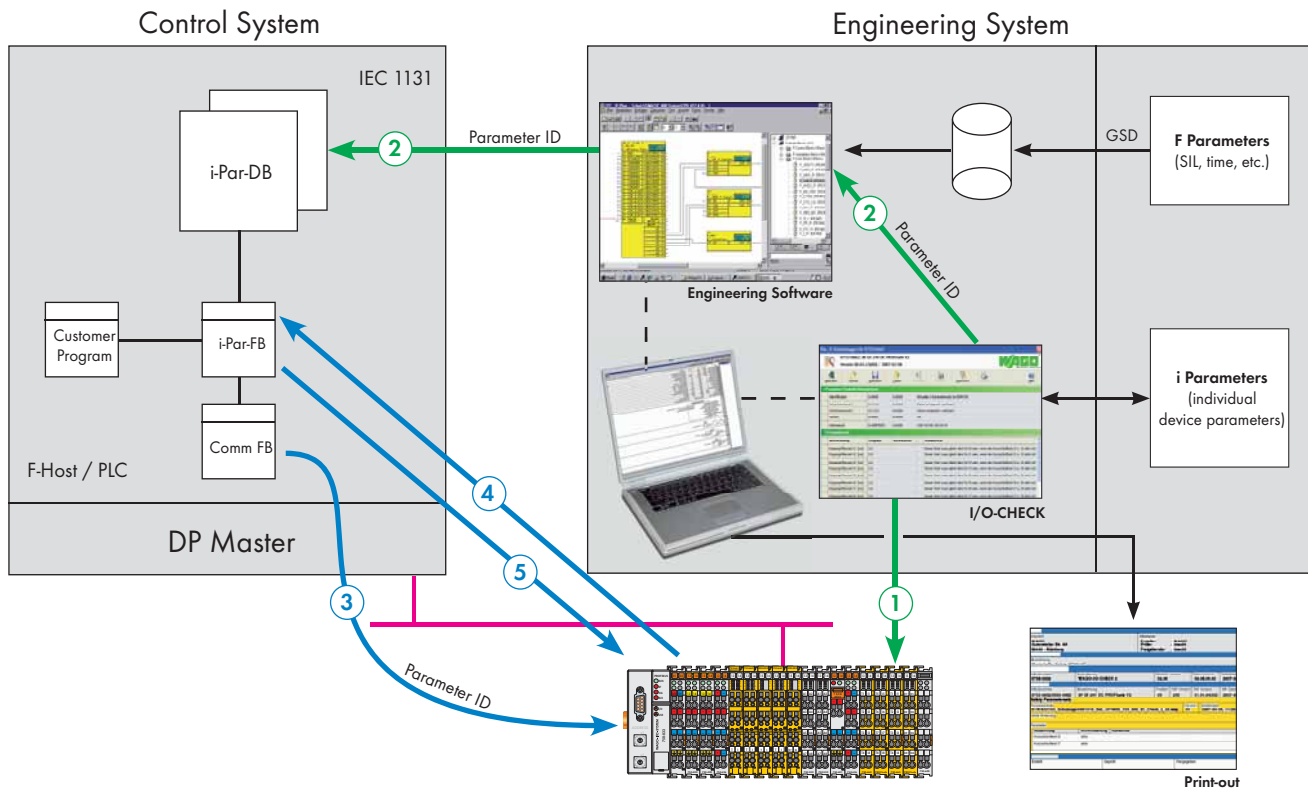
The functionality of the 753 Series modules can be adjusted via safety parameters.

The following I/O have been approved for use with the modules:

- 750-333 and 750-343 PROFIBUS Couplers
- 750-833 PROFIBUS Controller
- 750-340 and 750-370 PROFINET Couplers

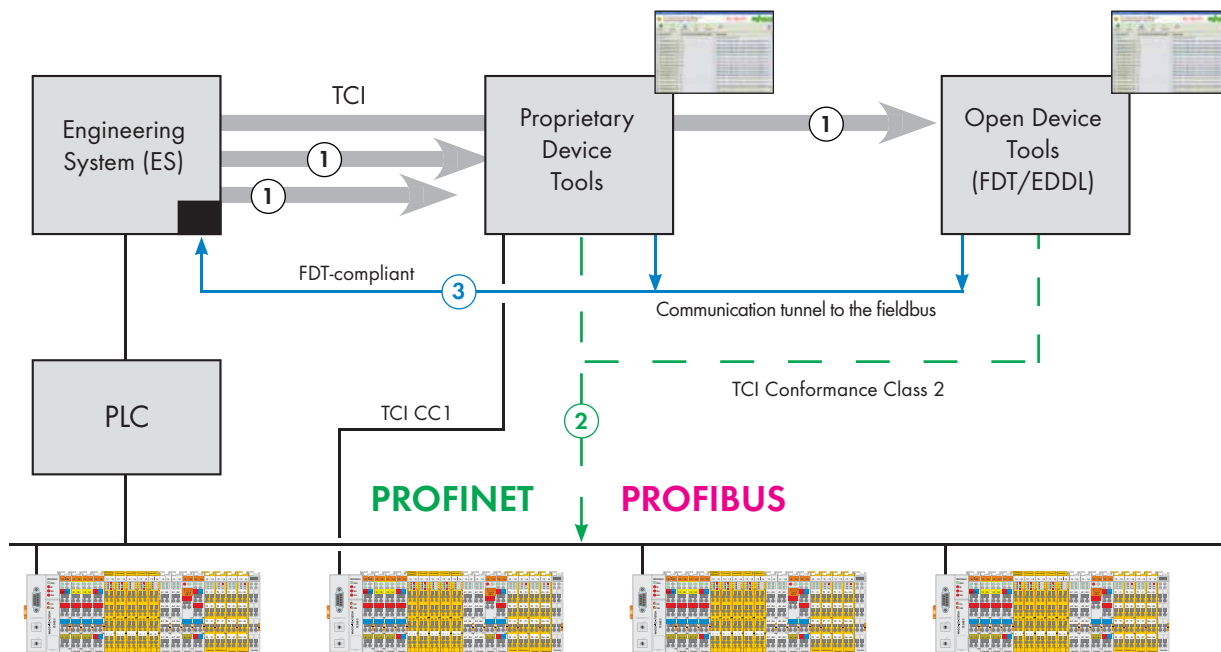
The required firmware version and assembly guidelines can be found in the product manual for each device.

Safety Configuration



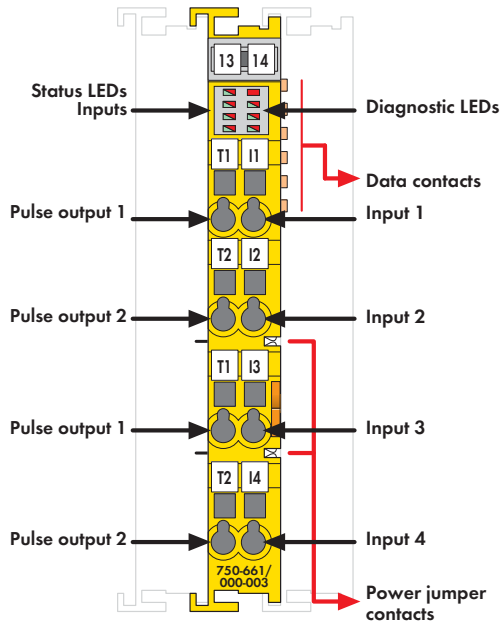
- ① Selection and download of safety parameters into the safe module using I/O-CHECK.
- ② Transmission of the parameter ID (i-Par-CRC) from I/O-CHECK into the engineering tool (Drag and Drop) and into the control unit.
- ③ Compensation of parameter set by comparing the i-Par-CRC for both the controller and module via safe module.
- ④ Load the i-Par-DB with the module parameters if compensation (point 3) is OK, but the i-Par-DB has no parameter ID or a different one (i-Par-DBs initialization).
- ⑤ Load the module with the i-Par-DB parameter if the compensation (point 3) has failed and the i-Par-DB has the same parameter ID as the parameter ID transmitted by I/O-CHECK on step 2.

Integration of I/O-CHECK for Safety Configuration into Engineering Tool

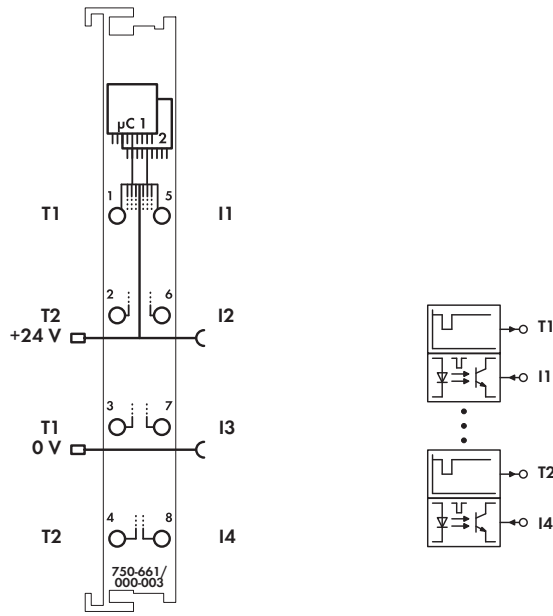


- ① The device tool is accessed via TCI interface and transmitted to the selected device.
- ② The data is exchanged with the device via system interface or via fieldbus (TCI CC2).
- ③ Device Tool and Device communication is performed via FDT-compliant communication interface of the EngineeringSystem and then via individual standard fieldbus processes (TCI CC3).

4-Channel Digital Input Module PROFI-safe V2 iPar






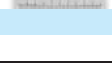

Delivered without miniature WSB markers



Both 750-661/000-003 and 753-661/000-003 PROFI-safe Input Modules connect potential-free, emergency-off switches with contacts, protection door switches, mode selectors, safety sensors and semiconductor outputs. The modules have 4 clock-sensitive inputs (I1-I4) fed via 2 differently clocked outputs (T1-T2); clock outputs are short-circuit protected. Inputs are continually monitored for cross circuits and voltage supply from separate sources. Additional safety relevant parameters (e.g., operating modes, switching off test pulses, discrepancy or filter times) can be configured via WAGO-I/O-CHECK. The configuration tool can be conveniently integrated into engineering systems supporting both CC2 and CC3 tool calling interfaces (TCI). When exchanging modules, parameters are automatically downloaded into the control unit via PROFI-safe-compatible iPar server – depending on the settings. The PROFI-safe address can be set using the DIP switch located on the side of the module, or via WAGO-I/O-CHECK.

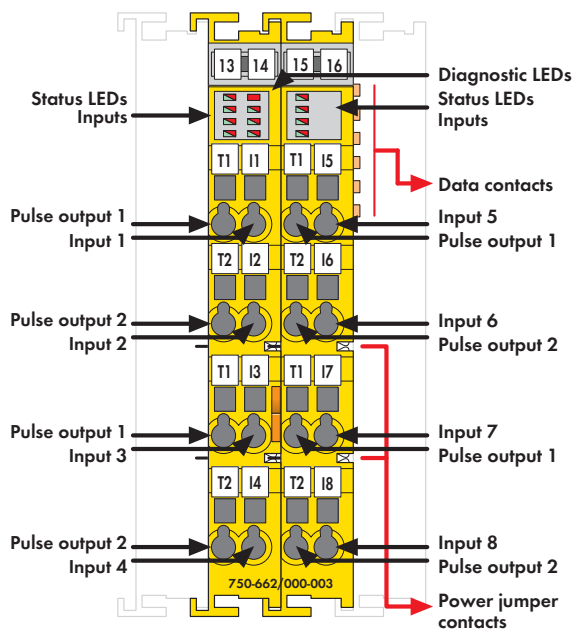
The modules support both PROFI-safe V1 (PROFIBUS) and V2 (PROFIBUS, PROFINET) protocols. An optocoupler provides electrical isolation between the bus and the field side. Individual I/O modules can be arranged in any combination when configuring the field-bus node.

To protect the module against surge voltages (over-voltage protection acc. to IEC 61000-4-5), the 750-626 filter module or an external surge filter must be used to filter the 24V supply voltage. Reference the product manual for further information (available in German and English).

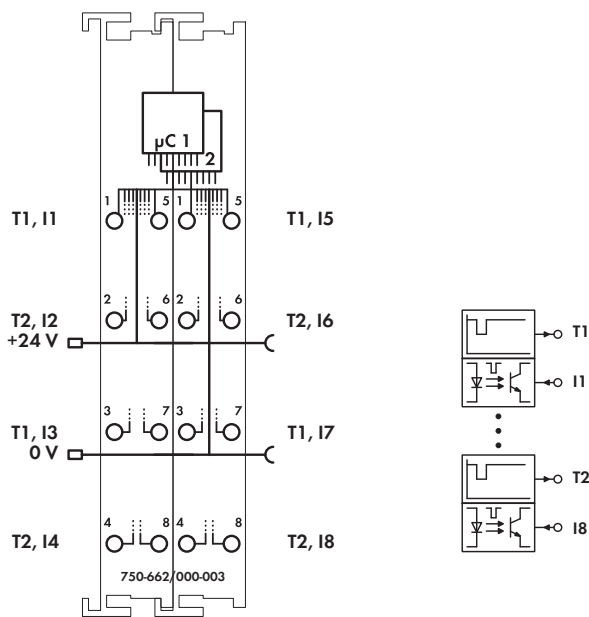
Description	Item No.	Pack. Unit
4FDI 24V PROFI-safe V2 iPar	750-661/000-003	1
4FDI 24V PROFI-safe V2 iPar (without connector)	753-661/000-003	1
Accessories		
 753 Series connector	753-120	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Conformity marking	CE	
 UL 508		

Technical Data	
Inputs:	
Sensor inputs	I1 ... I4; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	50 Hz
General specifications:	
Achievable safety classes	SIL 3; Cat. 4, PL e
Voltage supply	5 V system voltage via internal bus
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC (20.4 V ... 28.8 V)
Current consumption typ. (internal)	145 mA
Current consumption typ. (field side)	20 mA
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	51 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Input Module PROFIsafe V2 iPar







Delivered without miniature WSB markers



Both 750-662/000-003 and 753-662/000-003 PROFIsafe Input Modules connect potential-free, emergency-off switches with contacts, protection door switches, mode selectors, safety sensors and semiconductor outputs. The module provides 8 clock sensitive inputs (I1-I8) fed via 2 differently clocked outputs (T1-T2); clock outputs are short-circuit protected. Inputs are continually monitored for cross circuits and voltage supply from separate sources. Additional safety relevant parameters (e.g., operating modes, switching off test pulses, discrepancy or filter times) can be configured via WAGO-I/O-CHECK. The configuration tool can be conveniently integrated into engineering systems supporting both CC2 and CC3 tool calling interfaces (TCI). When exchanging modules, parameters are automatically downloaded into the control unit via PROFIsafe-compatible iPar - server, depending on settings. The PROFIsafe address can be set using the DIP switch located on the side of the module, or via WAGO-I/O-CHECK.

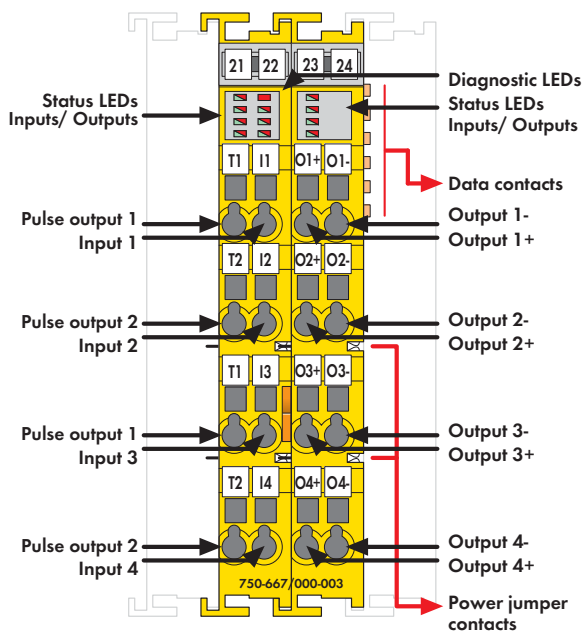
The modules support both PROFIsafe V1 (PROFIBUS) and V2 (PROFIBUS, PROFINET) protocols. An optocoupler provides electrical isolation between the bus and the field side. Individual I/O modules can be arranged in any combination when configuring the field-bus node.

To protect the module against surge voltages (over-voltage protection acc. to IEC 61000-4-5), the 750-626 filter module or an external surge filter must be used to filter the 24V supply voltage. Reference the product manual for further information (available in German and English).

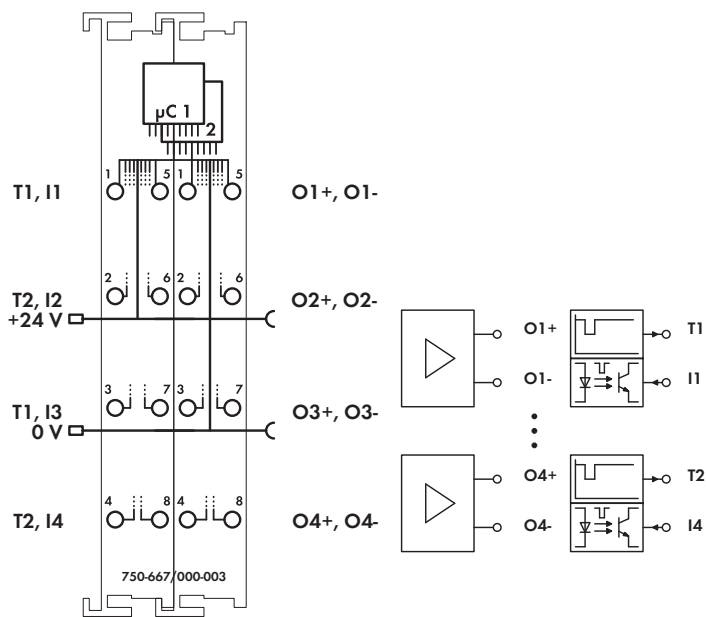
Description	Item No.	Pack. Unit
8FDI 24V PROFIsafe V2 iPar	750-662/000-003	1
8FDI 24V PROFIsafe V2 iPar (without connector)	753-662/000-003	1
Accessories		
 753 Series connector	753-120	25
 Coding elements	753-150	100
 Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Conformity marking	CE	
 UL 508		

Technical Data	
Inputs:	
Sensor inputs	I1 ... I8; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	50 Hz
General specifications:	
Achievable safety classes	SIL 3; Cat. 4, PL e
Voltage supply	5 V system voltage via internal bus
	24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC (20.4 V ... 28.8 V)
Current consumption typ. (internal)	148 mA
Current consumption typ. (field side)	20 mA
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in
	9 ... 10 mm / 0.37 in
Width	24 mm
Weight	90 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

4/4-Channel Digital Input and Output Module PROFI-safe V2 iPar






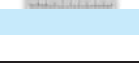

Delivered without miniature WSB markers





Both 750-667/000-003 and 753-667/000-003 Modules have 4 power outputs (O1-O4), as well as 4 clock-sensitive inputs (I1-I4). The sensors can be supplied directly with 24V or fed by 2 differently clocked outputs (T1-T2). The inputs connect potential-free, emergency-off switches with contacts, protection door switches, mode selectors, as well as both safety sensors and semiconductor outputs (e.g., light barriers, PLC outputs). The power outputs switch both DC13 resistive and inductive loads with up to a 2A-rated current without requiring any additional external circuit. The power outputs operate in both bipolar (high-side/low-side switching) and unipolar (common potential on one side of the load) modes. The modules monitor short-circuits, cross circuits and 24V voltage supply from separate sources. Both the monitoring and additional safety relevant parameters (e.g., operating modes, switching off test pulses, discrepancy or filter times) can be configured via WAGO-I/O-CHECK. The configuration tool can be conveniently integrated into engineering systems supporting both CC2 and CC3 tool calling interfaces (TCI).

When exchanging modules, parameters are automatically downloaded into the control unit via PROFI-safe-compatible iPar server – depending on settings. The PROFI-safe address can be set using the DIP switch on the side of the module, or via WAGO-I/O-CHECK. The module supports both the PROFI-safe V1 (PROFIBUS) and V2 (PROFIBUS, PROFINET) protocols. The individual input modules can be arranged in any combination when configuring the fieldbus node.

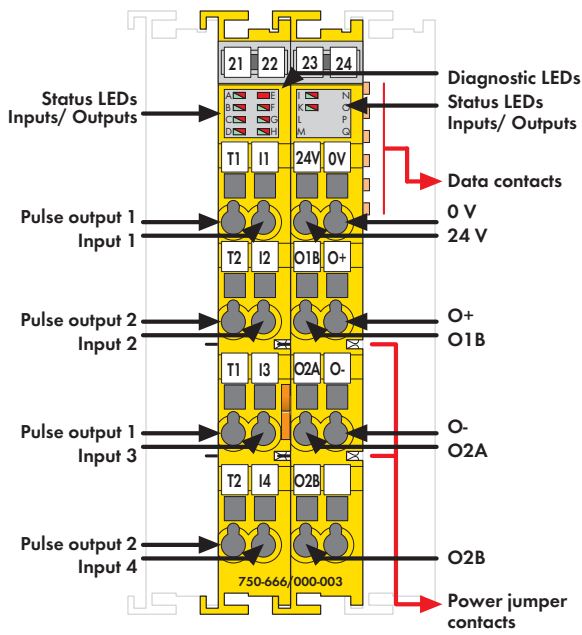
To protect the module against surge voltages (over-voltage protection acc. to IEC 61000-4-5), the 750-626 filter module or an external surge filter must be used to filter the 24V supply voltage. Reference the product manual for further information (available in German and English).

Description	Item No.	Pack. Unit
4FDI/4FDO 24V/2A PROFI-safe V2 iPar	750-667/000-003	1
4FDI/4FDO 24V/2A PROFI-safe V2 iPar (without connector)	753-667/000-003	1
Accessories		
 753 Series connector	753-120	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Standards and Approvals Also see "Approvals Overview" in Section 1		
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Conformity marking	CE	
 UL 508		

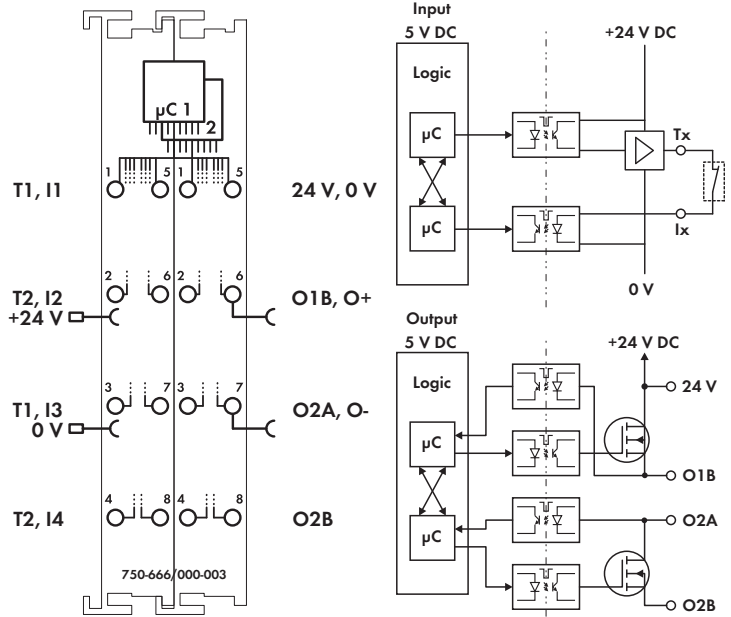
Technical Data	
Inputs:	
Sensor inputs	I1 ... I4; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	50 Hz
Outputs:	
Power outputs	O1 ... O4; power outputs for actuators
Output current (per channel)	O1 ... O4: 2 A
Total output current	8 A
Max. switching frequency	Resistive load = 50 Hz; Inductive load = 0.1 Hz
Capacitive load for each channel	O1 ... O4; 2.2 µF
Test pulse length	0 ms ... 500 ms
General specifications:	
Achievable safety classes	SIL 3; Cat. 4, PL e
Voltage supply	5 V system voltage via internal bus 24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC (20.4 V ... 28.8 V)
Current consumption typ. (internal)	180 mA
Current consumption typ. (field side)	20 mA + charge
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	24 mm
Weight	100 g
EMC  Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC  Emission of interference	acc. to EN 61000-6-4 (2007)

4-Channel Digital Input and 2-Channel Digital Output Safety Module PROFIsafe V2 iPar

24V/10A semiconductor power output



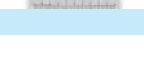



Delivered without miniature WSB markers



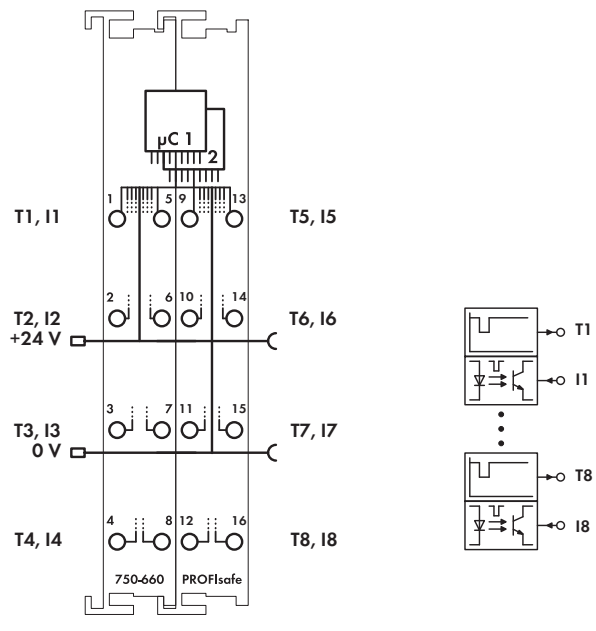
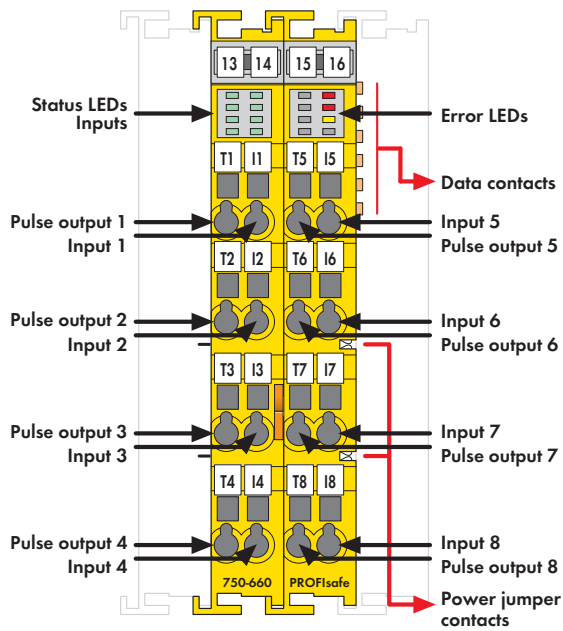
The 75x666/000-003 module is equipped with 2 power outputs (O1 ... O2) and 4 clock sensitive inputs (I1 ... I4). The sensors can be supplied directly with 24V, or fed by 2 differently clocked outputs (T1 ... T2). The inputs connect potential-free, emergency-off switches with contacts, protection door switches, mode selectors, as well as both safety sensors and semiconductor outputs (e.g., light barriers, PLC outputs). The power outputs switch both DC13 resistive and inductive loads with up to a 2A-rated current without requiring any additional external circuit. The power outputs operate in both bipolar (high-side/low-side switching) and unipolar (common potential on one side of the load) modes. The modules monitor short-circuits, cross circuits and 24V voltage supply from separate sources. Both the monitoring and additional safety relevant parameters (e.g., operating modes, switching off test pulses, discrepancy or filter times) can be configured via WAGO-I/O-CHECK. The configuration tool can be conveniently integrated into engineering systems supporting both CC2 and CC3 tool calling interfaces (TCI).

When exchanging modules, parameters are automatically downloaded into the control unit via PROFIsafe-compatible iPar server – depending on settings. The PROFIsafe address can be set using the DIP switch on the side of the module, or via WAGO-I/O-CHECK. The modules support both PROFIsafe V1 (PROFIBUS) and V2 (PROFIBUS, PROFINET) protocols. Individual input modules can be arranged in any combination when configuring the field bus node. **To protect the module against surge voltages (over-voltage protection acc. to IEC 61000-4-5), the filter module 750-626 or an external surge filter must be used the 24V supply voltage. Reference the product manual for further information (available in German and English).**

Description	Item No.	Pack. Unit
4FDI/2FDO 24V/10A PROFIsafe V2 iPar; power safety module with transistor output	750-666/000-003	1
4FDI/2FDO 24V/10A PROFIsafe V2 iPar; power safety module with transistor output (without connector)	753-666/000-003	1
Accessories	Item No.	Pack. Unit
 753 Series connector	753-120	25
 Coding elements	753-150	100
 Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals		
Safety standards	IEC 61508, parts 1-7, Edition 2: 2010; EN ISO 13849-1: 2008 + AC: 2009; EN 62061	
Conformity marking	CE	
 UL 508	For use with 75 °C wire only!	

Technical Data	
Inputs:	
Sensor inputs	I1 ... I4; clock sensitive to T1 ... T2
	Type 1 acc. to IEC61131
Input current (typ.)	2.2 mA
Input frequency (max.)	50 Hz
Outputs:	
Power outputs	O1 ... O2; power outputs for actuators
Output current (per channel)	O1 ... O2: 10 A
Total output current	10 A/20 A (Single output operation)
Max. switching frequency	Resistive load = 50 Hz; Inductive load = 0.1 Hz
Test pulse length	0 ms ... 500 ms
General specifications:	
Achievable safety classes	SIL 3; Cat. 4, PL e
Voltage supply	5 V system voltage via internal bus 24 V via power jumper contacts
Voltage via power jumper contacts	24 V DC (20.4 V ... 31.2 V)
Current consumption typ. (internal)	190 mA
Current consumption typ. (field side)	30 mA + charge
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	24mm
Weight	95 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

8-Channel Digital Input Module PROFI-safe V1.3



Delivered without miniature WSB markers

Emergency stop buttons, limit indicators, or other safe-contact sensors may be connected to the 750-660/000-001 PROFI-safe Input Module. The module has 8 pulse inputs (I1 ... I8) that are supplied by 8 different pulse outputs (T1 ... T8). The pulse outputs are short circuit proof. The inputs are constantly monitored for short circuits and supply voltage from separate sources. A green LED for each of the 8 input channels indicates the signal state, 2 red LEDs indicate internal or external errors. The address switch at the side of the module is used to set the PROFI-safe address. The fieldside and internal system are electrically isolated.

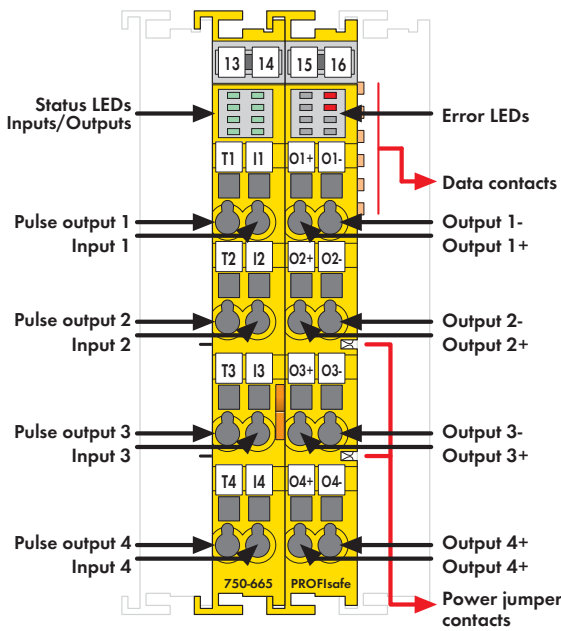
Any configuration of the input modules is possible when designing the fieldbus node. Grouping of module types is not necessary. A fieldbus node comprised of PROFI-safe devices must be supplied by a filtered power supply (PELV/SELV power supply unit). Reference the product manual for further information.

When implementing new installations, please consider PROFI-safe V2 iPar 750-662/000-003 8-Channel Digital Input Safety Module (see page 299).

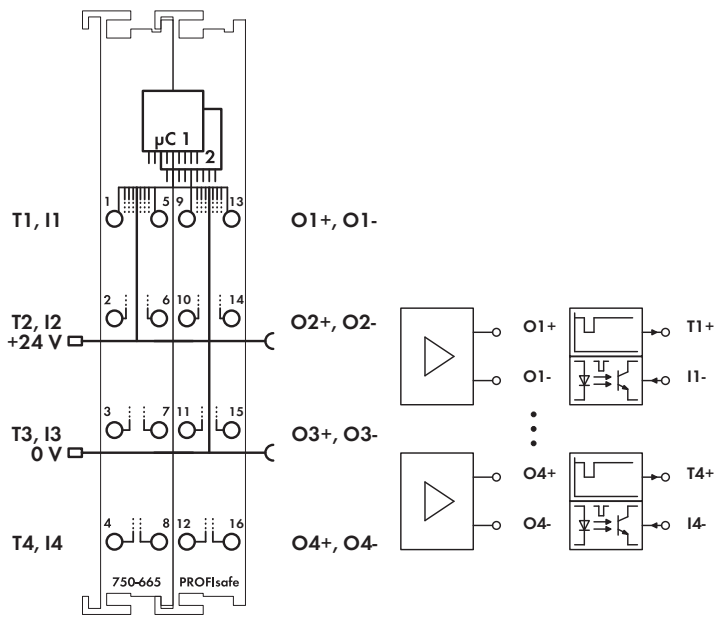
Description	Item No.	Pack. Unit
8FDI 24V DC PROFI-safe V1.3	750-660/000-001	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals		
Also see "Approvals Overview" in Section 1		
Basic standard safety applications	IEC 61508, parts 1-7, 1998 und 2000; EN 954-1 Cat. 4	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

Technical Data	
Inputs	I1 ... I8; pulse inputs
Achievable safety classes	8 x Cat. 2/SIL 2 or 4 x Cat. 4/SIL 3
Outputs	T1 ... T8: 8 pulse outputs, short circuit proof
Voltage via power jumper contacts	24 V DC (-1.5 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Response times (min ... max)	t _{on} (H>L) = 13 ms ... 71 ms t _{off} (H>L) = 13 ms ... 26 ms
	plus 2 x runtime internal bus plus 2 x runtime coupler - PLC plus runtime PLC
Proof test interval	10 years
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	97 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)

4-Channel Digital Input and Output Module PROFI-safe V1.3



Delivered without miniature WSB markers

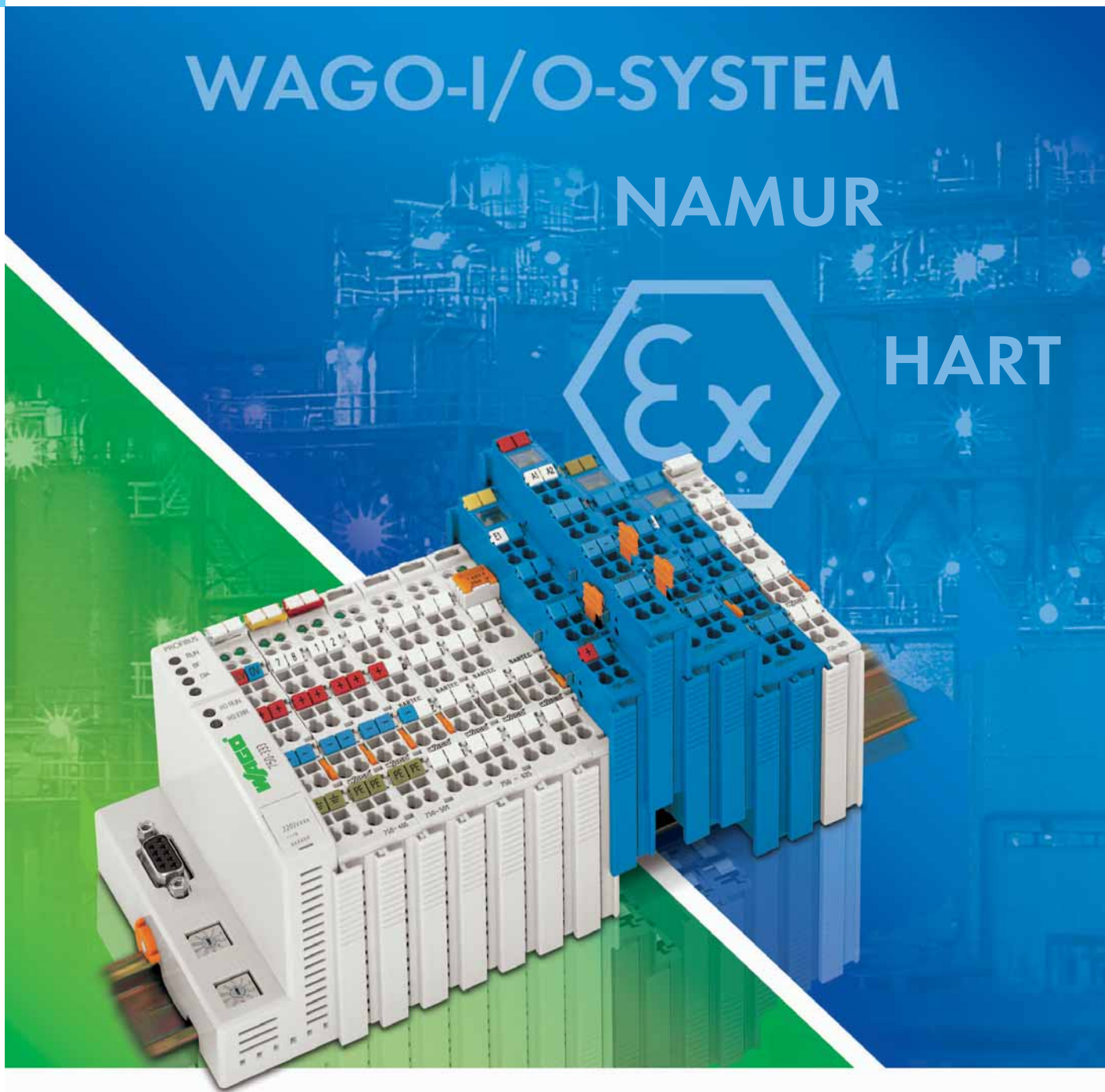


The 750-665/000-001 PROFI-safe Input and Output Module has 4 power outputs (O1 ... O4) and 4 pulse inputs (I1 ... I4) that are supplied by 4 different pulse outputs (T1 ... T4). The pulse outputs are short circuit proof. The inputs are constantly monitored for short circuits and supply voltage from separate sources. A green LED for each of the 4 input and the 4 output channels indicates the signal state, 2 red LEDs indicate internal or external errors. The address switch at the side of the module is used to set the PROFI-safe address. The fieldside and internal system are electrically isolated. Any configuration of the modules is possible when designing the fieldbus node. Grouping of module types is not necessary. Reference the product manual for further information.

When implementing new installations, please consider PROFI-safe V2 iPar 750-667/000-003 4/4-Channel Digital Input and Output Safety Module (see page 300).

Description	Item No.	Pack. Unit
4FDO 0.5A, 4FDI 24V DC PROFI-safe V1.3	750-665/000-001	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Standards and Approvals		
Also see "Approvals Overview" in Section 1		
Basic standard safety applications	IEC 61508, parts 1-7, 1998 und 2000; EN 954-1 Cat. 4	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

Technical Data	
Inputs	I1 ... I4; pulse inputs (T1 ... T4)
Achievable safety classes	4 x Cat. 2/SIL 2 or 2 x Cat. 4/SIL 3
Outputs	O1 ... O4: outputs for actuators
Achievable safety classes	4 x Cat. 2/SIL 2 or 2 x Cat. 4/SIL 3
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Current consumption typ. (KBUS)	55 mA
Reactance (max.)	capacitive reactance 2 nF; category DC 13
Response times (min ... max) Inputs	t _{on} (H>L) = 13 ms ... 71 ms t _{off} (H>L) = 13 ms ... 26 ms plus 2 x runtime internal bus plus 2 x runtime coupler - PLC plus runtime PLC
Response times (max.) Outputs	t _{on} (H>L) = 13 ms t _{off} (H>L) = 13 ms plus 2 x runtime internal bus plus 2 x runtime coupler - PLC plus runtime PLC
Switching frequency _{max}	
resistive load	5 Hz
inductive load acc. to IEC947-5-1,	0.1 Hz, 5 Hz with free-wheeling diodes
Proof test interval	10 years
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	98 g
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)



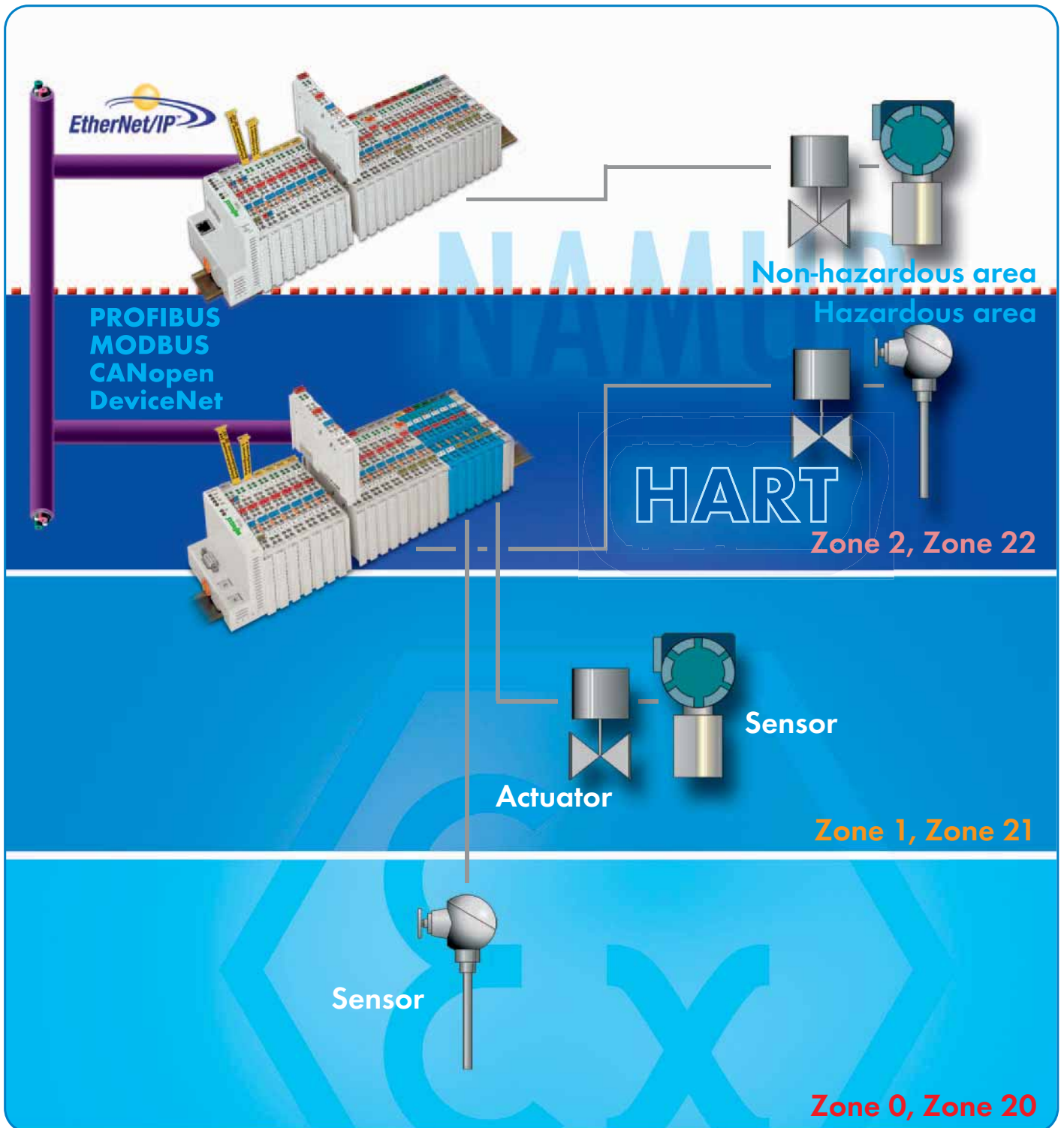
Today's development shows that many chemical or petrochemical companies have production plants, production and process automation machines in operation which use gas-air or dust-air mixtures which can be explosive. For this reason, the electrical components used in such plants and systems must not pose a risk of explosion resulting in injury to persons or damage to property. The WAGO-I/O-SYSTEM 750 is designed for use in both hazardous and non-hazardous environments.

Using the fieldbus technology in hazardous environments can be time consuming and cost intensive and is only made possible in a limited way.

When used in hazardous areas of Zone 2, the WAGO-I/O-SYSTEM 750 offers a safe, easy and economical connection to the sensors and actuators of Zones 0 and 1. The Ex i I/O modules were specially developed for this purpose. They build up an intrinsically safe section, which can be integrated into a standard fieldbus node, offering all the advantages of a state-of-the-art fieldbus technology (e.g., fieldbus independency, flexibility, modularity, programmability, reliability, cost effectiveness).

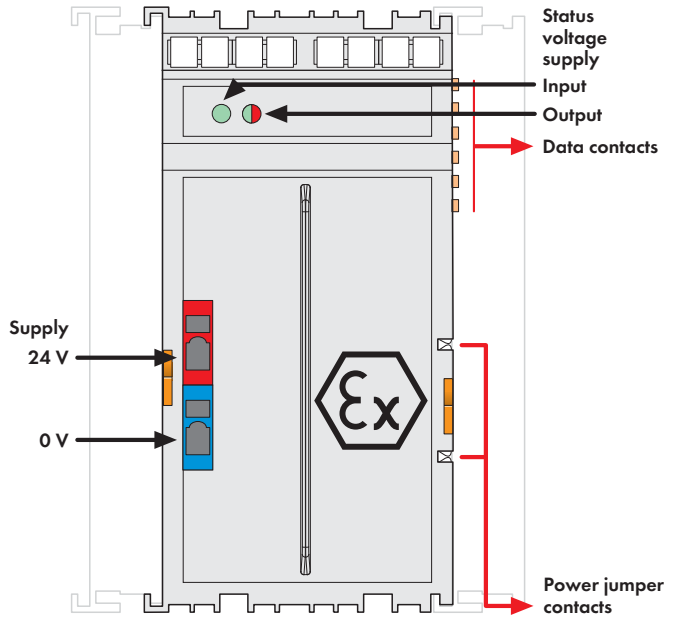
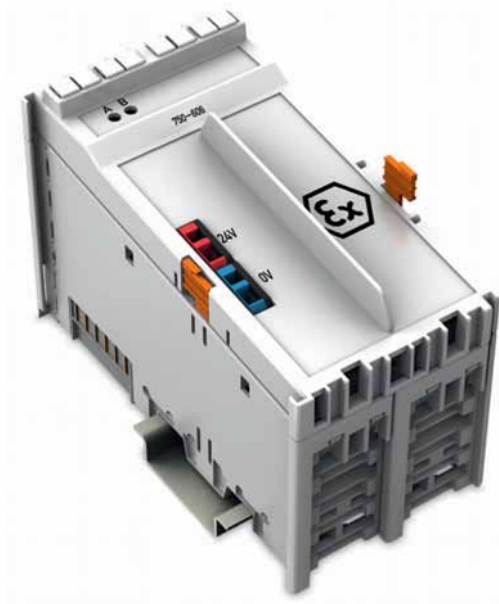
The WAGO-I/O-SYSTEM 750 is also approved for mining applications.

Additional information at www.wago.com:
Fieldbus Technology for Use in Hazardous Areas



Item Designation of Intrinsically Safe I/O Modules	Mining	Gas	Dust
750-606,			
750-625/000-001	24 V DC 1.0 A Power Supply Ex i	I (M2) [Ex ia] I,	II 3 D Ex tD A22 IP6X T135°C
750-435	1DI NAMUR Ex i	I (M2) [Ex ia] I,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-438	2DI NAMUR Ex i	I (M2) [Ex ia] I,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-535	2DO 24 V DC Ex i	I (M2) [Ex ib] I,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
750-485	2AI 4-20 mA S.E. Ex i	I (M2) [Ex ib] I,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
750-484	2AI 4-20 mA S.E. HART Ex i	I (M2) [Ex ia] I,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-481/003-000	2AI RTD Ex i	I (M2) [Ex ia] I,	II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
750-487/003-000	2AI TC Ex i	I (M2) [Ex ib] I,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
750-585	2AO 0-20 mA Ex i	I (M2) [Ex ib] I,	II 3 (2) D Ex tD [ibD] A22 IP6X T135°C

1 Supply Module 24 V DC, 1.0 A Ex i



Delivered without miniature WSB markers

The supply module provides power to all intrinsically safe Ex i modules of the 750 Series. It also separates the intrinsically safe from the non-intrinsically safe section of the WAGO-I/O-SYSTEM 750 and monitors the power supply to the downstream Ex-i segment. Input and output sides are electrically isolated from each other.

The maximum current available from the supply module is 1.0A. When configuring the system, it must be ensured that this total current is not exceeded. In the event of a short circuit or overload, electronic monitoring switches off the output voltage. After eliminating the fault, the output voltage is reactivated within approx. 10 sec.

Note:


If, due to load conditions, more than one supply module is required per station, four separation modules (750-616) must be placed between the intrinsically safe sections.

LED indicators:

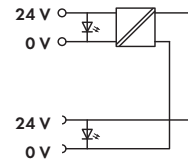
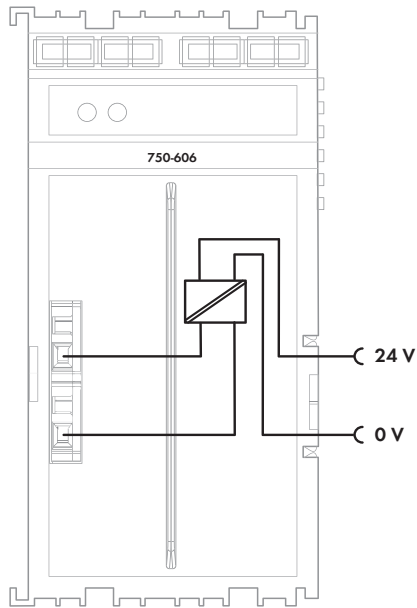
- LED green (input voltage)
- LED green/red (output voltage available/not available)

Note: General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
24V DC 1.0A power supply Ex i	750-606	1
24V DC 1.0A power supply Ex i (without diagnostics)	750-625/000-001	1

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	

Technical Data	
Max. nominal output voltage via power jumper contacts	24 V DC
Current via power jumper contacts (max.)	1 A DC
Input voltage	20.4 V ... 28.8 V DC
Power consumption P (max.)	30 W
Power loss P _v	< 5 W
Fuse	electronic
Bit width	750-606: 2 bits (input voltage failure, fuse triggered)



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	48 mm
Weight	44 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

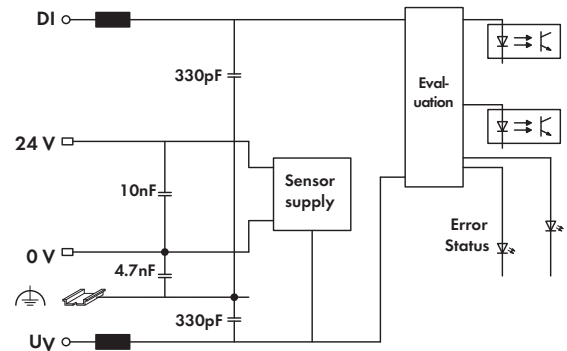
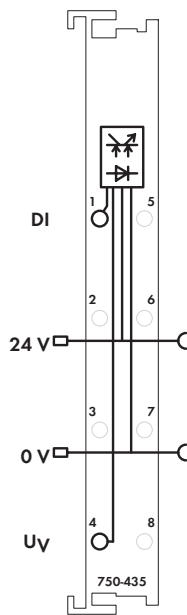
Explosion Protection

Ex directive	EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006, EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005
Safety data	$V_n = 24 V \pm 0,3 V$; $V_m = 253 V$

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding (versions upon request)	ABS, DNV, GL, KR
UL 508	
ANSI/ISA 12.12.01	pending
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 G Ex nA II T4, II 3 D Ex tD A22 IP6X T135°C
Permissible operation temperature: 0 °C ≤ T _A ≤ +60 °C (750-606)	
TUN 09.0001X	[Ex ia] I, Ex nA II T4, Ex tD A22 IP6X T135°C
Permissible operation temperature: 0 °C ≤ T _A ≤ +60 °C (750-606)	

Also see "Approvals Overview" in Section 1



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	44.3 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

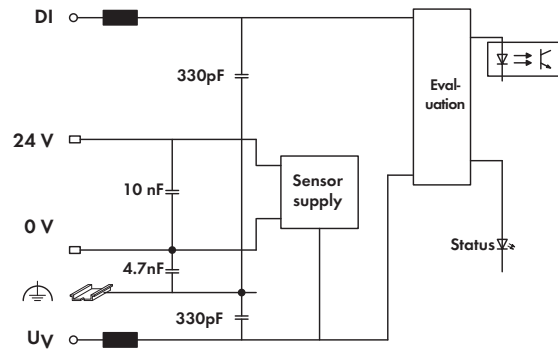
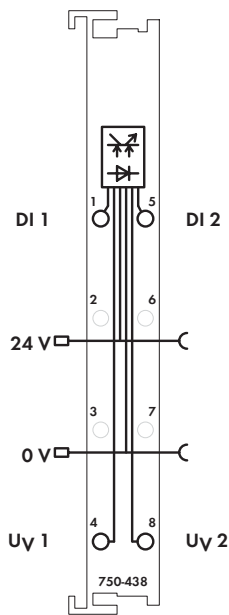
Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 12\text{ V}$; $I_0 = 16\text{ mA}$; $P_0 = 48\text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ia IIC	$L_0 = 180\text{ mH}$; $C_0 = 1.4\text{ }\mu\text{F}$
Intrinsically safe Ex ia IIB	$L_0 = 560\text{ mH}$; $C_0 = 9\text{ }\mu\text{F}$
Intrinsically safe Ex ia I	$L_0 = 1\text{ H}$; $C_0 = 35\text{ }\mu\text{F}$ without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135 °C
Permissible operation temperature: $0\text{ °C} \leq T_A \leq +60\text{ °C}$	
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135 °C
Permissible operation temperature: $0\text{ °C} \leq T_A \leq +60\text{ °C}$	

Also see "Approvals Overview" in Section 1



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	46.9 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 12\text{ V}$; $I_0 = 13.5\text{ mA}$; $P_0 = 40.5\text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ia IIC	$L_0 = 190\text{ mH}$; $C_0 = 1.4\text{ }\mu\text{F}$
Intrinsically safe Ex ia IIB	$L_0 = 600\text{ mH}$; $C_0 = 9\text{ }\mu\text{F}$
Intrinsically safe Ex ia I	$L_0 = 1\text{ H}$; $C_0 = 35\text{ }\mu\text{F}$ without consideration of the simultaneousness; with consideration of the simultaneousness see manual

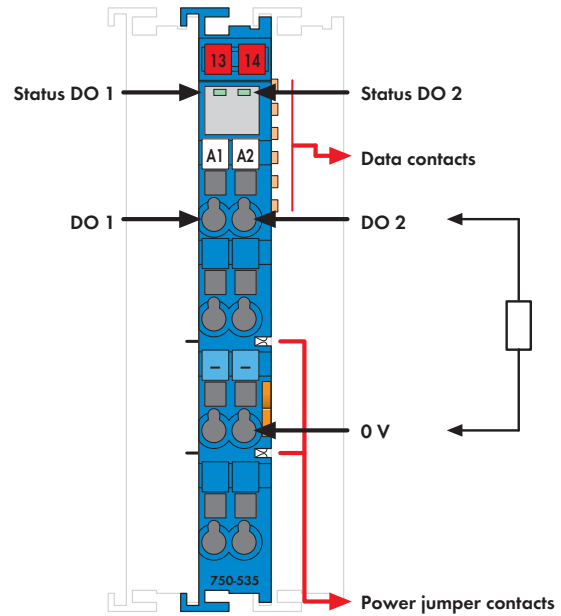
Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, DNV, GL, KR
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
	Permissible operation temperature: $0\text{ }^{\circ}\text{C} \leq T_A \leq +60\text{ }^{\circ}\text{C}$
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C
	Permissible operation temperature: $0\text{ }^{\circ}\text{C} \leq T_A \leq +60\text{ }^{\circ}\text{C}$

Also see "Approvals Overview" in Section 1

2-Channel Digital Output Module 24 V DC, Ex i

Short-circuit protected; PNP-positive switching



Delivered without miniature WSB markers

The digital output module controls actuators in hazardous Zone 1, such as intrinsically safe magnetic valves. The WAGO-I/O-SYSTEM 750 must be installed either in Zone 2 or in a non-hazardous area.

Note: The digital output module must only be operated via Ex i 24VDC power supply!

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!


All outputs are electronically short-circuit-protected.

LED indicators:

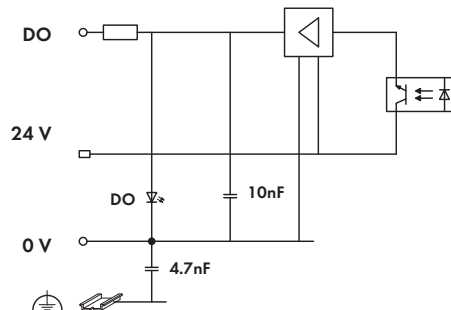
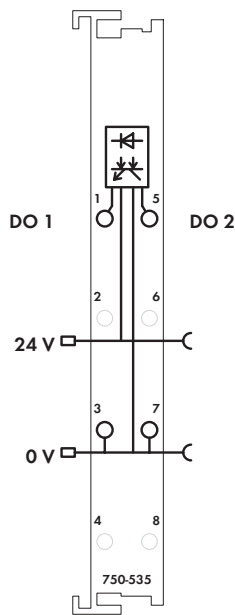
- Green LED (output status)

Field and system levels are electrically isolated.

Description	Item No.	Pack. Unit
2DO 24V DC Ex i	750-535	1

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
	plain	248-501
	with marking	see pages 352 ... 353

Technical Data	
No. of outputs	2
Current consumption typ. (internal)	7 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Type of load	resistive, inductive, lamps
Max. switching frequency	1 kHz
Output data	24 V DC, $R_i = 285 \Omega$
Current consumption typ. (field side)	8.5 mA / module + load
Power consumption P (max.)	2.1 W (with an output current of 40 mA)
Power loss P_v	1.1 W (with an output current of 40 mA)
Isolation	375 V system/supply
Bit width	2 bits (status)



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48.4 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 27.3 \text{ V}$; $I_0 = 106 \text{ mA}$; $P_0 = 723 \text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ib IIC	$L_0 = 3 \text{ mH}$; $C_0 = 88 \text{ nF}$
Intrinsically safe Ex ib IIB	$L_0 = 12 \text{ mH}$; $C_0 = 680 \text{ nF}$
Intrinsically safe Ex ib I	$L_0 = 20 \text{ mH}$; $C_0 = 3.6 \mu\text{F}$ without consideration of the simultaneousness; with consideration of the simultaneousness see manual

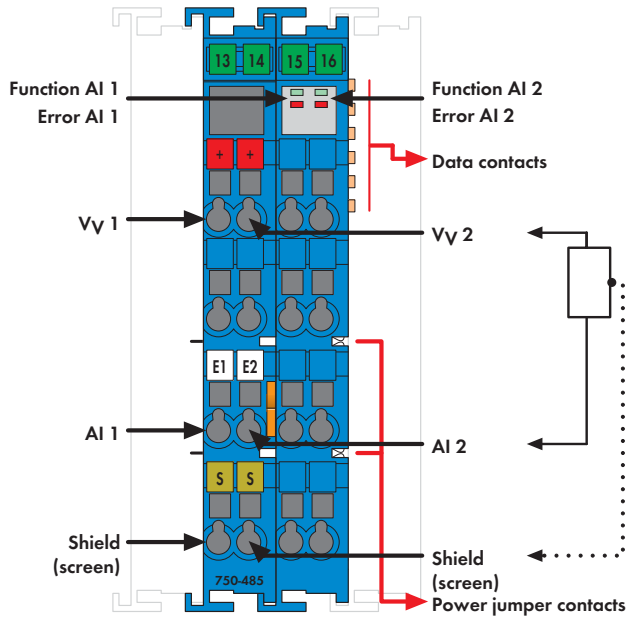
Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I (M2) [Ex ib] I, II 3 (2) G Ex nA [ib] IIC T4, II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
TUN 09.0001X	[Ex ib] I, Ex nA [ib] IIC T4, Ex tD [ibD] A22 IP6X T135°C

Also see "Approvals Overview" in Section 1

2-Channel Analog Input Module 4-20 mA, Ex i

Single-ended (S.E.)



Delivered without miniature WSB markers


The analog input module provides power to the intrinsically safe transducers located in the hazardous Zone 1 and processes their analog signals. The WAGO-I/O-SYSTEM 750 must be installed either in Zone 2 or in a non-hazardous area. The 24V supply is derived from the module's power jumper contacts. The transmitter supply is non-inherently electronically short-circuit-protected.

The shield (screen) is directly connected to the DIN rail. LED indicators:
 • Green LED (signal current on/off)
 • Red LED (wire breakage, measuring range overflow/underflow)
 Field and system levels are electrically isolated.

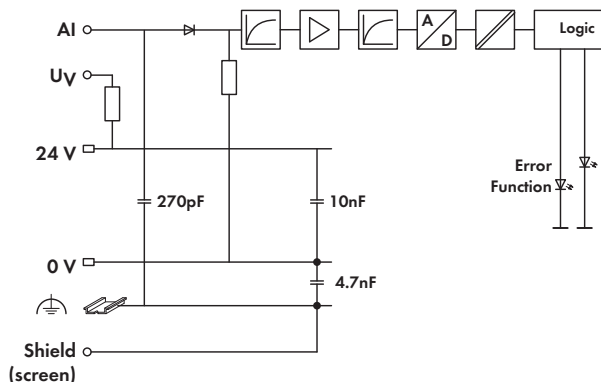
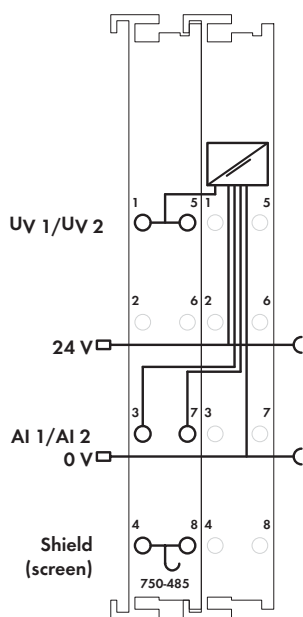
Note: The analog input module must only be operated via Ex i 24VDC power supply!

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI 4-20mA Ex i	750-485	1

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	31 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Transmitter supply	$V_V = 16 \text{ V}$ at 20 mA
Signal current	4 ... 20 mA
Input resistance	< 100 Ω
Resolution	12 bits
Conversion time	< 2 ms
Measuring error (25°C)	< $\pm 0.2 \%$ of the full scale value
Temperature coefficient	< $\pm 0.01 \%$ / K of the full scale value
Current consumption typ. (field side)	11 mA + load
Power consumption P (max.)	1.3 W
Power loss P_V	0.75 W
Isolation	375 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control / status (optional)



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	93.4 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 27.3 \text{ V}$; $I_0 = 90 \text{ mA}$; $P_0 = 0.61 \text{ W}$; Characteristic: Linear
Intrinsically safe Ex ib IIC	$L_0 = 5 \text{ mH}$; $C_0 = 88 \text{ nF}$
Intrinsically safe Ex ib IIB	$L_0 = 18 \text{ mH}$; $C_0 = 680 \text{ nF}$
Intrinsically safe Ex ib I	$L_0 = 100 \text{ mH}$; $C_0 = 3.5 \mu\text{F}$
	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

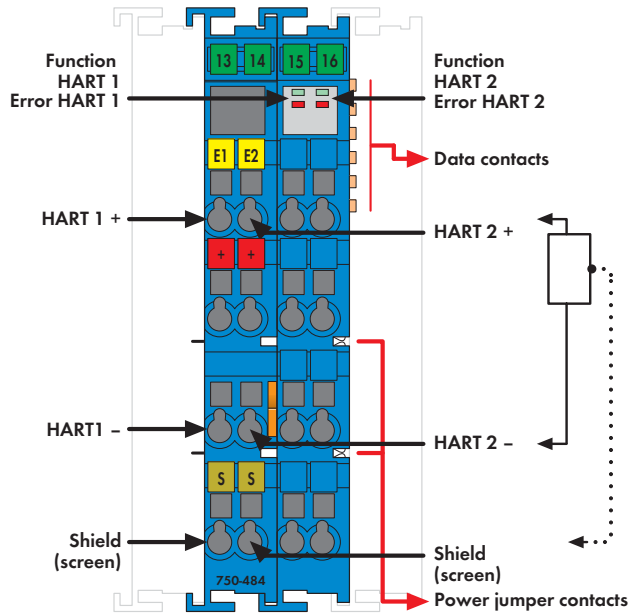
Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I (M2) [Ex ib] I, II 3 (2) G Ex nA [ib] IIC T4, II 3 (2) D Ex tD [ibD] A22 IP6X T135 °C
Permissible operation temperature: $0 \text{ }^\circ\text{C} \leq T_A \leq +60 \text{ }^\circ\text{C}$	
TUN 09.0001X	[Ex ib] I, Ex nA [ib] IIC T4, Ex tD [ibD] A22 IP6X T135 °C
Permissible operation temperature: $0 \text{ }^\circ\text{C} \leq T_A \leq +60 \text{ }^\circ\text{C}$	

Also see "Approvals Overview" in Section 1

2-Channel Analog Input Module 4-20 mA HART, Ex i

Single-ended (S.E.)



Delivered without miniature WSB markers

The analog input module connects two field-side transformers equipped with a HART interface that are to be used in hazardous environments of Zones 0+1.

It supplies the transducers, reads the process values via analog interface and enables HART communication for configuring and importing dynamic variables. The WAGO-I/O-SYSTEM 750 must be installed either in Zone 2 or in a non-hazardous area.

The 24V supply is derived from the power jumper contacts via multipliers to the field contacts (HART +). The shield (screen) is directly connected to the DIN rail.


Note: The analog input module must only be operated via Ex i 24VDC power supply!

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

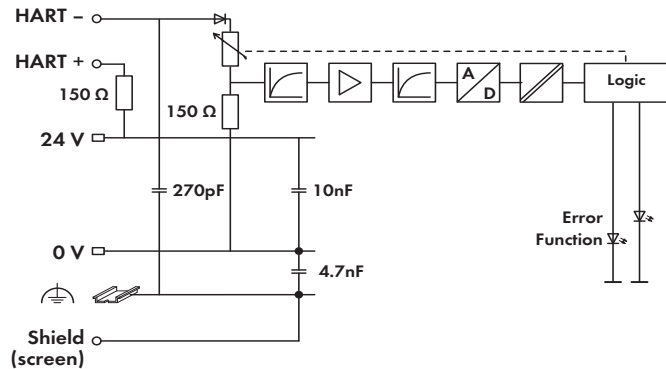
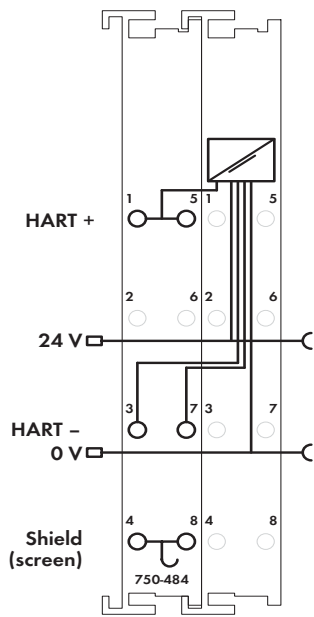
The measurement input is equipped with current limitation, which limits the current to a max. 25mA. These modules can supply the voltage for 2-wire transducers without dedicated power supply.

Up to 4 HART dynamic variables (PV, SV, TV, QV) per channel can be mapped in the cyclic process image of the coupler or controller (configurable). For HART communication with connected intelligent HART field devices, the HART protocol can be mapped in the cyclic process image of the coupler or controller (configurable).

FDT/DTM device drivers are available for select (programmable) couplers, allowing HART tool routing to the connected HART device.

Description	Item No.	Pack. Unit
2AI 4-20 mA S.E. HART Ex i	750-484	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
PROFIBUS/HART Gateway DTM	759-360	1
MODBUS TCP/HART Gateway DTM	759-359	1

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	25 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Transmitter supply	$V_V = 16.5 \text{ V}$ at 20 mA
Input voltage (max.)	24V
Signal current	4 mA ... 20 mA
Overvoltage protection	30 V, reverse polarity protected
Conversion time (typ.)	10 ms
Input filter	parameterizable
Resolution of the A/D converter	12 bits
Measuring error (25°C)	0.2 % of upper range value (non-linearity)
Temperature coefficient	$< \pm 0.01 \% / K$ of full scale value
Current consumption typ. (field side)	26 mA + load
Power consumption P (max.)	1.60 W (with slaves (20 mA))
Power loss P_V	0.62 W (without slaves)
Isolation	375 V system/supply
Bit width	2 x 2 bytes data 2 x 2 bytes data + 2n x 4 bytes data (n = number of dynamic variables)
	2 x 2 bytes data + 6 bytes mailbox
Diagnostics	Wire break, measuring range overflow
HART devices per channel	1 device (single-drop, no multi-drop)
HART modems per channel	1 modem (no multiplex)



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	54 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Explosion Protection

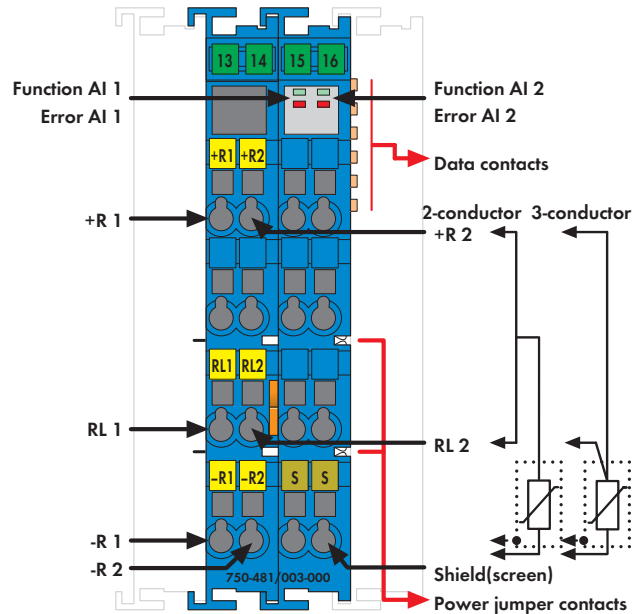
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	V ₀ = 27.3 V; I ₀ = 92.7 mA; P ₀ = 630 mW; Characteristic: Linear
Intrinsically safe Ex ia IIC	L ₀ = 1.5 mH; C ₀ = 87 nF
Intrinsically safe Ex ia IIB	L ₀ = 1.5 mH; C ₀ = 670 nF
Intrinsically safe Ex ia I	L ₀ = 36 mH; C ₀ = 3.49 μF without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, DNV, GL, KR
UL 508	pending
ANSI/ISA 12.12.01	pending
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C

Also see "Approvals Overview" in Section 1

2-Channel Analog Input Module for Resistance Sensors, Ex i



Delivered without miniature WSB markers

The analog input module allows the direct connection of Pt or Ni resistance sensors and potentiometers located in hazardous environments of Zones 0 and 1. The WAGO-I/O-SYSTEM 750 must be installed either in Zone 2 or in a non-hazardous area. The 24V supply is derived from the module's power jumper contacts. The shield (screen) is directly connected to the DIN rail.


LED indicators:

- Green LED (availability ON/OFF)
- Red LED (short circuit, wire breakage, measuring range overflow/under-flow)

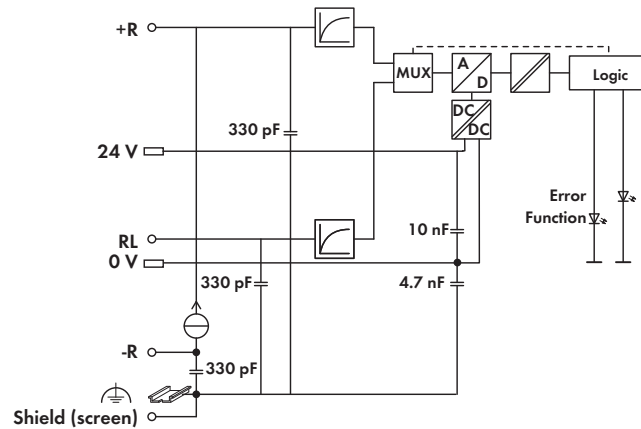
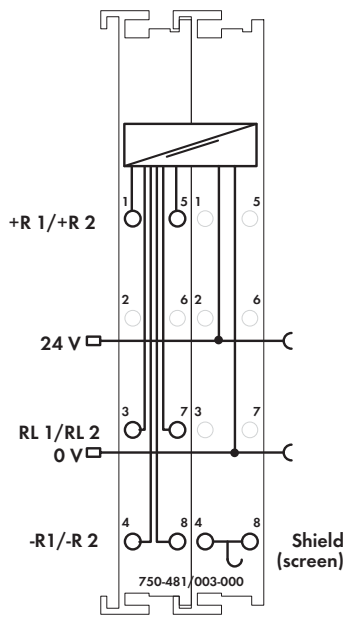
Field and system levels are electrically isolated.

Note: The analog input module must only be operated via Ex i 24VDC power supply!

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI RTD Ex i	750-481/003-000	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	25 mA
Current consumption typ. (24 V)	12 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Conversion time	150 ... 500 ms (per channel)
Measuring error (25 °C)	< ± 0.2 % of the full scale value
Temperature coefficient	< ± 0.01 % / K of the full scale value
Measuring current (typ.)	< 0.5 mA
Sensor types (Version can be set via WAGO-I/O-Check software)	
RTD	Pt 100 (preset), Pt 200, Pt 500, Pt 1000, Ni 100, Ni 120, Ni 1000
Ohmmeter	1.25 kΩ, 5 kΩ
Potentiometer	1 kΩ, 5 kΩ, % linearized
Sensor connection	3-conductor (preset) or 2-conductor
Temperature range	-200 °C ... + 850 °C (Pt); -60 °C ... +250 °C (Ni); -80 °C ... +320 °C (Ni 120)
Resolution (over entire range)	0.1 °C, 0.1 Ω, 0.0049 %
Power consumption P (max.)	0.45 W
Power loss P _v	0.45 W
Isolation	500 V system/supply
Bit width	2 x 16 bits data 2 x 8 bits control / status (optional)



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	94.2 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Explosion Protection

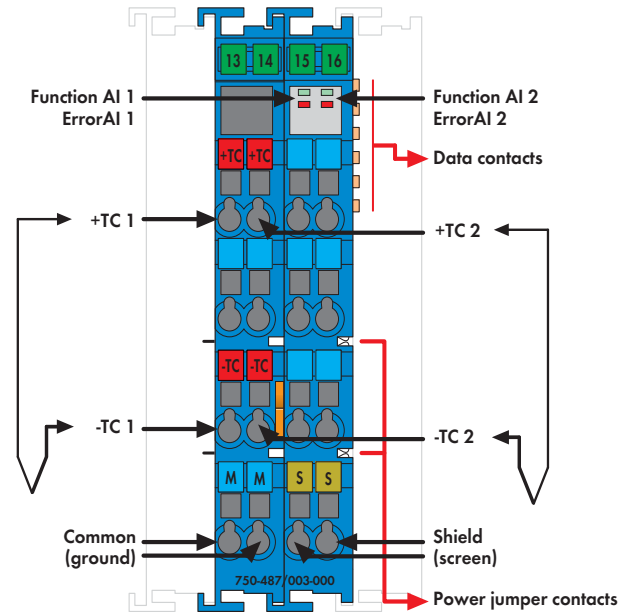
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 7.2 \text{ V}$; $I_0 = 5.8 \text{ mA}$; $P_0 = 10.5 \text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ia IIC	$L_0 = 0.9 \text{ H}$; $C_0 = 13.5 \mu\text{F}$
Intrinsically safe Ex ia IIB	$L_0 = 1 \text{ H}$; $C_0 = 240 \mu\text{F}$
Intrinsically safe Ex ia I	$L_0 = 1 \text{ H}$; $C_0 = 1000 \mu\text{F}$ without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, DNV, GL, KR
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
Permissible operation temperature: $0 \text{ °C} \leq T_A \leq +60 \text{ °C}$	
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C
Permissible operation temperature: $0 \text{ °C} \leq T_A \leq +60 \text{ °C}$	

Also see "Approvals Overview" in Section 1

2-Channel Analog Input Module for Thermocouples Ex i



Delivered without miniature WSB markers

The analog input module directly connects two thermocouples operating in hazardous environments of Zones 0 and 1. The WAGO-I/O-SYSTEM 750 must be installed either in Zone 2 or in a non-hazardous area. Internal electrical isolation allows operation of grounded sensors. The module automatically linearizes the entire temperature range. Cold junction compensation mitigates the clamping unit offset voltage over the 0–55 °C operating range.

The 24V supply is derived from the module's power jumper contacts. Field and system levels are electrically isolated. The module mode is parameterized via WAGO-I/O-CHECK 3 software.

LED indicators:

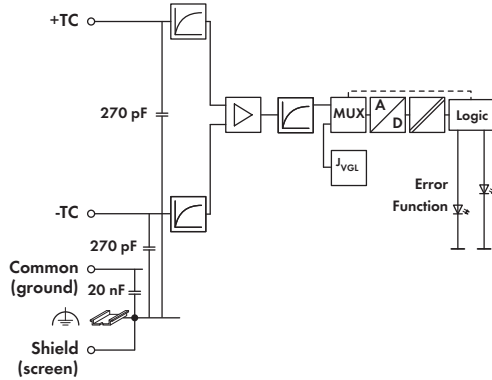
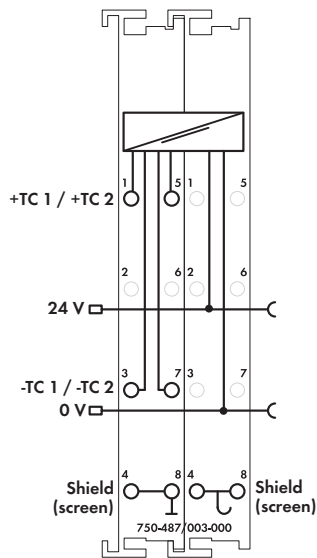
- Green LED (availability ON/OFF)
- Red LED (wire breakage, measuring range overflow/underflow)

Note: The analog input module must only be operated via Ex i 24VDC power supply!

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
2AI TC Ex i	750-487/003-000	1
Accessories		
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	

Technical Data	
Number of inputs	2
Current consumption typ. (internal)	50 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Conversion time	≤ 320 ms (both channels)
Measuring error (25 °C)	< ± 6 K (voltage input < ± 2 K; cold junction comp. < ± 4 K) (for type K)
Temperature coefficient	< ± 0.2 K / K of full scale value (type K)
Cold junction compensation	internal; at each pair of modules
Resolution (over entire range)	0.1 °C or 0.01 mV for voltage measurement
Internal resistance	≥ 1 MΩ
Measuring range	Thermocouples: Type B: +600 °C ... +1,800 °C Type E: -200 °C ... +1,000 °C Type J: -100 °C ... +1,200 °C Type K: -100 °C ... +1,370 °C* *(default setting) Type L: -100 °C ... +900 °C Type N: -100 °C ... +1,300 °C Type R: 0 °C ... +1,700 °C Type S: -50 °C ... +1,700 °C Type T: -100 °C ... +400 °C Type U: -25 °C ... +600 °C Voltage sensors: MB1: ± 30 mV MB2: ± 60 mV MB3: ± 120 mV
Power consumption P (max.)	0.29 W
Power loss P _v	0.29 W
Isolation	375 V system/supply



Technical Data

Bit width	2 x 16 bits data 2 x 8 bits control/status (optional)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	80 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

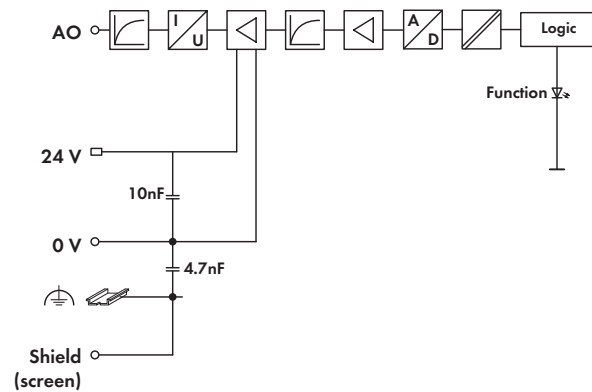
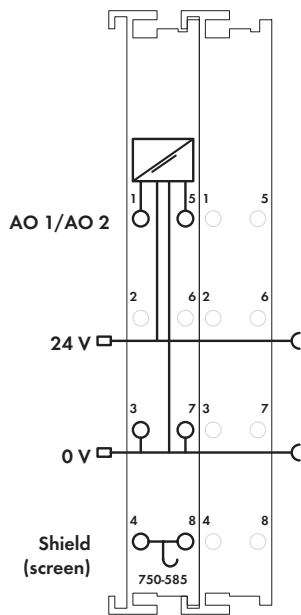
Explosion Protection

Ex directive	EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006, EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005
Electric circuit, safety relevant data	$U_0 = 14.4 \text{ V}$; $I_0 = 29.1 \text{ mA}$; $P_0 = 52.4 \text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ia IIC	$L_0 = 52 \text{ mH}$; $C_0 = 650 \text{ nF}$
Intrinsically safe Ex ia IIB	$L_0 = 100 \text{ mH}$; $C_0 = 4.0 \text{ }\mu\text{F}$
Intrinsically safe Ex ia I	$L_0 = 400 \text{ mH}$; $C_0 = 17.9 \text{ }\mu\text{F}$ without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	GL
UL 508	pending
ANSI/ISA 12.12.01	pending
TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I, II 3 (1) G Ex nA [ia] IIC T4, II 3 (1) D Ex tD [iaD] A22 IP6X T135°C
TUN 09.0001X	[Ex ia] I, Ex nA [ia] IIC T4, Ex tD [iaD] A22 IP6X T135°C

Also see "Approvals Overview" in Section 1



Technical Data

Wire connection	CAGE CLAMP [®]
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	91.6 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Explosion Protection

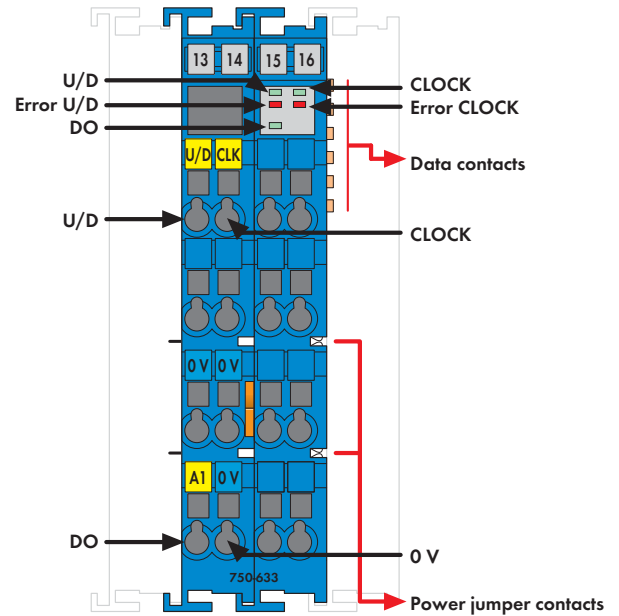
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 27.3 \text{ V}$; $I_0 = 57.5 \text{ mA}$; $P_0 = 392 \text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ib IIC	$L_0 = 11 \text{ mH}$; $C_0 = 88 \text{ nF}$
Intrinsically safe Ex ib IIB	$L_0 = 56 \text{ mH}$; $C_0 = 680 \text{ nF}$
Intrinsically safe Ex ib I	$L_0 = 110 \text{ mH}$; $C_0 = 3.5 \mu\text{F}$ without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EC
EC low voltage guideline	2006/95/EC
Conformity marking	CE
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
TÜV 07 ATEX 554086 X	I (M2) [Ex ib] I, II 3 (2) G Ex nA [ib] IIC T4, II 3 (2) D Ex tD [ibD] A22 IP6X T135°C
TUN 09.0001X	[Ex ib] I, Ex nA [ib] IIC T4, Ex tD [ibD] A22 IP6X T135°C

Also see "Approvals Overview" in Section 1

1 Up/Down Counter, Ex i




Delivered without miniature WSB markers

The 750-633 Counter records binary pulse signals with NAMUR-compliant levels and transmits the counter state to the fieldbus system. The U/D input allows either Up or Down counting. Counter and digital output (DO) can be set or reset via control byte. The output is short-circuit proof.

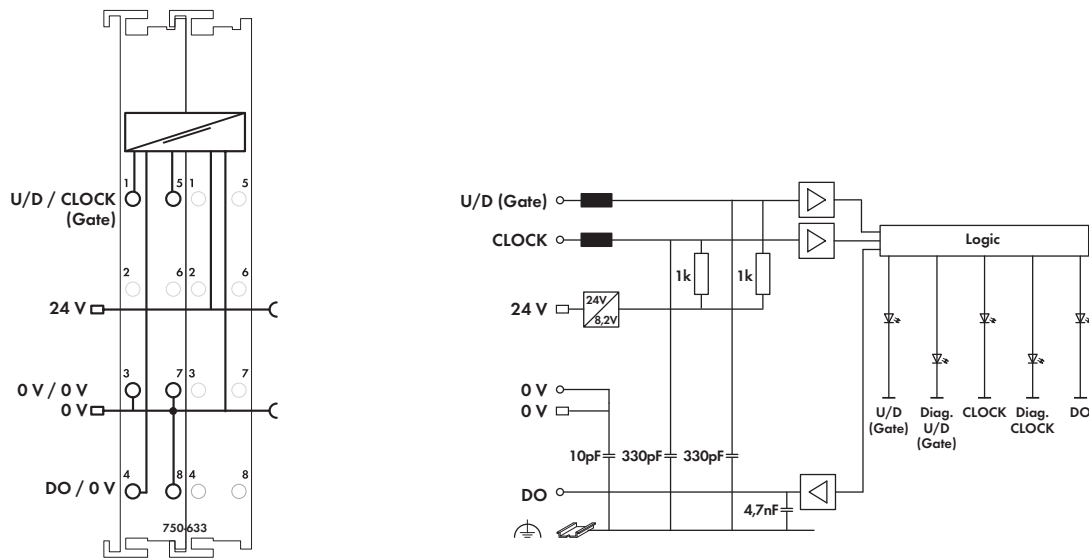
- LED indicators:
- Green LED (Up/Down + CLK + DO status)
 - Red LED (Up/Down + CLK error status)
- Field and system levels are electrically isolated.

Note: Only use the up/down counter in connection with the 24VDC Ex i supply module (note the power supply instructions on page 23)!

General information (e.g., installation regulations) on explosion protection is available in the WAGO-I/O-SYSTEM 750 manuals!

Description	Item No.	Pack. Unit
Up/Down Counter, Ex i	750-633	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	

Technical Data	
No. of counters	1
No. of outputs	1
Current consumption typ. (internal)	25 mA
Voltage via power jumper contacts	Supply via 24 V DC Ex i supply module
Counter	
Signal current (0)	≤ 1.2 mA
Signal current (1)	≥ 2.1 mA
Input filter	10 μs
Switching hysteresis	0.2 mA
Input resistance	1 kOhm
Short-circuit current	8,2 mA (+/- 5 %)
Short-circuit monitoring	> 6.4 mA
Line break monitoring	≤ 0.3 mA
Switching frequency	20 kHz - 50 kHz
Counter depth	32 bits
Output	
Output data	24 VDC, Ri = 285 Ω (+/- 5 %)
Open-circuit voltage	24 VDC
Current consumption typ. (field side)	31 mA + sensor load + actuator load
Power consumption P (max.)	2.2 W
	(sensor load: 8.2 mA
	+ actuator load: 45 mA)
Power loss P _v	1.7 W
	(sensor load: 8.2 mA
	+ actuator load: 45 mA)
Isolation (peak value)	375 V system/supply
Bit width	1 x 32-bit data,
	1 x 8-bit status/diagnostics



Technical Data

Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	85 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	pending
EMC: marine applications	
- emission of interference	pending

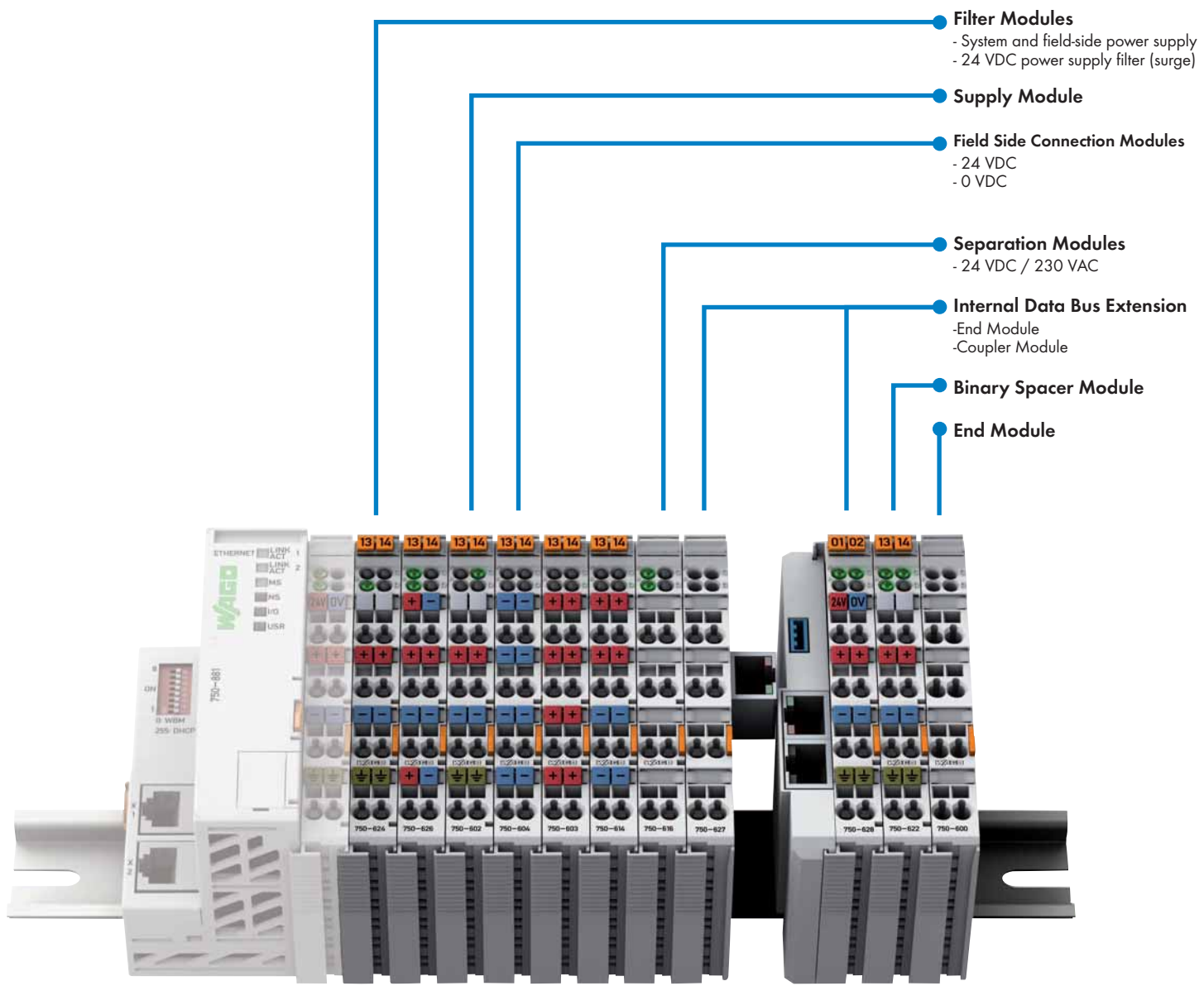
General Specifications

Explosion Protection	
Ex directive	EN 60079-0:2006, EN 60079-11:2007, EN 60079-15:2005, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006
Electric circuit, safety relevant data	$V_0 = 12 \text{ V}$; $I_0 = 13.3 \text{ mA}$; $P_0 = 40 \text{ mW}$; Characteristic: Linear
Intrinsically safe Ex ia IIC	$L_0 = 190 \text{ mH}$; $C_0 = 1.4 \mu\text{F}$
Intrinsically safe Ex ia IIB	$L_0 = 600 \text{ mH}$; $C_0 = 9 \mu\text{F}$
Intrinsically safe Ex ia I	$L_0 = 1 \text{ H}$; $C_0 = 35 \mu\text{F}$
Intrinsically safe	without consideration of the simultaneousness; with consideration of the simultaneousness see manual

Standards, Guidelines and Approvals

EC EMC guideline	2004/108/EG
EC low voltage guideline	2006/95/EG
Conformity marking	CE
☞ TÜV 07 ATEX 554086 X	I (M2) [Ex ia] I II 3 (1) G Ex nA [ia Ga] IIC T4 Gc II 3 (1) D Ex t [ia Da] IIIC T135°C Dc
☞ TUN 09.0001X	[Ex ia] I Ex nA [ia Ga] IIC T4 Gc Ex t [ia Da] IIIC T135°C Dc
☞ ANSI/ISA 12.12.01	pending
☞ UL 508	pending
Shipbuilding	pending

System Modules 230 V AC/DC 24 VDC 120 VAC



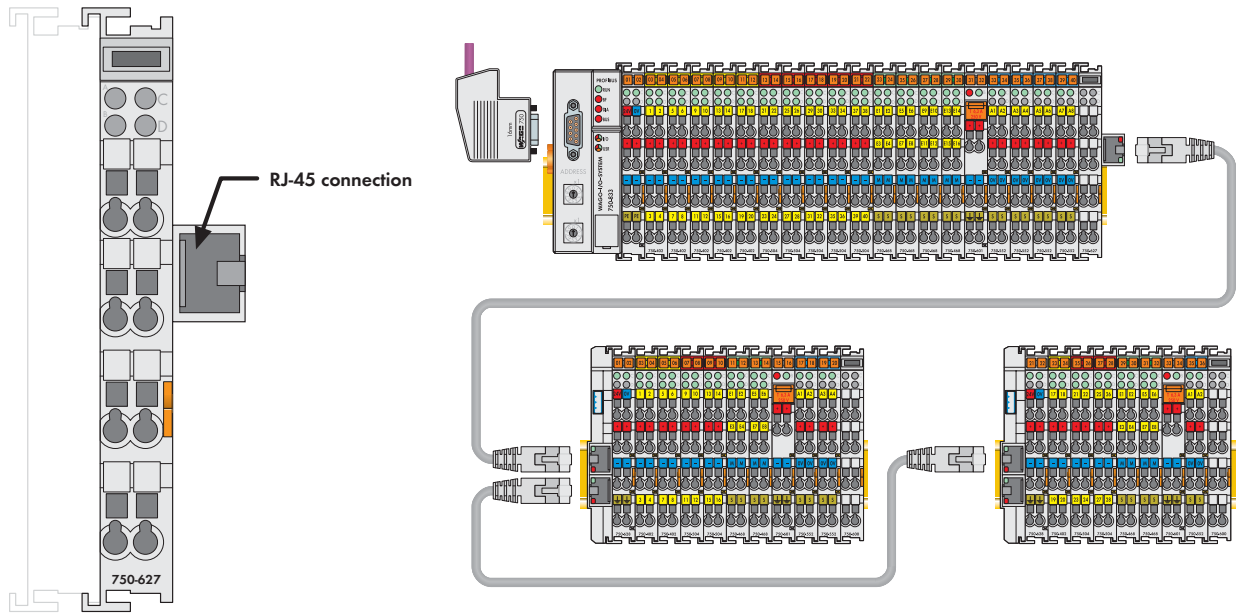
Modular I/O System Overview

System Modules



Function	System Module	Page	System Module	Page
Internal Data Bus Extension	750-627 End Module	328	750-628 Coupler Module	329
24 VDC Supply Modules	750-602, 24 VDC, passive	330	750-601, 24 VDC, max. 6.3 A without diagnostics, with fuse carrier	331
	750-610, 24 VDC, max. 6.3 A with diagnostics, with fuse carrier	332	750-623, 24 VDC, 5 ... 15 V	333
24 VDC Internal System Supply Module with Bus Power Supply	750-613, 24 VDC	334		
24 VAC Power Supply Modules	750-617 24 VAC, with fuse carrier	331		
120 VAC Power Supply Module	750-615, 120 VAC, max. 6.3 A without diagnostics, with fuse carrier	331		
230 VAC Power Supply Modules	750-612, 0 ... 230 V AC/DC without diagnostics, passive	330	750-609, 230 VAC, max. 6.3 A without diagnostics, with fuse carrier	331
	750-611, 230 VAC, max. 6.3 A with diagnostics, with fuse carrier	332		
Filter Modules	750-624 Field Side Power Supply Filter	335	750-626 Power Supply Filter with Overvoltage (Surge) Protection	336
Field Side Connection Modules	750-604 / 753-604 0 VDC	339	750-603 / 753-603 24 VDC	338
	750-614 / 753-614 0 ... 230 V AC/DC	337	750-1605 24 VDC	340
	750-1606 0 VDC	341	750-1607 24 V / 0 VDC	342
Separation Modules	750-616 Separation Module	346	750-621 Separation Module with Contacts	346
Binary Spacer Module	750-622 Binary Spacer Module	343		
	753-1629 Binary Spacer Module, activ	344	753-629/020-000 Binary Spacer Module, passive	345
End Module	750-600 End Module	347		
Ex i Modules	see pages 304 ... 325			

1 Internal Data Bus Extension End Module



Delivered without miniature WSB markers


The end module for the internal data bus extension 750-627 is attached to the end of the I/O terminal block like the standard end module 750-600. The block is terminated with the module, to which a connecting cable can be attached with an RJ-45 connector.

Power to the internal electronics is supplied via the internal bus. Together with at least one coupler module for the internal data bus extension 750-628 the module forms a functional unit. The fieldbus coupler/controller carries out all diagnosis and commissioning tasks.

Installation note Attention:

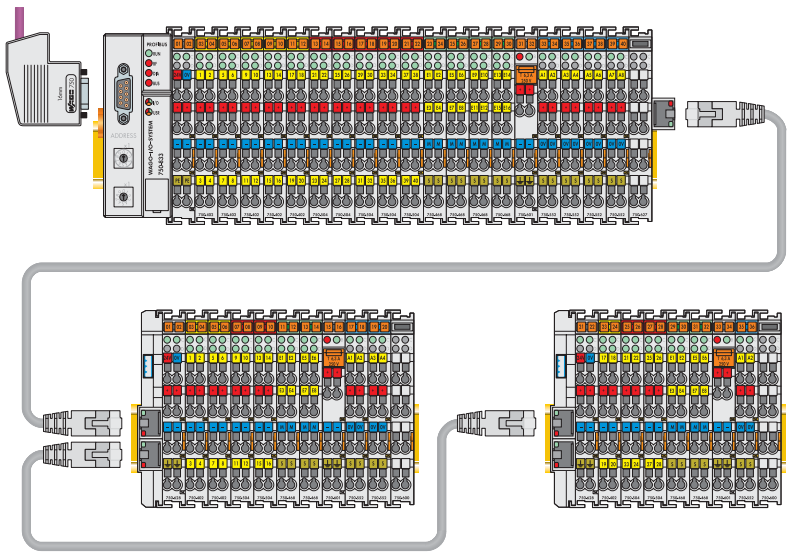
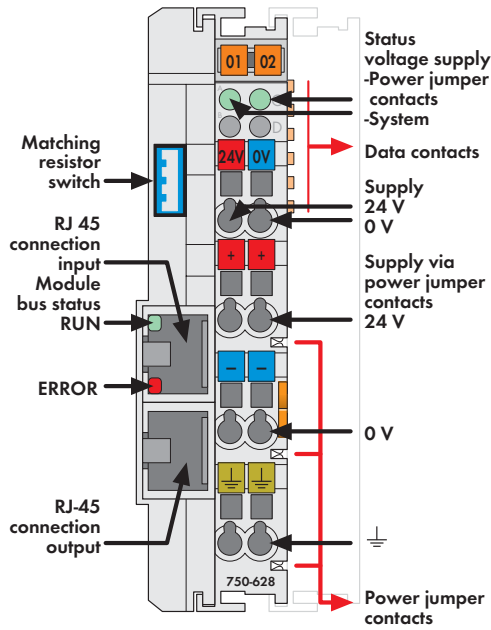
To ensure safe, reliable operating states when using the internal data bus extension 750-627/-628 these states must be registered prior to startup with the following couplers or PLCs (refer to manual for supported couplers/PLCs). You must use the "WAGO Extension Setting" software for this (download: www.wago.com).

Please complete the manufacturing number matrix on the right-hand side of the couplers when updating the firmware and internal operating parameters.

Description	Item No.	Pack. Unit
Internal Data Bus Extension End Module	750-627	1
Accessories	Item No.	Pack. Unit
Software „WAGO Extension Setting“	Download: www.wago.com	
Communication cable (used to register or remove the end extension module)	750-920	10
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	GL	
UL 508		

Technical Data	
Max. no. of coupler modules	up to 10
Max. current consumption (internal)	70 mA
Buscoupler connection	1 x RJ-45 socket
Distance	max. 5 m (end module and coupler module)
Transmission medium	shielded copper wire (ETHERNET patch cable)
	4 x 2 x 0.25 mm ² , twisted pair, double shielding
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	24 mm
Weight	45.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)



Internal Data Bus Extension Coupler Module



Delivered without miniature WSB markers

The coupler module for the internal data bus extension module 750-628 replaces the fieldbus coupler/controller at an I/O terminal block. It is also the mating piece for the end module 750-627. Plug the connecting cable into the top RJ-45 socket to establish the logical link to the fieldbus coupler/controller via end module 750-627. The extension is completely transparent for the fieldbus coupler/controller. All of the functions of the I/O module system are retained without any changes. A further extension to the system is provided by the bottom RJ-45 socket. This enables the entire system to be extended by 10 stages. The supply voltage for the field side and the internal electronics can be input separately. Both levels are electrically isolated from each other. Two diagnostic LEDs give information about the supply voltage for both the internal and field side. Two LEDs in the input socket indicate fault-free communication with the bus coupler. The extension module can be used as the last coupler module in the system (switch on matching resistor) or as a bridge between two I/O module assemblies.

Installation note Attention: To ensure safe, reliable operating states when using the internal data bus extension 750-627/-628 these states must be registered prior to startup with the following couplers or PLCs (refer to manual for supported couplers/PLCs). You must use the "WAGO Extension Setting" software for this (download: www.wago.com). Please note that only one terminating resistor may be activated in the whole system. Please complete the manufacturing number matrix on the right-hand side of the couplers when updating the firmware and internal operating parameters.

Description	Item No.	Pack. Unit
Internal Data Bus Extension Coupler Module	750-628	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	GL	
UL 508		

Technical Data	
Max. no. of I/O modules	64 (in the whole system)
Buscoupler connection	2 x RJ-45 socket (input + output)
Distance	5 m (10 m see manual), (end module and coupler or coupler and coupler)
Transmission medium	shielded copper wire (ETHERNET patch cable) 4 x 2 x 0.25 mm ² , twisted pair, double shielding
Power supply	24 V DC (-15 % ... +20 %)
Max. input current (24 V)	200 mA
Efficiency of the power supply	76 %
Inrush current	2.5 x continuous current
Internal current consumption (5 V)	150 mA
Total current for I/O modules (5 V)	400 mA
Voltage via power jumper contacts	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	DC10 A
Isolation	500 V system/supply
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	25 mm
Weight	74.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

1 Supply Module 24 V DC / 230 V AC/DC
passive

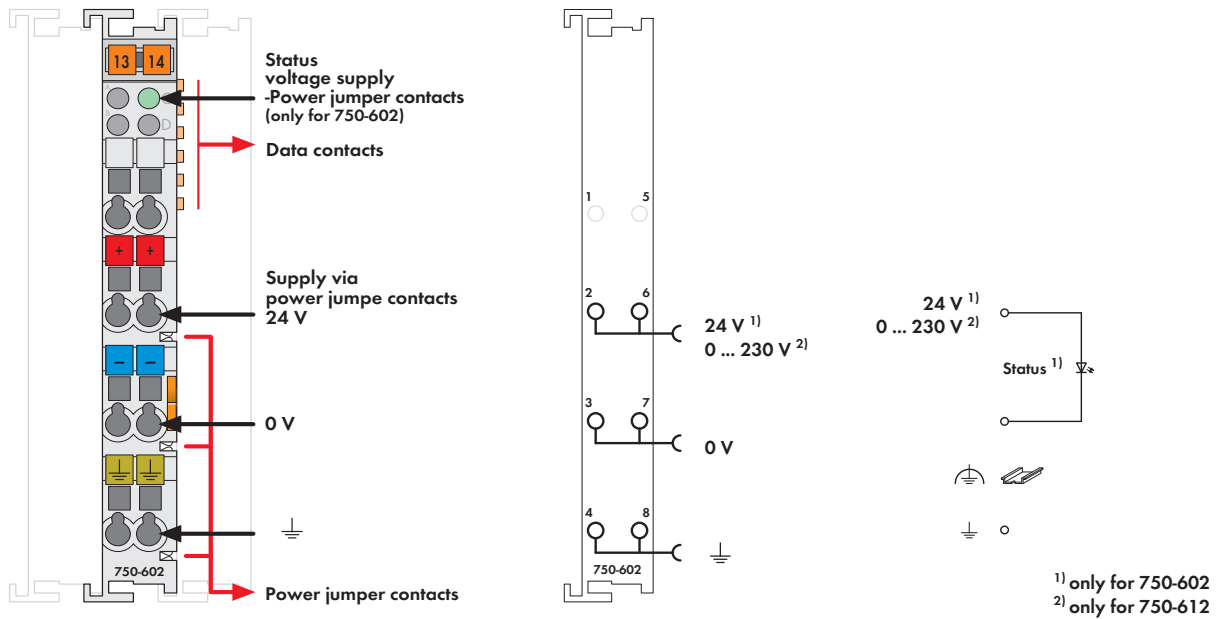










Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The supply module provides the I/O modules with the corresponding supply potential.

The maximum current at the supply module is 10A. When configuring the system, it must be ensured that this total current is not exceeded.

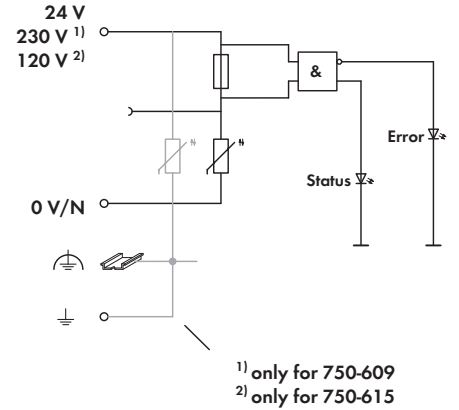
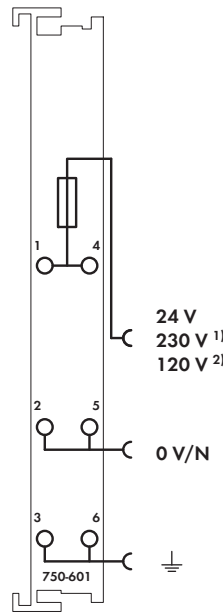
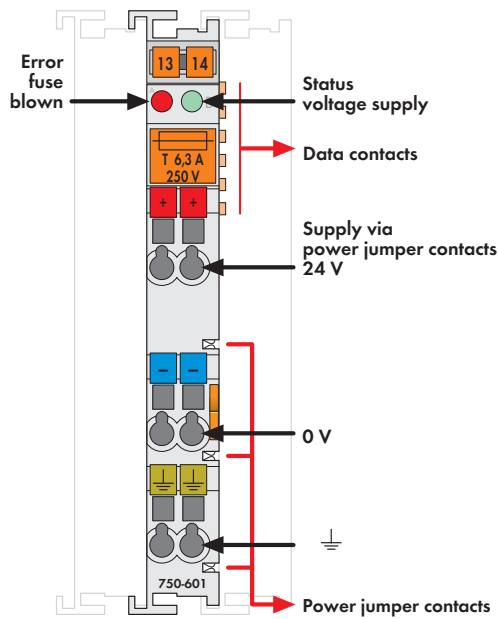
Should higher currents be necessary, intermediate supply modules must be added in the assembly.

Description	Item No.	Pack. Unit
24V DC Power Supply	750-602	10 ¹⁾
24V DC Power Supply/T	750-602/025-000	1
[Operating temperature -20 °C ... +60 °C]		
0-230V AC/DC Power Supply	750-612	10 ¹⁾
24V DC Power Supply (without connector)	753-602	1
0-230V AC/DC Power Supply (without connector)	753-612	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	750-602, -612
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-602, -612
 EN 61241-0, -1		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (750-602 / 753-602) 0 V ... 230 V AC/DC (750-612 / 753-612)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	44.5 g (750-602) 51.5 g (750-612)
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005) (750-602) acc. to EN 61000-6-2 (2001) (750-612)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Supply Module 24 V DC / 24 V AC / 230 V AC / 120 V AC

with fuse carrier




Delivered without miniature WSB markers

The supply module provides the I/O modules with the corresponding supply potential.

The maximum current at the supply module is 6.3A. When configuring the system, it must be ensured that this total current is not exceeded. Should higher currents be necessary, intermediate supply modules must be added in the assembly.

This module is fuse-protected (5 x 20mm). The fuse can be changed quickly, with ease, from the retractable fuse carrier.

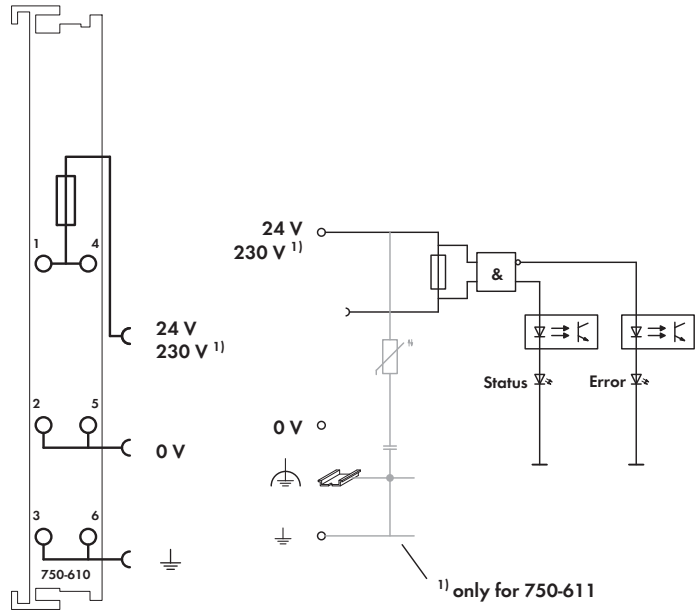
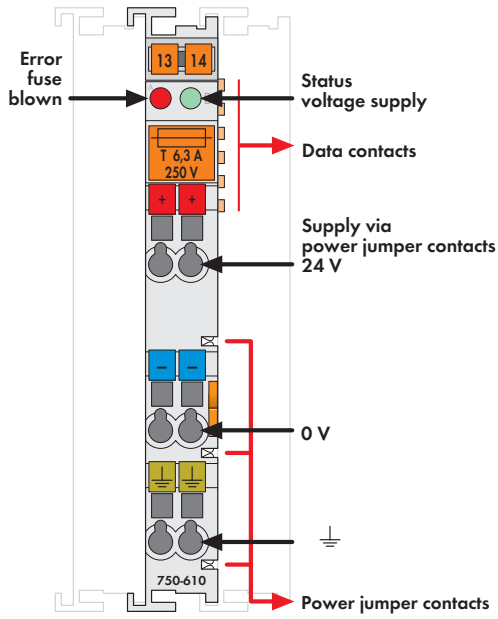
A blown fuse is indicated by an LED.

Description	Item No.	Pack. Unit
24V DC Power Supply/Fuse	750-601	10 ¹⁾
24V AC Power Supply/Fuse	750-617	1
120V AC Power Supply/Fuse	750-615	10 ¹⁾
230V AC Power Supply/Fuse	750-609	1
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	750-601, -609
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-609, -615
EN 61241-0, -1		
EN 50021	II 3 G EEx nA II T4	750-617
EN 60079-0, -11, -15	I M2 Ex d I	750-601*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-601*
	II 3 D Ex tD A22 IP6X T135°C	750-601*
* Permissible operating temperature: 0°C ... +60°C		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (750-601) 24 V AC (750-617) 230 V AC (750-609) 120 V AC (750-615)
Current via power jumper contacts (max.)	6.3 A DC
Fuse	5 x 20; T 6.3 A (Fuse not included. Use UL recognized fuses only!)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	56 g (750-601, 750-615, 750-617) 54.5 g (750-609)
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005) (750-601, 750-615, 750-617)
EMC: CE - emission of interference	acc. to EN 61000-6-2 (2001) (750-609)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 Supply Module 24 V DC / 230 V AC

with fuse carrier / diagnostics



Delivered without miniature WSB markers

The supply module provides the I/O modules with the corresponding supply potential.

The maximum current at the supply module is 6.3A. When configuring the system, it must be ensured that this total current is not exceeded. Should higher currents be necessary, intermediate supply modules must be added in the assembly.

This module is fuse-protected (5 x 20mm). The fuse can be changed quickly, with ease, from the retractable fuse carrier.

A blown fuse and the status of the supply voltage are indicated via LEDs.

The I/O module sends information about the status of the supply module to the fieldbus coupler through two input bits. One bit is for the status of the fuse. The other bit is for the status of the supply voltage.

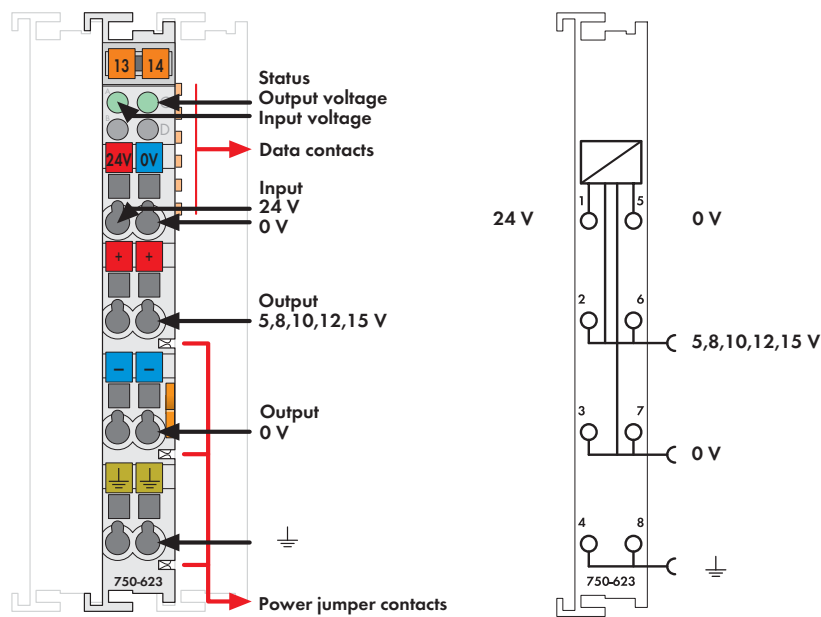
Description	Item No.	Pack. Unit
24V DC Power Supply/Fuse/Diagn.	750-610	10 ¹⁾
230V AC Power Supply/Fuse/Diagn.	750-611	1
¹⁾ Also available individually		

Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	

Approvals	Also see "Approvals Overview" in Section 1
Conformity marking	CE
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA
UL 508	
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4
EN 61241-0, -1	

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (750-610) 230 V AC (750-611)
Current via power jumper contacts (max.)	6.3 A DC
Current consumption (internal)	5 mA
Supply voltage detection level on	> 15 V DC (750-610) > 164 V AC (750-611)
Supply voltage detection level off	< 5 V DC (750-610) < 40 V AC (750-611)
Fuse	5 x 20; T 6.3 A (Fuse not included. Use UL recognized fuses only!)
Internal bit width	2 bits
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Supply Module 24 V DC / 5 V - 15 V



Delivered without miniature WSB markers


The I/O module generates 5V, 8V, 10V, 12V and 15V DC output voltages from the 24VDC input voltage.

The output voltage is selected by a DIP switch located on the side of the module. The output voltage can be tapped at the CAGE CLAMP® connections.

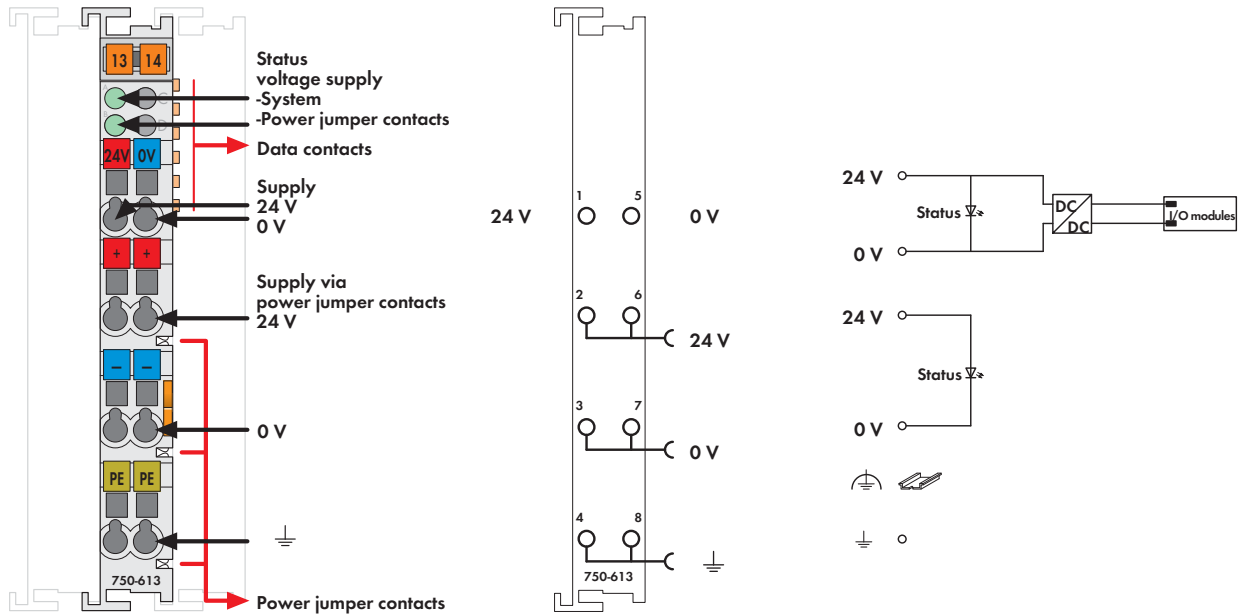
The adjoining modules are also supplied with this voltage level via the power jumper contacts.

Status LEDs indicate the module's operating state.

The input voltage and the output voltage are not electrically isolated.

Description	Item No.	Pack. Unit	Technical Data
Supply Module DC 24V / 5-15V	750-623	1	Power supply: 24 V DC (-15 % ... +20 %)
			Output voltage: 5 V, 8 V, 10 V, 12 V, 15 V DC
			Output current: 0.5 A (1 A at 5 V)
			Wire connection: CAGE CLAMP®
			Cross sections: 0.08 mm² ... 2.5 mm² / AWG 28 ... 14
			Stripped lengths: 8 ... 9 mm / 0.33 in
			Width: 12 mm
			Weight: 37.016 g
			EMC: CE - immunity to interference acc. to EN 61000-6-2 (2005)
			EMC: CE - emission of interference acc. to EN 61000-6-3 (2007)
Accessories	Item No.	Pack. Unit	
Miniature WSB Quick marking system			
	plain	248-501	5
	with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1		
Conformity marking	CE		
Shipbuilding	GL		
UL 508			

1 Internal System Supply Module 24 V DC



The internal system supply module increases the current supply for the internal system by 2A.

If the internal current consumption of all modules is higher than 2A, an additional supply module must be added.

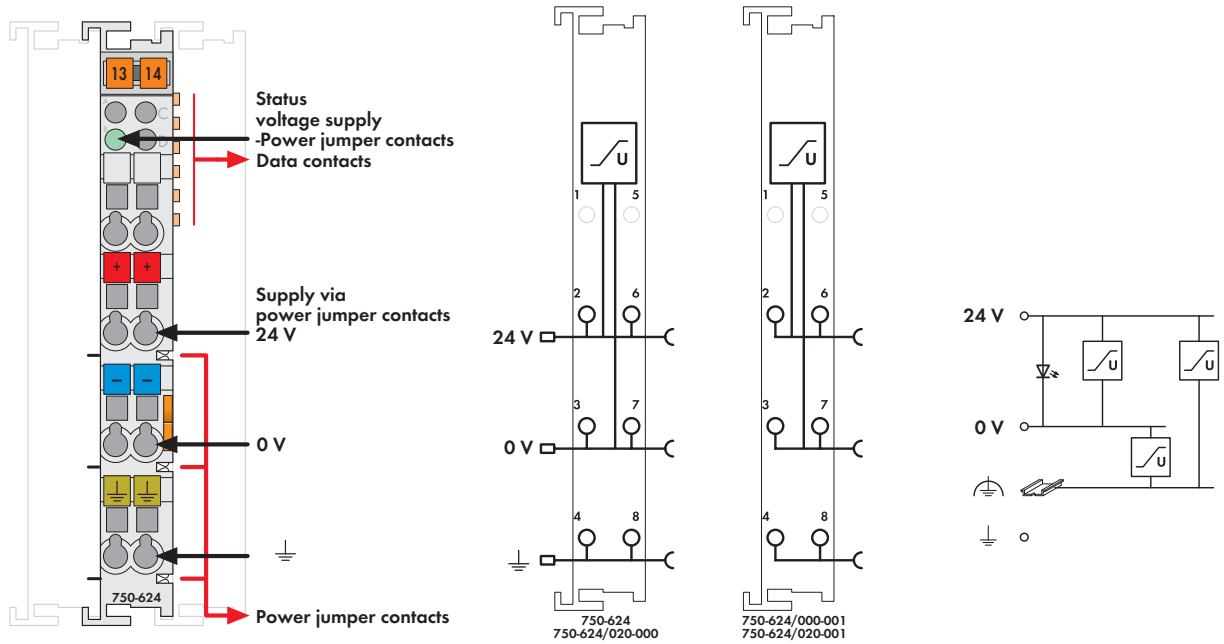
The module also supplies field side power to the adjoining modules via the power jumper contacts.

Description	Item No.	Pack. Unit
24V DC Bus Power Supply	750-613	10 ¹⁾
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
plain	248-501	5
with marking	see pages 352 ... 353	
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Power supply	24 V DC (-1.5 % ... +20 %)
Input current max.	500 mA
Total current for I/O modules	2000 mA
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	58.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Filter Module

for field side power supply



Delivered without miniature WSB markers


The WAGO-I/O-SYSTEM 750 can also be used in shipbuilding applications and onshore/offshore installations (e.g., platforms, loading facilities). This is possible via certification under the standards of leading agencies such as Germanischer Lloyd and Lloyds Register. This module ensures proper (certified) system operation and is equipped with surge suppression for 24VDC field side power supply. High-insulation versions are optimized for use in systems with insulation monitoring.

750-624/020-000, 750-624/020-001

- Required for shipbuilding certified operation with 750 Series I/O modules.
- 750-624/020-001 may also be used as a supply module.

750-624, 750-624/000-001

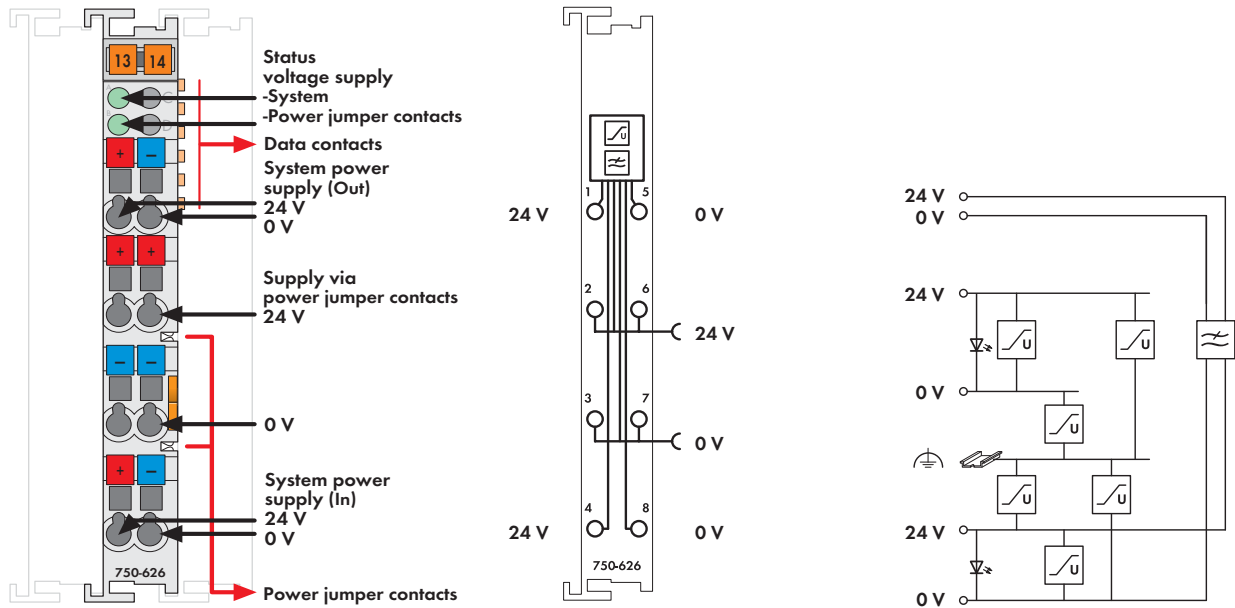
- Required for shipbuilding certified operation with 750-625 Ex i supply module.
- Required for the use of 750 Series PROFIsafe modules.
- 750-624/000-001 may also be used as a supply module.

Description	Item No.	Pack. Unit
24V DC Field Side Power Supply Filter with Overvoltage (Surge) Protection, High Isolation	750-624/020-000	1
24V DC Field Side Power Supply Filter with Overvoltage (Surge) Protection, High Isolation / without Power Jumper Contacts	750-624/020-001	1
24V DC Field Side Power Supply Filter with Overvoltage (Surge) Protection	750-624	1
24V DC Field Side Power Supply Filter with Overvoltage (Surge) Protection / without Power Jumper Contacts	750-624/000-001	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-624/...
EN 61241-0, -1		
EN 60079-0, -11, -15	I M2 Ex d I	750-624*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-624*
	II 3 D Ex tD A22 IP6X T135°C	750-624*
* Permissible operating temperature: 0°C ... +60°C		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

1 Filter Module

for system and field side power supply



Delivered without miniature WSB markers


The WAGO-I/O-SYSTEM 750 can also be used in shipbuilding applications and onshore/offshore installations (e.g., platforms, loading facilities). This is possible via certification under the standards of leading agencies such as Germanischer Lloyd and Lloyds Register. Proper system operation is ensured (certified) by using this overvoltage protection module. The module filters the 24V system power supply and is equipped with surge suppression. High-insulation versions are optimized for use in systems with insulation monitoring.

750-626/020-000

- Required for shipbuilding certified operation with both 750 Series couplers and programmable controllers.

750-626

- Required for shipbuilding certified operation with both 758 Series IPCs and 750-625 Ex-i supply module.
- Required for the use of 750 Series PROFIsafe modules.

Description	Item No.	Pack. Unit
24V DC Power Supply Filter with Overvoltage (Surge) Protection, High Isolation	750-626/020-000	1
24V DC Power Supply Filter with Overvoltage (Surge) Protection /HI /T	750-626/025-001	1
24V DC Power Supply Filter with Overvoltage (Surge) Protection	750-626	1
24V DC Power Supply Filter with Overvoltage (Surge) Protection /T	750-626/025-000	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	750-626, -626/
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	750-626/020-000
EN 61241-0, -1		
EN 60079-0, -11, -15	I M2 Ex d I	750-626*
EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-626*
	II 3 D Ex tD A22 IP6X T135°C	750-626*
* Permissible operating temperature: 0°C ... +60°C		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... +30 %)
Current via power jumper contacts (max.)	10 A DC
Current via system voltage (max.)	1.5 A (1 A up to hardware 04)
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	51 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Field Side Connection Module

0 ... 230 V AC/DC

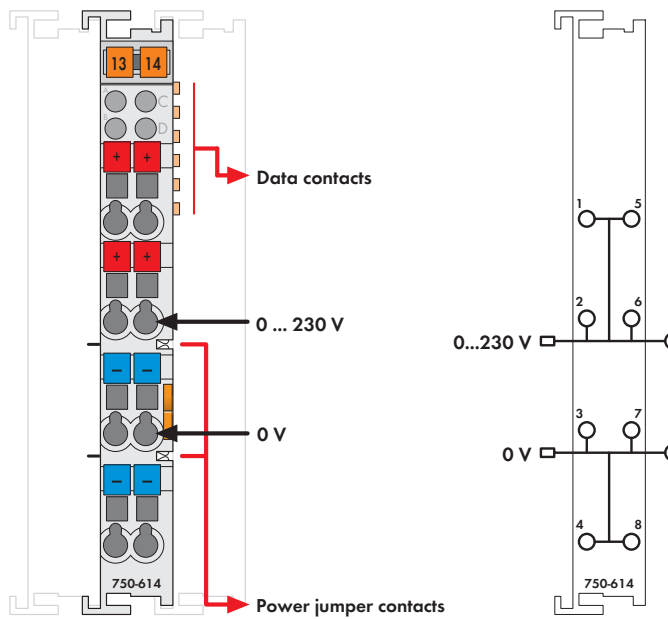



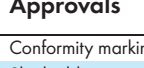








Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

Field side connection module for multiple tapping of the supply voltage.

This eliminates the need for additional terminal blocks.

Description	Item No.	Pack. Unit
Field Side Connection	750-614	10 ¹⁾
Field Side Connection (without connector)	753-614	10 ¹⁾
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding	ABS, BV, DNV, GL, KR, LR*, NKK*, PRS*, RINA* *753 Series, pending	
 UL 508		
 ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
 EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	753-614
 EN 61241-0, -1		
 EN 60079-0, -11, -15	I M2 Ex d I	750-614*
 EN 61241-0, -1, -11	II 3 G Ex nA IIC T4	750-614*
	II 3 D Ex tD A22 IP6X T135°C	750-614*
* Permissible operating temperature: 0°C ...		

Technical Data	
Voltage via power jumper contacts (max.)	0 V ... 230 V AC/DC
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	45.5 g
EMC: CE - immunity to interference	acc. to EN 50082-2 (1996)
EMC: CE - emission of interference	acc. to EN 50081-1 (1993)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

Field Side Connection Module

24 V DC

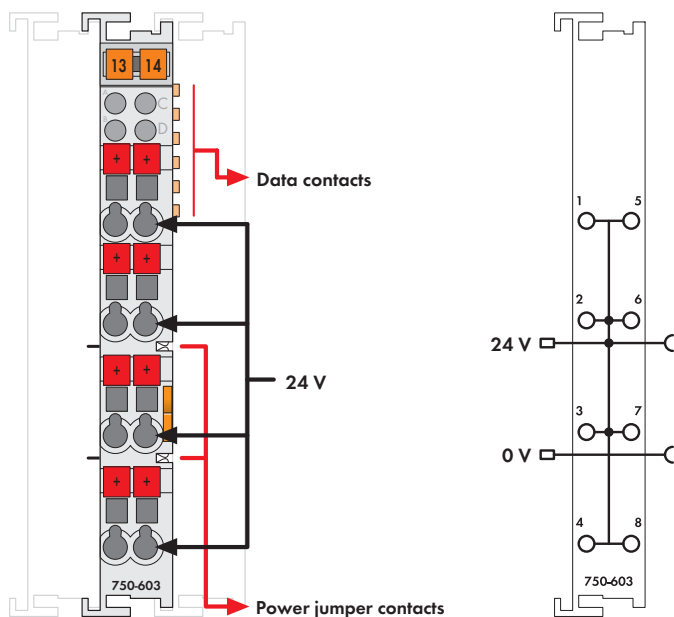




Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The field side connection module provides 24V power for the inputs of the 8-channel input module 750-430/-431, eliminating external terminal blocks.

The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together. The 24V power is available to all eight field side CAGE CLAMP® connections and the 0V potential is passed through without being used by the module.

Description	Item No.	Pack. Unit	
Field Side Connection	750-603	1	
Field Side Connection (without connector)	753-603	1	
<hr/>			
Accessories			
	753 Series Connectors	753-110	25
	Coding elements	753-150	100
	Miniature WSB Quick marking system		
	plain	248-501	5
	with marking	see pages 352 ... 353	
<hr/>			
Approvals	Also see "Approvals Overview" in Section 1		
Conformity marking	CE		
Shipbuilding	ABS, DNV, GL, KR		
UL 508	-		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4		
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4		
EN 61241-0, -1	-		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... + 30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	- immunity to interference acc. to Germanischer Lloyd (2003)
EMC: marine applications	- emission of interference acc. to Germanischer Lloyd (2003)

Field Side Connection Module

0 V DC

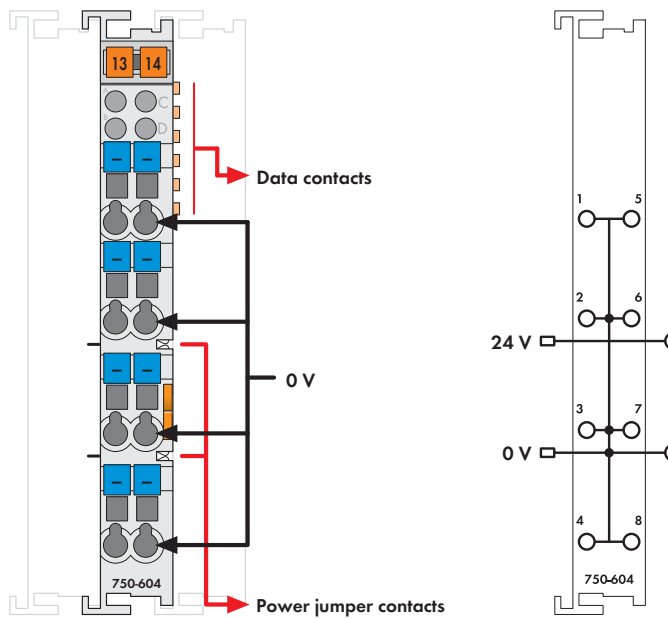



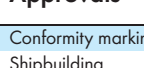


Fig. 750 Series/Technical data see page 24/Delivered without miniature WSB markers
750/753 Series marking see pages 10 ... 11 / 12 ... 13

The field side connection module provides 0 V potential for the outputs of the 8-channel output module 750-530.

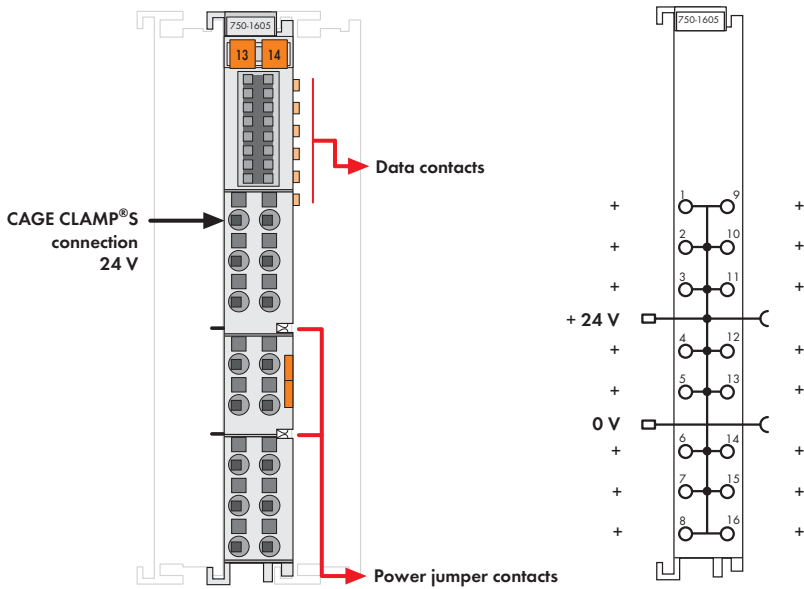
This eliminates the need for additional terminal blocks.

The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together. The 24V power is provided to all eight (8) field side CAGE CLAMP® connections and the 0V potential passed through without being used by the module.

Description	Item No.	Pack. Unit
Field Side Connection	750-604	1
Field Side Connection (without connector)	753-604	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... + 30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 14
Stripped lengths, 750/753 Series	8 ... 9 mm / 0.33 in 9 ... 10 mm / 0.37 in
Width	12 mm
Weight	48.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)


1 Field Side Connection Module 16+
24 V DC



The field side connection module provides 24V power for the inputs of the 16-channel input modules 750-1405 and 750-1406 (also suitable for 8 channel input modules in 1-wire connection), eliminating external terminal blocks.

210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP®S.

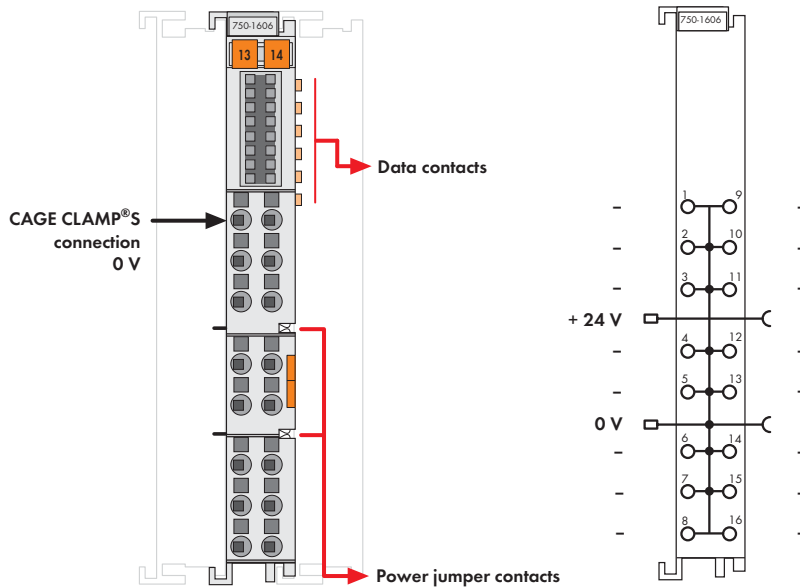
The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together. The 24V power is available to all 16 field side CAGE CLAMP®S connections and the 0V potential is passed through without being used by the module.

Description	Item No.	Pack. Unit
Field Side Connection 16+	750-1605	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... + 30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g

Field Side Connection Module 16-


0 V DC



The field side connection module provides 0V potential for the outputs of the 16-channel output module 750-1504 (also suitable for 8 channel output modules in 1-wire connection), eliminating external terminal blocks.

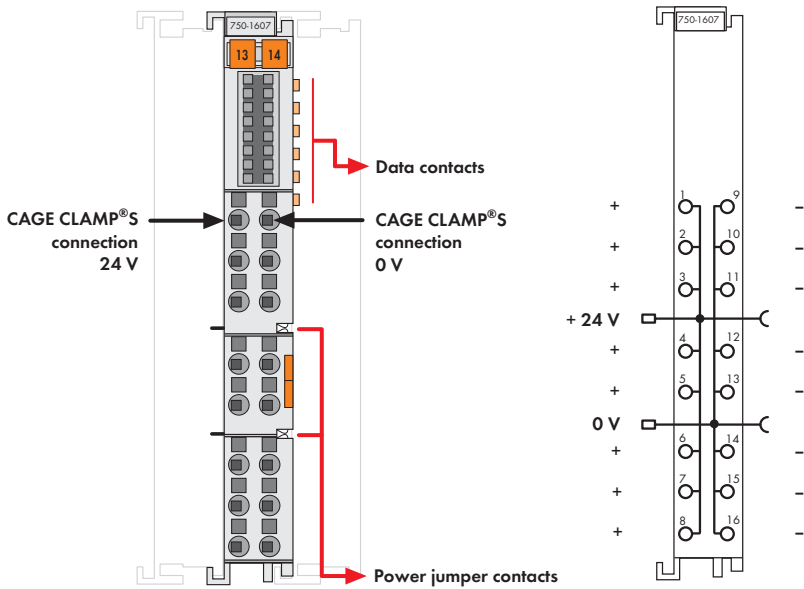
210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP®S.

The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together. The 0V potential is available to all 16 field side CAGE CLAMP®S connections and the 24V power is passed through without being used by the module.

Description	Item No.	Pack. Unit
Field Side Connection 16-	750-1606	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft,		
Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... + 30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	45 g

1 Field Side Connection Module 8+/8-
24 V / 0 V DC




The field side connection module provides 24 V and 0 V power for the inputs and outputs of the 8-channel input/output module 750-1506 (also suitable for 8-channel I/O modules, 1-wire connection) eliminating external terminal blocks.

The 24V supply and 0V potential are derived from the internal power jumper contacts of an adjacent upstream I/O module. A connection of the potentials to the downstream I/O modules is made automatically via the power jumper contacts when snapping the I/O modules together.

The 24 V and 0 V power is available to all eight filed side CAGE CLAMP®S connections.

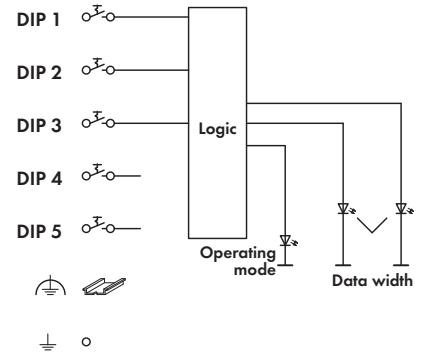
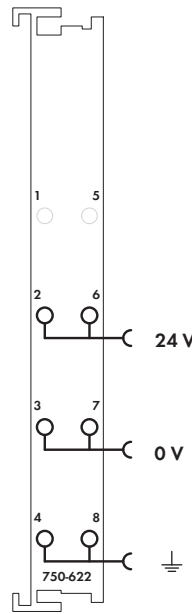
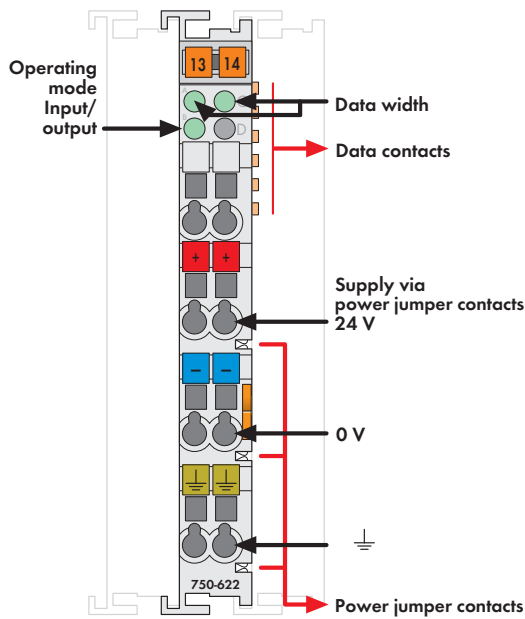
210-719 operating tool (2.5mm blade) is required to open the CAGE CLAMP®S.

Description	Item No.	Pack. Unit
Field Side Connection 8+/8-	750-1607	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Approvals Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
Shipbuilding	ABS, DNV, GL, KR	
UL 508		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-25 % ... + 30 %)
Current via power jumper contacts (max.)	10 A DC
Wire connection	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 1.5 mm ² / AWG 28 ... 16 fine-stranded: 0.25 mm ² ... 1.5 mm ² / AWG 22 ... 16
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g

Binary Spacer Module

with supply module




Delivered without miniature WSB markers

Binary spacer modules reserve bit addresses in the process image of a fieldbus node.

The operating mode as well as the bit width can be adjusted by DIP switches on the side of the module. The operating mode (inputs/outputs) can be chosen by one DIP switch, the number of inputs or outputs (2, 4, 6 or 8) can be chosen by two DIP switches.

The configuration is indicated by means of 3 LEDs.

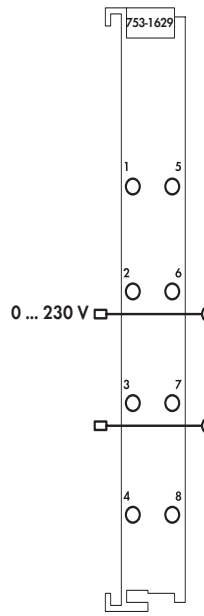
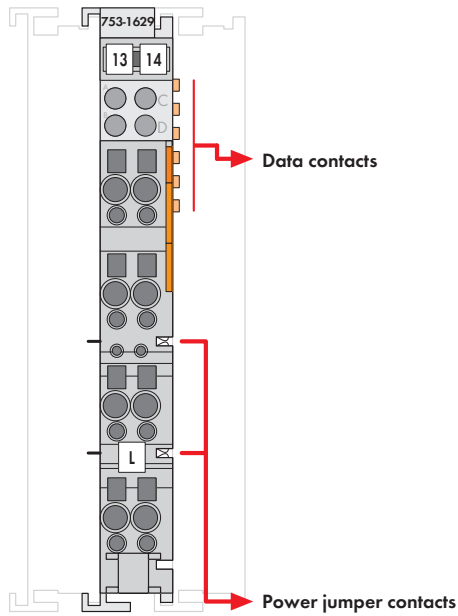
The binary spacer module also acts as a power supply module and provides the 24V field-side voltage for the downcircuit I/O modules via power jumper contacts.

Description	Item No.	Pack. Unit
Binary Spacer Module	750-622	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA nL IIC T4	
EN 61241-0, -1		

Technical Data	
Voltage via power jumper contacts (max.)	24 V DC (-15 % ... +20 %)
Current via power jumper contacts (max.)	10 A DC
Current consumption (internal)	10 mA
Isolation	500 V system/supply
Internal bit width	2, 4, 6 or 8 Bit
Bit width	2 Bit: DIP1: OFF/DIP2: OFF; 4 Bit: DIP1: ON/DIP2: OFF; 6 Bit: DIP1: OFF/DIP2: ON; 8 Bit DIP1: ON/DIP2: ON
Operating mode	Inputs DIP 3 OFF; Outputs DIP 3 ON
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	8 ... 9 mm / 0.33 in
Width	12 mm
Weight	48 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)

Spacer Module

active







Active spacer modules provide both hardware and software space reservation for standard function modules (digital/analog) in PROFIBUS networks (only in connection with 750-333 coupler).

These modules are available with and without power jumper contacts for power supply to downstream modules.

753 Series pluggable connectors enable the use of pre-wired cable assemblies. WAGO's spacer modules also simulate a function module and are configured accordingly (select module "optionally not plugged").

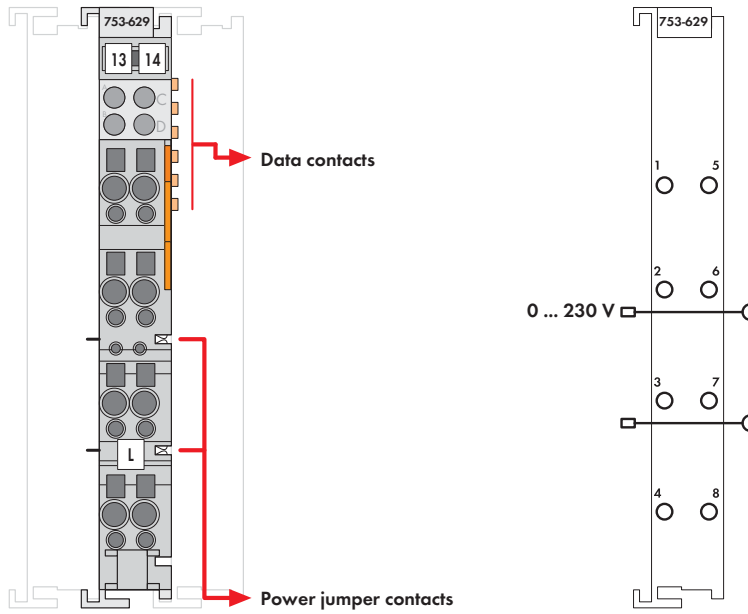
Subsequent node expansion is made possible by replacing spacer modules with function modules without disturbing existing wiring or configuration.

Description	Item No.	Pack. Unit
Spacer module, active (without connector)	753-1629	1
Spacer module, active/without power jumper contacts (without connector)	753-1629/000-001	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
 with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	

Technical Data	
Voltage via power jumper contacts (max.)	0 ... 230 V AC/DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	61 g

Spacer Module

passive






WAGO's passive spacer modules provide hardware place reservation for standard function modules (digital/analog).

753 Series pluggable connectors enable the use of pre-wired cable assemblies. Subsequent node expansion is made possible by replacing spacer modules with corresponding function modules without disturbing existing wiring. The modules can also accommodate cables that are currently unused.

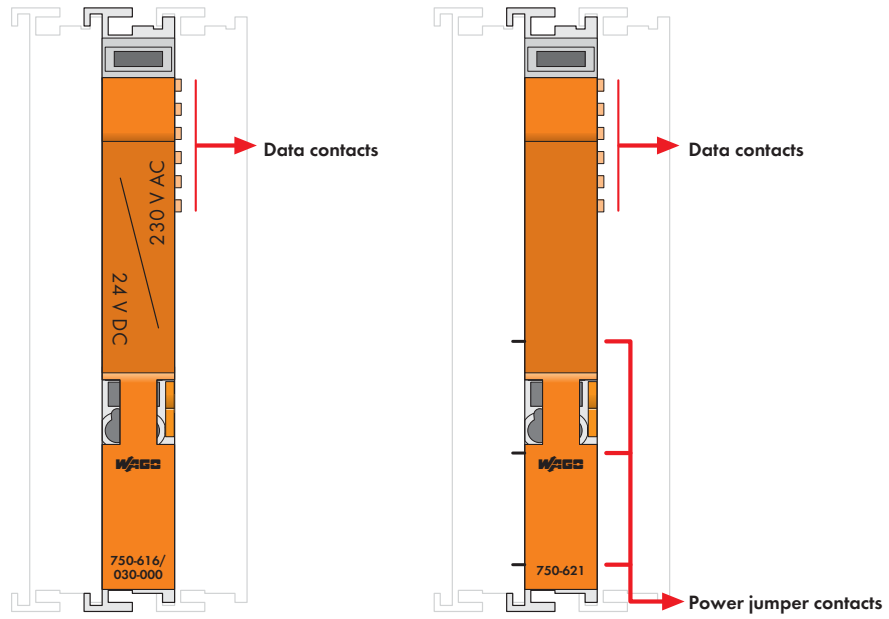
The passive spacer modules have no electronics. They do not reserve any bits/bytes in the process image and are therefore not shown in the configuration.

The modules feature two power jumper contacts for power supply to downstream modules.

Description	Item No.	Pack. Unit
Spacer module, passive (without connector)	753-629/020-000	1
Accessories		
 753 Series Connectors	753-110	25
 Coding elements	753-150	100
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals		
Conformity marking	CE	

Technical Data	
Voltage via power jumper contacts (max.)	0 ... 230 V AC/DC
Wire connection	CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 14
Stripped lengths	9 ... 10 mm / 0.37 in
Width	12 mm
Weight	29.2 g

1 Separation Module




A separation module visually divides a fieldbus node into sections.

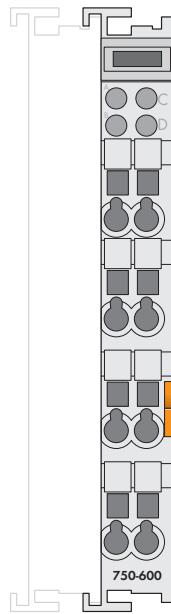
The 750-616 Separation Module has no power jumper contacts. A separation module with printing on its face has got the item no. 750-616/030-000.

Note:
Operation of the adjacent I/O modules requires a supply module.

The 750-621 Separation Module has power jumper contacts that can supply the power to adjacent bus modules.

Description	Item No.	Pack. Unit
Separation Module	750-616	10 ¹⁾
Separation Module/ 24V DC/ 230V AC	750-616/030-000	1
Separation Module with Contacts	750-621	1
1) Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon request)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	750-616
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nA IIC T4	
EN 61241-0, -1		


Technical Data	
Width	12 mm
Weight	38.94 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)



After the fieldbus node is assembled with the correct buscoupler and I/O modules, the end module is snapped onto the assembly.

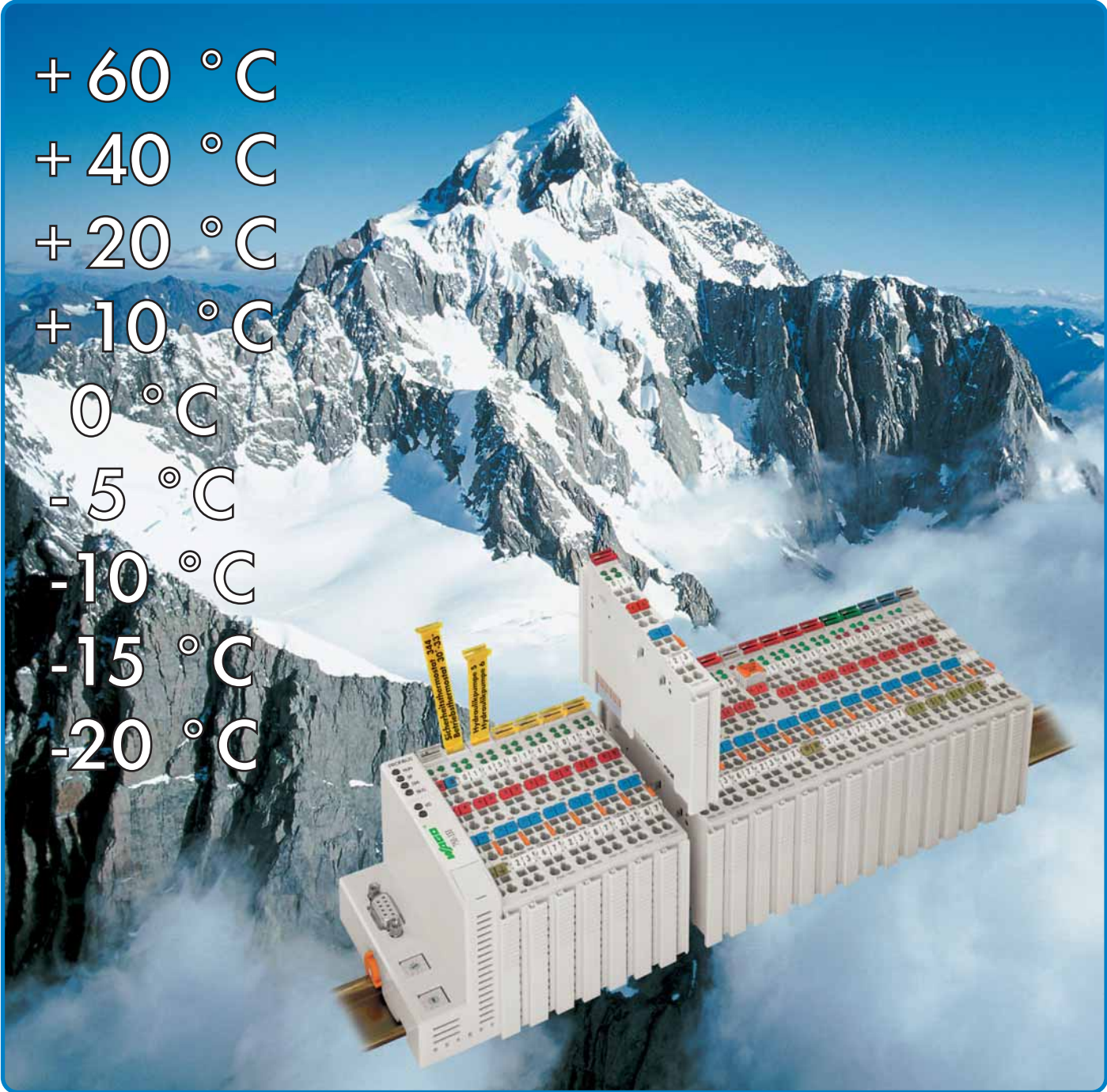
It completes the internal data circuit and ensures correct data flow.

1.8

Description	Item No.	Pack. Unit
End Module	750-600	10 ¹⁾
End Module/T	750-600/025-000	1
(Operating temperature -20 °C ... +60 °C)		
¹⁾ Also available individually		
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
	plain	248-501 5
	with marking	see pages 352 ... 353
Approvals	Also see "Approvals Overview" in Section 1	
Conformity marking	CE	
Shipbuilding (versions upon)	ABS, BV, DNV, GL, KR, LR, NKK, PRS, RINA	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	750-600
EN 60079-0, -11, -15	I M2 Ex d I	750-600*
EN 61241-0, -1, -11	II 3 G Ex nA IICT4	750-600*
	II 3 D Ex tD A22 IP6X T135 °C	750-600*
	* Permissible operating temperature: 0 °C ... +60 °C	

Technical Data	
Width	12 mm
Weight	33.5 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-4 (2007)
EMC: marine applications	
- immunity to interference	acc. to Germanischer Lloyd (2003)
EMC: marine applications	
- emission of interference	acc. to Germanischer Lloyd (2003)

WAGO-I/O-SYSTEM 750
for an Extended Temperature Range from -20 °C to +60 °C



WAGO-I/O-SYSTEM 750

The standard operating temperature range for most industrial applications is 0 °C to 55 °C, and WAGO offers a full line of industrial I/O modules to meet these applications. However, some applications require that components operate in environments outside this temperature range; e.g., the monitoring and controlling of rail track heaters, or the lighting control in open-air building such as railway stations.

For these applications, WAGO now offers a line of WAGO-I/O-SYSTEM products for temperatures ranging from -20 °C to +60 °C. Key to WAGO's extended-temperature products are the continuous enhancement of design and materials, use of coated PCBs and highly accurate production methods.

Fieldbus couplers/controllers



Item No.	Description	Page
750-333/025-000	PROFIBUS DP/V1/T	104
750-337/025-000	CANopen MSS/T	126
750-812/025-000	Contr. MODBUS / RS 485 / 150 ... 19200 Bd/T	78
750-815/025-000	Contr. MODBUS / RS 485 / 1.2 ... 115.2 kbd/T	78
750-833/025-000	PROFIBUS DP/V1 Controller/T	50
750-841/025-000	ETHERNET Controller 100 MBit/s/T	58
750-880/025-000	ETHERNET Controller/T	52

Digital input modules

Digital output modules

Analog input modules

Analog output modules



Item No.	Description	Page
750-400/025-000	2DI 24V DC 3.0ms	162
750-402/025-000	4DI 24V DC 3.0ms/T	165
750-408/025-000	4DI 24V DC 3.0ms, low-side switching /T	168
750-430/025-000	8DI 24V DC, 3.0ms/T	171
750-504/025-000	4DO 24V DC 0.5A/T	202
750-504/025-800	4DO 24V DC 0.5A/T/R	202
750-530/025-000	8DO 24V DC 0.5A/T	206
750-465/025-000	2AI 0-20mA S.E./T	229
750-454/025-000	2AI 4-20mA Diff./T	228
750-466/025-000	2AI 4-20mA S.E./T	229
750-482/025-000	2AI 4-20mA 12 Bit S.E. HART/T	235
750-455/025-000	4AI 4-20mA S.E./T	232
750-457/025-000	4AI ±10V DC S.E./T	241
750-468/025-000	4AI 0-10V DC S.E./T	239
750-461/025-000	2AI Pt 100/RTD/T	245
750-552/025-000	2AO 0-20mA/T	254
750-554/025-000	2AO 4-20mA/T	254
750-559/025-000	4AO 0-10V DC/T	259

System and specialty modules

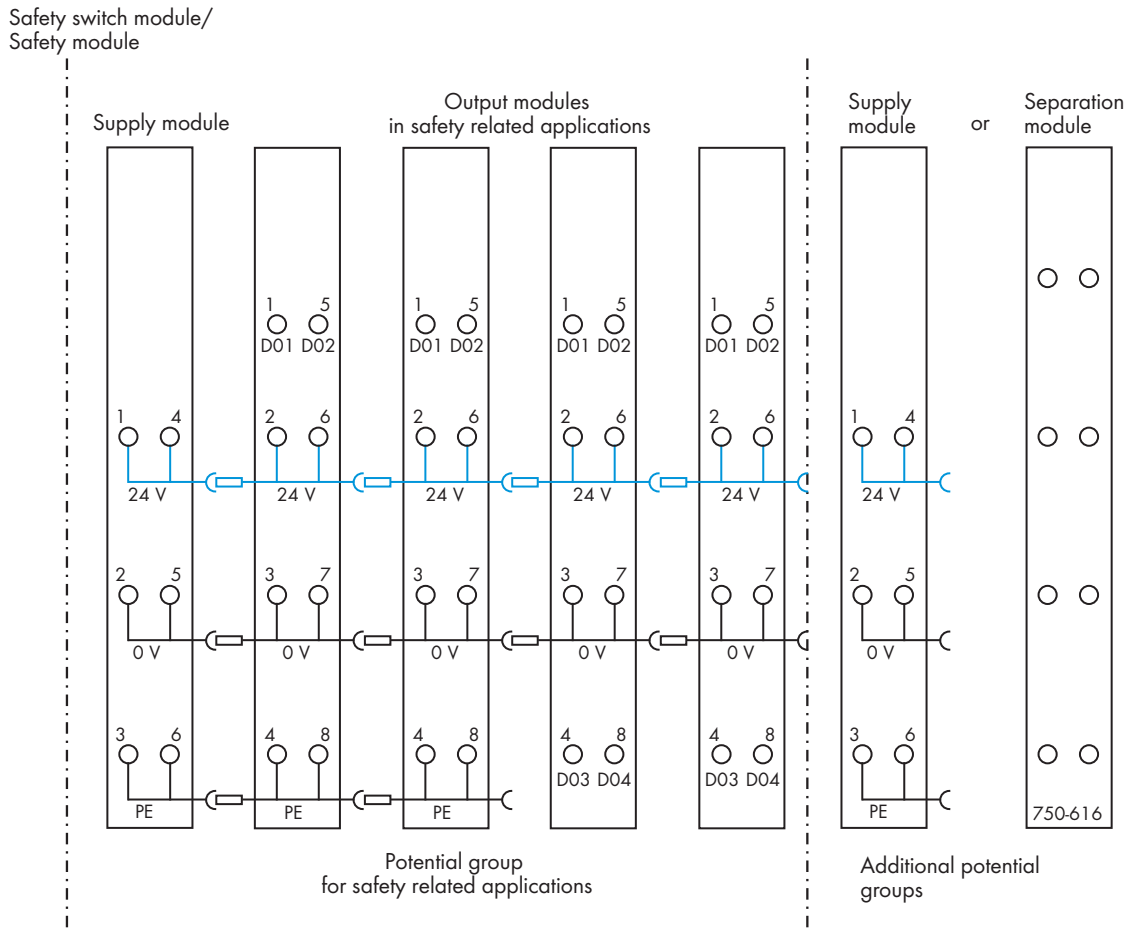


Item No.	Description	Page
750-653/025-000	RS-485 / Configurable/T	272
750-653/025-018	RS-485 / 9600/N/8/1/5 bytes/T	272
750-652/025-000	RS-232 / RS-485 configurable/T	275
750-638/025-000	2-Channel Up/Down Counter, 500 Hz/T	265
750-636/025-000	DC Drive Controller 24V/5A/T	295
750-626/025-000	24V DC Power Supply Filter with Overvoltage (Surge) Protection /T	336
750-626/025-001	24V DC Power Supply Filter with Overvoltage (Surge) Protection /HI /T	336
750-602/025-000	24V DC Power Supply/T	330
750-600/025-000	End Module/T	347

Use of Interference-Free I/O Modules in Safety Applications

To easily perform cost-effective, centralized deactivation of complete actuator groups safely, the actuator's power supply can be switched off using a safety switching device. This can either be performed for each individual actuator or by turning off the power supply to a group of control outputs. Ensure that, in the event of failure, no interferences from other current or power circuits will occur even when the control voltage is switched off so the defined safety function properties (logic and time response) remain unchanged.

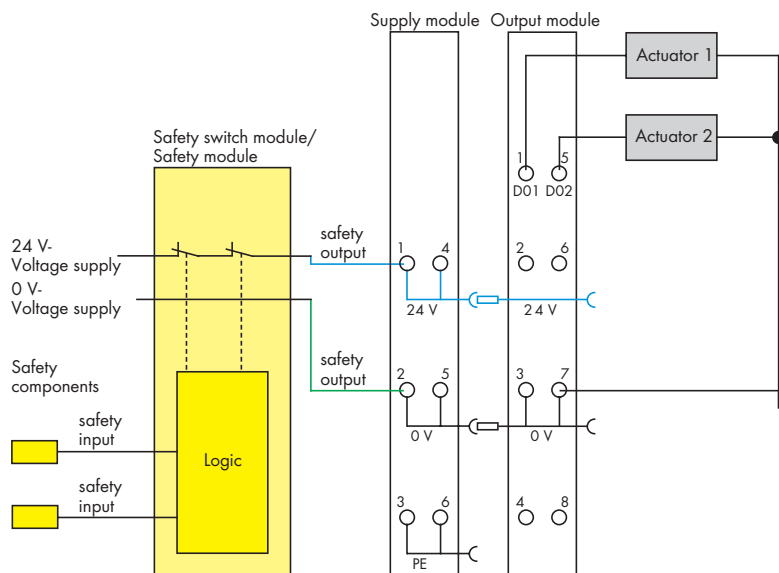
WAGO 75x-yyy/zzz-8zz I/O Modules are designed to provide "interference-free" safety functionality. These modules comply with safety requirements up to Category 4 of DIN EN ISO 13847-1:2007. Safety category and performance level depend solely on the safety components and their wiring. "Interference-free" WAGO I/O modules have no active influence on the safety function, they are not an active part of the safety application and are not a substitute for the safety switching device! When using the components in safety functions, the corresponding notes must be observed in the relevant manual!



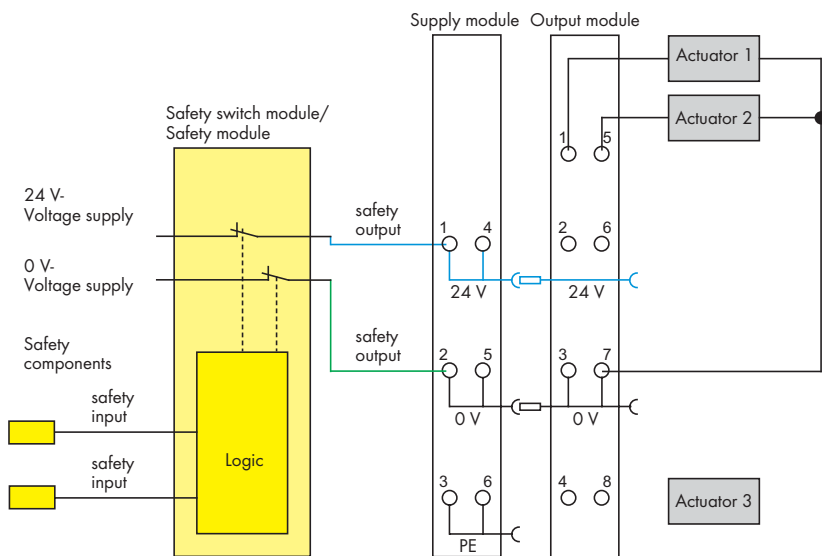
When using the digital output modules in safety-related applications, the modules belonging to a safety switching device shall be combined to form a potential group. The voltage for the potential group shall only be supplied via 750-601/750-602 Supply Modules or 750-626 Filter Module. Either a power supply module or a separation module without power jumper contacts (750-616) must be connected at the end of the potential group.

Item description for interference-free I/O modules	
750-501/000-800	2DO 24V DC 0.5A/Interference-free
750-502/000-800	2DO 24V DC 2.0A/Interference-free
750-504/000-800	4DO 24V DC 0.5A/Interference-free
750-504/025-800	4DO 24V DC 0.5A/T/Interference-free
750-506/000-800	2DO 24V DC 0.5A/Diagnostics/Interference-free
750-508/000-800	2DO 24V DC 2.0A/Diagnostics/Interference-free
750-531/000-800	4DO 24V DC 0.5A/2-conductor/Interference-free

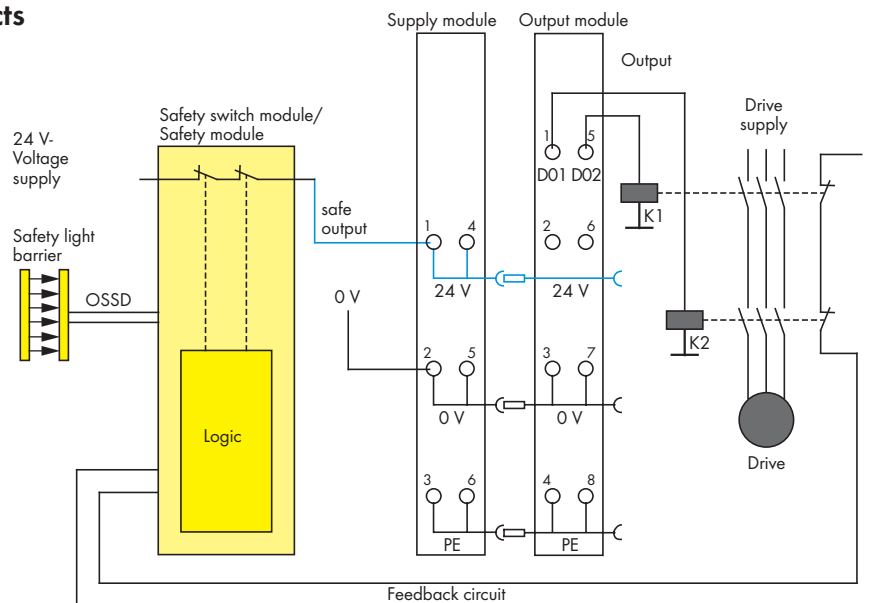
Two-Channel, Single-Pole Power Supply Disconnection



Two-Channel, Double-Pole Power Supply Disconnection



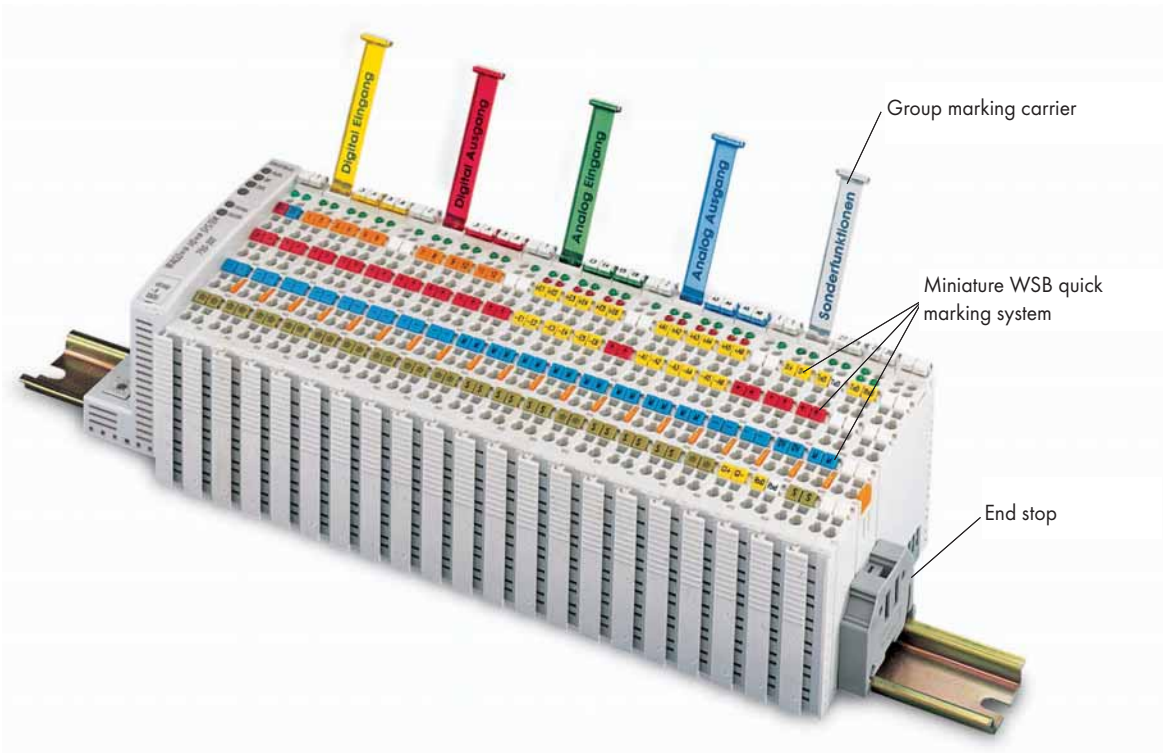
Two-Channel, Single-Pole Disconnection with Feedback from the Contactors' Feedback-Signal Contacts



The examples of circuit configuration show basic connection options for control voltage disconnection. Depending on the additional circuit used (e.g., safe diagnostics via feedback contacts of the contactors), performance levels up to PLe can be achieved.

1 Accessories

Manuals, GSD and EDS Files, Marking Accessories, Mounting Accessories



Description		
Manuals:	for fieldbus coupler/controller and ECO fieldbus coupler: PROFINET, PROFIBUS, ETHERNET, DeviceNet, CANopen, SERCOS III, MODBUS, INTERBUS, CC-Link, CAL, Telecontrol, I/O-LIGHTBUS, KNX IP, BACnet, LON, Peer to Peer;	Available in German and English on the Internet at www.wago.com or as DVD AUTOMATION Tools and Docs 0888-0412/xxxx-0101
	for I/O modules (digital input, digital output, analog input, analog output, specialty modules, system modules, Ex i, PROFI-safe)	
GSD and EDS files:	available for the fieldbus system PROFIBUS, DeviceNet and CANopen	

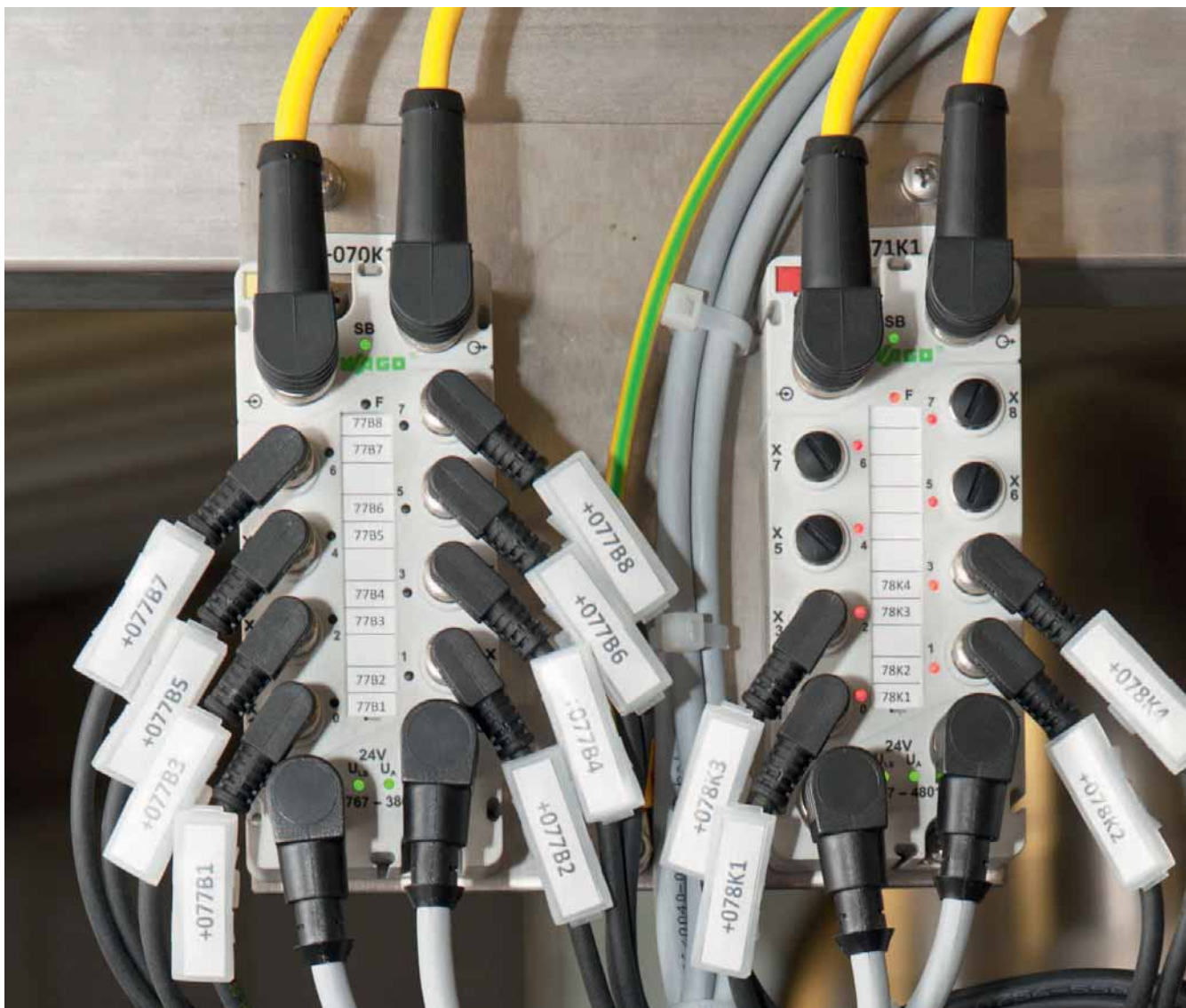


Description		Item No.	Pack. Unit
Marker cards for group marking carrier	sheet DIN A4 (160 cards)	750-100	1 sheet
Miniature WSB Quick marking system			
	plain	248-501	5 cards
	yellow	248-501/000-002	5 cards
	red	248-501/000-005	5 cards
	blue	248-501/000-006	5 cards
	gray	248-501/000-007	5 cards
	orange	248-501/000-012	5 cards
	light green	248-501/000-017	5 cards
	green	248-501/000-023	5 cards
	violet	248-501/000-024	5 cards
Marking software and printer/plotter see section 10			
End stop, for DIN 35 rail, 6 mm / 0.236 in wide		249-116	100 (4x25)
End stop, for DIN 35 rail, 10 mm / 0.394 in wide		249-117	50 (2x25)
Communication cable (used to register or remove the end extension module)		750-920	1
WAGO USB Service Cable		750-923	1
Operating tool, with partially insulated shaft	Type 1, blade (2.5 x 0.4) mm	210-719	1
Operating tool, with partially insulated shaft	Type 2, blade (3.5 x 0.5) mm	210-720	1

Accessories

Miniature WSB Quick Marking System

Description		Item No.	Pack. Unit
Miniature WSB quick marking system,			
Marking per card:			
0 V	100 x blue	247-506/000-006	5 cards
0 V	100 x white	247-506	5 cards
-	100 x blue	247-507/000-006	5 cards
-	100 x white	247-507	5 cards
24 V	100 x red	247-508/000-005	5 cards
24 V	100 x white	247-508	5 cards
+	100 x red	247-509/000-005	5 cards
+	100 x white	247-509	5 cards
⊕	100 x light green	247-552/000-017	5 cards
⊕	100 x white	247-552	5 cards
PE	100 x light green	248-578/000-017	5 cards
PE	100 x white	248-578	5 cards
A0 A1 ... A8 A9	10 x white	247-510	5 cards
E0 E1 ... E8 E9	10 x white	247-511	5 cards
X0 X1 ... X8 X9	10 x white	247-512	5 cards
0 to 09	10 x white	247-513	5 cards
10 to 19	10 x white	247-514	5 cards
20 to 29	10 x white	247-515	5 cards
30 to 39	10 x white	247-516	5 cards
40 to 49	10 x white	247-517	5 cards
50 to 59	10 x white	247-518	5 cards
60 to 69	10 x white	247-519	5 cards
70 to 79	10 x white	247-520	5 cards
80 to 89	10 x white	247-521	5 cards
90 to 99	10 x white	247-522	5 cards
00 to 49	2 x white	247-523	5 cards
50 to 99	2 x white	247-524	5 cards
100 to 149	2 x white	247-525	5 cards
150 to 199	2 x white	247-526	5 cards
200 to 249	2 x white	247-527	5 cards
250 to 299	2 x white	247-528	5 cards
300 to 349	2 x white	247-529	5 cards
350 to 399	2 x white	247-530	5 cards
400 to 449	2 x white	247-531	5 cards
450 to 499	2 x white	247-532	5 cards
500 to 549	2 x white	247-533	5 cards
550 to 599	2 x white	247-534	5 cards
600 to 649	2 x white	247-535	5 cards
650 to 699	2 x white	247-536	5 cards
700 to 749	2 x white	247-537	5 cards
750 to 799	2 x white	247-538	5 cards
800 to 849	2 x white	247-539	5 cards
850 to 899	2 x white	247-540	5 cards
900 to 949	2 x white	247-541	5 cards
950 to 999	2 x white	247-542	5 cards
.0 to .7 / plain	10 x /20 x white	247-543	5 cards
.0 to .7 /-	10 x /20 x white	247-544	5 cards
.0 to .7 /-	10 x /20 x blue	247-544/000-006	5 cards
.0 to .7 /+	10 x /20 x white	247-545	5 cards
.0 to .7 /+	10 x /20 x red	247-545/000-005	5 cards
.0 to .7 /N	10 x /20 x white	247-546	5 cards
.0 to .7 /N	10 x /20 x blue	247-546/000-006	5 cards
.0 to .7 /L	10 x /20 x white	247-547	5 cards



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Fieldbus Coupler DeviceNet	374 – 375
Fieldbus Coupler CANopen	376 – 377



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Programmable Fieldbus Couplers CANopen	378 – 379



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Digital Input Module 24 V DC, 8 Inputs (8 x M8), low-side switching	384 – 385
Digital Input Module 24 V DC, 8 Inputs (4 x M12), low-side switching	386 – 387
Digital Input Module 24 V DC, 8 Inputs (8 x M12)	388 – 389
Digital Output Module 24 V DC, 0.5 A; 8 Outputs (8 x M8)	390 – 391
Digital Output Module 24 V DC, 0.5 A; 8 Outputs (4 x M12)	392 – 393
Digital Output Module 24 V DC, 2.0 A; 8 Outputs (8 x M8)	394 – 395
Digital Output Module 24 V DC, 2.0 A; 8 Outputs (4 x M12)	396 – 397
Digital Output Module 24 V DC, 0.5 A, 8 Outputs (8 x M8), low-side switching	398 – 399
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Digital Output Module 24 V DC, 0.5 A, 8 Outputs (8 x M12)	402 – 403
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Configurable Connectors	434 – 435
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ETHERNET and PROFINET Accessories, Compensation Connector	437
General Accessories	438 – 439
CoDeSys V3	440
WAGOframe	441

WAGO *SPEEDWAY 767*

Modular IP67 I/O System

Where previously discrete wiring was once required, fieldbuses now provide communication between control unit, system and machine.

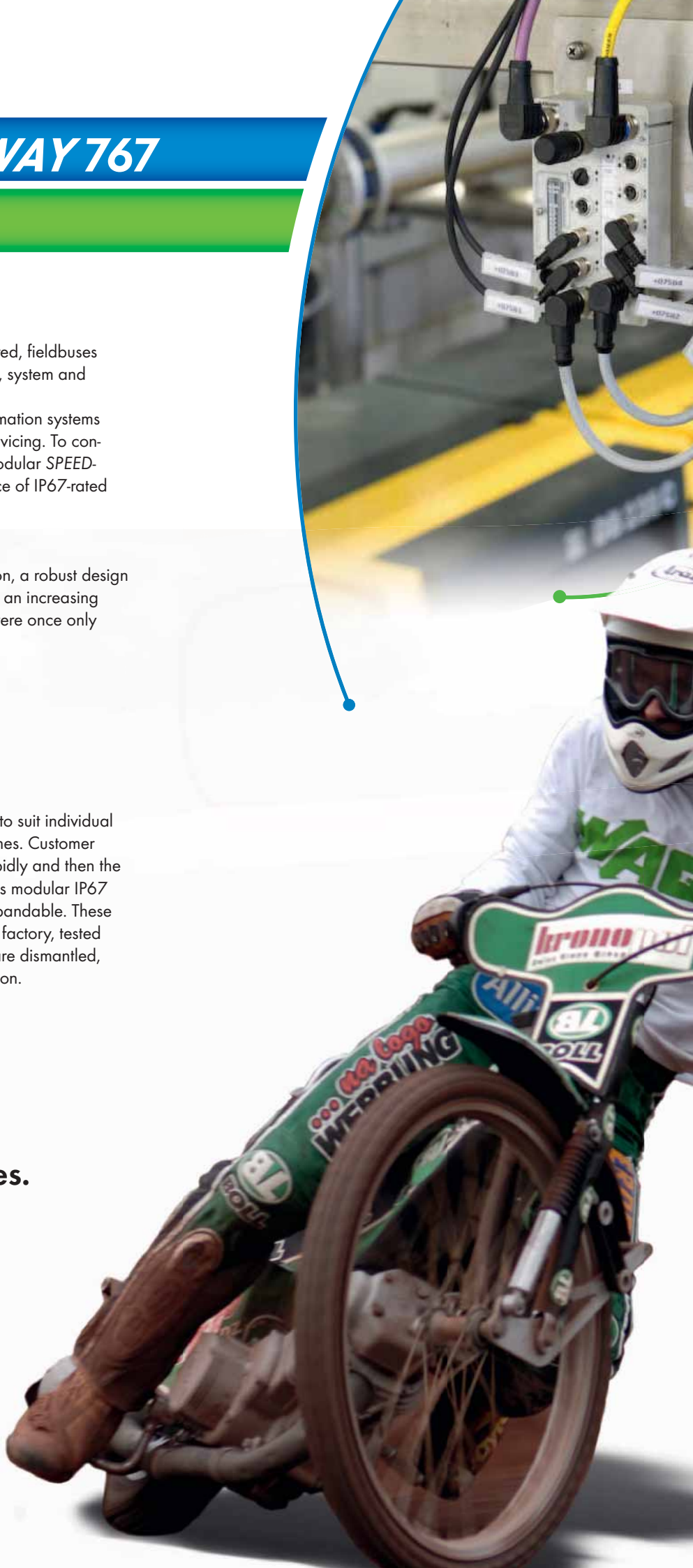
Depending on equipment type, cabinet-free automation systems help minimize costs for planning, start-up, and servicing. To continue leading the way, WAGO has throttled its modular *SPEEDWAY 767* I/O-SYSTEM, boosting the performance of IP67-rated components.

In addition to requiring a high degree of protection, a robust design and standardized connection technology, there is an increasing demand for highly functional IP67 features that were once only reserved for IP20 systems, such as:

- Fast
- Programmable
- Parameterizable
- Diagnostic capable
- Updatable

Typically, machines and systems must be tailored to suit individual requirements while meeting tight customer deadlines. Customer requirements must be incorporated easily and rapidly and then the system must be designed and installed. This makes modular IP67 systems ideal, as they are easily scalable and expandable. These systems allow machines to be first mounted in the factory, tested and then accepted by the customers. Then, they are dismantled, re-installed on customer's site and put into operation.

WAGO-SPEEDWAY 767
offers all of these features.



System Features



Modular Design

- Application-oriented signal acquisition/output



High-Performance Data Transfer

- Fast data exchange



CoDeSys

Programmable via CoDeSys 3

- Integrated signal preprocessing



Wide Variety of Parameterization Options

- Fieldbus dependent/independent



Servicing Convenience

- Update-capable, parameter-saving and flexible



Fieldbus Independence

- Meets specific market/system requirements



Asynchronous and Synchronous Diagnostics

- Fast and precise error analysis



Efficient Power Supply Solution

- Convenient module supply



Temperature Range of -25°C to $+60^{\circ}\text{C}$

- Ideal for extreme environments



Excellent Protection

- EMC, water and dust protection



Screw and DIN-Rail Mount Options

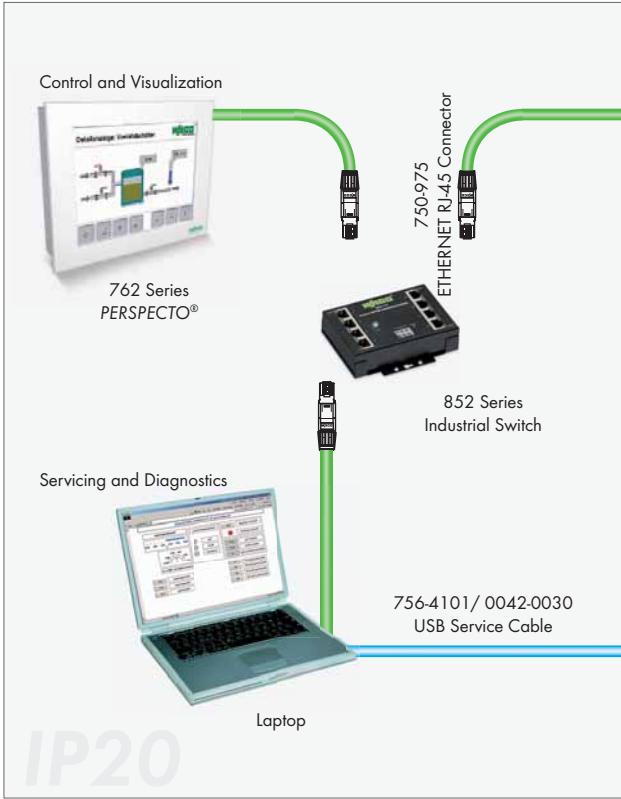
- Flexible module assembly



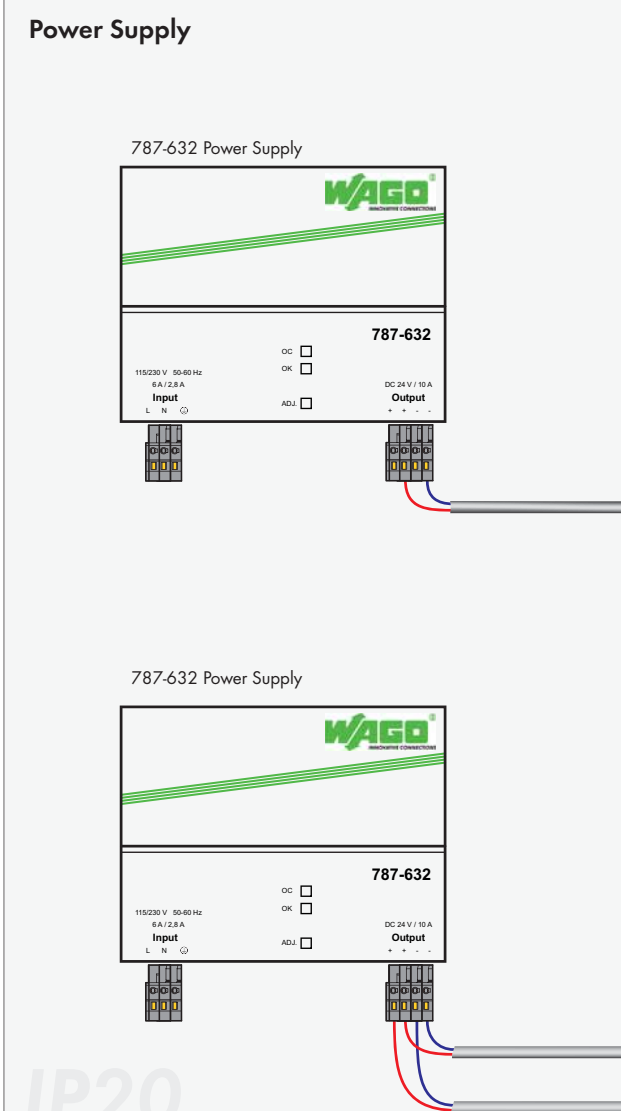
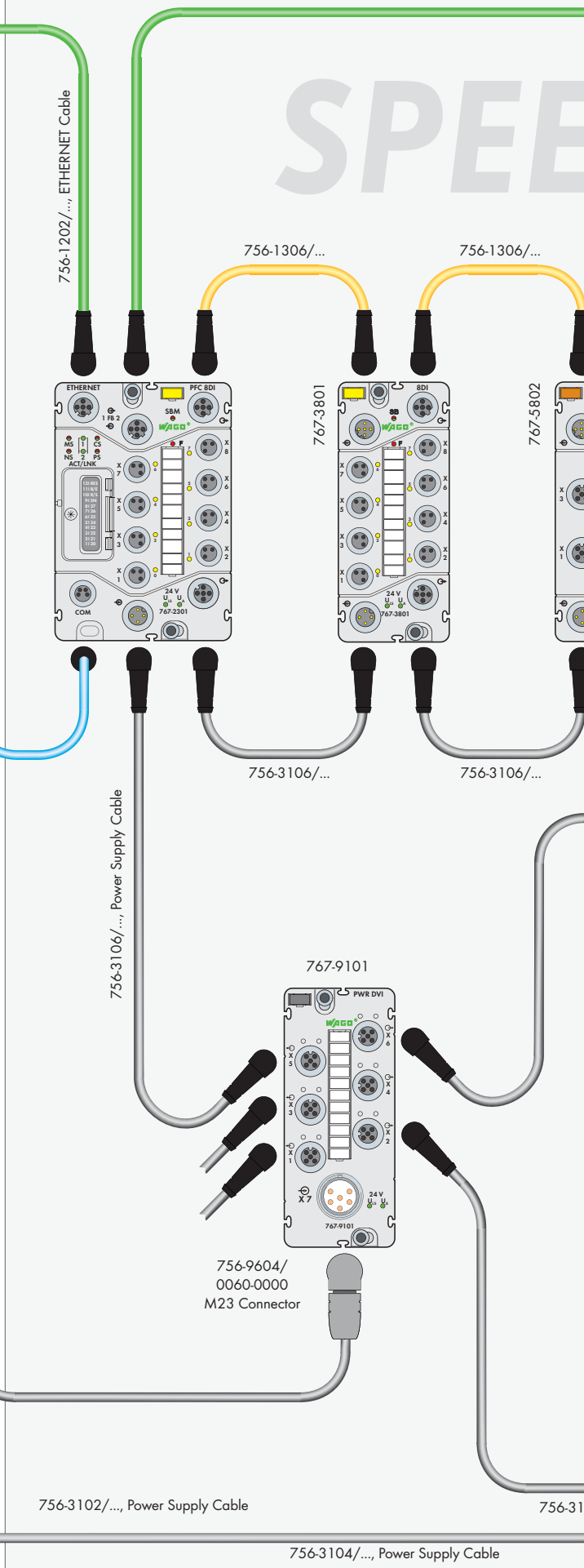
Ergonomic Design

- User-friendly modules design

Topology Example (ETHERNET System incl. Accessories)

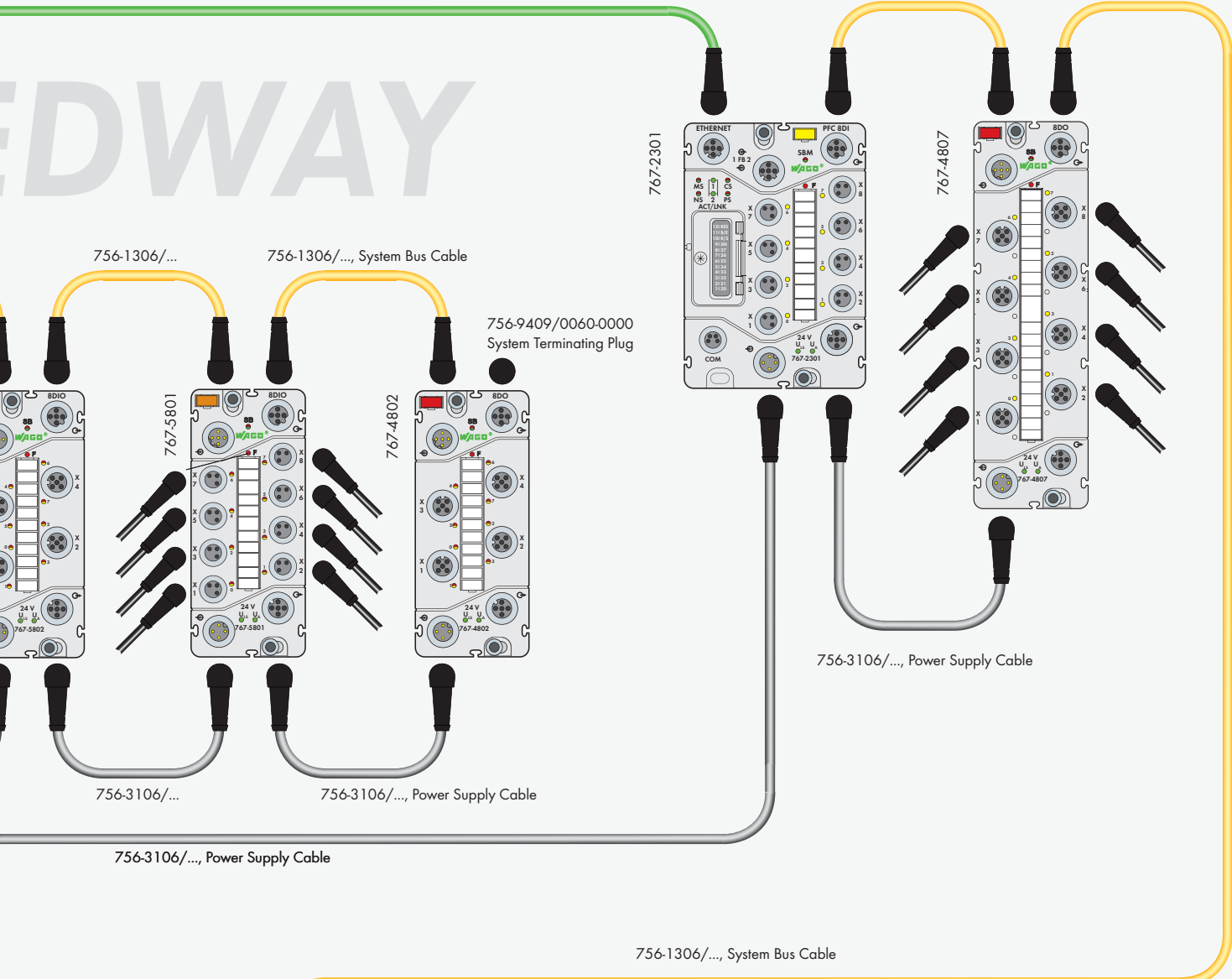


WAGO SPEEDWAY 767



756-1204/..., ETHERNET Cable

756-1306/..., System Bus Cable



756-1306/...

756-1306/..., System Bus Cable

756-9409/0060-0000 System Terminating Plug

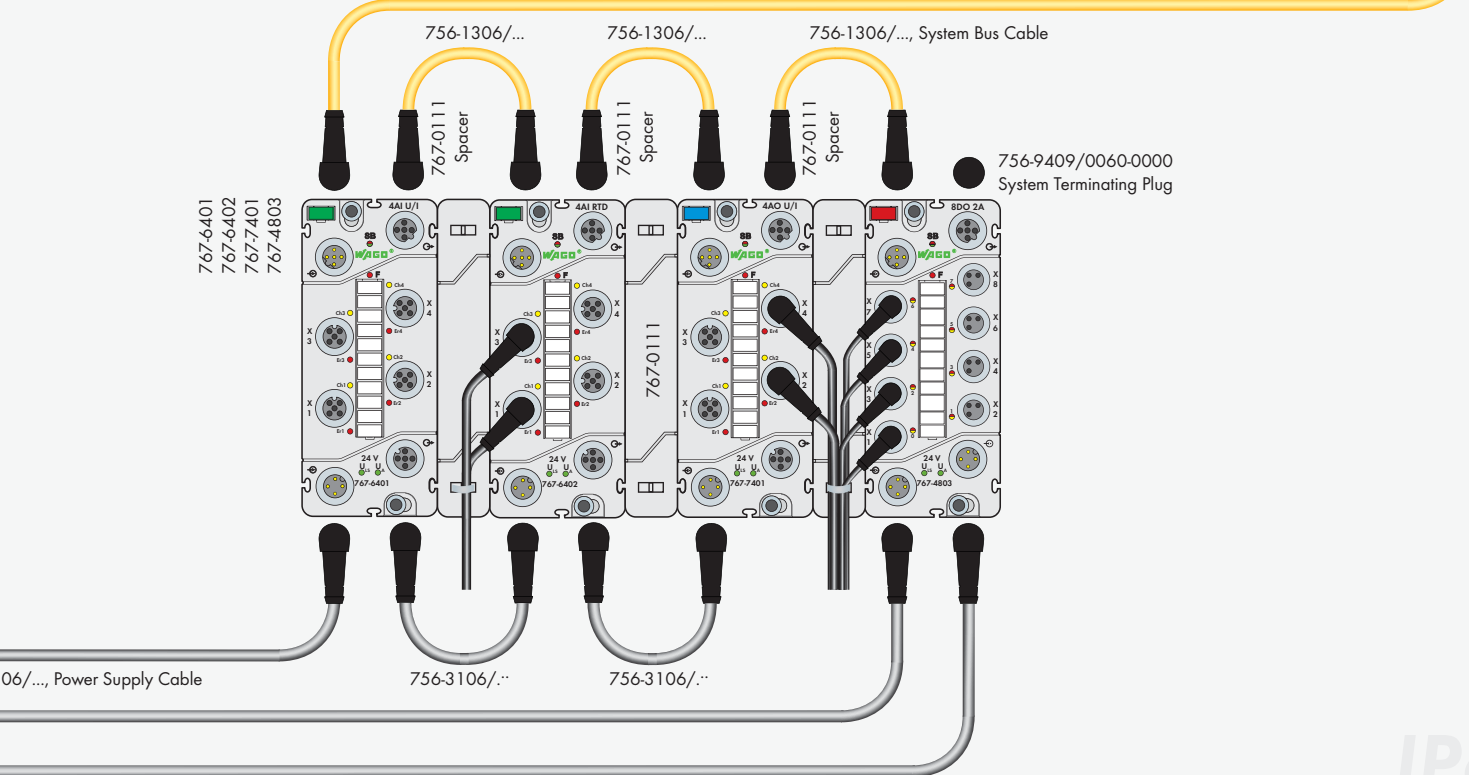
756-3106/...

756-3106/..., Power Supply Cable

756-3106/..., Power Supply Cable

756-3106/..., Power Supply Cable

756-1306/..., System Bus Cable



756-1306/...

756-1306/...

756-1306/..., System Bus Cable

767-0111 Spacer

767-0111 Spacer

767-0111 Spacer

756-9409/0060-0000 System Terminating Plug

767-6401
767-6402
767-7401
767-4803

06/..., Power Supply Cable

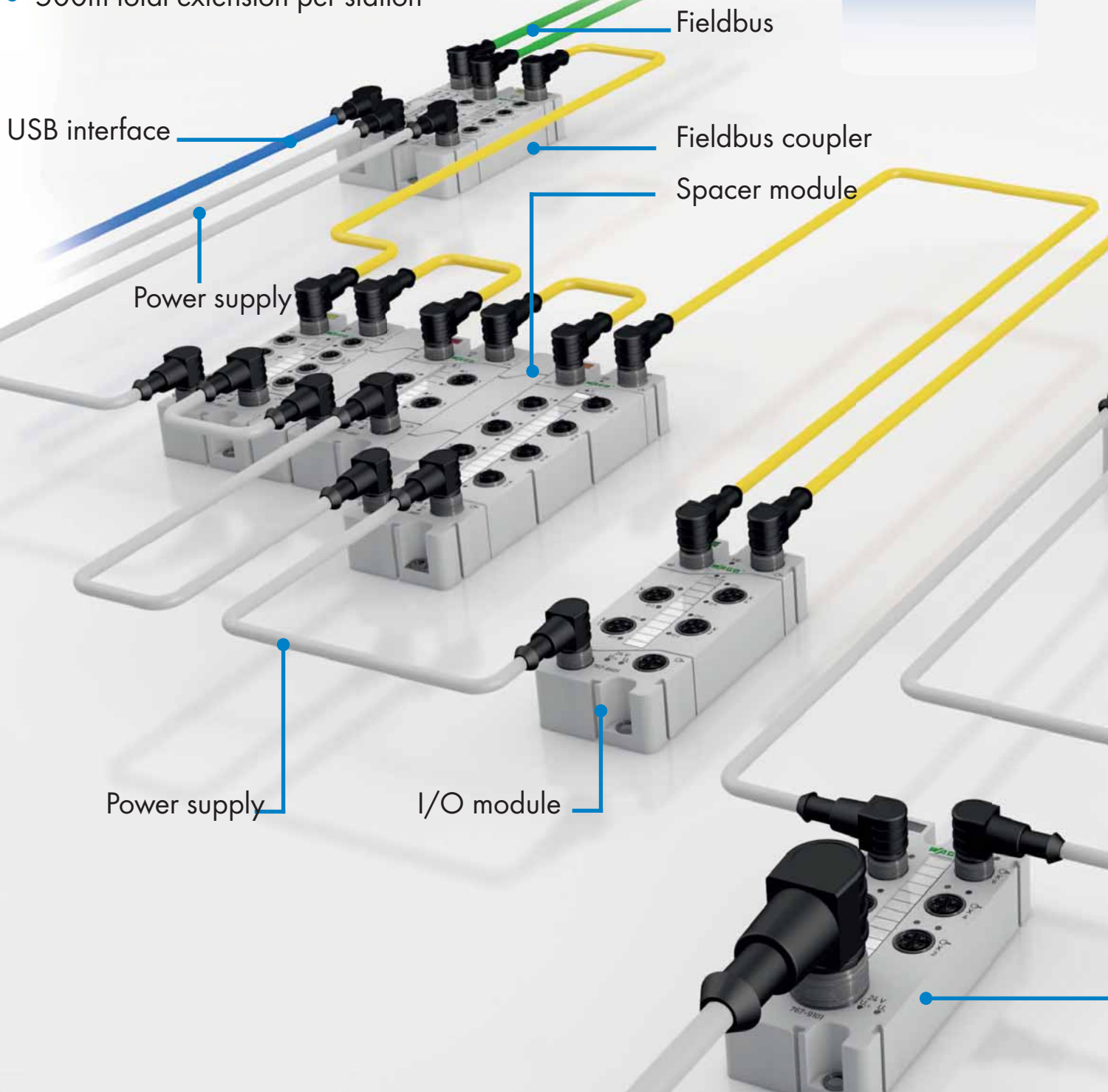
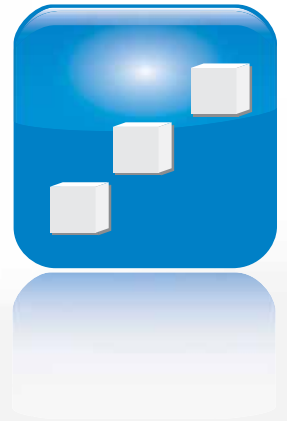
756-3106/...

756-3106/...

Modular Design for Application-Oriented Signal Acquisition/Output

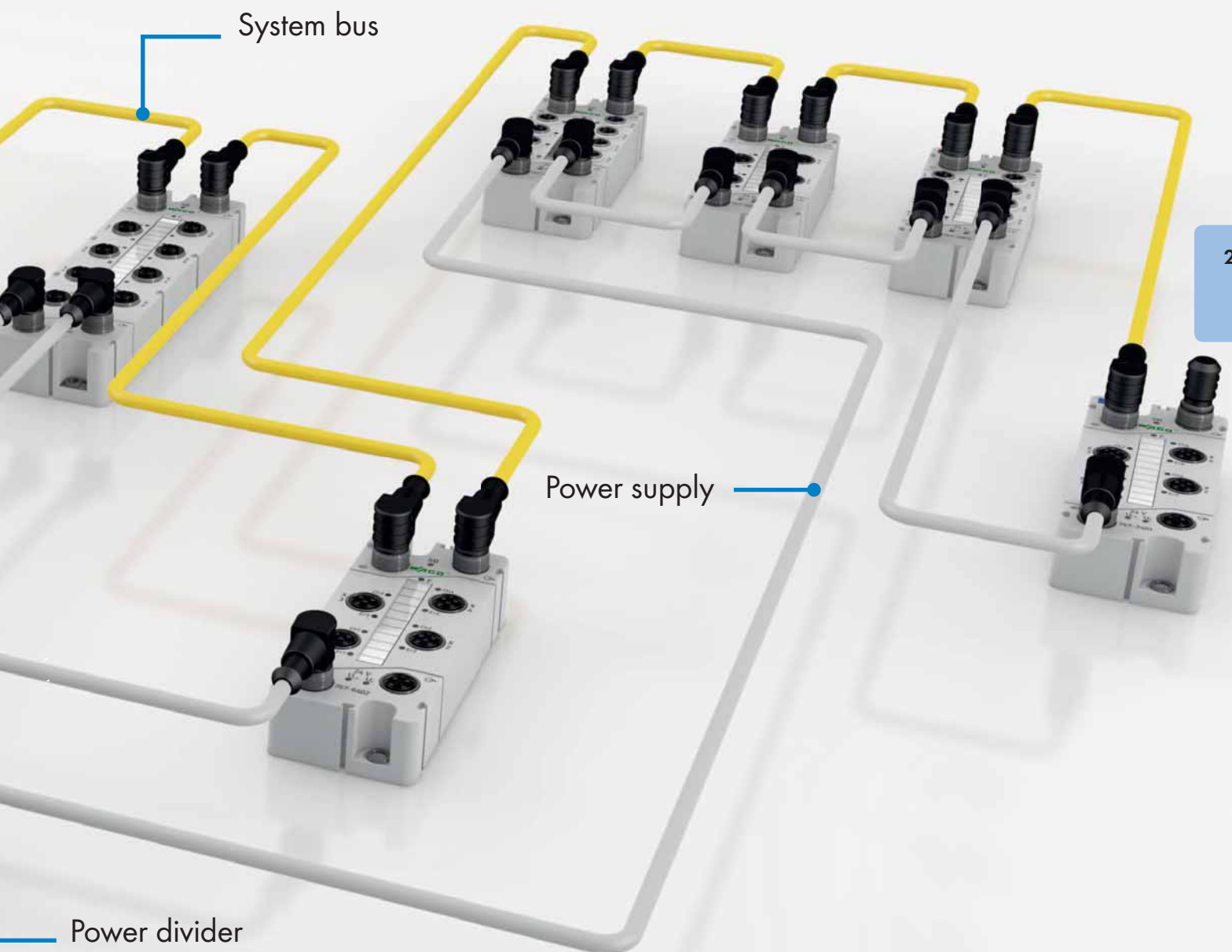
Up to:

- 64 I/O modules per station
- 8 channels per module
- 520 channels per station
- 50m between two modules
- 500m total extension per station



WAGO SPEEDWAY 767 is a modular IP67 I/O system. SPEEDWAY connects to a fieldbus and on to higher-level control systems via (programmable) fieldbus coupler. The fieldbus coupler features digital inputs. An integrated system bus interface allows connection to other I/O modules (e.g., analog, digital). This permits signals to be received and transmitted directly in the field, as based on application requirements. When used in areas of high signal concentration, the modules can be installed in an extreme-

ly compact manner. The I/O modules are connected to each other via data line (system bus) and supply line, allowing additional power supply to be performed via power dividers (e.g., when higher power demand is required or greater distances must be bridged). Depending on the fieldbus type, configuration, programming, servicing and diagnostics can be performed via integrated USB port and fieldbus interface.



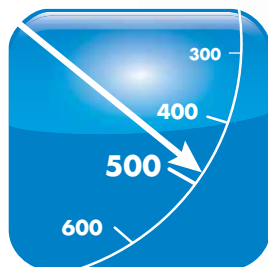
High-Performance Data Transfer

Fast Data Exchange

- Up to 512 digital signals, approx. 700 μ s
- Up to 256 digital signals + 64 analog signals, approx. 700 μ s
- Up to 32 digital signals + 8 analog signals, approx. 400 μ s

Increasing degrees of system automation and the trend toward fast ETHERNET-based controllers or fieldbus protocols call for a high communication bandwidth. Large data volumes are forwarded in short cycles for signal acquisition and transmission within the I/O system.

WAGO SPEEDWAY 767 is designed for this purpose, also offering high synchrony, low jitter/skew and low latency for optimal control of dynamic system processes.



Updatable, Parameter-Saving and Flexible



Updatable


Acquisition and operating costs of a system are steadily increasing. This is why your return on investment is now more important than ever. The *SPEEDWAY 767* System is updatable, providing a valuable contribution to cost optimization.

Both coupler and I/O module firmware can be easily updated. This allows quick access to new functionalities, while errors can be fixed without replacing components.

System parameter handling

All parameterizable *SPEEDWAY* modules feature factory default settings. The modules can be customized to suit specific systems requirements. *SPEEDWAY* provides the freedom of system parameter handling – not every control system permits direct data parameterization, administration and archiving.

This way, parameter settings won't be lost in case of a module exchange. System parameter handling provides archiving of

- Updatable
- System parameter handling
- “Options handling” for 

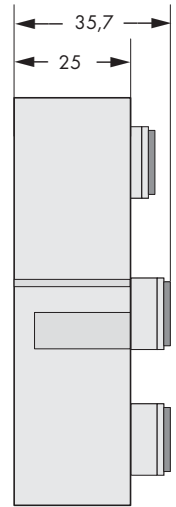
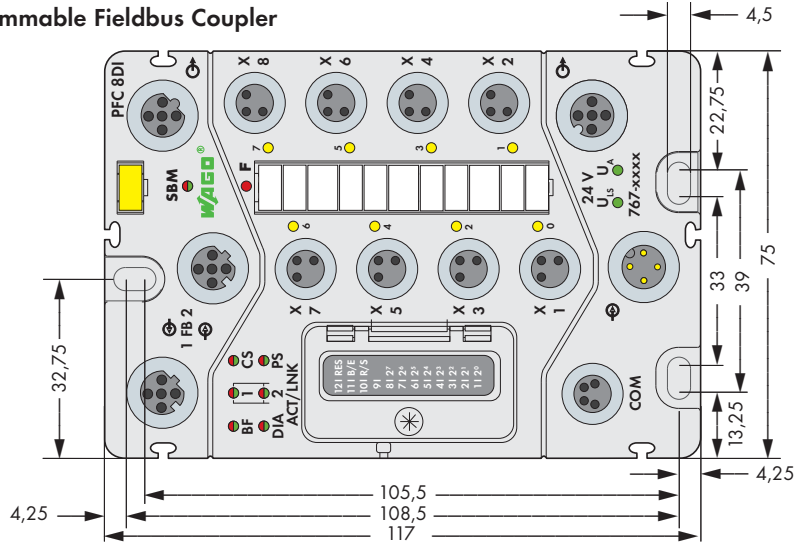
all settings and checks (e.g., when exchanging an I/O module) if the right replacement module is used. In the event of a failure, parameter data can be restored quickly and reliably. Optionally, current hardware, software and firmware versions can be checked.

“Options handling”

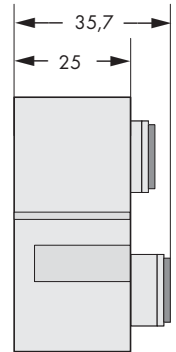
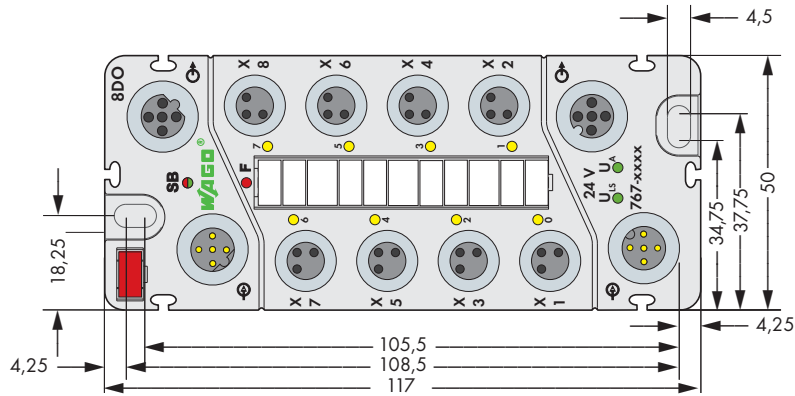
Operation-related, variable I/O station configurations of a system (e.g., tool replacement in processing center) can often only be customized with extensive engineering before a changed production process can start. *With PROFIBUS, SPEEDWAY 767 supports variable system configuration without engineering modification.*

Supporting this, the higher-level control system defines various expansion stages within a maximum engineering configuration. This allows the control system to identify a *SPEEDWAY* station modification (number and type of modules) and run a sub-program without engineering modification.

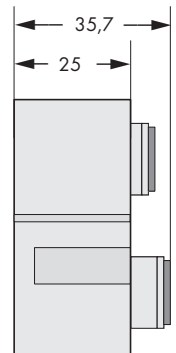
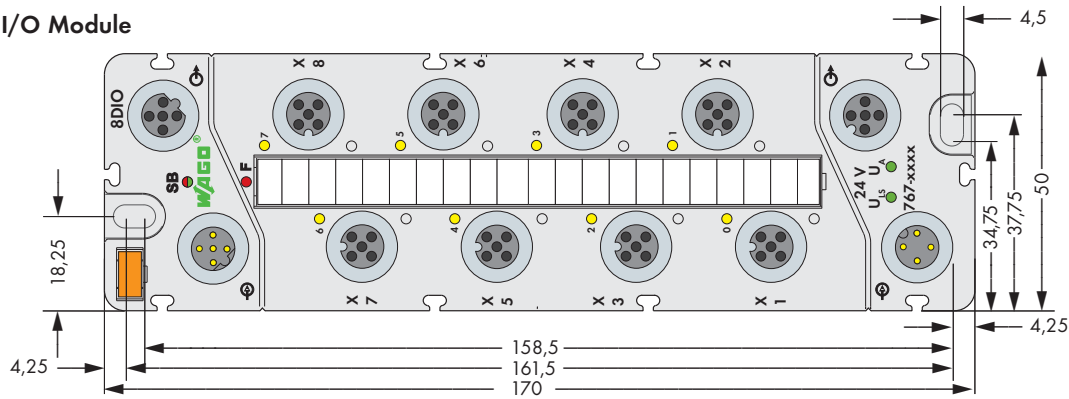
Fieldbus Coupler/Programmable Fieldbus Coupler



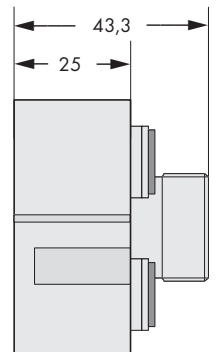
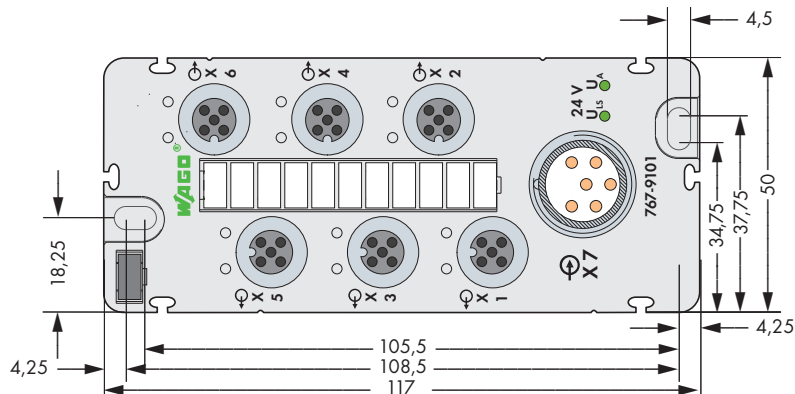
I/O Module



I/O Module



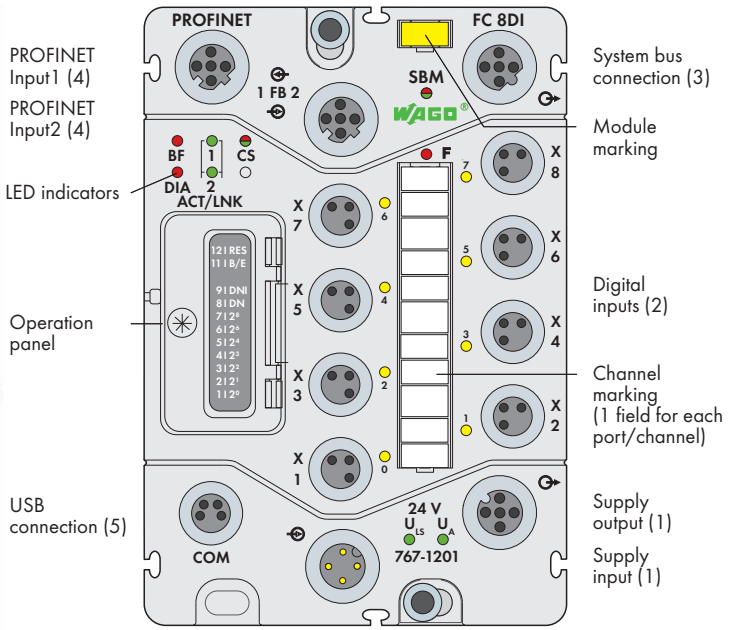
Power Divider



Technical Data		
Materials:		
Enclosures	Polyamide (PA)	light gray (RAL7035)
	Makrolon (address switch cover)	transparent
Flammability acc. to UL94-V0		
halogen-, silicon-free		
Sealing	Polyurethane (PUR)	
	halogen-, silicon-free	
M8+M12 connectors	M8x1 Ms nickel-plated tapped bush	
	M12x1 Ms nickel-plated tapped bush	
	CUSn6 contacts (Ni/Au surface)	
	50 mating cycles	
Viton seal		
Transportation and storage requirements:		
Free fall	≤1 m	EN 61131-2
Temperature	-40 °C ... +85 °C	
Relative humidity	5 ... 95 %	without condensation
Air pressure	1.080 ... 660 hPa	-1.000 ... 3.500 m
Operating conditions:		
Operating temperature	-25 ... +60 °C	any fitting position
Temperature change	3 K/ s	
Air pressure	1.080 ... 795 hPa	-1.000 ... 2.000 m
Pollutant concentration	SO ₂ : <0.5 ppm	
	H ₂ S: <0.1 ppm	
Degree of pollution	3	IEC60664 (IEC61131)
Protection class	III	IEC60536 (VDE0106, Part1)
Degree of protection	IP67 (NEMA 6&6P)	DIN40050 (EN60529)
UV resistance:		
acc. to DIN EN ISO 4892-2B	1000 hrs UV exposure	
Mechanical capacities: acc. to IEC61131-2		
Test specification	Criterion	Limit values
IEC 60068-2-6 Vibration resistance	5 Hz ≤ f < 59 Hz	0.35 mm amplitude (permanent)
	59 Hz ≤ f ≤ 500 Hz	5 g (permanent, +/- 10 %)
	Frequency change	1 octave/minute
	Vibration direction	3 mutually perpendicular axes
	Duration	10 frequency cycles per axis
IEC 60068-2-27 Shock resistance (temporary)	Type of shock	Half sine peak value
	Shock intensity	50 g
	Shock duration	11 ms
	Shock direction	3 mutually perpendicular axes in ± direction
	Number of shocks	3 shocks in each axis
IEC 60068-2-29 Shock resistance (permanent)	Type of shock	Half sine peak value
	Shock intensity	30 g
	Shock duration	6 ms
	Shock direction	3 mutually perpendicular axes
	Number of shocks	1000 shocks in each axis
Electromagnetic compatibility:		
Immunity to interference	acc. to EN 61000-6-2	
Emission of interference	acc. to EN 61000-6-4	

PROFINET IO Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:

PROFINET IO is the ETHERNET-based, manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications.

The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFINET IO. The fieldbus coupler creates a process image of all inputs and outputs depending on the station's module structure and the configuration data transmitted by the IO controller. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSDML file) and transferred by the IO controller. The device signals existing module and channel errors as diagnostic alarms.

Characteristics:

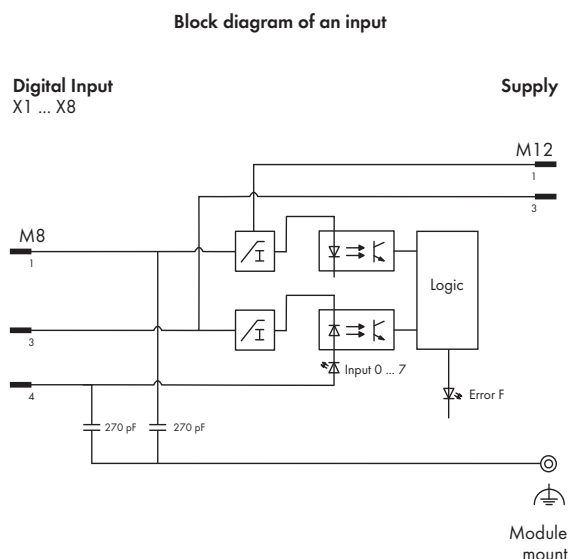
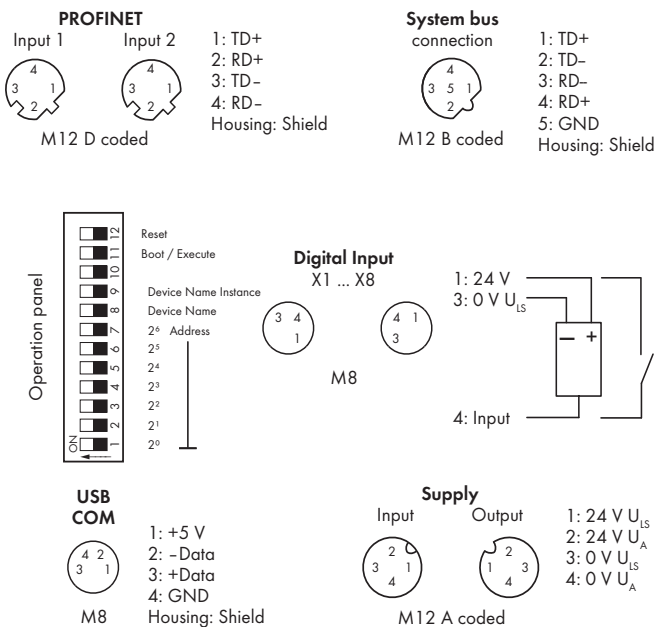
- Conformance Class B
- Shared device support
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- Configuration and system update either via fieldbus or USB interface
- Parametrization via GSDML or FDT/DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

Included:

- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC PROFINET IO 8DI 24V DC	767-1201	1
Accessories		
PROFINET cable + accessories	see pages 432 + 437	
System bus/power supply cable + accessories	see pages 422 ... 427 + 436	
General accessories	see pages 438 ... 439	
GSDML file	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	

Technical Data	
Fieldbus:	
Device type	PROFINET IO device
Connection type (4)	M12 connectors, D coded, 5 poles
Baud rate	100 Mbit/s, full duplex
Transmission medium	100Base-TX, twisted pair copper cables
Station name	Adjustable via operation panel or DCP
Protocols	PROFINET IO, DCP, ILLDP, SNMP
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	Logic and sensor voltage U _{LS} : 24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	Logic and sensor current I _{LS} : typ. 125 mA + sensors (max. 400 mA)
Actuator current I _A	5mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply

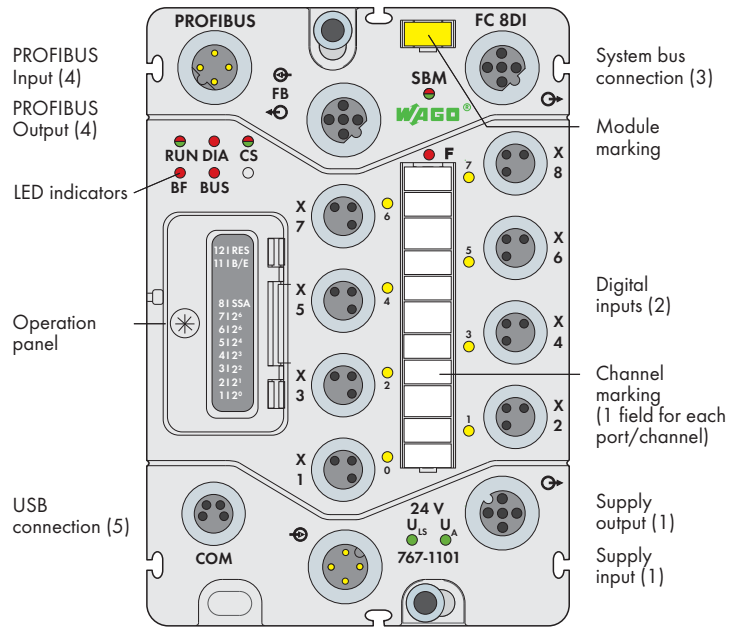


Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFINET	IEC 61158
UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)

Technical Data	
Process image:	
Input process image	512 bytes
Output process image	512 bytes
LED indicators:	
BF : PROFINET IO bus error	LED (red)
DIA : PROFINET IO diagnostics	LED (red)
ACT/LNK 1 : Network connection FB1	LED (green)
ACT/LNK 2 : Network connection FB2	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	377.1 g

2 PROFIBUS DP-V1 Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:

PROFIBUS DP is the manufacturer-independent and open fieldbus standard from PROFIBUS & PROFINET International (PI). This standard offers solutions for manufacturing/process automation and safety applications in addition to covering an entire range of needs from drive technology to synchronous motion control applications. The fieldbus coupler links the WAGO SPEEDWAY 767 I/O modules to PROFIBUS DP. The coupler creates a process image of all inputs and outputs depending on the station's module structure and the configuration data transmitted by the DP master. In addition, the coupler provides the connected I/O modules with the parametrization data provided by the device description (GSD file) and transferred by the DP master, if required. In DP-V0 operation mode, the device provides device, identification and channel related diagnostics as well as module status. In DP-V1 operation mode, status messages and optional diagnostic alarms are provided instead of identification and channel based diagnostics.

Characteristics:

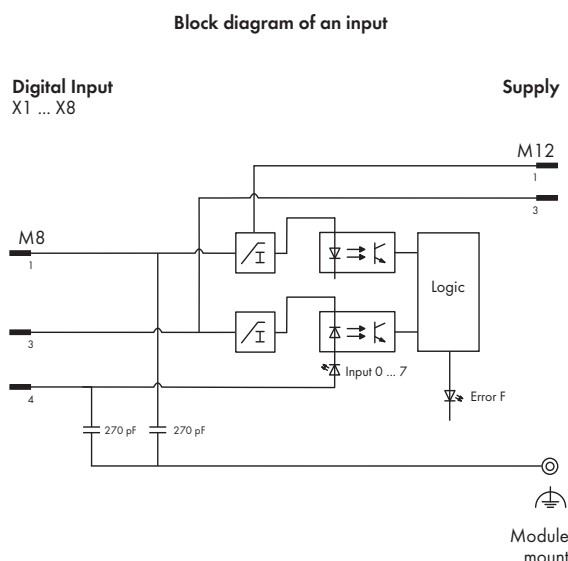
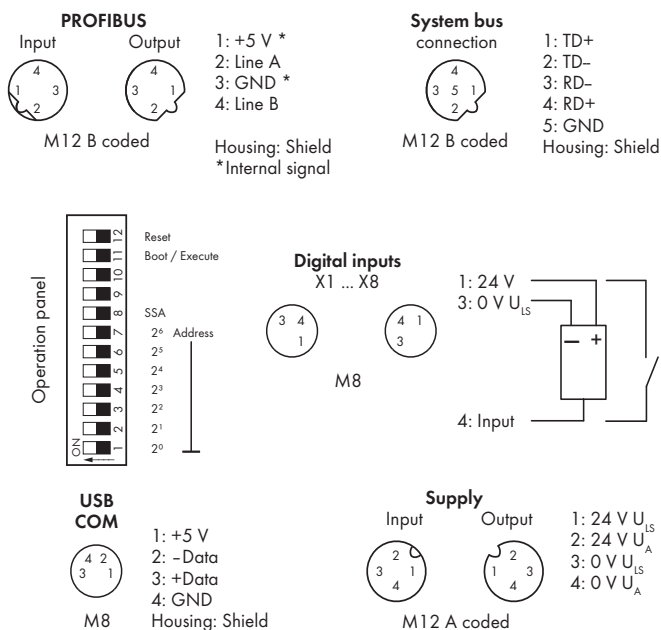
- 8 digital 24VDC inputs included
- Modular and extendable up to 63 I/O modules (via system bus connection)
- USB Interface for servicing purposes
- Parametrization via GSD or FDT/ DTM (incl. diagnostics and simulation)
- Enclosed operation panel (operating mode and address switch)

Included:

- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

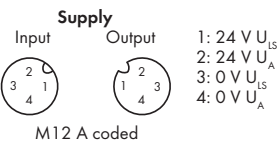
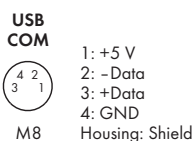
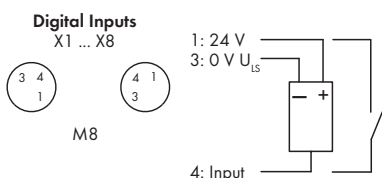
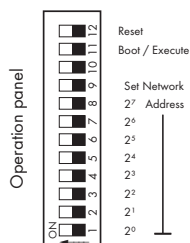
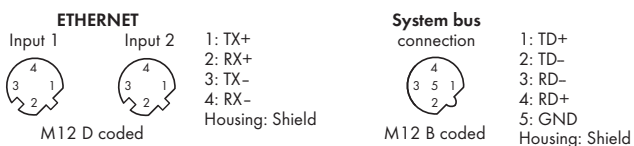
Description	Item No.	Pack. Unit
FC PROFIBUS DP 8DI 24V DC	767-1101	1
Accessories		
PROFIBUS cable + accessories	see pages 428 ... 429	
System bus/power supply cable + accessories	see pages 422 ... 427 + 436	
General accessories	see pages 438 ... 439	
GSD files	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	

Technical Data	
Fieldbus:	
Device type	PROFIBUS DP-V1 slave
Connection type (4)	M12 connectors, B coded, 4 poles
Baud rate	9.6 kBd ... 12 MBd (automatic recognition)
Transmission medium	RS-485 / 2-core copper cable acc. to IEC 61158 and EN50170
Station address	0 - 125 (adjustable via operation panel or PROFIBUS)
Protocols	PROFIBUS DP
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{IS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{IS}	typ. 110 mA + sensors (max. 400 mA)
Actuator current I _A	5mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply

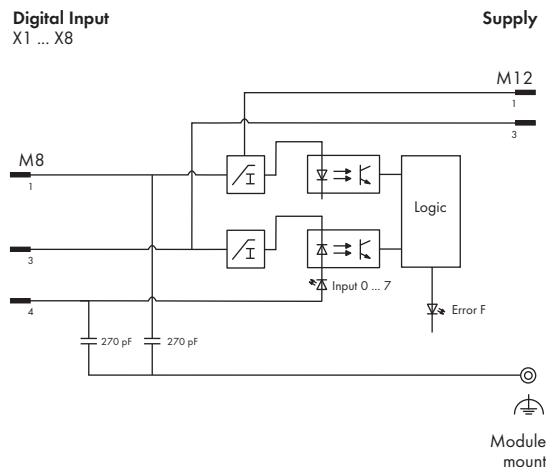


Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	63
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
PROFIBUS	IEC 61158
UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)

Technical Data	
Process image:	
Input process image	244 bytes
Output process image	244 bytes
LED indicators:	
RUN : Fieldbus coupler initialization	LED (green/red)
BF : PROFIBUS DP bus error	LED (red)
DIA : PROFIBUS DP diagnostics	LED (red)
BUS : PROFIBUS DP projecting error	LED (red)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	405 g



Block diagram of an input



Technical Data

Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)

Technical Data

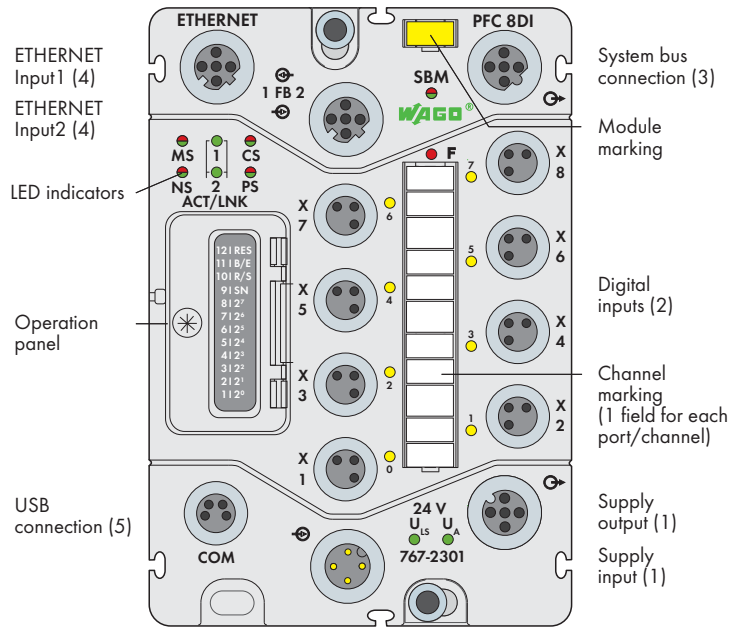
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS : ETHERNET module status	LED (green/red)
NS : ETHERNET network status	LED (green/red)
ACT/LNK 1 : ETHERNET data exchange/network connection	LED (green)
ACT/LNK 2 : ETHERNET data exchange/network connection	LED (green)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	400 g

ETHERNET Programmable Fieldbus Coupler (PLC)

incl. 8 digital inputs (8 x M8)



Short description:

In addition to MODBUS/TCP, the ETHERNET/IP protocol has proven itself as an industrial communication standard over ETHERNET. The fieldbus coupler links the WAGO SPEEDWAY 767 system to ETHERNET. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The application protocols MODBUS/TCP and ETHERNET/IP are available for process data and the protocol services Http, BootP, DHCP, DNS, SNTP, FTP and SNMP (on request) for the system administration and diagnostics. In addition, this fieldbus coupler is programmable to IEC61131-3 and can thus relieve the central control system and fieldbus, reduce response times, define the operating mode in the event of failure (fieldbus failure) as well as divide complex applications into independent, functional units.

Characteristics:

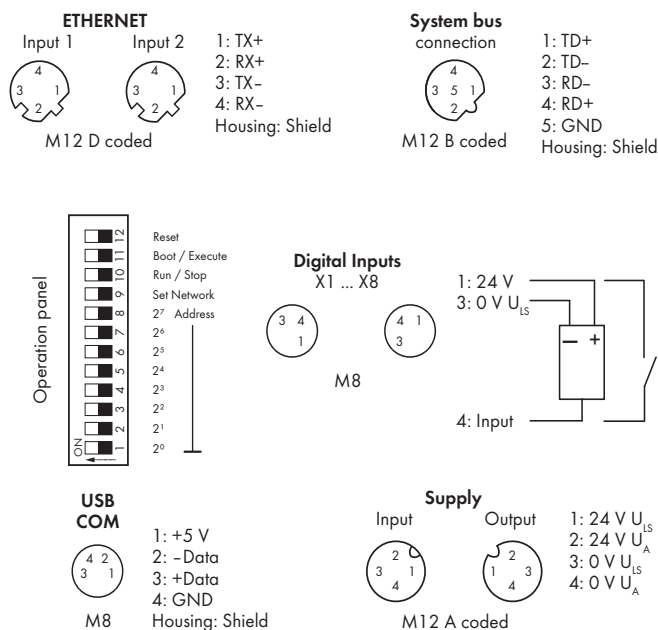
- Integrated switch
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- Programming, FDT/DTM configuration and system update either via fieldbus or USB interface
- Programmable to IEC61131-3
- Enclosed operation panel (operating mode and address switch)

Included:

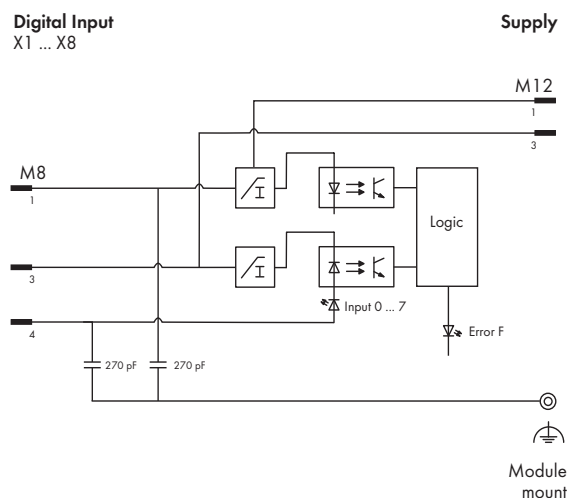
- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
PFC ETHERNET 8DI 24V DC	767-2301	1
Accessories		
ETHERNET cable + accessories	see pages 432 + 437	
System bus/power supply cable + accessories	see pages 422 ... 427 + 436	
General accessories	see pages 438 ... 439	
DTM (Device Type Manager)	Download: www.wago.com	
CoDeSys 3	759-915 (see page 440)	

Technical Data	
Fieldbus:	
Device type	ETHERNET device
Connection type (4)	M12 connectors, D coded, 5 poles
Baud rate	10/ 100 Mbits
Transmission medium	Copper cable
Station address	1-255 (last byte of IP address adjustable via operation panel)
Protocols	MODBUS/TCP (UDP), EtherNet/IP
Additional data	see manual
Programming:	
CoDeSys 3	Development system for programming and visualization according to IEC 61131-3
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{LS}	typ. 125 mA + sensors (max. 400 mA)
Actuator current I _A	5mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply



Block diagram of an input

**Technical Data****Digital inputs:**

Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

System bus:

Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded

Isolation:

Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each

Service:

Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles

Standards and approvals:

UL 508	
Conformity marking	CE

Configurable functions:

Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)
------------------------------	--

Technical Data**Process image:**

Input process image	2048 bytes
Output process image	2048 bytes
Input variables	512 bytes
Output variables	512 bytes
Program memory	1024 Kbytes
Data memory	256 Kbytes
Remanent memory	32 Kbytes (20 Kbytes retain, 12 Kbytes flag)

LED indicators:

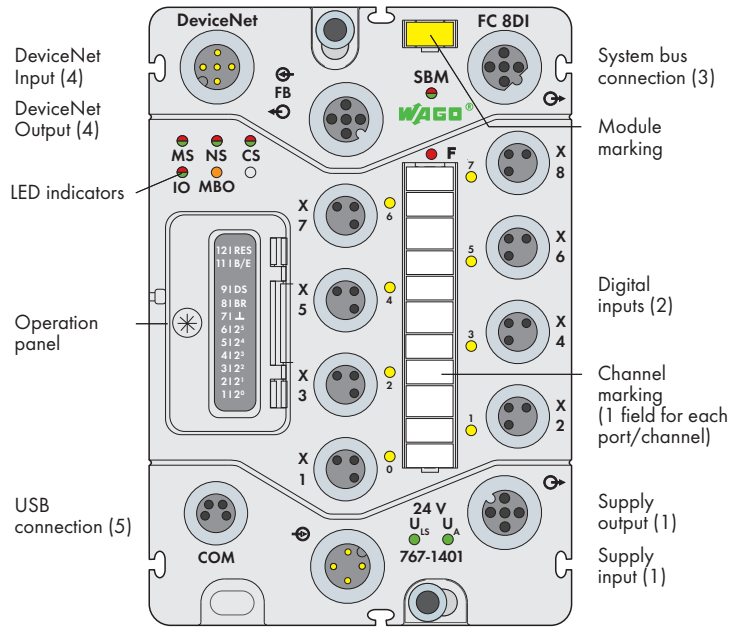
MS : ETHERNET module status	LED (green/red)
NS : ETHERNET network status	LED (green/red)
ACT/LNK 1 : ETHERNET data exchange/network connection	LED (green)
ACT/LNK 2 : ETHERNET data exchange/network connection	LED (green)
CS : Fieldbus coupler status	LED (green/red)
PS: Program status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	330 g

DeviceNet Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:

DeviceNet is a manufacturer-independent, open CAN-based fieldbus protocol typically used for networking sensors and actuators with higher-level automation devices. It operates in both master-slave and multi-master modes, while active participants communicate via a point-to-point or a multipoint connection. As a slave, the fieldbus coupler links the WAGO SPEEDWAY 767 system to DeviceNet. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs.

Characteristics:

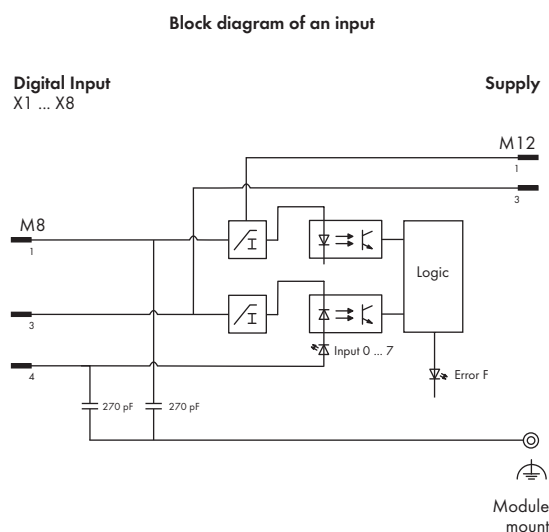
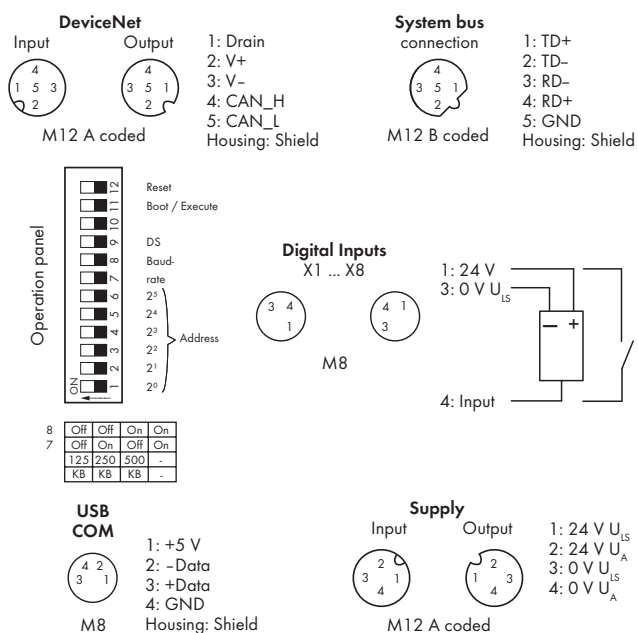
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes (FDT/DTM configuration and system update)
- Enclosed operation panel (operating mode and address switch)

Included:

- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC DeviceNet 8DI 24V DC	767-1401	1
Accessories		
DeviceNet cable + accessories	see pages 430 ... 431	
System bus/power supply cable + accessories	see pages 422 ... 427 + 436	
General accessories	see pages 438 ... 439	
EDS files	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	

Technical Data	
Fieldbus:	
Device type	DevieNet Slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 250/ 500 Kbit/s
Transmission medium	Copper cable
Station address	0-63 (adjustable via operation panel)
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{IS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{IS}	typ. 80 mA + sensors (max. 400 mA)
Actuator current I _A	5mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply

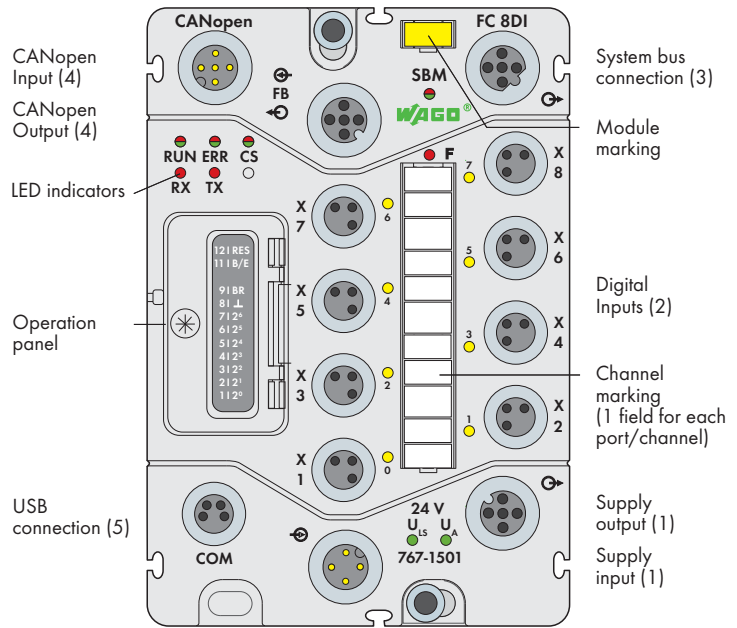


Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
DeviceNet	IEC62026-3, EN50325-2
UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)

Technical Data	
Process image:	
Input process image	2048 bytes
Output process image	2048 bytes
LED indicators:	
MS: DeviceNet module status	LED (green/red)
IO: IO status	LED (green/red)
NS: DeviceNet network status	LED (green/red)
MBO: MAC-ID/Baud rate overwritten	
	LED (orange)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	388 g

CANopen Fieldbus Coupler

incl. 8 digital inputs (8 x M8)



Short description:

CANopen is an industrial fieldbus protocol based on the Controller Area Network (CAN) system. CANopen links the WAGO SPEEDWAY 767 system as a slave to the master. Data is transmitted using PDOs and SDOs. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The process image is divided into two data zones containing: data received and data to be sent. Process data is available to the bus participants via object directory.

Characteristics:

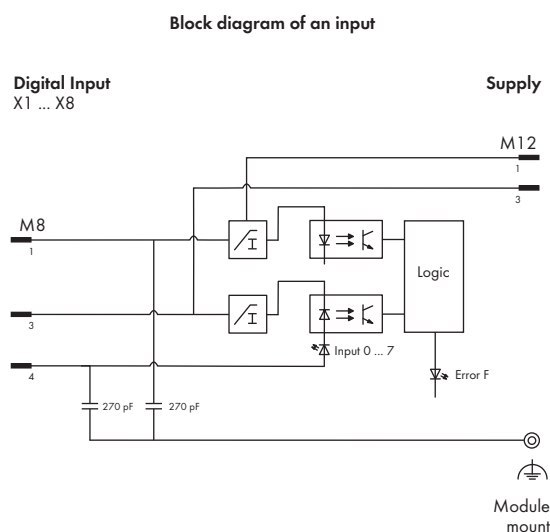
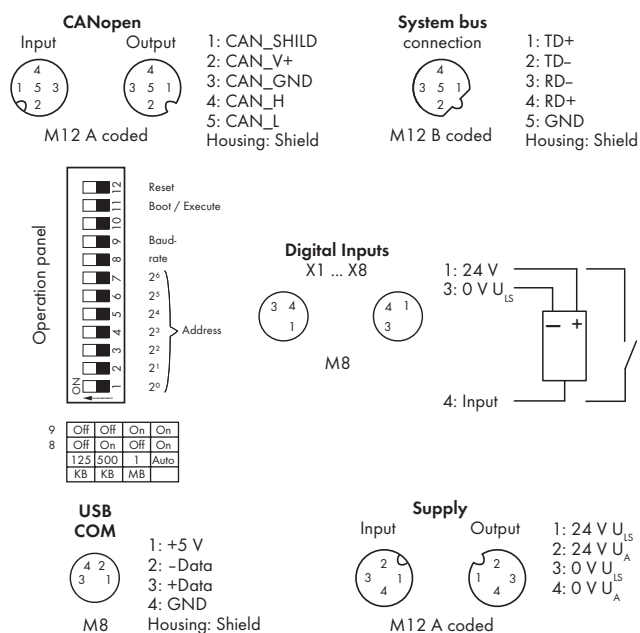
- 8 digital 24VDC inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes (FDT/DTM configuration and system update)
- Enclosed operation panel (operating mode and address switch)

Included:

- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
FC CANopen 8DI 24V DC	767-1501	1
Accessories		
CANopen cable + accessories	see pages 430 ... 431	
System bus/power supply cable + accessories	see pages 422 ... 427 + 436	
General accessories	see pages 438 ... 439	
EDS files	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	

Technical Data	
Fieldbus:	
Device type	CANopen slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 500/ 1000 Kbits Auto-baudrate detection
Transmission medium	Copper cable
Station address	1-127 (adjustable via operation panel)
Additional data	see manual
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{LS}	typ. 85 mA + sensors (max. 400 mA)
Actuator current I _A	5mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply



Technical Data

Digital inputs:

Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

System bus:

Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded

Isolation:

Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each

Service:

Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles

Standards and approvals:

UL 508	
Conformity marking	CE

Configurable functions:

Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)
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Technical Data

Process image:

Input process image	512 bytes
Output process image	512 bytes

LED indicators:

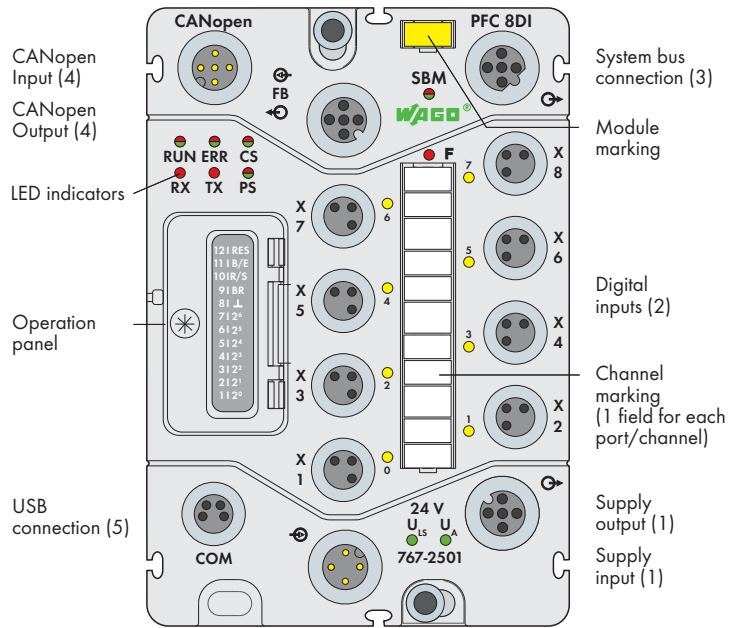
RUN: CANopen status	LED (green/red)
RX: CANopen receiver buffer	LED (red)
ERR: CANopen bus error	LED (green/red)
TX: CANopen transmit buffer	LED (red)
CS : Fieldbus coupler status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	377 g

CANopen Programmable Fieldbus Coupler (PLC)

incl. 8 digital inputs (8 x M8)



Short description:

CANopen is an industrial fieldbus protocol based on the Controller Area Network (CAN) system. CANopen links the WAGO SPEEDWAY 767 system as a slave to the master. Data is transmitted using PDOs and SDOs. When initializing, the buscoupler determines the station's module structure and creates a process image of all inputs and outputs. The process image is divided into two data zones containing: data received and data to be sent. Process data is available to the bus participants via object directory. In addition, this fieldbus coupler is programmable to IEC61131-3 and can thus relieve the central control system and fieldbus, reduce response times, define the operating mode in the event of failure (fieldbus failure) as well as divide complex applications into independent, functional units.

Characteristics:

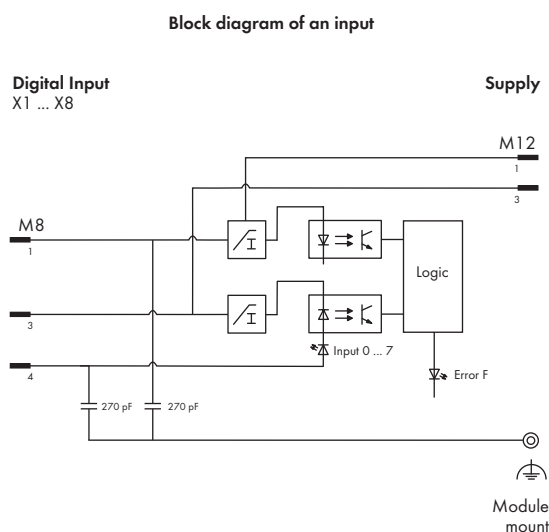
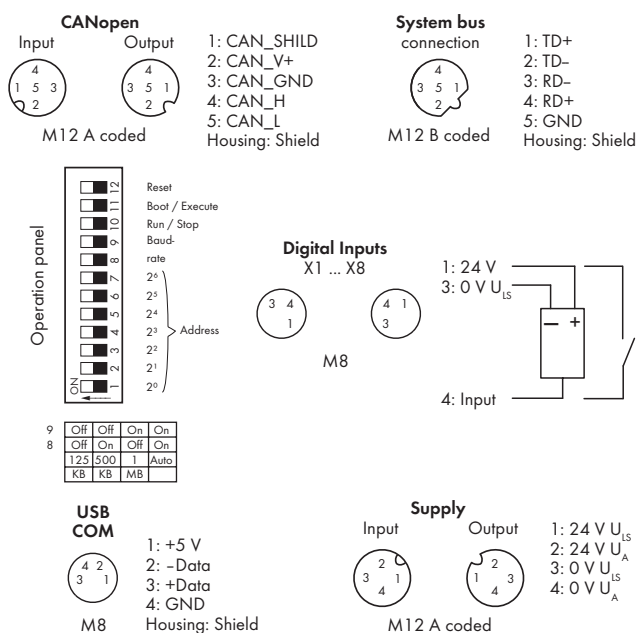
- 8 digital DC24V inputs included
- Modular and extendable up to 64 I/O modules (via system bus connection)
- USB interface for servicing purposes (FDT/DTM configuration and system update)
- Programmable to IEC61131-3
- Enclosed operation panel (operating mode and address switch)

Included:

- Module WMB marker card, yellow (1 pcs)
- Channel marker strips (1 pcs)
- M8 protective caps (2 pcs)

Description	Item No.	Pack. Unit
PFC CANopen 8DI 24V DC	767-2501	1
Accessories		
CANopen cable + accessories	see pages 430 ... 431	
System bus/power supply cable + accessories	see pages 422 ... 427 + 436	
General accessories	see pages 438 ... 439	
EDS files	Download: www.wago.com	
DTM (Device Type Manager)	Download: www.wago.com	
CoDeSys 3	759-915 (see page 440)	

Technical Data	
Fieldbus:	
Device type	CANopen slave
Connection type (4)	M12 connectors, A coded, 5 poles
Baud rate	125/ 500/ 1000 Kbits
Transmission medium	Copper cable
Station address	1-127 (adjustable via operation panel)
Additional data	see manual
Programming:	
CoDeSys 3	Development system for programming and visualization according to IEC 61131-3
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{IS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{IS}	typ. 85 mA + sensors (max. 400 mA)
Actuator current I _A	5mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply

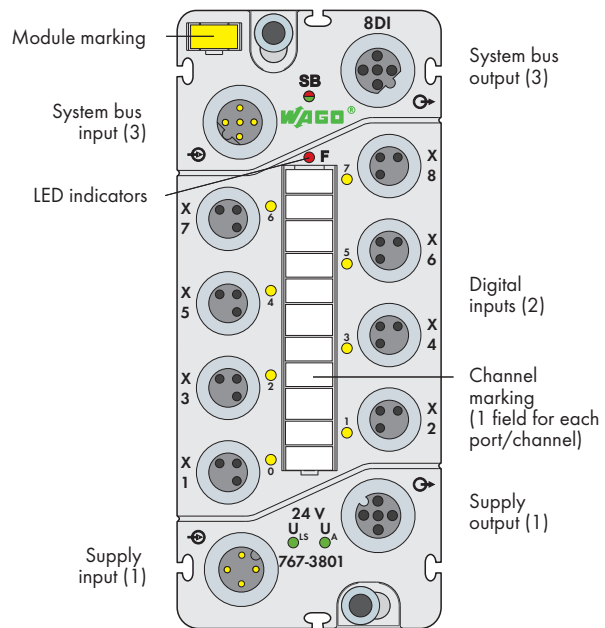


Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- to 3-wire
Input filter	parametrizable
Input characteristic	Type 1, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+15 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	2.8 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
System bus:	
Number of expendable modules	64
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	No
U _{IS} , U _A , system bus, fieldbus	500 V DC each
Service:	
Type	USB standard 1.1
Connection type (5)	M8 connectors, 4 poles
Standards and approvals:	
UL 508	
Conformity marking	CE
Configurable functions:	
Fieldbus coupler	see manual
Digital Inputs	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)

Technical Data	
Process image:	
Input process image	512 bytes
Output process image	512 bytes
Input variables	512 bytes
Output variables	512 bytes
Program memory	1024 Kbytes
Data memory	256 Kbytes
Remanent memory	32 Kbytes (20 Kbytes retain, 12 Kbytes flag)
LED indicators:	
RUN: CANopen status	LED (green/red)
RX: CANopen receiver buffer	LED (red)
ERR: CANopen bus error	LED (green/red)
TX: CANopen transmit buffer	LED (red)
CS : Fieldbus coupler status	LED (green/red)
PS: Program status	LED (green/red)
SBM : System bus master status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	75 x 35.7 x 117
Weight	378 g

Digital Input Module 24 V DC

8 inputs (8 x M8)

**Short description:**

This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:

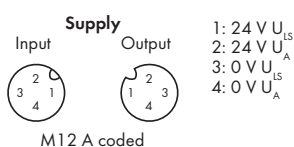
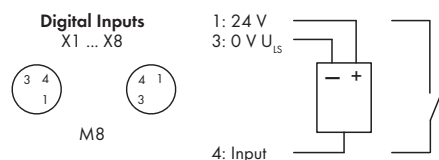
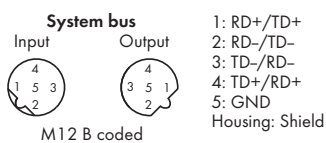
- 8 digital inputs, 24VDC
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:

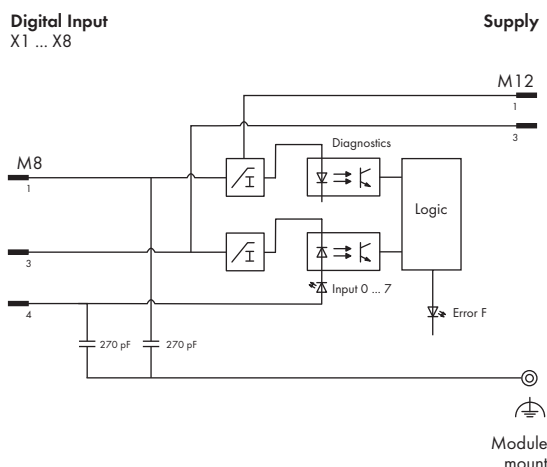
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M8 protective cap

Description	Item No.	Pack. Unit
8DI 24V DC (8xM8)	767-3801	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I _A	5 mA
Protection	Reverse voltage protection for U _{LS} + U _A ; short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 80 μs Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect



Block diagram of an input

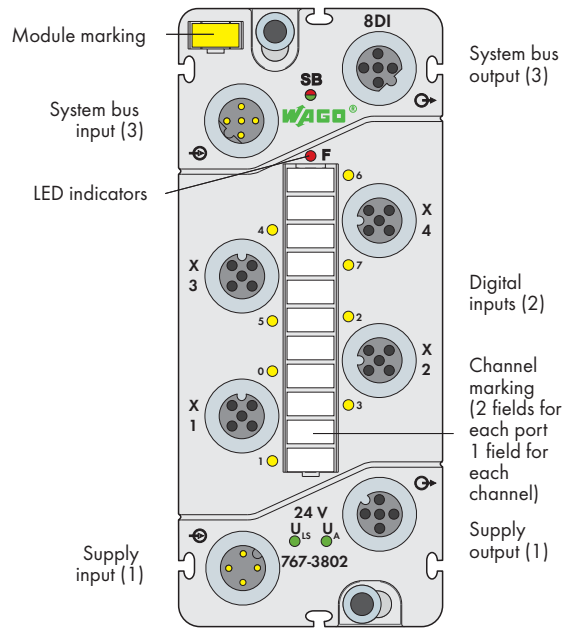


Technical Data	
Input characteristic:	
Input voltage	Typical input current
-30 V DC < U _{IN} < 0 V DC	0
5 V	2.4 mA
11 V	6.4 mA
24 V	7.3 mA
30 V	7.4 mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1 / 0.5 / 3 / 15 / 20 ms / filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

Digital Input Module 24 V DC

8 inputs (4 x M12, two outputs per connector)

**Short description:**

Digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:

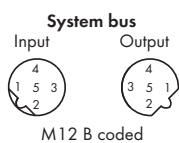
- 8 digital inputs 24 VDC
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:

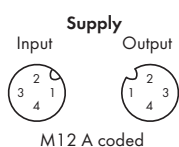
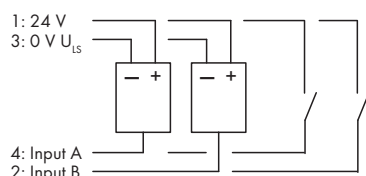
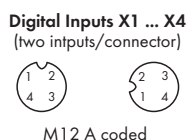
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DI 24V DC (4xM12)	767-3802	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{IS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{IS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I _A	5 mA
Protection	Reverse voltage protection for U _{IS} + U _A ; short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 80 μs Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	high-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

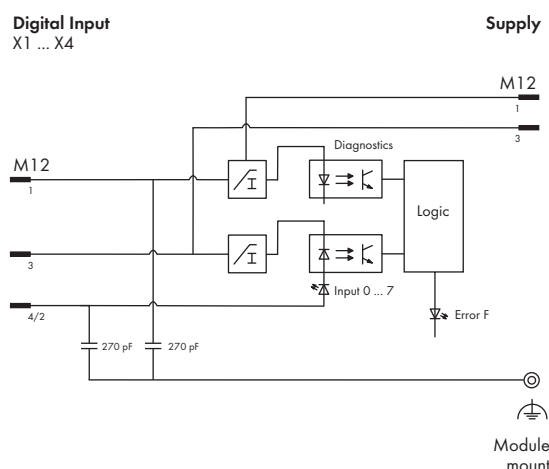


1: RD+/TD+
2: RD-/TD-
3: TD-/RD-
4: TD+/RD+
5: GND
Housing: Shield



1: 24 V U_{IS}
2: 24 V U_A
3: 0 V U_{IS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:

Input voltage	Typical input current
-30 V DC < U_{IN} < 0 V DC	0
5 V	2.4 mA
11 V	6.4 mA
24 V	7.3 mA
30 V	7.4 mA

System bus:

Connection type (3)	M12 connectors, B coded, 5 poles, shielded
---------------------	--

Standards and approvals:

UL 508	
Conformity marking	CE

Technical Data

Isolation:

Channel - Channel	No
U_{IS} , U_A system bus	500 V DC each

Configurable functions:

Input filter (per channel)	0.1 / 0.5 / 3 / 15 / 20 ms / filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U_{IS} + U_A)
------------------------------	---

Process image:

Process data width	1-byte data + status
--------------------	----------------------

LED indicators:

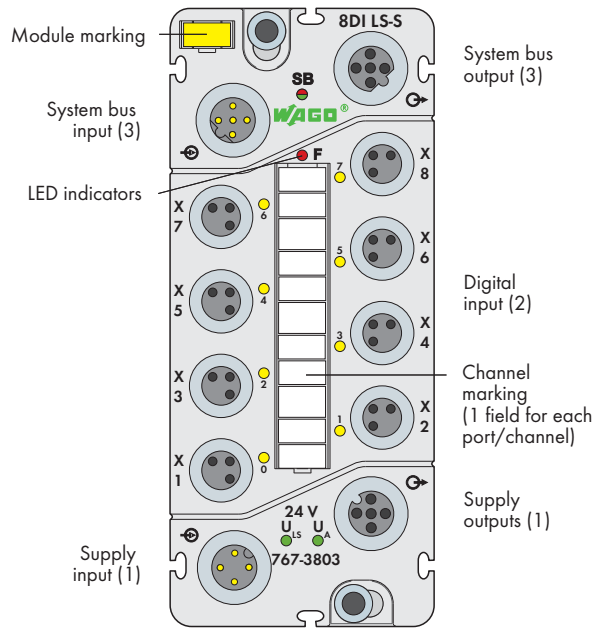
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U_{IS} + U_A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Digital Input Module 24 V DC

8 inputs (8 x M8), low-side switching



Short description:

This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:

- 8 digital inputs 24 VDC, low-side switching
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

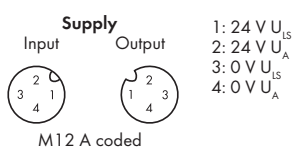
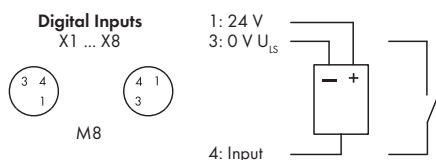
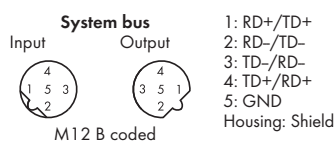
Included:

- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M8 protective cap

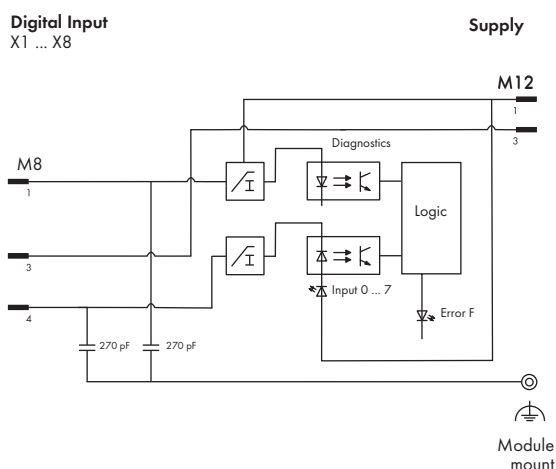
Description	Item No.	Pack. Unit
8DI 24V DC LS SWITCH (8xM8)	767-3803	1

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439
IP67 cables and connectors	see pages 422 ... 437 + chapter 5

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{IS} + U_A ; Short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	HW: $\leq 80 \mu s$ SW: parametrizable
Signal voltage (0)	$(U_{IS} - 5V) \dots U_{IS}$
Signal voltage (1)	- 3V ... $(U_{IS} - 11V)$
Input wiring	Low-side switching
Input voltage	24 V DC (-3 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7 mA
Connection of 2-wire BEROs	Permitted bias current: max. 1.5 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect



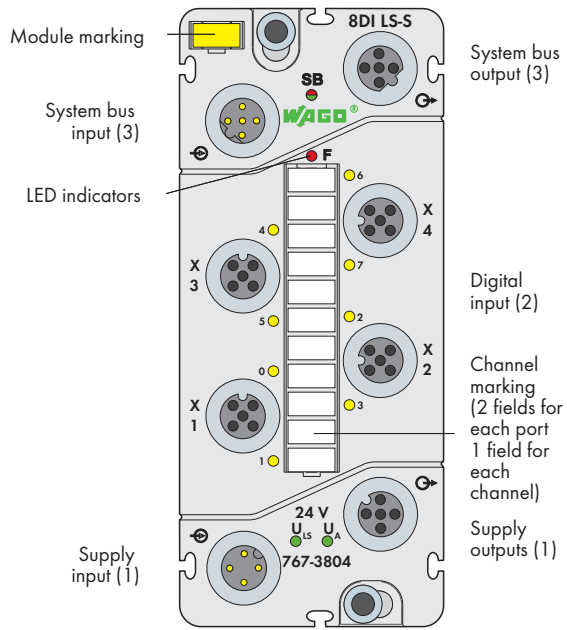
Block diagram of an input



Technical Data	
Input characteristic:	
Input voltage	Typical input current
U_{IN}	0mA
$U_{IN} - 5V$	2.2 mA
$U_{IN} - 11V$	6.1 mA ... 6.3 mA
$-3 V < U_{IN} < 0 V$	7mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U_{IS} , U_{A} system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage ($U_{IS} + U_{A}$)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
$U_{IS} + U_{A}$: Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

2 Digital Input Module 24 V DC
386 8 inputs (4 x M12, two inputs per connector), low-side switching



Short description:

This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:

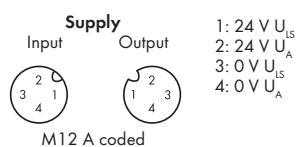
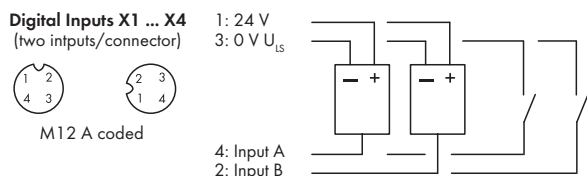
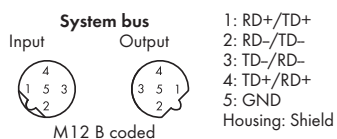
- 8 digital inputs 24 VDC, low-side switching
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:

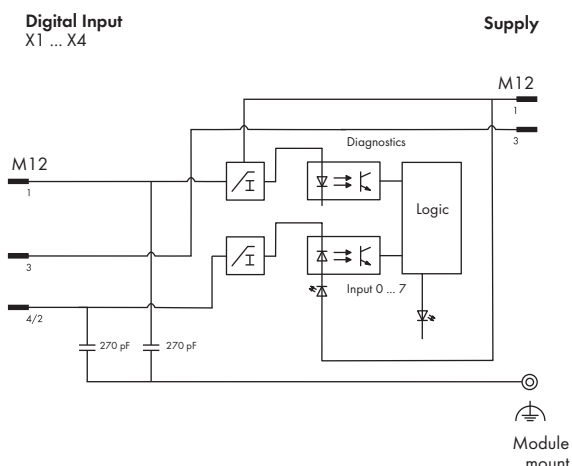
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DI 24V DC LS SWITCH (4xM12)	767-3804	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{IS} + U_A ; Short circuit protection for sensor supply
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: $\leq 80 \mu s$ Software: parametrierbar
Signal voltage (0)	$(U_{IS} - 5V) \dots U_{IS}$
Signal voltage (1)	- 3V ... $(U_{IS} - 11V)$
Input wiring	Low-side switching
Input voltage	24 V DC (-3 V DC < U_{IN} < +30 V DC)
Input current (typ.)	7 mA
Connection of 2-wire BEROs	Permitted bias current: max. 1.5 mA
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect



Block diagram of an input



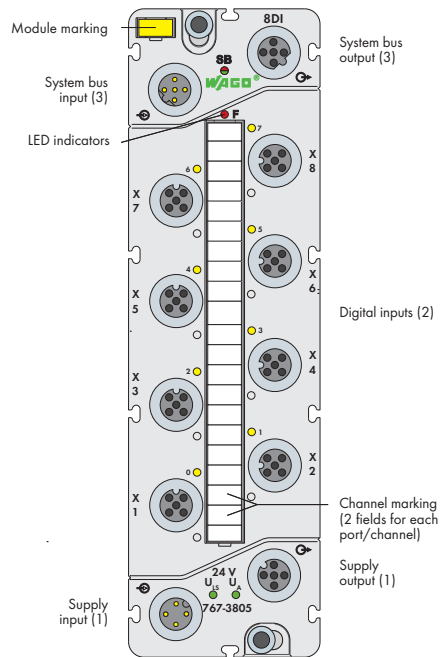
Technical Data	
Input characteristic:	
Input voltage	Typical input current
U _{IN}	0mA
U _{IN} - 5V	2.2 mA
U _{IN} - 11V	6.1 mA ... 6.3 mA
-3 V < U _{IN} < 0 V	7mA
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Input filter (per channel)	0.1 / 0.5 / 3 / 15 / 20 ms / filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock, simulation value: 0/1
Online simulation (per module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

2 Digital Input Module 24 V DC

388

8 inputs (8 x M12)



Short description:

This digital input module records binary signals from switches, sensors and proximity switches (BEROs).

Characteristics:

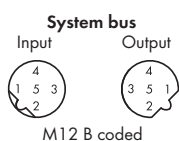
- 8 digital inputs, 24VDC
- Diagnostic capable (per module)
- Parametrizable (filter, inversion, online simulation and diagnostics)

Included:

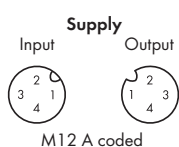
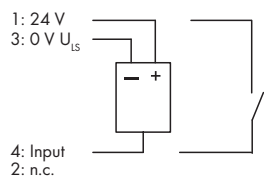
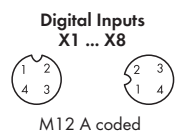
- 1 x WMB marker, yellow
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DI 24V DC (8xM12)	767-3805	1
Accessories	Item No.	
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I _{LS}	typ. 40 mA + sensors (max. 400 mA)
Actuator current I _A	5 mA
Protection	Reverse voltage protection for U _{IS} + U _A Short-circuit protection for sensor/actuator
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 80 µs Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 V DC (-30 V DC < U _{IN} < +30 V DC)
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect

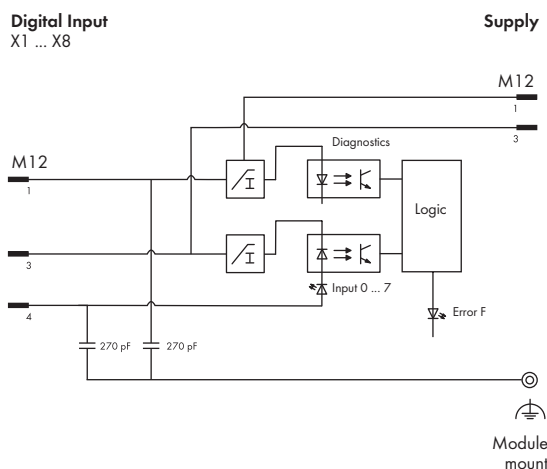


1: RD+/TD+
2: RD-/TD-
3: TD-/RD-
4: TD+/RD+
5: GND
Housing: Shield



1: 24 V U_{IS}
2: 24 V U_A
3: 0 V U_{IS}
4: 0 V U_A

Block diagram of an input



Technical Data

Input characteristic:

Input voltage	Typical input current
-30 V DC < U _{IN} < 0 V DC	0
5 V	2.4 mA
11 V	6.4 mA
24 V	7.3 mA
30 V	7.4 mA

System bus:

Connection type (3)	M12 connectors, B coded, 5 poles, shielded
---------------------	--

Standards and approvals:

UL 508	
Conformity marking	CE

Technical Data

Isolation:

Channel - Channel	no
U _{IS} , U _A , system bus	500 V DC each

Configurable functions:

Input filter (per channel)	0.1 / 0.5 / 3 / 15 / 20 ms / filter off
Inversion (per channel)	On/off
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per module)	Short circuit of sensor supply Undervoltage (U _{IS} + U _A)
------------------------------	--

Process image:

Process data width	1-byte data + status
--------------------	----------------------

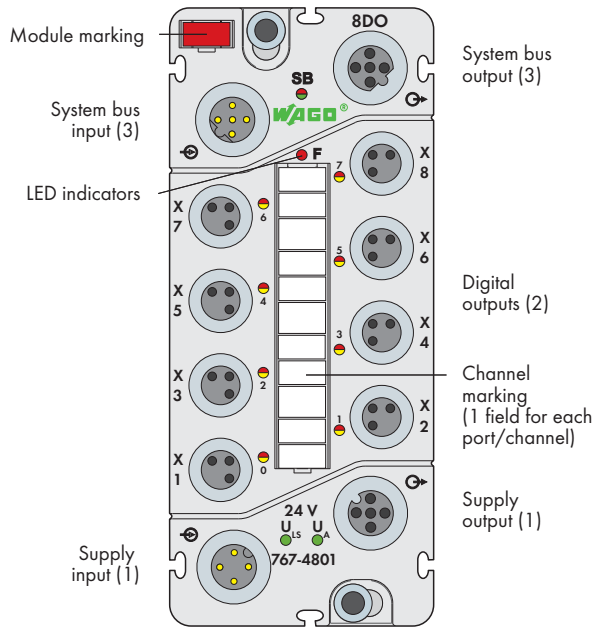
LED indicators:

SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Input signal status	LED (yellow)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 170
Weight	270

2 Digital Output Module 24 V DC / 0.5 A
390 8 outputs (8 x M8)



Short description:

Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

- 8 digital outputs 24 VDC / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual operation, online simulation and diagnostics)

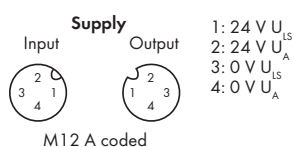
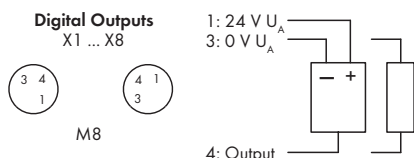
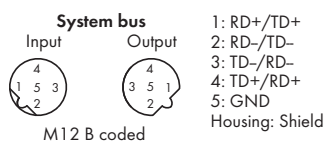
Included:

- 1 x WMB marker, red
- 1 x marking strip
- 2 x M8 protective cap

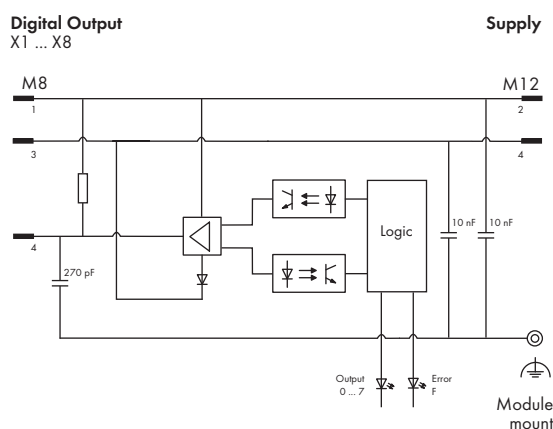
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (8xM8)	767-4801	1
8DO 24V DC 0.5A IF (8xM8)*	767-4801/000-800	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439
IP67 cables and connectors	see pages 422 ... 437 + chapter 5

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{IS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	$\leq U_A$
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 μ A
Output circuit	High-side switching



Block diagram of an output

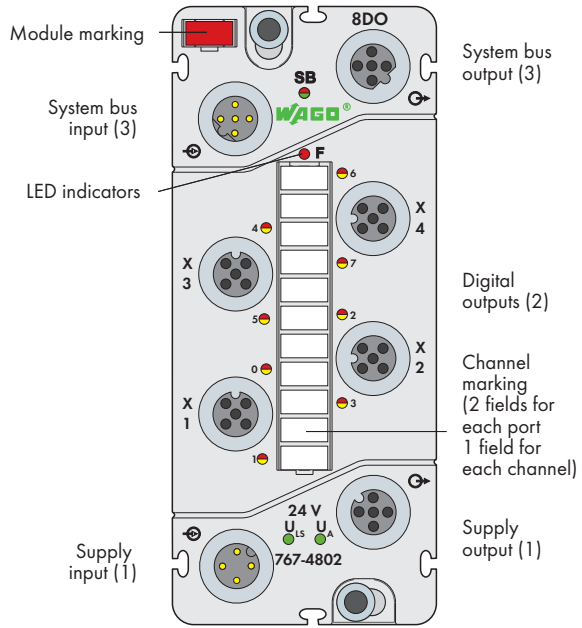


Technical Data	
Information on actuator selection:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 μs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	Typ. 270 μs (resistive load)
Rise time from "0" to "1"	typ. 40 μs (resistive load)
Fall time from "1" to "0"	Typ. 50 μs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz
Parallel connection of 2 outputs	Lamp load approx. 500 Hz for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Short circuit (actuators) Wire break (actuators) Overtemperature
I/O diagnostics (per module)	Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

2 Digital Output Module 24 V DC / 0.5 A
8 outputs (4 x M12, two outputs per connector)

392



Short description:

Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

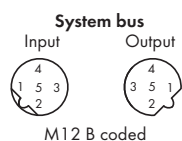
- 8 digital outputs 24 VDC / 0.5 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual operation, online simulation and diagnostics)

Included:

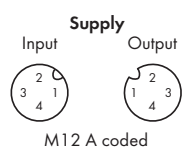
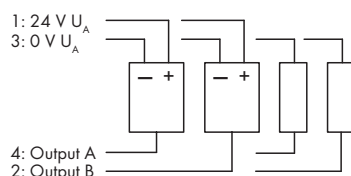
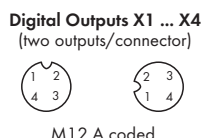
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (4xM12)	767-4802	1
8DO 24V DC 0.5A IF (4xM12)*	767-4802/000-800	1
* Interference-free for safety function applications (see manual)		
Accessories	Item No.	
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439	
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U_{IS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	$\leq U_A$
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 μ A
Output circuit	High-side switching

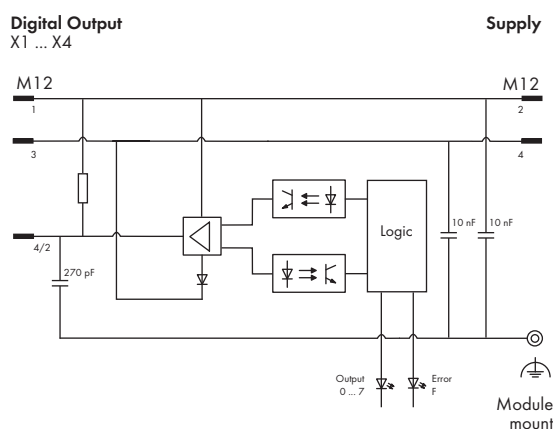


- 1: RD+/TD+
 - 2: RD-/TD-
 - 3: TD-/RD-
 - 4: TD+/RD+
 - 5: GND
- Housing: Shield



- 1: 24 V U_{IS}
- 2: 24 V U_A
- 3: 0 V U_{IS}
- 4: 0 V U_A

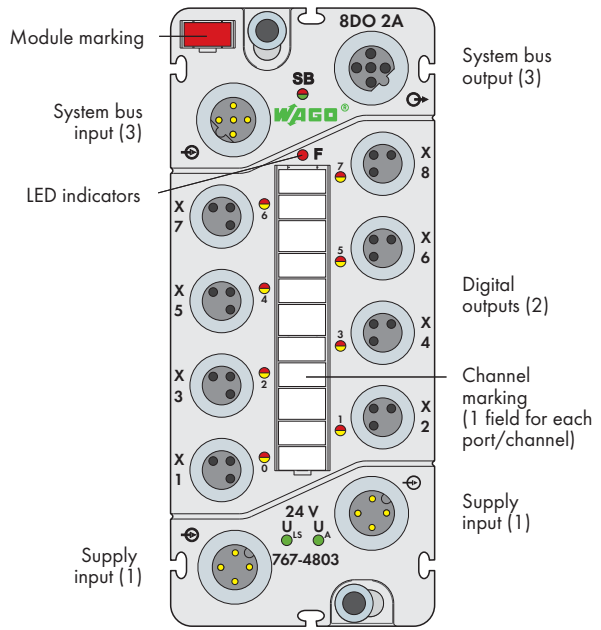
Block diagram of an output



Technical Data	
Information on actuator selection:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 μs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	Typ. 270 μs (resistive load)
Rise time from "0" to "1"	Typ. 40 μs (resistive load)
Fall time from "1" to "0"	Typ. 50 μs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz
Parallel connection of 2 outputs	Lamp load approx. 500 Hz for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Short circuit (actuators) Wire break (actuators) Overtemperature
I/O diagnostics (per module)	Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

2 Digital Output Module 24 V DC / 2.0 A
8 outputs (8 x M8)



Short description:

Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

- 8 digital outputs 24 VDC / 2.0 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

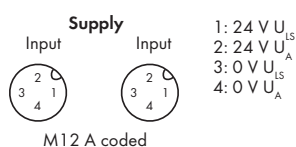
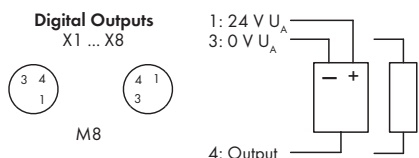
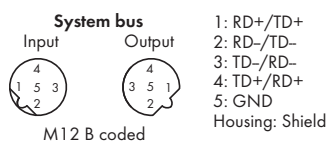
Included:

- 1 x WMB marker, red
- 1 x marking strip
- 2 x M8 protective cap

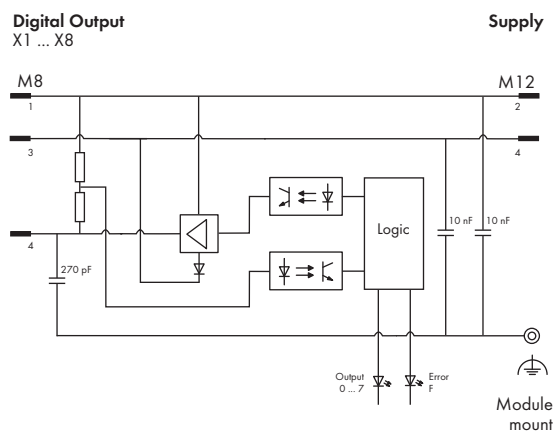
Description	Item No.	Pack. Unit
8DO 24V DC 2.0A (8xM8)	767-4803	1
8DO 24V DC 2.0A IF (8xM8)*	767-4803/000-800	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439
IP67 cables and connectors	see pages 422 ... 437 + chapter 5

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 55 mA + actuators
Protection	Reverse voltage protection for U_{IS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	$\leq U_A$
Output current (per channel)	2.0 A (max. 2.4 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 2.0 A	Max. 0.2 V DC
Output current (module)	max. 8 A
Leakage current in OFF state	typ. 780 μ A
Output circuit	High-side switching



Block diagram of an output



Technical Data

Information on actuator selection:

Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 μs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	Typ. 265 μs (resistive load)
Rise time from "0" to "1"	Typ. 30 μs (resistive load)
Fall time from "1" to "0"	Typ. 50 μs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 2 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz
Parallel connection of 2 outputs	Lamp load approx. 500 Hz for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	max. 0.1 Ω

Operating state influence on output:

PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

System bus:

Connection type (3)	M12 connectors, B coded, 5 poles, shielded
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Standards and approvals:

UL 508	
Conformity marking	CE

Technical Data

Isolation:

Channel - Channel	No
U _{LS} , U _A system bus	500 V DC each

Configurable functions:

Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per channel)	Short circuit (actuators) Wire break (actuators) Overtemperature
I/O diagnostics (per module)	Undervoltage (U _{LS} + U _A)

Process image:

Process data width	1-byte data + status
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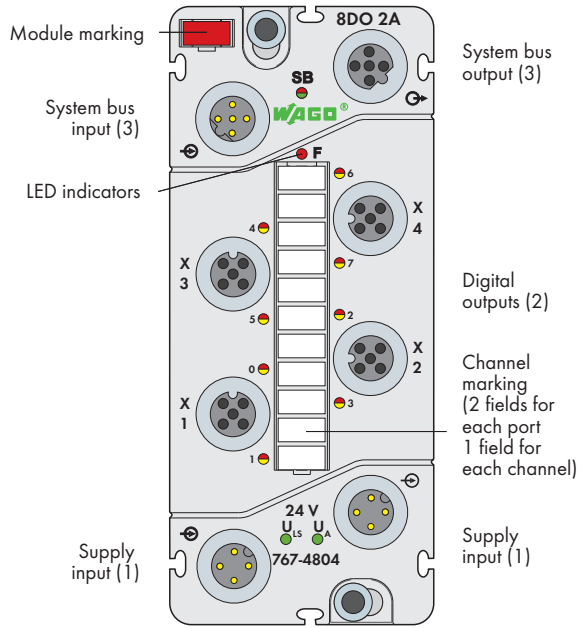
LED indicators:

SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U _{LS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	277 g

2 Digital Output Module 24 V DC / 2.0 A
 8 outputs (4 x M12, two outputs per connector)



Short description:

Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

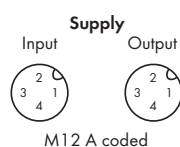
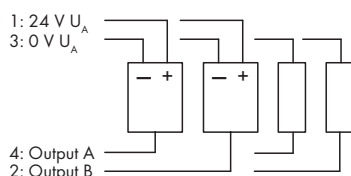
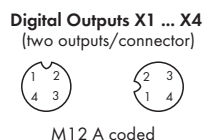
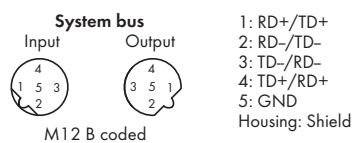
- 8 digital outputs 24 VDC / 2.0 A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

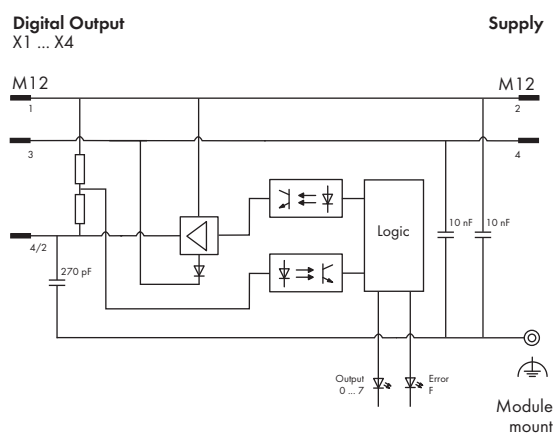
Description	Item No.	Pack. Unit
8DO 24V DC 2.0A (4xM12)	767-4804	1
8DO 24V DC 2.0A IF (4xM12)*	767-4804/000-800	1
* Interference-free for safety function applications (see manual)		
Accessories	Item No.	
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439	
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)
Actuator current I_A	typ. 55 mA + actuators
Protection	Reverse voltage protection for U_{IS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	$\leq U_A$
Output current (per channel)	2.0 A (max. 2.4 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U_A at 2.0 A	Max. 0.2 V DC
Output current (module)	max. 8 A
Leakage current in OFF state	typ. 780 μ A
Output circuit	High-side switching



- 1: 24 V U_{IS}
2: 24 V U_{IS}
3: 0 V U_{IS}
4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:

Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	Typ. 265 µs (resistive load)
Rise time from "0" to "1"	Typ. 30 µs (resistive load)
Fall time from "1" to "0"	Typ. 50 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 2 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz
Parallel connection of 2 outputs	Lamp load approx. 500 Hz for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	max. 0.1 Ω

Operating state influence on output:

PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

System bus:

Connection type (3)	M12 connectors, B coded, 5 poles, shielded
---------------------	--

Standards and approvals:

UL 508	
Conformity marking	CE

Technical Data

Isolation:

Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each

Configurable functions:

Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per channel)	Short circuit (actuators) Wire break (actuators) Overtemperature
I/O diagnostics (per module)	Undervoltage (U _{IS} + U _A)

Process image:

Process data width	1-byte data + status
--------------------	----------------------

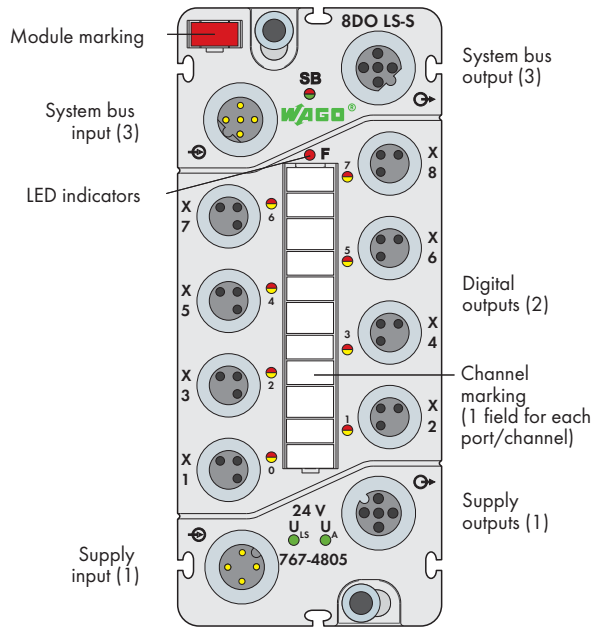
LED indicators:

SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	250 g

2 Digital Output Module 24 V DC / 0.5 A
398 8 outputs (8 x M8), low-side switching



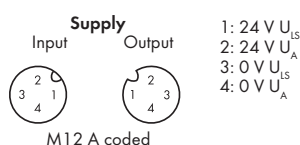
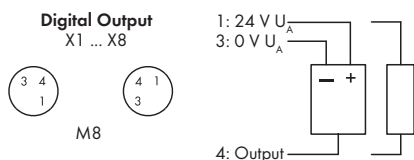
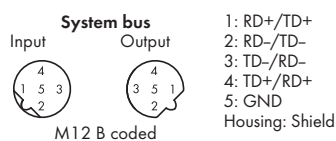
Short description:
Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:
- 8 digital outputs 24 VDC / 0.5 A, low-side switching
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

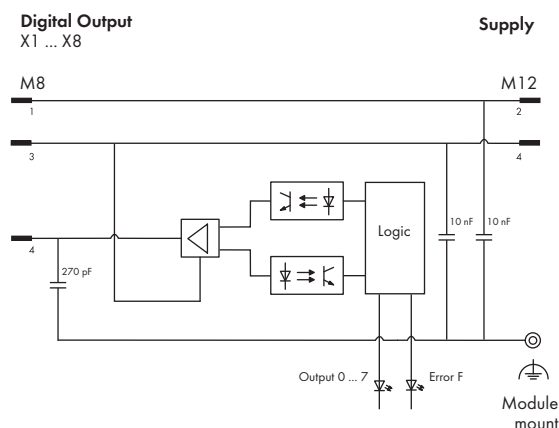
- Included:**
- 1 x WMB marker, red
 - 1 x marking strip
 - 2 x M8 protective cap

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A LS SWITCH (8xM8)	767-4805	1
Accessories		
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439	
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA (only logic part)
Actuator current I_A	Typ. 20 mA + actuators
Protection	Reverse voltage protection for U_{IS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	$\geq 0V U_A$
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload protection (thermal shutdown)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC ($0V U_A$)
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 μ A
Output circuit	Low-side switching



Block diagram of an output

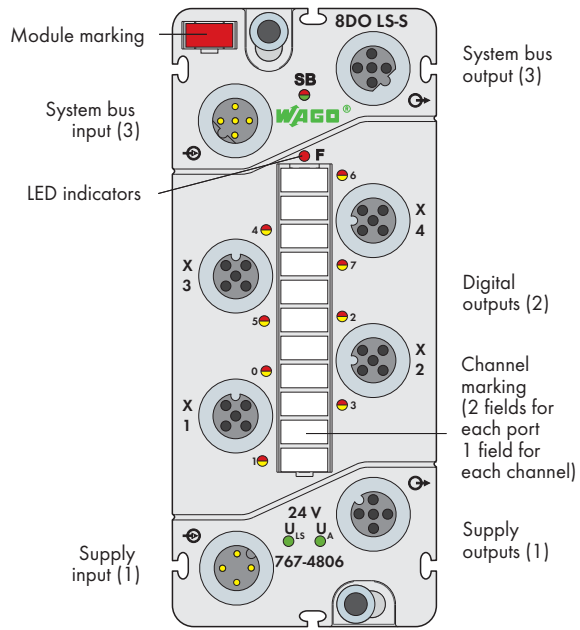


Technical Data	
Information on actuator selection:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 µs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	Typ. 270 µs (resistive load)
Rise time from "0" to "1"	Typ. 150 µs (resistive load)
Fall time from "1" to "0"	Typ. 150 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz Lamp load approx. 500 Hz
Parallel connection of 2 outputs	For power boost For redundant load actuation
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _{Ar} system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value / hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

2 Digital Output Module 24 V DC / 0.5 A

400 8 outputs (4 x M12, two inputs per connector), low-side switching



Short description:

Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

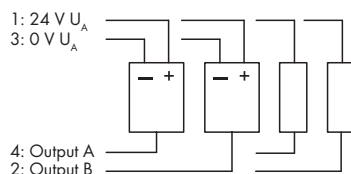
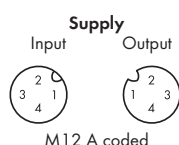
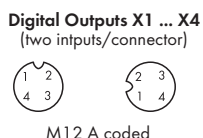
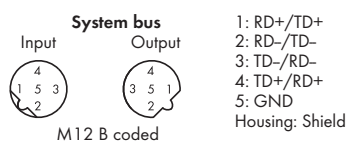
- 8 digital outputs 24 VDC / 0.5 A, low-side switching
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

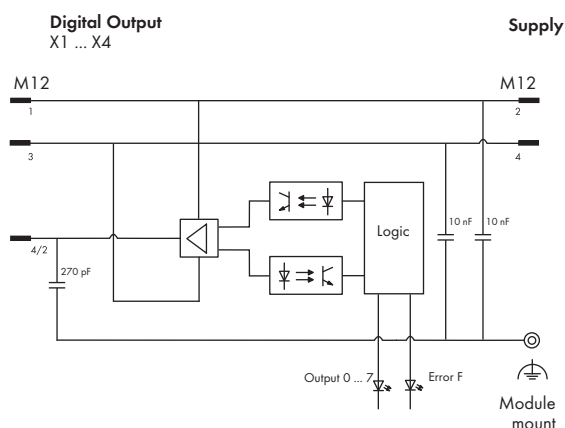
- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (4xM12)	767-4806	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA (only logic part)
Actuator current I_A	Typ. 20 mA + actuators
Protection	Reverse voltage protection for U_{IS} + U_A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	$\geq 0V U_A$
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload protection (thermal shutdown)
Voltage drop against U_A at 500 mA	Max. 0.2 V DC ($0 V U_A$)
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 μA
Output circuit	Low-side switching



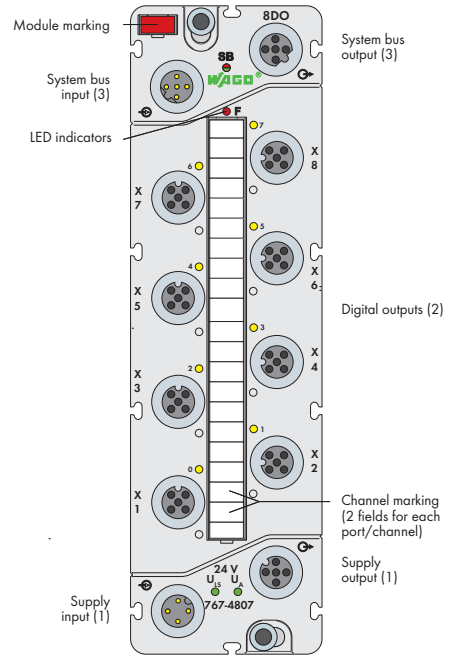
Block diagram of an output



Technical Data	
Information on actuator selection:	
Delay time HW	
from "0" to "1" (0-90%)	Typ. 75 μ s (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	Typ. 270 μ s (resistive load)
Rise time from "0" to "1"	Typ. 150 μ s (resistive load)
Fall time from "1" to "0"	Typ. 150 μ s (resistive load)
Cable length	\leq 30 m
Protection against reverse voltages	\leq 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz Lamp load approx. 500 Hz
Parallel connection of 2 outputs	For power boost For redundant load actuation
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	$<$ 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U_{IS} , U_{Ar} system bus	500 V DC each
Configurable functions:	
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value / hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Undervoltage (U_{IS} + U_A)
Process image:	
Process data width	1-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U_{IS} + U_A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	270 g

2 Digital Output Module 24 V DC / 0.5 A
8 outputs (8 x M12)



Short description:

Digital output module for actuator control (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

- 8 digital outputs, 24VDC / 0.5A
- Diagnostic capable (per channel)
- Parametrizable (inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

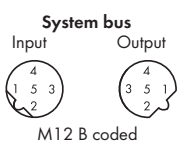
Included:

- 1 x WMB marker, red
- 1 x marking strip
- 2 x M12 protective cap

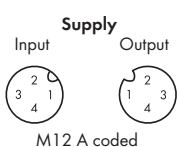
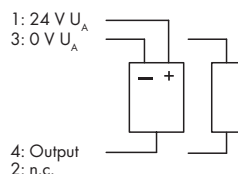
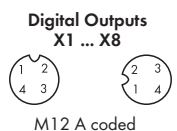
Description	Item No.	Pack. Unit
8DO 24V DC 0.5A (8xM12)	767-4807	1
8DO 24V DC 0.5A IF (8xM12)*	767-4807/000-800	1
* Interference-free for safety function applications (see manual)		

Accessories	Item No.
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439
IP67 cables and connectors	see pages 422 ... 437 + chapter 5

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	max. 8 A (U _{IS} : 4 A, U _A : 4 A)
Supply voltage	
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U _A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I _{LS}	typ. 45 mA (only logic part)
Actuator current I _A	typ. 25 mA + actuators
Protection	Reverse voltage protection for U _{IS} + U _A
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U _A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U _A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 150 μA
Output circuit	High-side switching

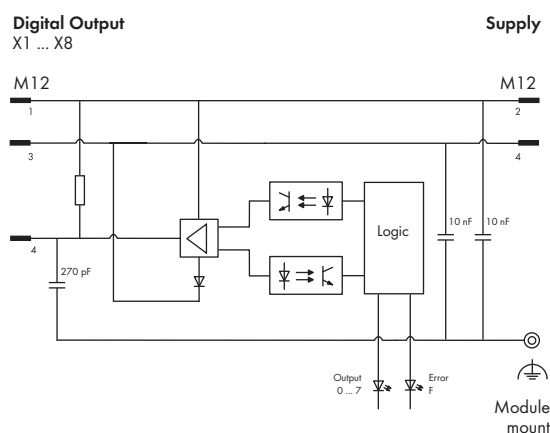


- 1: RD+/TD+
 - 2: RD-/TD-
 - 3: TD-/RD-
 - 4: TD+/RD+
 - 5: GND
- Housing: Shield



- 1: 24 V U_{IS}
- 2: 24 V U_A
- 3: 0 V U_{IS}
- 4: 0 V U_A

Block diagram of an output



Technical Data

Information on actuator selection:

Delay time HW	
from "0" to "1" (0-90%)	typ. 65 µs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	typ. 190 µs (resistive load)
Rise time from "0" to "1"	typ. 40 µs (resistive load)
Fall time from "1" to "0"	typ. 50 µs (resistive load)
Cable length	≤ 30 m
Protection against reverse voltages	≤ 0.5 A
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz
Parallel connection of 2 outputs	Lamp load approx. 500 Hz for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω

Operating state influence on output:

PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

System bus:

Connection type (3)	M12 connectors, B coded, 5 poles, shielded
---------------------	--

Standards and approvals:

UL 508	
Conformity marking	CE

Technical Data

Isolation:

Channel - Channel	no
U _{IS} , U _A system bus	500 V DC each

Configurable functions:

Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics

I/O diagnostics:

I/O diagnostics (per channel)	Short circuit (actuators) Wire break (actuators) Overtemperature
I/O diagnostics (per module)	Undervoltage (U _{IS} + U _A)

Process image:

Process data width	1-byte data + status
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LED indicators:

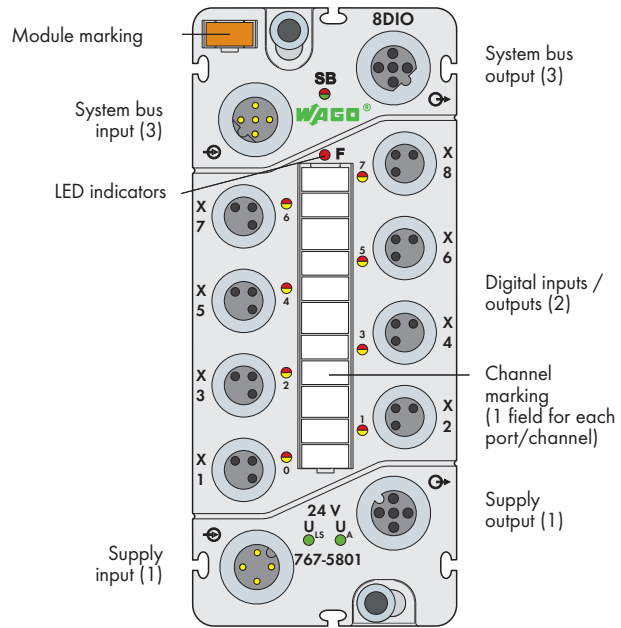
SB: System bus status	LED (green/red/orange)
F: Error status	LED (red)
0 ... 7: Output signal status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 170
Weight	270

Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (8 x M8)



Short description:

This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs), and it controls actuators (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

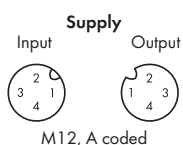
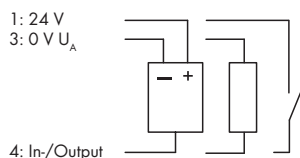
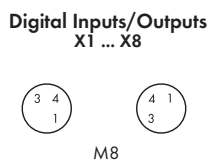
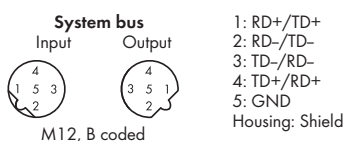
- 8 digital inputs/outputs 24 V DC / 0.5 A
- Input/output, parametrizable channel for channel
- Diagnostic capable (per channel/per module)
- Parametrizable (operating mode, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

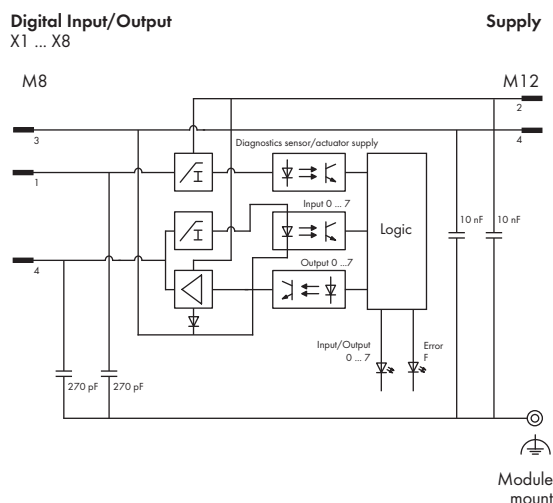
- 1 x WMB module marker card, orange
- 1 x marker strip
- 2 x M8 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (8xM8)	767-5801	1
8DIO 24V DC 0.5A IF (8xM8)*	767-5801/000-800	1
* Interference-free for safety function applications (see manual)		
Accessories	Item No.	
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439	
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	
Technical Data		
Module supply:		
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed	
Current carrying capacity of supply connections	max. 8 A (U_{IS} : 4 A, U_A : 4 A)	
Supply voltage		
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)	
Actuator voltage U_A	24 V DC (-25 % ... +30 %)	
Supply current		
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)	
Actuator current I_A	typ. 75 mA + sensors/actuators (max. 800 mA) + load	
Protection	Reverse voltage protection for U_{IS} + U_A Short-circuit protection for sensor/actuator supply	

Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Input filter	Hardware: $\leq 110 \mu s$ Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 VDC ($-3 \text{ VDC} < U_{IN} < +30 \text{ VDC}$); Power from U_A is strongly recommended, recovery for voltages $> U_A$
Input current (typ.)	7.0 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	$\leq 30 \text{ m}$
Input characteristic:	
Input voltage	Typical input current
0 V DC	0
5 V	2.7 mA
11 V	6.8 mA
24 V	7 mA
30 V	7.1 mA



Block diagram of an input/output

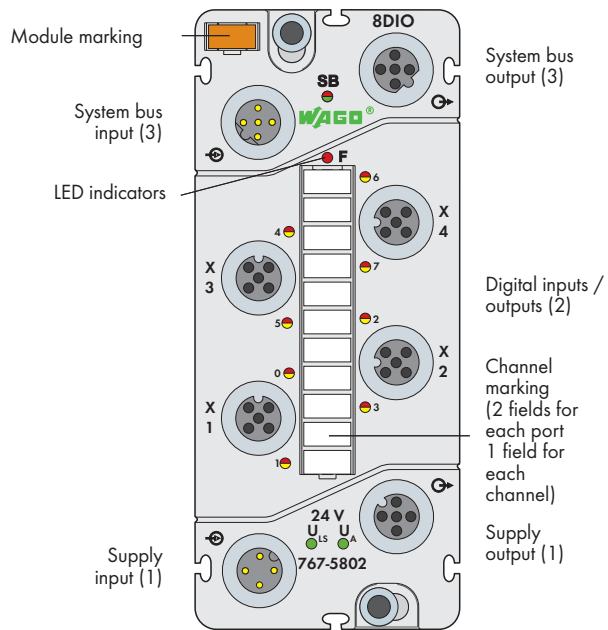


Technical Data	
Digital outputs:	
No. of outputs	8
Connection type (2)	M8 connectors, 3 poles
Wire connection	2- or 3-wire
Output voltage	≤ U _A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U _A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 5 μA
Output circuit	High-side switching
Information on actuator selection:	
Delay time HW	
from "0" to "1" (0-90%)	typ. 90 μs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	typ. 310 μs (resistive load)
Rise time from "0" to "1"	typ. 60 μs (resistive load)
Fall time from "1" to "0"	typ. 45 μs (resistive load)
Cable length	≤ 30 m
Reverse current (in case of recovery for	≤ 0.5 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
Counters:	
No. of counters	2
Counter type	Event, gate time, pulse duration counter
Counting/switching frequency	0 Hz ... 1 kHz

Technical Data	
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	UL 508
Conformity marking	CE
Isolation:	
Channel - Channel	no
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Operating mode (per module)	DO-Module/DI-Module/DIO-Module/ DIO + 1 counter/DIO + 2 counters
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Short-circuit of sensor/actuator supply Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	Depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow)
0 ... 7: Output diagnostics	LED (red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260 g

Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (4 x M12, two inputs/outputs per connector)



Short description:

This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs), and it controls actuators (e.g., magnetic valves, DC contactors, indicators).

Characteristics:

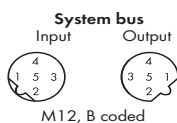
- 8 digital inputs/outputs 24 VDC / 0.5 A
- Input/output, parametrizable channel for channel
- Diagnostic capable (per channel/per module)
- Parametrizable (operating mode, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

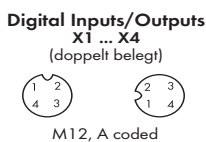
- 1 x WMB module marker card, orange
- 1 x marker strip
- 2 x M8 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (4xM12)	767-5802	1
8DIO 24V DC 0.5A IF (4xM12)*	767-5802/000-800	1
* Interference-free for safety function applications (see manual)		
Accessories	Item No.	
Marking strips, marking pen, spacer module and protective caps	see pages 438 ... 439	
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	
Technical Data		
Module supply:		
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed	
Current carrying capacity of supply connections	max. 8 A (U_{IS} : 4 A, U_A : 4 A)	
Supply voltage		
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)	
Actuator voltage U_A	24 V DC (-25 % ... +30 %)	
Supply current		
Logic and sensor current I_{LS}	typ. 45 mA (only logic part)	
Actuator current I_A	typ. 75 mA + sensors/actuators (max. 800 mA) + load	
Protection	Reverse voltage protection for U_{IS} + U_A Short-circuit protection for sensor/actuator supply	

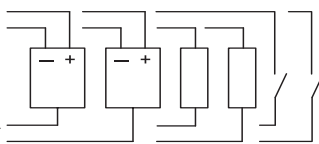
Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Input filter	Hardware: $\leq 110 \mu s$ Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U_{IN} < +30 VDC); Power from U_A is strongly recommended, recovery for voltages > U_A
Input current (typ.)	7.0 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V DC	0
5 V	2.7 mA
11 V	6.8 mA
24 V	7 mA
30 V	7.1 mA



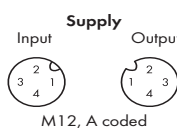
1: RD+/TD+
2: RD-/TD-
3: TD-/RD-
4: TD+/RD+
5: GND
Housing: Shield



1: 24 V
3: 0 V U_A

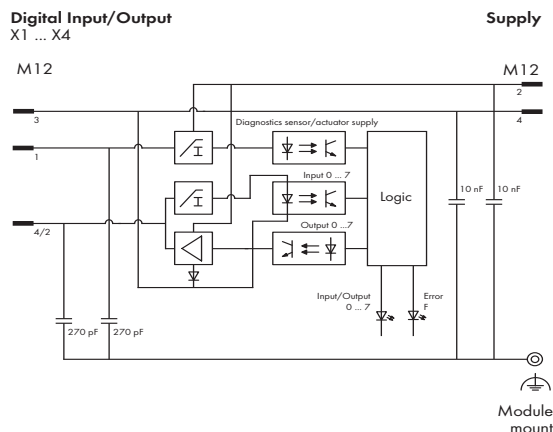


4: In-/Output A
2: In-/Output B



1: 24 V U_{IS}
2: 24 V U_A
3: 0 V U_{IS}
4: 0 V U_A

Block diagram of an input/output



Technical Data

Digital outputs:

No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U _A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U _A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 5 μA
Output circuit	High-side switching

Information on actuator selection:

Delay time HW	
from "0" to "1" (0-90%)	typ. 90 μs (resistive load)
Delay time HW	
from "1" to "0" (0-90%)	typ. 310 μs (resistive load)
Rise time from "0" to "1"	typ. 60 μs (resistive load)
Fall time from "1" to "0"	typ. 45 μs (resistive load)
Cable length	≤ 30 m
Reverse current (in case of recovery for	≤ 0.5 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω

Operating state influence on output:

PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	
tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart

Counters:

No. of counters	2
Counter type	Event, gate time, pulse duration counter
Counting/switching frequency	0 Hz ... 1 kHz

Technical Data

System bus:

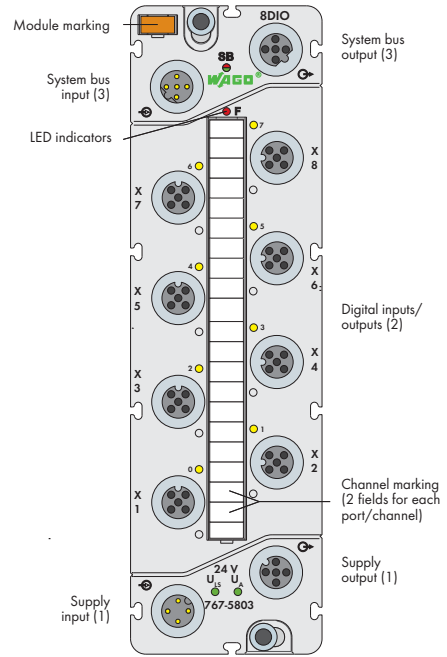
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE
Isolation:	
Channel - Channel	no
U _{IS} , U _A , system bus	500 V DC each
Configurable functions:	
Operating mode (per module)	DO-Module/DI-Module/DIO-Module/ DIO + 1 counter/DIO + 2 counters
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Short-circuit of sensor/actuator supply Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	Depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow)
0 ... 7: Output diagnostics	LED (red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	255 g

Digital Input/Output Module 24 V DC / 0.5 A

8 inputs/outputs (8 x M12)



Short description:

This digital input/output module records binary signals from switches, sensors and proximity switches (BEROs). The module also controls actuators, such as magnetic valves, DC contactors and indicators.

Characteristics:

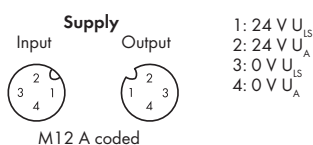
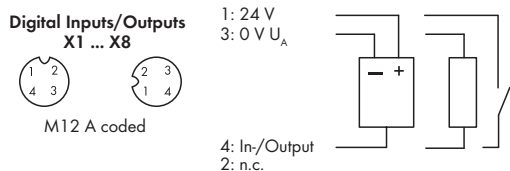
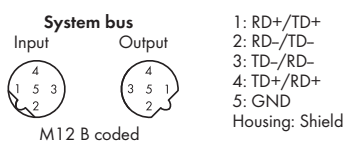
- 8 digital inputs/outputs, 24VDC / 0.5A
- Input/output, parametrizable channel for channel
- Diagnostic capable (per channel/per module)
- Parametrizable (operating mode, counter, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

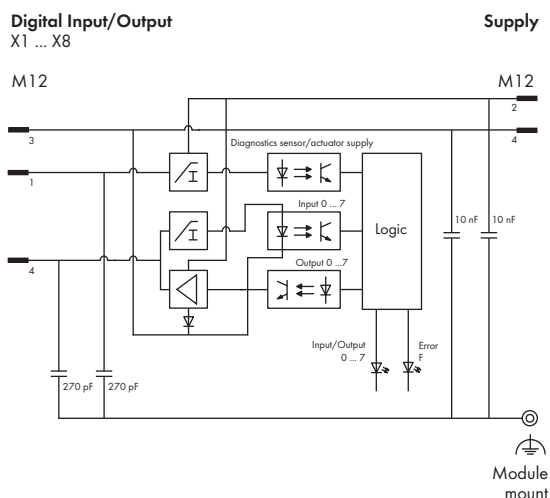
- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
8DIO 24V DC 0.5A (8xM12)	767-5803	1
8DIO 24V DC 0.5A IF (8xM12)*	767-5803/000-800	1
* Interference-free for safety function applications (see manual)		
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	
Technical Data		
Module supply:		
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed	
Current carrying capacity of supply connections	max. 8 A (U _{IS} : 4 A, U _A : 4 A)	
Supply voltage		
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)	
Actuator voltage U _A	24 V DC (-25 % ...+30 %)	
Supply current		
Logic and sensor current I _{LS}	typ. 45 mA (only logic part)	
Actuator current I _A	typ. 75 mA + sensors/actuators (max. 800 mA) + load	
Protection	Reverse voltage protection for U _{IS} + U _A Short-circuit protection for sensor/actuator supply	

Technical Data	
Digital inputs:	
Number of inputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2 oder 3 Leiter
Input filter	Hardware: ≤ 60 μs Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... +30 V DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U _{IN} < +30 VDC); Power from U _A is strongly recommended, recovery for voltages > U _A
Input current (typ.)	7 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Input characteristic:	
Input voltage	Typical input current
0 V DC	0
5 V	2.7 mA
11 V	6.8 mA
24 V	7 mA
30 V	7.1 mA



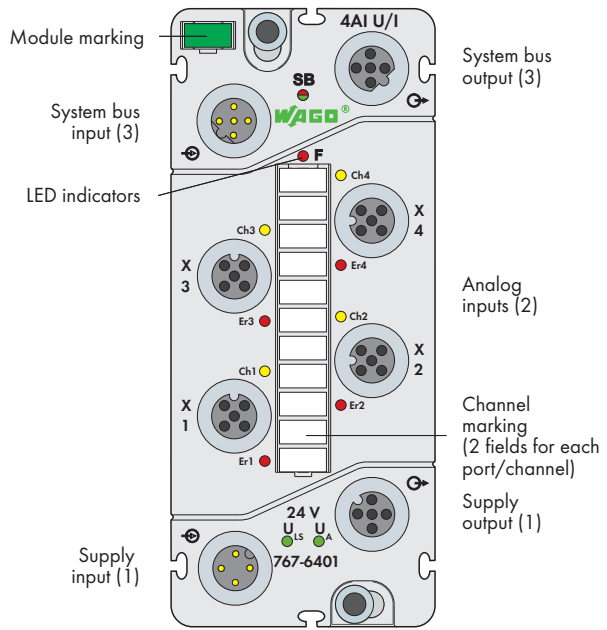
Block diagram of an input/output



Technical Data	
Digital outputs:	
No. of outputs	8
Connection type (2)	M12 connectors, A coded, 4 poles
Wire connection	2- or 3-wire
Output voltage	≤ U _A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U _A at 500 mA	max. 0.2 V DC
Output current (module)	max. 4 A
Leakage current in OFF state	typ. 5 μA
Output circuit	High-side switching
Information on actuator selection:	
Delay time HW from "0" to "1" (0-90%)	typ. 70 μs (resistive load)
Delay time HW from "1" to "0" (0-90%)	typ. 180 μs (resistive load)
Rise time from "0" to "1"	typ. 40 μs (resistive load)
Fall time from "1" to "0"	typ. 40 μs (resistive load)
Cable length	≤ 30 m
Reverse current (in case of recovery for	≤ 0,5 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage	tolerance
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded

Technical Data	
Counters:	
No. of counters	2
Counter type	Event/gate time counter, pulse duration
Counting/switching frequency	0 Hz ... 1 kHz
Standards and approvals:	
UL 508	CE
Isolation:	
Channel - Channel	no
U _{IS} , U _A , system bus	500 V DC each
Configurable functions:	
Operating mode (per module)	DO-Module/DI-Module/DIO-Module/ DIO + 1 counter/DIO + 2 counters
Counter	Count direction, start/limit value switching output, gate time
Input filter (per channel)	0.1/ 0.5/ 3 /15 /20 ms/ filter off
Inversion (per channel)	On/off
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0/1
Manual mode (per channel)	On/off
Manual mode value (per channel)	0/1
Online simulation (per channel)	Lock/unlock; simulation value: 0/1
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Short-circuit of sensor/actuator supply Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	Depends on operating mode
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 ... 7: Input and output signal status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 170
Weight	260

2 Analog Input Module Voltage/Current
410 4 inputs



Short description:

Analog input module records voltage and current signals.

Characteristics:

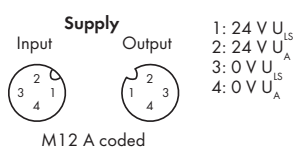
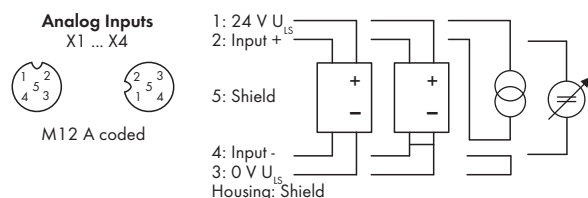
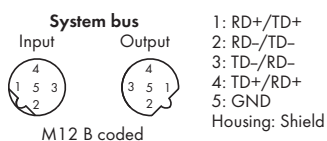
- 4 analog inputs 0-20 mA, 0-22 mA (acc. to NAMUR NE43), 4-20 mA, ±20 mA, 0-10 V or ±10 V
- Diagnostic capable
- Parametrizable (measuring range, limiting value, filter, substitute value, online simulation and diagnostics)

Included:

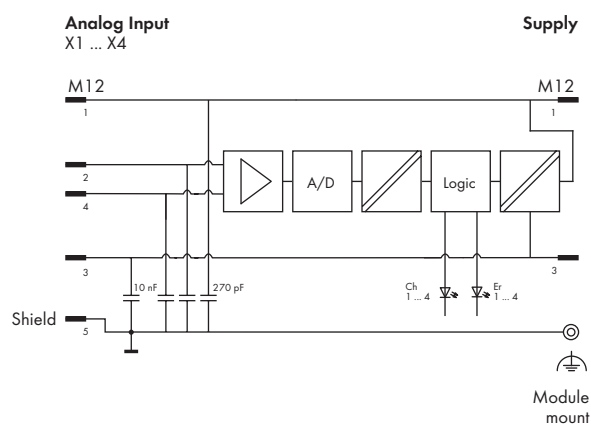
- 1 x WMB marker, green
- 1 x marking strips
- 2 x M12 protective caps

Description	Item No.	Pack. Unit
4AI U/I	767-6401	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	50 mA + sensors (max. 400 mA)
Actuator current I_A	5 mA
Protection	Reverse voltage protection for U_{IS} + U_A ; short circuit protection for sensor supply
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages (differential inputs)
Wire connection	2-, 3- or 4-wire (external shield (screen) via knurled nut)
Measuring range	0-22mA, 4-20mA, ±20mA, 0-10V, ±10V
Input impedance	AI(U) ≥ 100 kΩ AI(I) ≤ 200 Ω at 20 mA
Type of cable, cable length	shielded, ≤ 30 m



Block diagram of an input

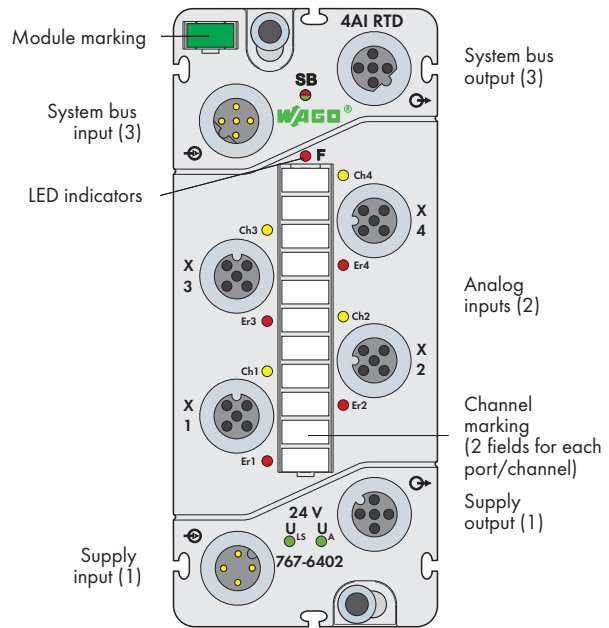


Technical Data	
Analog value creation:	
Resolution	16 bits
Conversion method	SAR
Monotonicity without error code	yes
Conversion time	1 ms
Sampling delay	1 ms (module)
	< 100 μs (channel/channel)
Sampling repeat time	1ms
Failures and errors:	
Voltage proof	up to 32 V (internal current limitation)
Max. measuring error at 25°C	≤ ± 0.2 % of the measuring range
Temperature error	≤ 100 ppm/K of measuring range
Maximum error over the full temperature range	≤ ± 0.6 % of the measuring range
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	0-20 mA, 0-22 mA, 4-20 mA, ±20 mA, 0-10 V, ±10 V, user-defined
Limiting values (per channel)	Min./Max.
Input filter (per channel)	50 Hz / 60 Hz / filter off
Substitute value (per channel)	Value
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range)
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overrange/measuring range underflow and wire break at 4-20 mA Overcurrent Limit value violation (min/max)
I/O diagnostics (per module)	Short circuit (sensor power supply) Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

Analog Input Module RTD

4 inputs



Short description:

Analog input module records the values from resistance thermometers, resistors and potentiometer adjustment.

Characteristics:

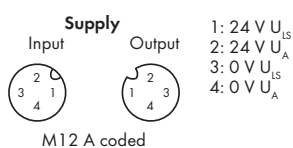
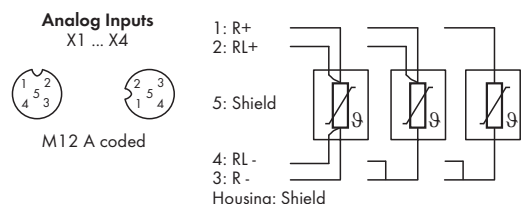
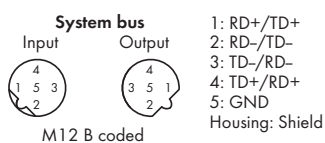
- 4 RTD analog inputs
- Diagnostic capable
- Parametrizable (measuring range, limiting value, filter, substitute value, online simulation and diagnostics)

Included:

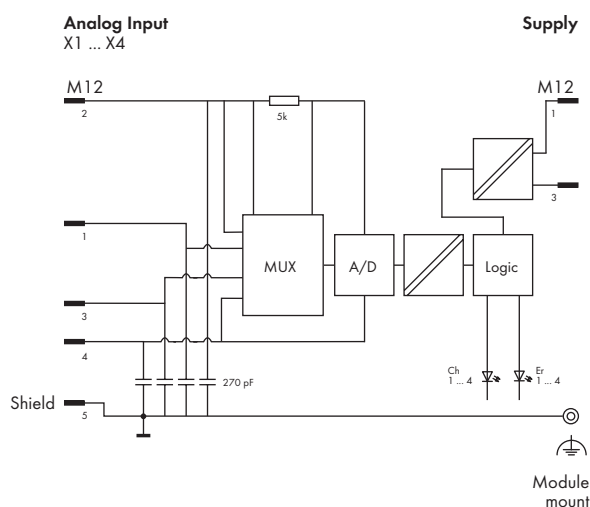
- 1 x WMB marker, green
- 1 x marking strips
- 2 x M12 protective caps

Description	Item No.	Pack. Unit
4AI RTD	767-6402	1
Accessories		Item No.
Marking strips, marking pen, spacer		see pages 438 ... 439
module and protective caps		
IP67 cables and connectors		see pages 422 ... 437 + chapter 5

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{IS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{IS}	typ. 40 mA
Actuator current I_A	4mA
Protection	Reverse voltage protection for U_{IS} + U_A
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Resistance thermometers, resistors, potentiometers
Wire connection	2-/3-/4-wire (external shield (screen) via knurled nut)
Signal measuring range	
Resistance thermometer	Pt100, Pt200, Pt500, Pt1000 Ni100, Ni120, Ni1000
Resistors	1 kΩ and 4 kΩ
Potentiometer	0 ... 100 % setting angle (for 1 kΩ and 4 kΩ)
Temperature range	Pt: -200 °C ... +850 °C Ni: -60 °C ... +250 °C
Resolution (over entire range)	0.05 °C / 0.05 Ω / 0.25 Ω / 0.005 %
Measuring current	< 0.5 mA
Type of cable, cable length	shielded, ≤ 30 m



Block diagram of an input

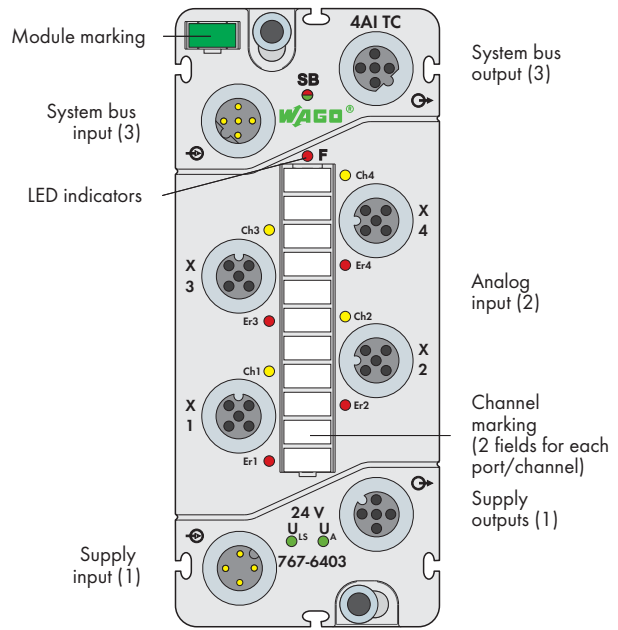


Technical Data	
Analog value creation:	
Resolution	16 bits
Integration time	2 - 120ms
Conversion method	SigmaDelta
Monotonicity without error code	yes
Conversion time	1/Input sampling frequency (s)
Sampling repeat time	Number of active channels x conversion time x 2
Linearization	See free characteristic
Failures and errors:	
Max. measuring error at 25°C	± 0.1 % of the measuring range
Temperature error	± 0.001 % of the measuring range/ K
Maximum error over the full temperature range	< 2°C
Maximum temporary deviation	0.05 °C
Repeat accuracy	0.05 °C
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Isolation:	
Channel - Channel	No
U_{IS} , U_A system bus	500 V DC each
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Configurable functions:	
Measuring range (per channel)	Pt100/ Pt200/ Pt500/ Pt1000, Ni100/ Ni120/ Ni1000; 1 kΩ / 4 kΩ; 0 ... 100 % setting angle (for 1 kΩ and 4 kΩ); user-defined
Wire connection (per channel)	2-wire/3-wire/4-wire
Limiting values (per channel)	Min./Max.
Integration time (per channel)	2, 4, 8, 16.7, 20, 30, 60, 120ms
Linearization (per channel)	Linear/Pt/Ni/Ni TK 5000
Substitute value (per channel)	Value
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range)
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overrange/measuring range underflow Limit value violation (min/max) Wire break
I/O diagnostics (per module)	Undervoltage (U_{IS} + U_A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U_{IS} + U_A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	280 g

Analog Input Module for Thermocouples (TCs)

4 inputs



Short description:

This analog input module receives the measured values from thermocouples and voltage sensors.

Characteristics:

- 4 analog inputs TC*
- Diagnostic capable
- Parametrizable (measuring range, limiting values, filter, cold junction compensation, substitute value, online simulation and diagnostics)

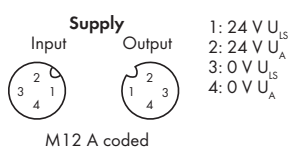
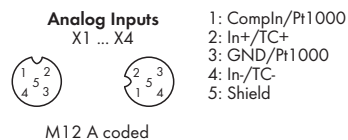
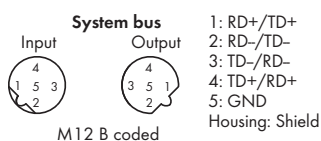
* Preassembled connector for cold junction compensation available as accessory.

Included:

- 1 x WMB marker, green
- 1 x marking strips
- 2 x M12 protective caps

Description	Item No.	Pack. Unit
4AI TC	767-6403	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	
Compensation connector, M12 plug, straight, spring clamp technology	756-9207/050-000	

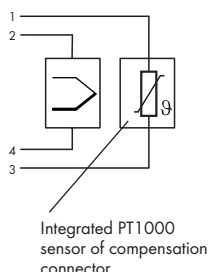
Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{LS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %); Also required for power supply transmission
Supply current	
Logic and sensor current I_{LS}	Typ. 40 mA
Actuator current I_A	≤ 5mA
Protection	Reverse voltage protection for U_{LS} + U_A
Analog inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	-
Wire connection	2-wire (external shield (screen) via connector pin 5)



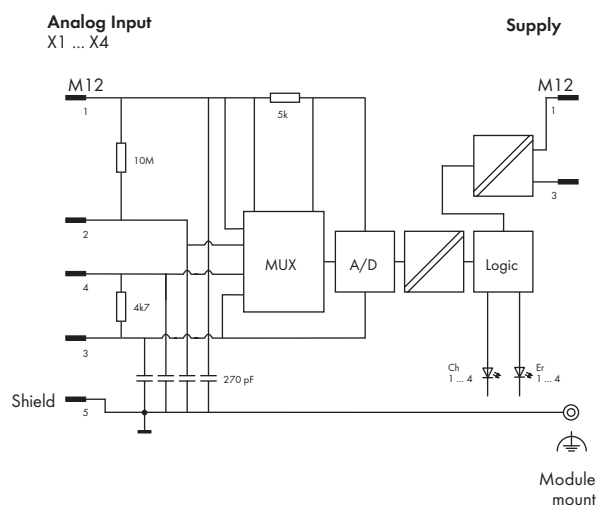
- 1: RD+/TD+
 - 2: RD-/TD-
 - 3: TD-/RD-
 - 4: TD+/RD+
 - 5: GND
- Housing: Shield

- 1: Compln/Pt1000
- 2: In+/TC+
- 3: GND/Pt1000
- 4: In-/TC-
- 5: Shield

- 1: 24 V U_{LS}
- 2: 24 V U_A
- 3: 0 V U_{LS}
- 4: 0 V U_A



Block diagram of an input



Technical Data

Analog inputs:

Signal measuring range	
Measuring range	Thermocouples:
	Type B: +200 °C ... +1,820 °C
	Type C: 0 °C ... +2320 °C
	Type E: -250 °C ... +1000 °C
	Type J: -210 °C... +1200 °C
	Type K: -210 °C ... +1370 °C
	Type N: -210 °C ... +1300 °C
	Type R: -50 °C ... +1768 °C
	Type S: -50 °C ... +1768 °C
	Type T: -210 °C ... +400 °C
	Voltage sensors:
	MB1: ± 36 mV
	MB2: ± 72 mV
	MB3: ± 145 mV
	MB4: ± 290 mV
Resolution (over entire range)	0.1 °C or 0.01 mV
Input resistance	≥ 10MΩ
Type of cable, cable length	shielded, ≤ 30 m
Analog value creation:	
Resolution	16 bits
Integration time	2 - 120ms
Conversion method	SigmaDelta
Monotonicity without error code	Yes
Conversion time	Integration time x 3
Sampling repeat time	Number of active channels x conversion time
Linearization	Acc. to sensor type
Failures and errors:	
Max. measuring error (without temperature compensation)	≤ ± 1 K over the entire measuring range (for type K)
Max. measuring error cold junction	≤ ± 1K
Temperature error	± 0.05 K/K (type K)
Maximum error over the full temperature range	± 3K
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded

Technical Data

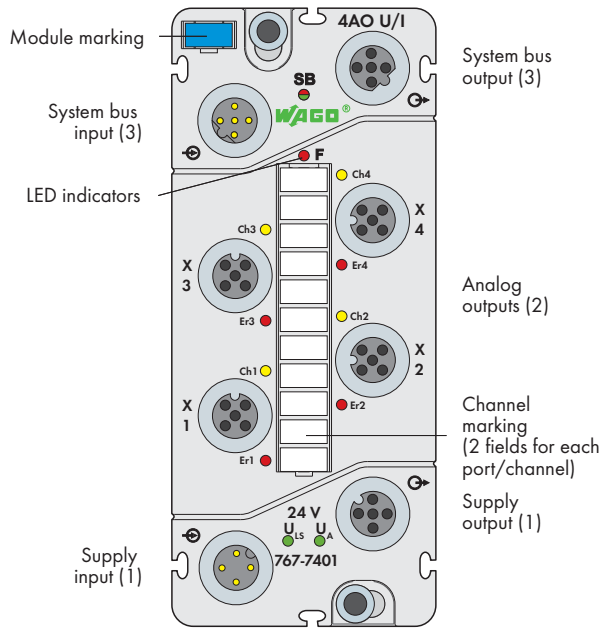
Standards and approvals:

UL 508	
Conformity marking	CE
Isolation:	
Channel - Channel	No
U _{LS} , U _A , system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	Type B; C; E; J; K; N; R; S; T MB 1; MB 2; MB 3; MB 4; user-defined
Limiting values (per channel)	Min./Max.
Integration time (per channel)	2, 4, 8, 16.7, 20, 30, 60, 120ms
Substitute value (per channel)	Value
Cold junction compensation (per channel)	Type: Fixed temperature; Compensation connector on the current input; Compensation connector on the previous input;
	Temperature: Value
	Offset: Value
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range)
Online simulation (per channel/module)	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Overrange/measuring range underflow Limit value violation (min/max) Wire break
I/O diagnostics (per module)	Undervoltage (U _{LS} + U _A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4: Input signal status	LED (yellow)
Er1 ... Er4: Input signal error	LED (red)
U _{LS} + U _A : Supply status	LED (green)
Indicators	Non-latching

General Specifications

Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	280 g

2 Analog Output Module Voltage/Current
416 4 outputs



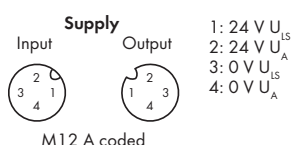
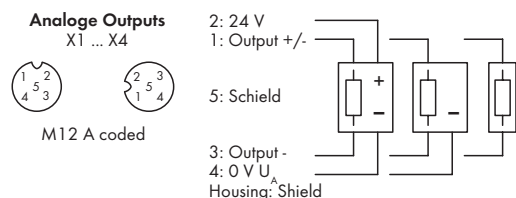
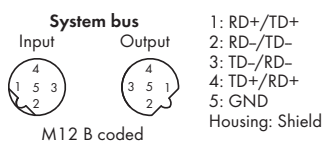
Short description:
Analog output module for the output of voltage and current signals.

Characteristics:
 - 4 analog outputs 0-20 mA, 4-20 mA, ±20 mA, 0-10 V or ±10 V
 - Diagnostic capable
 - Parametrizable (measuring range, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

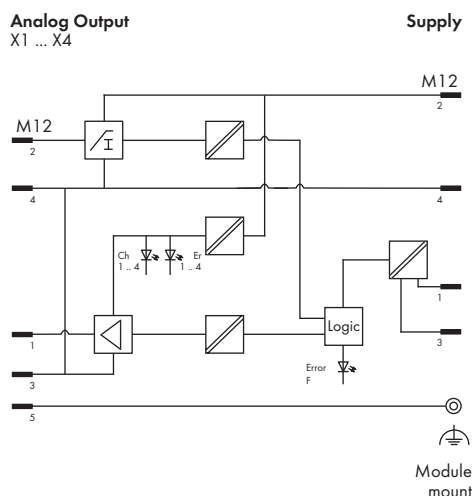
- Included:**
- 1 x WMB marker, blue
 - 1 x marking strips
 - 2 x M12 protective caps

Description	Item No.	Pack. Unit
4AO U/I	767-7401	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	

Technical Data	
Module supply:	
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed
Current carrying capacity of supply connections	Max. 8 A (U_{IS} : 4 A, U_A : 4 A)
Supply voltage	
Logic and sensor voltage U_{IS}	24 V DC (-25 % ... +30 %)
Actuator voltage U_A	24 V DC (-25 % ... +30 %)
Supply current	
Logic and sensor current I_{IS}	28 mA (only logic part)
Actuator current I_A	34 mA + actuators
Protection	Reverse voltage protection for $U_{IS} + U_A$; Overload and short circuit protection for U_{IS}
Analog outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Type of signal	Currents and voltages
Wire connection	2-, 3- or 4-wire (external shield (screen) via knurled nut)
Measuring range	0-20mA, 4-20mA, ±20mA, 0-10V, ±10V
Output load (load impedance)	≤ 500 Ω (current) ≥ 5 kΩ (voltage)
Maximum capacitive load (at voltage outputs)	10 nF
Maximum inductive load (at current outputs)	1 mH
Type of cable, cable length	shielded, ≤ 30 m



Block diagram of an output

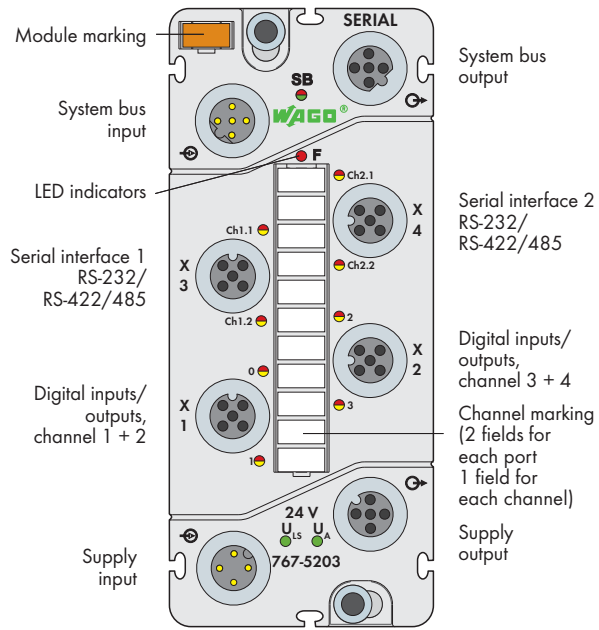


Technical Data	
Analog value creation:	
Resolution	15-bit unipolar, 16-bit bipolar
Monotonicity	yes
Cycle time	approx. 1 ms
Recovery time for resistive, inductive and capacitive loads	approx. 1 ms
Failures and errors:	
Maximum continuous overload (without failure)	0 Ω
Max. measuring error at 25°C	≤ ± 0.2 % of the measuring range
Temperature error	≤ 100 ppm/K of measuring range
Maximum error over the full temperature range	≤ ± 0.6 % of the measuring range
Overshooting	approx. ± 0.05 % of the measuring range
Output ripple	approx. ± 0.02 % of the measuring range
Crosstalk between the channels at DC voltage and AC voltage 50 Hz and 60 Hz	- 90 dB
Short circuit protection	electronic
Nominal output current	max. 1 A
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded
Standards and approvals:	
UL 508	
Conformity marking	CE

Technical Data	
Isolation:	
Channel - Channel	No
U _{IS} , U _A system bus	500 V DC each
Configurable functions:	
Measuring range (per channel)	0-20 mA, 4-20 mA, ±20 mA, 0-10 V, ±10 V, user-defined
Substitute value strategy (per channel)	Switch substitute value/hold last value
Substitute value (per channel)	0 mA bzw. 0 V / substitute value according to measuring range
Manual mode (per channel)	On/off
Manual mode value (per channel)	Value
Online simulation (per channel)	Lock/unlock; simulation value: (according to measuring range)
Online simulation (per channel/	Diagnostics
I/O diagnostics:	
I/O diagnostics (per channel)	Short circuit (voltage) Wire break (current) Overtemperature
I/O diagnostics (per module)	Short circuit (actuator supply) Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	8-byte data + status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
Ch1 ... Ch4 : Output signal status	LED (yellow)
Er1 ... Er4 : Output signal error	LED (red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	282 g

2 Serial Interface (RS-232, RS-422/-485)

2 interfaces (2xM12) + 4 digital inputs/outputs (2xM12, two inputs/outputs per connector)



Short description:

The serial interface module controls/monitors both devices (e.g., barcode readers, printers, scales, laser measurement systems, operator panels, transponders) and integrated digital inputs/outputs.

Characteristics:

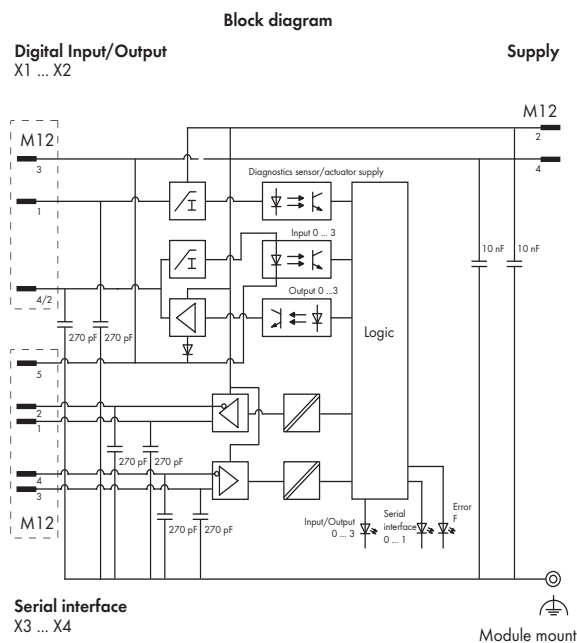
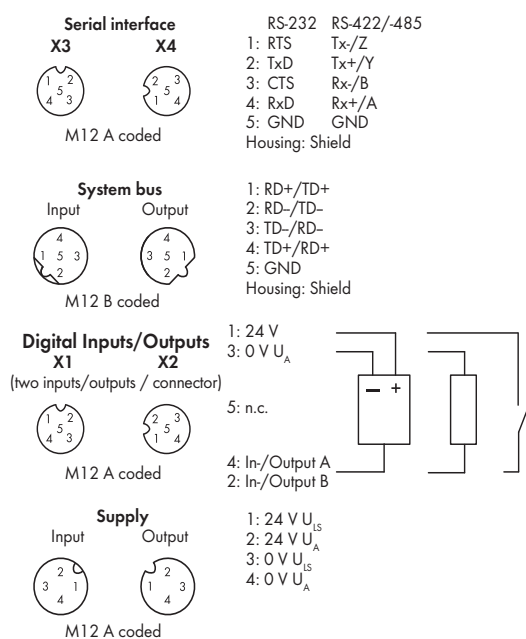
- 2 serial interfaces (RS-232, RS-422/-485)
- 4 digital inputs/outputs, 24 VDC / 0.5 A
- Diagnostic capable (per channel/per module)
- Parametrizable (serial interface, operating mode, filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics)

Included:

- 1 x WMB marker, orange
- 1 x marking strip
- 2 x M12 protective cap

Description	Item No.	Pack. Unit
Serial Interface (RS-232, RS-422/-485)	767-5203	1
Accessories		
Marking strips, marking pen, spacer	see pages 438 ... 439	
module and protective caps		
IP67 cables and connectors	see pages 422 ... 437 + chapter 5	
Technical Data		
Module supply:		
Connection type (1)	M12 connectors, A coded, 4 poles; Derating must be observed	
Current carrying capacity of supply connections	max. 8 A (U _{IS} : 4 A, U _A : 4 A)	
Supply voltage		
Logic and sensor voltage U _{LS}	24 V DC (-25 % ... +30 %)	
Actuator voltage U _A	24 V DC (-25 % ... +30 %)	
Supply current		
Logic and sensor current I _{LS}	typ. 75 mA + sensors (max. 400 mA)	
Actuator current I _A	typ. 25 mA + actuators 2.4 A (4 x 600 mA)	
Protection	Reverse voltage protection for U _{IS} + U _A Short-circuit protection for sensor/actuator supply	

Technical Data	
Serial interface:	
Interfaces	2
Connection type (2)	M12 connectors, A coded, 5 poles
Transmission channels	1 RxD / 1 TxD (full/half duplex)
Type of cable, cable length	15 m (RS-232); 1000 m (RS-422/-485)
Baud rate	300 - 115,200 baud
Buffer	4 KB (In); 4 KB (Out)
Digital inputs:	
Number of inputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- or 3-wire
Input filter	Hardware: ≤ 110 μs Software: parametrizable
Input characteristic	Type 2, acc. to IEC 61131-2
Signal voltage (0)	-3 V ... +5 V DC
Signal voltage (1)	+11 V ... U _A DC
Input wiring	High-side switching
Input voltage	24 VDC (-3 VDC < U _{IN} < +30 VDC); Power from U _A is strongly recommended, recovery for voltages > U _A
Input current (typ.)	7.3 mA
Connection of 2-wire BEROs	max. 1.5 mA admissible closed current
Cable length, unshielded	≤ 30 m
Wrong connection of inputs	No effect
Input characteristic:	
Input voltage	Typical input current
-3 V < U _{IN} < 0 V	0 mA
5 V	2.3 mA ... 2.5 mA
11 V	6.4 mA ... 6.7 mA
24 V < U _A < 31.2 V	7.3 mA ... 7.5 mA

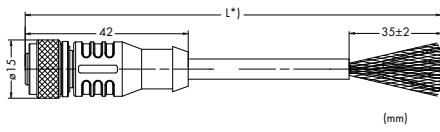


Technical Data	
Digital outputs:	
No. of outputs	4
Connection type (2)	M12 connectors, A coded, 5 poles
Wire connection	2- or 3-wire
Output voltage	≤ U _A
Output current (per channel)	0.5 A (max. 0.6 A), short-circuit/overload proof (thermal disconnection)
Voltage drop against U _A at 500 mA	max. 0.2 V DC
Output current (module)	max. 2 A
Leakage current in OFF state	typ. 500 μA
Output circuit	High-side switching
Information on actuator selection:	
Delay time HW from "0" to "1" (0-90%)	typ. 90 μs (resistive load)
Delay time HW from "1" to "0" (0-90%)	typ. 310 μs (resistive load)
Rise time from "0" to "1"	typ. 60 μs (resistive load)
Fall time from "1" to "0"	typ. 45 μs (resistive load)
Cable length	≤ 30 m
Reverse current (in case of recovery for voltages > U _A)	≤ 1 A (error: 1 channel)
Type of load	Inductive, resistive loads and lamps
Switching frequency	Inductive load approx. 20 Hz Resistive load approx. 500 Hz Lamp load approx. 500 Hz
Parallel connection of 2 outputs	for power boost for redundant actuation of a load
Type of protective circuit	External protection (e.g., recovery diodes)
Output resistance	< 0.4 Ω
Operating state influence on output:	
PLC CPU stop	Acc. to substitute value strategy
Supply voltage under rated voltage tolerance	0 V status
Interruption of supply voltage	0 V status
Output operation	Non-latching
Overload behavior	Automatic restart
System bus:	
Connection type (3)	M12 connectors, B coded, 5 poles, shielded

Technical Data	
Standards and approvals:	
UL 508	
Conformity marking	CE
Isolation:	
Channel - Channel	no
U _{IS} , U _A , system bus	500 V DC each
Parameterizable functions, serial interface:	
Operating mode (per channel)	RS-232; RS-422/-485
Baud rate (per channel)	300 - 115,700 baud
Data bits (per channel)	7/8
Parity	None/Even/Odd
Stop bits	1/2
Flow-Control	None/Xon+Xoff/RTS+CTS
Parameterizable functions, digital inputs/outputs:	
Operating mode, input filter, inversion, substitute value strategy, substitute value, manual mode, online simulation and diagnostics	For details, see manual.
I/O diagnostics:	
I/O diagnostics (per channel)	Overtemperature
I/O diagnostics (per module)	Short-circuit of sensor/actuator supply Undervoltage (U _{IS} + U _A)
Process image:	
Process data width	Interface: 10 bytes (data In/Out + status); DIO: 1-byte data In/Out + 1-byte status
LED indicators:	
SB: System bus status	LED (green/red)
F: Error status	LED (red)
0 - 3: Signal status, inputs/outputs	LED (yellow/red)
Ch1.1 + Ch2.1: Transmission status	LED (yellow/red)
Ch1.2 + Ch2.2: Reception status	LED (yellow/red)
U _{IS} + U _A : Supply status	LED (green)
Indicators	Non-latching
General Specifications	
Dimensions (mm) W x H x L	50 x 35.7 x 117
Weight	260

WAGO-SPEEDWAY 767

S-BUS cable suitable for drag chains (system bus cable), assembled on one end

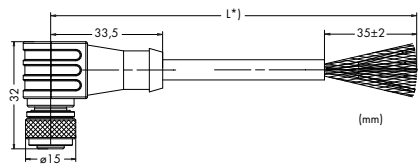


Pin 1 - 5: 0.14 mm²
 1 red
 2 black
 3 blue
 4 brown
 5 yellow, green,
 orange, gray

M12 socket, straight, B coded, suitable for drag chains

Item No. Pack. Unit

M12 socket, straight, one free cable end, 2.0 m	756-1501/060-020	1
M12 socket, straight, one free cable end, 5.0 m	756-1501/060-050	1
M12 socket, straight, one free cable end, 10.0 m	756-1501/060-100	1
M12 socket, straight, one free cable end, 20.0 m	756-1501/060-200	1

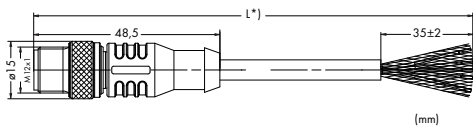


Pin 1 - 5: 0.14 mm²
 1 red
 2 black
 3 blue
 4 brown
 5 yellow, green,
 orange, gray

M12 socket, right angle, B coded, suitable for drag chains

Item No. Pack. Unit

M12 socket, right angle, one free cable end, 2.0 m	756-1502/060-020	1
M12 socket, right angle, one free cable end, 5.0 m	756-1502/060-050	1
M12 socket, right angle, one free cable end, 10.0 m	756-1502/060-100	1
M12 socket, right angle, one free cable end, 20.0 m	756-1502/060-200	1

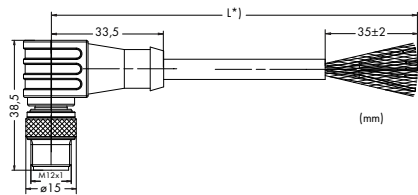


Pin 1 - 5: 0.14 mm²
 1 red
 2 black
 3 blue
 4 brown
 5 yellow, green,
 orange, gray

M12 plug, straight, B coded, suitable for drag chains

Item No. Pack. Unit

M12 plug, straight, one free cable end, 2.0 m	756-1503/060-020	1
M12 plug, straight, one free cable end, 5.0 m	756-1503/060-050	1
M12 plug, straight, one free cable end, 10.0 m	756-1503/060-100	1
M12 plug, straight, one free cable end, 20.0 m	756-1503/060-200	1



Pin 1 - 5: 0.14 mm²
 1 red
 2 black
 3 blue
 4 brown
 5 yellow, green,
 orange, gray

M12 plug, right angle, B coded, suitable for drag chains

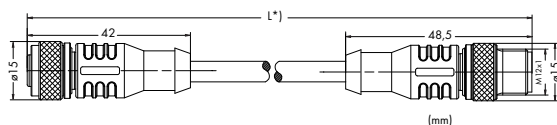
Item No. Pack. Unit

M12 plug, right angle, one free cable end, 2.0 m	756-1504/060-020	1
M12 plug, right angle, one free cable end, 5.0 m	756-1504/060-050	1
M12 plug, right angle, one free cable end, 10.0 m	756-1504/060-100	1
M12 plug, right angle, one free cable end, 20.0 m	756-1504/060-200	1

*) Cable length

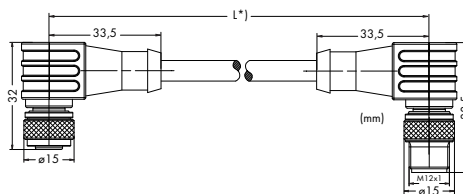
WAGO-SPEEDWAY 767

S-BUS cable suitable for drag chains (system bus cable), assembled on both ends and unassembled



Pin 1 - 5: 0.14 mm²
 1 red
 2 black
 3 blue
 4 brown
 5 yellow, green, orange, gray

M12 socket, straight / M12 plug, straight, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	756-1505/060-002	1
M12 socket, straight, M12 plug, straight, 0.3 m	756-1505/060-003	1
M12 socket, straight, M12 plug, straight, 0.5 m	756-1505/060-005	1
M12 socket, straight, M12 plug, straight, 1.0 m	756-1505/060-010	1
M12 socket, straight, M12 plug, straight, 2.0 m	756-1505/060-020	1
M12 socket, straight, M12 plug, straight, 5.0 m	756-1505/060-050	1
M12 socket, straight, M12 plug, straight, 10.0 m	756-1505/060-100	1
M12 socket, straight, M12 plug, straight, 20.0 m	756-1505/060-200	1
M12 socket, straight, M12 plug, straight, 50.0 m	756-1505/060-500	1



Pin 1 - 5: 0.14 mm²
 1 red
 2 black
 3 blue
 4 brown
 5 yellow, green, orange, gray

M12 socket, right angle / M12 plug, right angle, B coded, suitable for drag chains	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	756-1506/060-002	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	756-1506/060-003	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	756-1506/060-005	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	756-1506/060-010	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	756-1506/060-020	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	756-1506/060-050	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	756-1506/060-100	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	756-1506/060-200	1
M12 socket, right angle, M12 plug, right angle, 50.0 m	756-1506/060-500	1

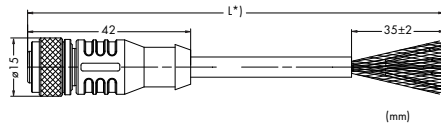
*) Cable length



S-Bus cable, not fitted with connectors, suitable for drag chains	Item No.	Pack. Unit
S-BUS cable, not fitted with connectors, 25.0 m	756-1500/000-250	1
S-BUS cable, not fitted with connectors, 50.0 m	756-1500/000-500	1
S-BUS cable, not fitted with connectors, 100.0 m	756-1500/000-1000	1

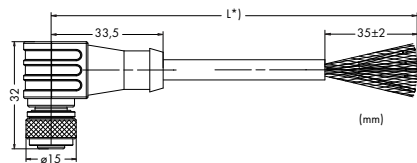
WAGO-SPEEDWAY 767

S-BUS cables, with one end of cable fitted



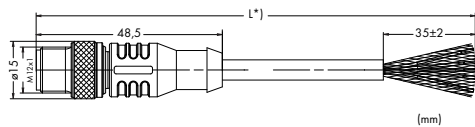
- Pin 1 - 5: 0.14 mm²
 1 white/blue
 2 blue
 3 white/orange
 4 orange
 5 white/green, green,
 white/brown, brown

M12 socket, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	756-1301/060-020	1
M12 socket, straight, one free cable end, 5.0 m	756-1301/060-050	1
M12 socket, straight, one free cable end, 10.0 m	756-1301/060-100	1
M12 socket, straight, one free cable end, 20.0 m	756-1301/060-200	1



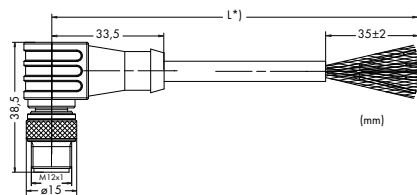
- Pin 1 - 5: 0.14 mm²
 1 white/blue
 2 blue
 3 white/orange
 4 orange
 5 white/green, green,
 white/brown, brown

M12 socket, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	756-1302/060-020	1
M12 socket, right angle, one free cable end, 5.0 m	756-1302/060-050	1
M12 socket, right angle, one free cable end, 10.0 m	756-1302/060-100	1
M12 socket, right angle, one free cable end, 20.0 m	756-1302/060-200	1



- Pin 1 - 5: 0.14 mm²
 1 white/blue
 2 blue
 3 white/orange
 4 orange
 5 white/green, green,
 white/brown, brown

M12 plug, straight, B coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	756-1303/060-020	1
M12 plug, straight, one free cable end, 5.0 m	756-1303/060-050	1
M12 plug, straight, one free cable end, 10.0 m	756-1303/060-100	1
M12 plug, straight, one free cable end, 20.0 m	756-1303/060-200	1



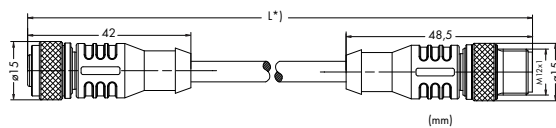
- Pin 1 - 5: 0.14 mm²
 1 white/blue
 2 blue
 3 white/orange
 4 orange
 5 white/green, green,
 white/brown, brown

M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	756-1304/060-020	1
M12 plug, right angle, one free cable end, 5.0 m	756-1304/060-050	1
M12 plug, right angle, one free cable end, 10.0 m	756-1304/060-100	1
M12 plug, right angle, one free cable end, 20.0 m	756-1304/060-200	1

*) Cable length

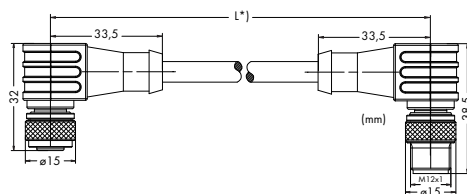
WAGO-SPEEDWAY 767

S-BUS cables, with both ends of cable fitted and not fitted with connectors



- Pin 1 - 5: 0.14 mm²
 1 white/blue
 2 blue
 3 white/orange
 4 orange
 5 white/green, green, white/brown, brown

M12 socket, straight / M12 plug, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	756-1305/060-002	1
M12 socket, straight, M12 plug, straight, 0.3 m	756-1305/060-003	1
M12 socket, straight, M12 plug, straight, 0.5 m	756-1305/060-005	1
M12 socket, straight, M12 plug, straight, 1.0 m	756-1305/060-010	1
M12 socket, straight, M12 plug, straight, 2.0 m	756-1305/060-020	1
M12 socket, straight, M12 plug, straight, 5.0 m	756-1305/060-050	1
M12 socket, straight, M12 plug, straight, 10.0 m	756-1305/060-100	1
M12 socket, straight, M12 plug, straight, 20.0 m	756-1305/060-200	1
M12 socket, straight, M12 plug, straight, 50.0 m	756-1305/060-500	1



- Pin 1 - 5: 0.14 mm²
 1 white/blue
 2 blue
 3 white/orange
 4 orange
 5 white/green, green, white/brown, brown

M12 socket, right angle / M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	756-1306/060-002	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	756-1306/060-003	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	756-1306/060-005	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	756-1306/060-010	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	756-1306/060-020	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	756-1306/060-050	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	756-1306/060-100	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	756-1306/060-200	1
M12 socket, right angle, M12 plug, right angle, 50.0 m	756-1306/060-500	1

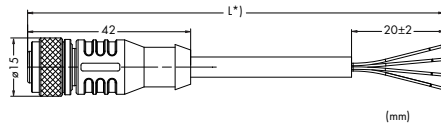


S-Bus cable, not fitted with connectors	Item No.	Pack. Unit
S-BUS cable, not fitted with connectors, 25.0 m	756-1300/000-250	1
S-BUS cable, not fitted with connectors, 50.0 m	756-1300/000-500	1
S-BUS cable, not fitted with connectors, 100.0 m	756-1300/000-1000	1

*) Cable length

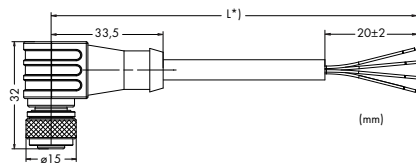
WAGO-SPEEDWAY 767

Power supply cables, with one end of cable fitted



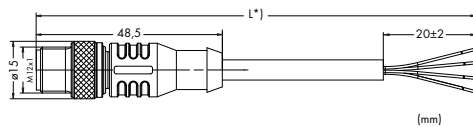
Pin 1 - 4: 0.75 mm²
 1 brown
 2 white
 3 blue
 4 black

M12 socket, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	756-3101/040-020	1
M12 socket, straight, one free cable end, 5.0 m	756-3101/040-050	1
M12 socket, straight, one free cable end, 10.0 m	756-3101/040-100	1
M12 socket, straight, one free cable end, 20.0 m	756-3101/040-200	1



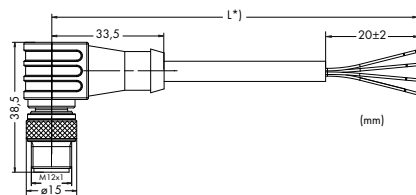
Pin 1 - 4: 0.75 mm²
 1 brown
 2 white
 3 blue
 4 black

M12 socket, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	756-3102/040-020	1
M12 socket, right angle, one free cable end, 5.0 m	756-3102/040-050	1
M12 socket, right angle, one free cable end, 10.0 m	756-3102/040-100	1
M12 socket, right angle, one free cable end, 20.0 m	756-3102/040-200	1



Pin 1 - 4: 0.75 mm²
 1 brown
 2 white
 3 blue
 4 black

M12 plug, straight, A coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	756-3103/040-020	1
M12 plug, straight, one free cable end, 5.0 m	756-3103/040-050	1
M12 plug, straight, one free cable end, 10.0 m	756-3103/040-100	1
M12 plug, straight, one free cable end, 20.0 m	756-3103/040-200	1



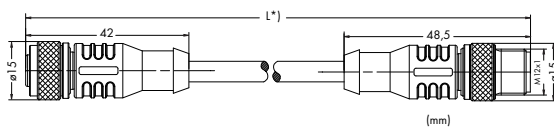
Pin 1 - 4: 0.75 mm²
 1 brown
 2 white
 3 blue
 4 black

M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	756-3104/040-020	1
M12 plug, right angle, one free cable end, 5.0 m	756-3104/040-050	1
M12 plug, right angle, one free cable end, 10.0 m	756-3104/040-100	1
M12 plug, right angle, one free cable end, 20.0 m	756-3104/040-200	1

*) Cable length

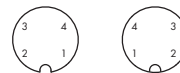
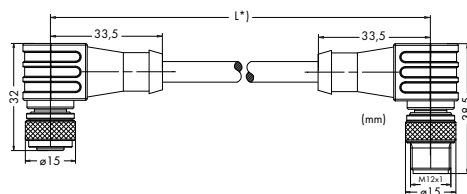
WAGO-SPEEDWAY 767

Power supply cables, with both ends fitted and not fitted with connectors



Pin 1 - 4: 0.75 mm²
 1 brown
 2 white
 3 blue
 4 black

M12 socket, straight / M12 plug, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 0.2 m	756-3105/040-002	1
M12 socket, straight, M12 plug, straight, 0.3 m	756-3105/040-003	1
M12 socket, straight, M12 plug, straight, 0.5 m	756-3105/040-005	1
M12 socket, straight, M12 plug, straight, 1.0 m	756-3105/040-010	1
M12 socket, straight, M12 plug, straight, 2.0 m	756-3105/040-020	1
M12 socket, straight, M12 plug, straight, 5.0 m	756-3105/040-050	1
M12 socket, straight, M12 plug, straight, 10.0 m	756-3105/040-100	1
M12 socket, straight, M12 plug, straight, 20.0 m	756-3105/040-200	1



Pin 1 - 4: 0.75 mm²
 1 brown
 2 white
 3 blue
 4 black

M12 socket, right angle / M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 0.2 m	756-3106/040-002	1
M12 socket, right angle, M12 plug, right angle, 0.3 m	756-3106/040-003	1
M12 socket, right angle, M12 plug, right angle, 0.5 m	756-3106/040-005	1
M12 socket, right angle, M12 plug, right angle, 1.0 m	756-3106/040-010	1
M12 socket, right angle, M12 plug, right angle, 2.0 m	756-3106/040-020	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	756-3106/040-050	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	756-3106/040-100	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	756-3106/040-200	1

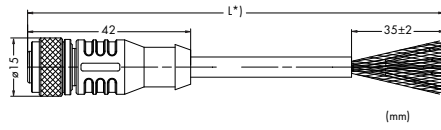


Power supply cable, not fitted with connectors	Item No.	Pack. Unit
Versorgungskabel, unkonfektioniert, 25,0 m	756-3100/000-250	1
Power supply cable, not fitted with connectors, 50.0 m	756-3100/000-500	1
Power supply cable, not fitted with connectors, 100.0 m	756-3100/000-1000	1

*) Cable length

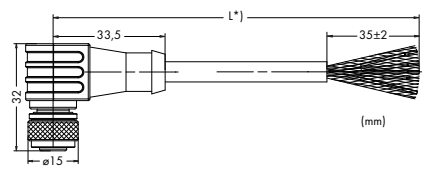
WAGO-SPEEDWAY 767

PROFIBUS cables, with one end of cable fitted



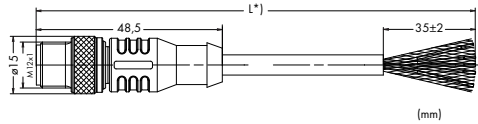
Pin 2 and 4: 0.34 mm²
 1 n.c.
 2 green
 3 n.c.
 4 red
 5 n.c.

M12 socket, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	756-1101/060-020	1
M12 socket, straight, one free cable end, 5.0 m	756-1101/060-050	1
M12 socket, straight, one free cable end, 10.0 m	756-1101/060-100	1
M12 socket, straight, one free cable end, 20.0 m	756-1101/060-200	1



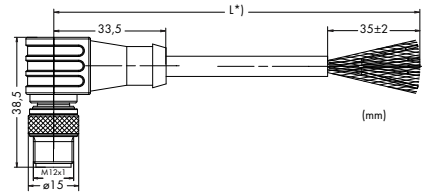
Pin 2 and 4: 0.34 mm²
 1 n.c.
 2 green
 3 n.c.
 4 red
 5 n.c.

M12 socket, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	756-1102/060-020	1
M12 socket, right angle, one free cable end, 5.0 m	756-1102/060-050	1
M12 socket, right angle, one free cable end, 10.0 m	756-1102/060-100	1
M12 socket, right angle, one free cable end, 20.0 m	756-1102/060-200	1



Pin 2 and 4: 0.34 mm²
 1 n.c.
 2 green
 3 n.c.
 4 red
 5 n.c.

M12 plug, straight, B coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	756-1103/060-020	1
M12 plug, straight, one free cable end, 5.0 m	756-1103/060-050	1
M12 plug, straight, one free cable end, 10.0 m	756-1103/060-100	1
M12 plug, straight, one free cable end, 20.0 m	756-1103/060-200	1



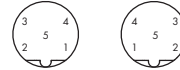
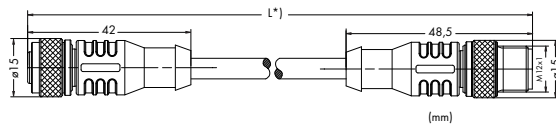
Pin 2 and 4: 0.34 mm²
 1 n.c.
 2 green
 3 n.c.
 4 red
 5 n.c.

M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	756-1104/060-020	1
M12 plug, right angle, one free cable end, 5.0 m	756-1104/060-050	1
M12 plug, right angle, one free cable end, 10.0 m	756-1104/060-100	1
M12 plug, right angle, one free cable end, 20.0 m	756-1104/060-200	1

*) Cable length

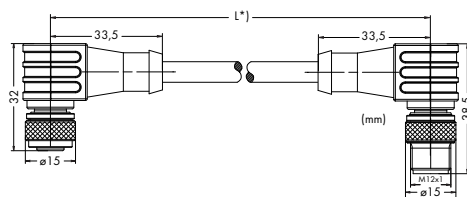
WAGO-SPEEDWAY 767

PROFIBUS cables, with both ends of cable fitted



Pin 2 and 4: 0.34 mm²
 1 n.c.
 2 green
 3 n.c.
 4 red
 5 n.c.

M12 socket, straight / M12 plug, straight, B coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2.0 m	756-1105/060-020	1
M12 socket, straight, M12 plug, straight, 5.0 m	756-1105/060-050	1
M12 socket, straight, M12 plug, straight, 10.0 m	756-1105/060-100	1
M12 socket, straight, M12 plug, straight, 20.0 m	756-1105/060-200	1



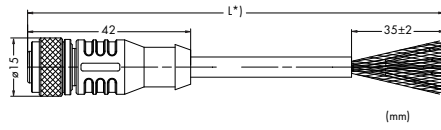
Pin 2 and 4: 0.34 mm²
 1 n.c.
 2 green
 3 n.c.
 4 red
 5 n.c.

M12 socket, right angle / M12 plug, right angle, B coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2.0 m	756-1106/060-020	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	756-1106/060-050	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	756-1106/060-100	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	756-1106/060-200	1

*] Cable length

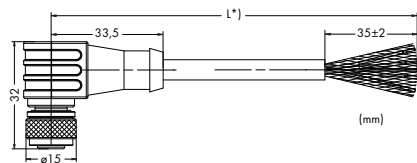
WAGO-SPEEDWAY 767

CANopen, DeviceNet cables, with one end of cable fitted



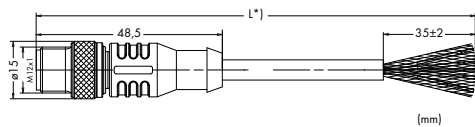
Pin 2 and 3: 0.38 mm²
 Pin 4 and 5: 0.67 mm²
 1 = Shield
 2 = red
 3 = black
 4 = white
 5 = blue

M12 socket, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, one free cable end, 2.0 m	756-1401/060-020	1
M12 socket, straight, one free cable end, 5.0 m	756-1401/060-050	1
M12 socket, straight, one free cable end, 10.0 m	756-1401/060-100	1
M12 socket, straight, one free cable end, 20.0 m	756-1401/060-200	1



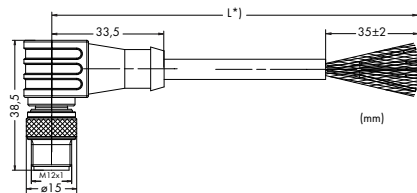
Pin 2 and 3: 0.38 mm²
 Pin 4 and 5: 0.67 mm²
 1 = Shield
 2 = red
 3 = black
 4 = white
 5 = blue

M12 socket, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, one free cable end, 2.0 m	756-1402/060-020	1
M12 socket, right angle, one free cable end, 5.0 m	756-1402/060-050	1
M12 socket, right angle, one free cable end, 10.0 m	756-1402/060-100	1
M12 socket, right angle, one free cable end, 20.0 m	756-1402/060-200	1



Pin 2 and 3: 0.38 mm²
 Pin 4 and 5: 0.67 mm²
 1 = Shield
 2 = red
 3 = black
 4 = white
 5 = blue

M12 plug, straight, A coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	756-1403/060-020	1
M12 plug, straight, one free cable end, 5.0 m	756-1403/060-050	1
M12 plug, straight, one free cable end, 10.0 m	756-1403/060-100	1
M12 plug, straight, one free cable end, 20.0 m	756-1403/060-200	1

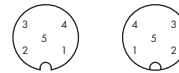
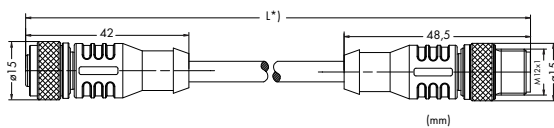


Pin 2 and 3: 0.38 mm²
 Pin 4 and 5: 0.67 mm²
 1 = Shield
 2 = red
 3 = black
 4 = white
 5 = blue

M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	756-1404/060-020	1
M12 plug, right angle, one free cable end, 5.0 m	756-1404/060-050	1
M12 plug, right angle, one free cable end, 10.0 m	756-1404/060-100	1
M12 plug, right angle, one free cable end, 20.0 m	756-1404/060-200	1

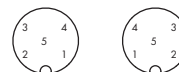
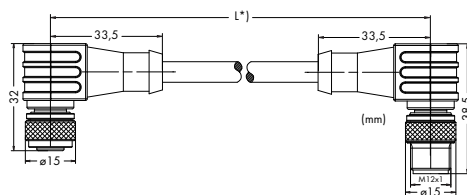
WAGO-SPEEDWAY 767

CANopen, DeviceNet cables, with both ends of cable fitted



Pin 2 and 3: 0.38 mm²
 Pin 4 and 5: 0.67 mm²
 1 = Shield
 2 = red
 3 = black
 4 = white
 5 = blue

M12 socket, straight / M12 plug, straight, A coded	Item No.	Pack. Unit
M12 socket, straight, M12 plug, straight, 2.0 m	756-1405/060-020	1
M12 socket, straight, M12 plug, straight, 5.0 m	756-1405/060-050	1
M12 socket, straight, M12 plug, straight, 10.0 m	756-1405/060-100	1
M12 socket, straight, M12 plug, straight, 20.0 m	756-1405/060-200	1

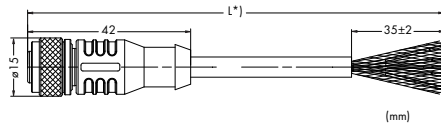


Pin 2 and 3: 0.38 mm²
 Pin 4 and 5: 0.67 mm²
 1 = Shield
 2 = red
 3 = black
 4 = white
 5 = blue

M12 socket, right angle / M12 plug, right angle, A coded	Item No.	Pack. Unit
M12 socket, right angle, M12 plug, right angle, 2.0 m	756-1406/060-020	1
M12 socket, right angle, M12 plug, right angle, 5.0 m	756-1406/060-050	1
M12 socket, right angle, M12 plug, right angle, 10.0 m	756-1406/060-100	1
M12 socket, right angle, M12 plug, right angle, 20.0 m	756-1406/060-200	1

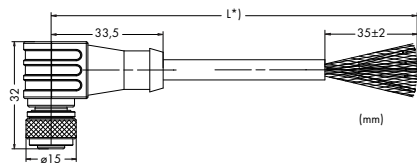
WAGO-SPEEDWAY 767

ETHERNET, PROFINET cables, with one or both ends of cable fitted



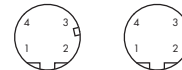
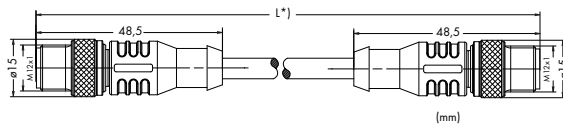
- Pin 1 - 4: 0.34 mm²
 1 yellow
 2 white
 3 orange
 4 blue

M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, one free cable end, 2.0 m	756-1201/060-020	1
M12 plug, straight, one free cable end, 5.0 m	756-1201/060-050	1
M12 plug, straight, one free cable end, 10.0 m	756-1201/060-100	1
M12 plug, straight, one free cable end, 20.0 m	756-1201/060-200	1



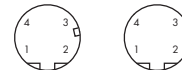
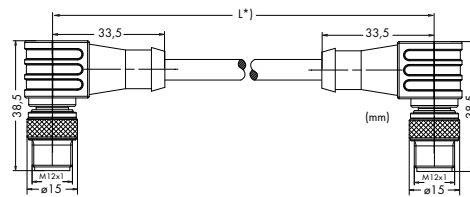
- Pin 1 - 4: 0.34 mm²
 1 yellow
 2 white
 3 orange
 4 blue

M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, one free cable end, 2.0 m	756-1202/060-020	1
M12 plug, right angle, one free cable end, 5.0 m	756-1202/060-050	1
M12 plug, right angle, one free cable end, 10.0 m	756-1202/060-100	1
M12 plug, right angle, one free cable end, 20.0 m	756-1202/060-200	1



- Pin 1 - 4: 0.34 mm²
 1 yellow
 2 white
 3 orange
 4 blue

M12 plug, straight / M12 plug, straight, D coded	Item No.	Pack. Unit
M12 plug, straight, M12 plug, straight, 2.0 m	756-1203/060-020	1
M12 plug, straight, M12 plug, straight, 5.0 m	756-1203/060-050	1
M12 plug, straight, M12 plug, straight, 10.0 m	756-1203/060-100	1
M12 plug, straight, M12 plug, straight, 20.0 m	756-1203/060-200	1



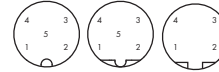
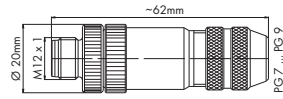
- Pin 1 - 4: 0.34 mm²
 1 yellow
 2 white
 3 orange
 4 blue

M12 plug, right angle / M12 plug, right angle, D coded	Item No.	Pack. Unit
M12 plug, right angle, M12 plug, right angle, 2.0 m	756-1204/060-020	1
M12 plug, right angle, M12 plug, right angle, 5.0 m	756-1204/060-050	1
M12 plug, right angle, M12 plug, right angle, 10.0 m	756-1204/060-100	1
M12 plug, right angle, M12 plug, right angle, 20.0 m	756-1204/060-200	1

*) Cable length

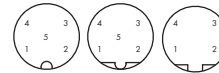
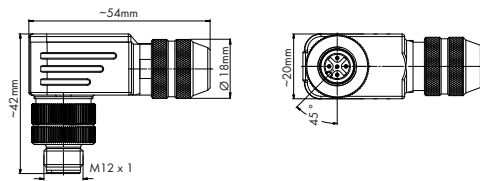
WAGO-SPEEDWAY 767

Configurable shielded connectors



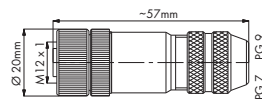
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 plug, straight, shielded	Item No.	Pack. Unit
M12 plug, A coded, straight, spring clamp technology	CANopen / DeviceNet	756-9207/060-000 1
M12 plug, B coded, straight, spring clamp technology	PROFIBUS / S-BUS	756-9401/060-000 1
M12 plug, D coded, straight, spring clamp technology	ETHERNET / PROFINET	756-9501/060-000 1



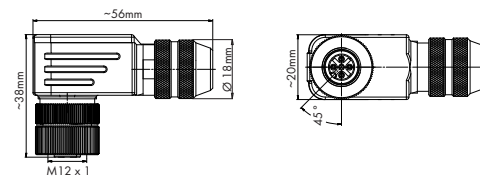
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 plug, right angle, shielded	Item No.	Pack. Unit
M12 plug, A coded, right angle, spring clamp technology	CANopen / DeviceNet	756-9211/060-000 1
M12 plug, B coded, right angle, spring clamp technology	PROFIBUS / S-BUS	756-9403/060-000 1
M12 plug, D coded, right angle, spring clamp technology	ETHERNET / PROFINET	756-9501/040-000 1



Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, straight, shielded	Item No.	Pack. Unit
M12 socket, A coded, straight, spring clamp technology	CANopen / DeviceNet	756-9208/060-000 1
M12 socket, B coded, straight, spring clamp technology	PROFIBUS / S-BUS	756-9402/060-000 1

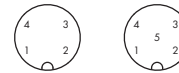
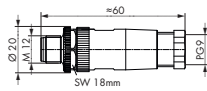


Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, right angle, shielded	Item No.	Pack. Unit
M12 socket, A coded, right angle, spring clamp technology	CANopen / DeviceNet	756-9210/060-000 1
M12 socket, B coded, right angle, spring clamp technology	PROFIBUS / S-BUS	756-9404/060-000 1

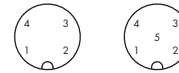
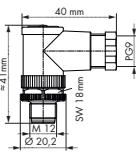
WAGO-SPEEDWAY 767

Configurable connectors with PG9 thread



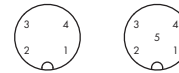
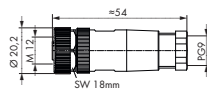
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 plug, straight, A coded, unshielded			Item No.	Pack. Unit
M12 plug, straight, screw clamp connection PG9	4-pole	Supply	756-9203/040-000	5
M12 plug, straight, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9203/050-000	5



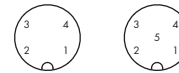
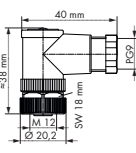
Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 plug, right angle, A coded, unshielded			Item No.	Pack. Unit
M12 plug, right angle, screw clamp connection PG9	4-pole	Supply	756-9206/040-000	5
M12 plug, right angle, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9206/050-000	5



Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, straight, A coded, unshielded			Item No.	Pack. Unit
M12 socket, straight, screw clamp connection PG9	4-pole	Supply	756-9213/040-000	5
M12 socket, straight, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9213/050-000	5

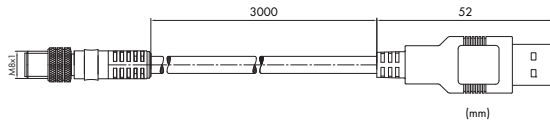


Conductor size
Ø 6 ... 8 mm / 0.14 - 0.5 mm²

M12 socket, right angle, A coded, unshielded			Item No.	Pack. Unit
M12 socket, right angle, screw clamp connection PG9	4-pole	Supply	756-9216/040-000	5
M12 socket, right angle, spring clamp technology PG9	5-pole	CANopen / DeviceNet	756-9216/050-000	5

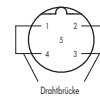
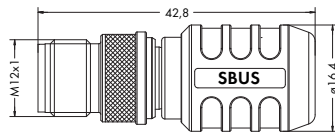
WAGO-SPEEDWAY 767

USB communication cable, terminating resistors

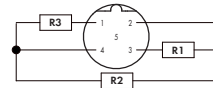
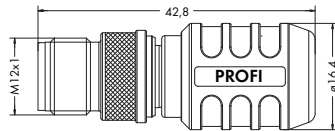


Pin 1 = red
Pin 2 = white
Pin 3 = green
Pin 4 = black

Description	Item No.	Pack. Unit
USB communication cable	756-4101/042-030	1

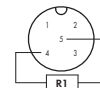
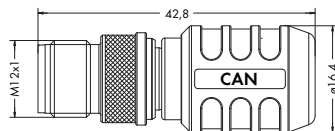


Description	Item No.	Pack. Unit
M12 system bus terminating plug, B coded, straight	756-9409/060-000	1



R3=390 Ω 0,4 W
R2=220 Ω 0,4 W
R1=390 Ω 0,4 W

Description	Item No.	Pack. Unit
M12 PROFIBUS terminating plug, B coded, straight	756-9405/060-000	1

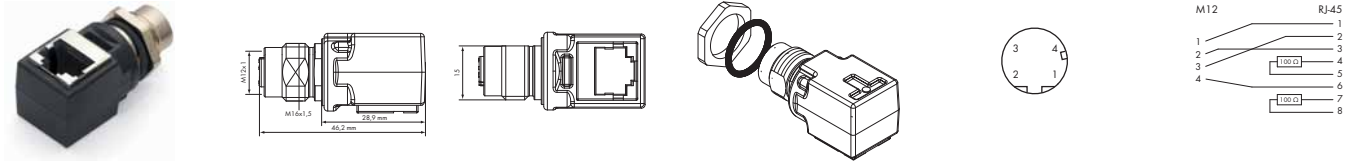


R1=120 Ω 0,25 W

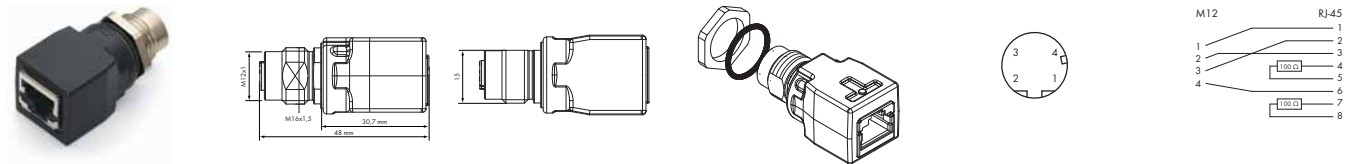
Description	Item No.	Pack. Unit
M12 CANopen, DeviceNet terminating plug, A coded, straight	756-9209/060-000	1

WAGO-SPEEDWAY 767

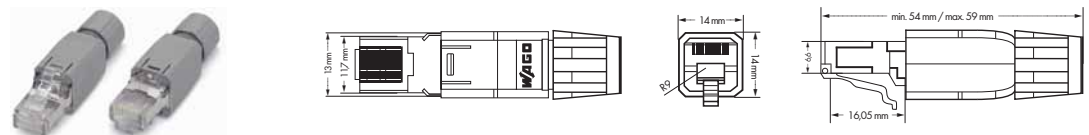
ETHERNET, PROFINET accessories



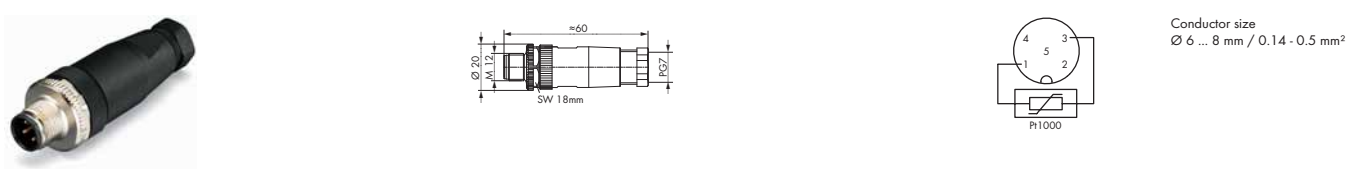
Description	Item No.	Pack. Unit
Adapter, right angle, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications or connecting IP67/IP20 components)	756-9503/040-000	1



Description	Item No.	Pack. Unit
Adapter, straight, M12 socket, D coded/RJ-45 socket (also ideally suited for control cabinet feed-through applications) or connecting IP67/IP20 components)	756-9504/040-000	1



Description	Item No.	Pack. Unit
ETHERNET RJ-45 connector, IP20	750-975	1
PROFINET RJ-45 connector, IP20	750-976	1

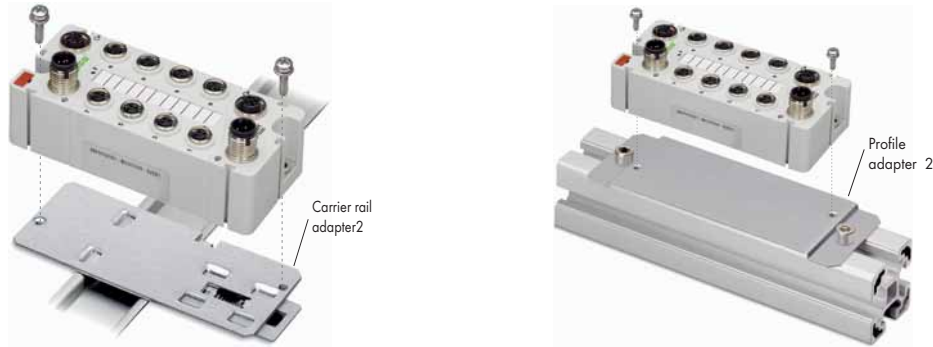


Description	Item No.	Pack. Unit
Preassembled M12 plug, axial, A coded, unshielded		
Compensation connector, 5-pole M12 plug, straight, spring clamp technology	for 767-6403 Thermocoupler Module (Pt1000 sensor integrated)	756-9207/050-000 1

WAGO-SPEEDWAY 767

General accessories

Application examples: I/O module



Carrier rail and profile adapters	Item No.	Pack. Unit
Carrier rail adapter 1 for couplers/progr. couplers	767-121	1
Carrier rail adapter 2 for I/O and power distribution modules	767-122	1
Profile adapter 1 for couplers/progr. couplers	767-123	1
Profile adapter 2 for I/O and power distribution modules	767-124	1



Protective caps (for covering unused sensor/actuator connectors)	Item No.	Pack. Unit	
M8 protective cap	for unused sockets	756-8101	1
M12 protective cap	for unused sockets	756-8102	1
M12 protective cap (fieldbus)	for unused plugs	755-809	1
M23 protective cap (fieldbus/supply)	for unused plugs	755-837	1



M23 plug, can be pre-assembled	Item No.	Pack. Unit	
6 poles	M23 plug, straight, soldering technology	756-9601/060-000	1
6 poles	M23 plug, right angle, soldering technology	756-9602/060-000	1



M23 socket, can be pre-assembled	Item No.	Pack. Unit	
6 poles	M23 socket, straight, soldering technology	756-9603/060-000	1
6 poles	M23 socket, right angle, soldering technology	756-9604/060-000	1

WAGO-SPEEDWAY 767

General accessories

Marker strip

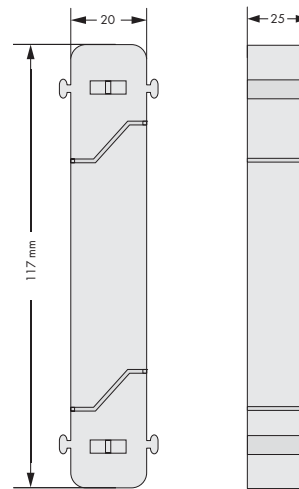
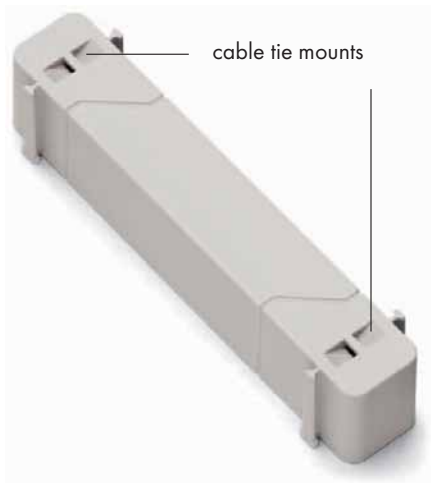


Marking pen with fibre tip



Marking accessories	Item No.	Pack. Unit
Marker strips 8xM8 (for couplers / I/O modules)	767-101	10
Marker strips 4xM12 (for I/O modules)	767-102	10
Marker strips for power distribution modules	767-103	10
Marking pen	210-110	1

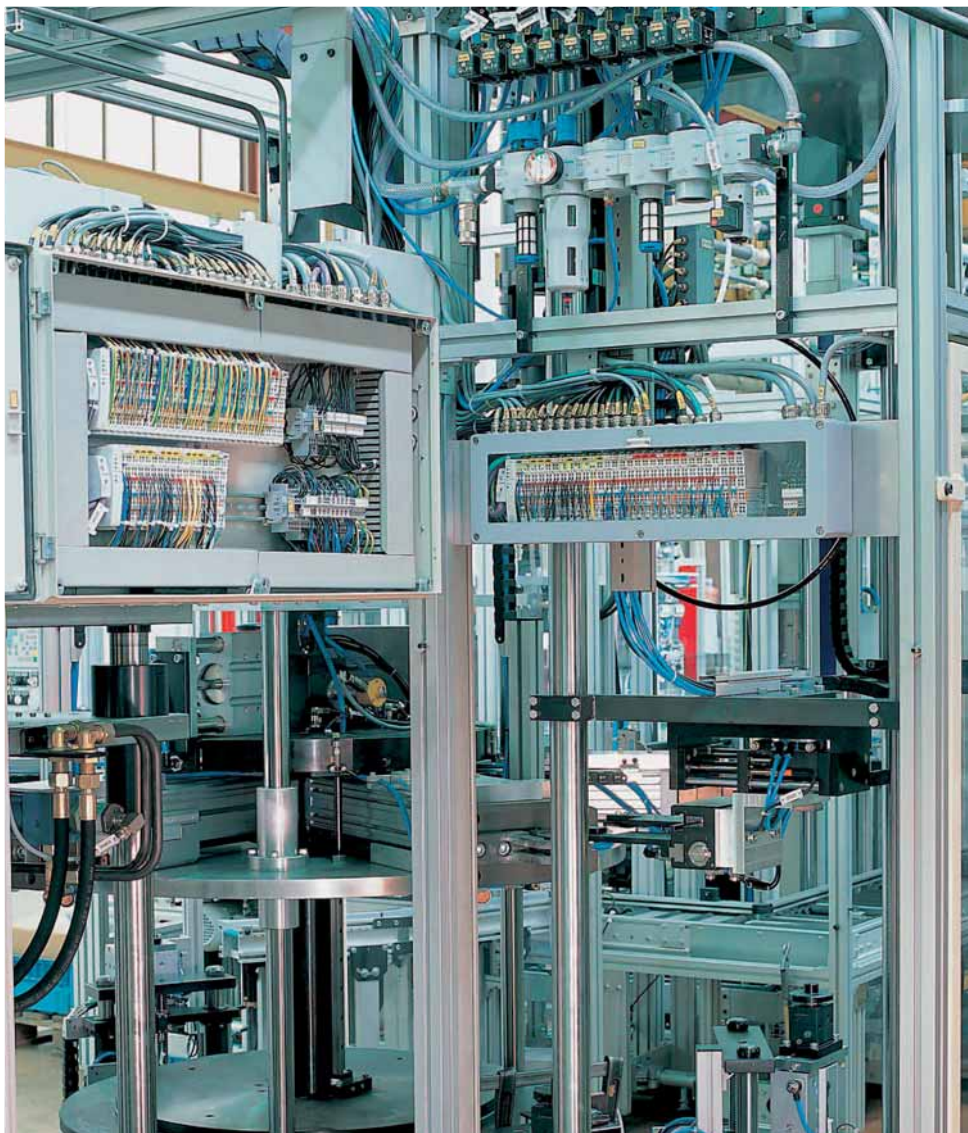
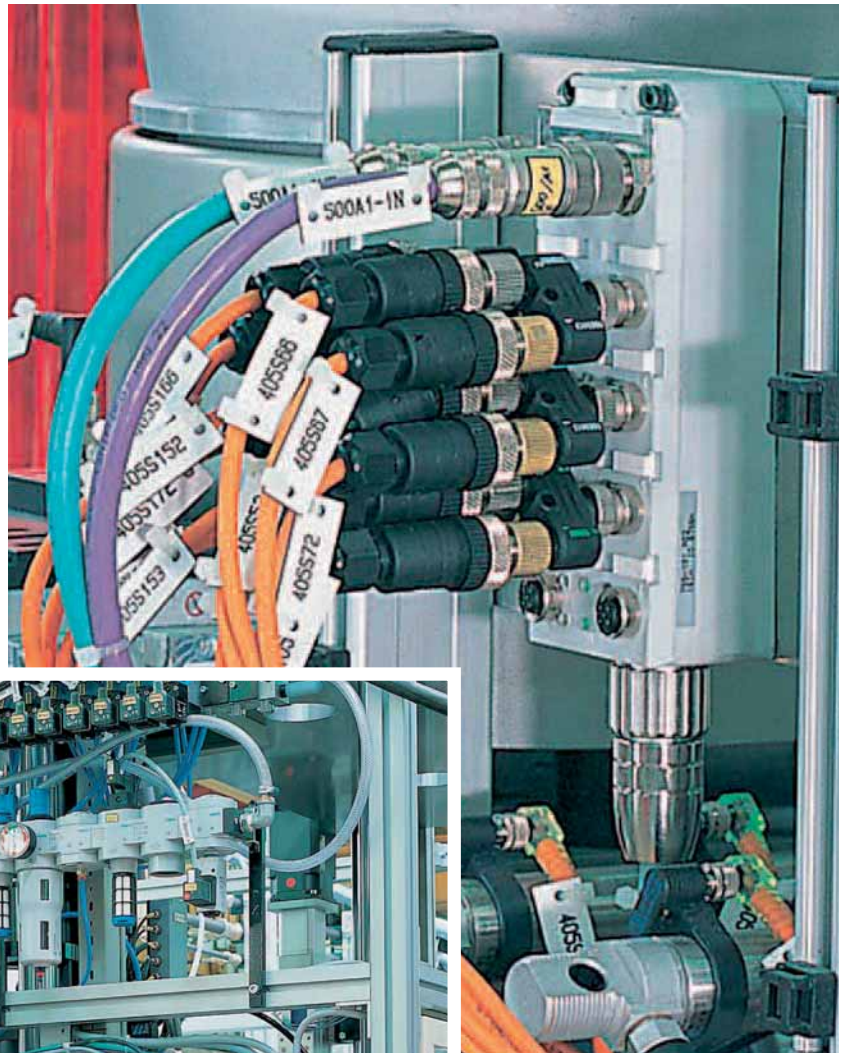
Spacer module



Description	Item No.	Pack. Unit
Spacer module	767-111	1

**WAGO Application: ZF Sachs AG
(Schweinfurt, Germany)**

WAGO Products:
WAGO-I/O-SYSTEM 750 / 755
with PROFIBUS connection



System Overview

444 - 445



PROFIBUS DP Topology

446 - 447

PROFIBUS DP Slave

16 Digital Inputs, Address Switch

16 Digital Inputs

448 - 449

8 Digital Inputs, 4 Digital Outputs, Address Switch

8 Digital Inputs, 4 Digital Outputs

450 - 451

8 Digital Outputs, Address Switch

8 Digital Outputs

452 - 453

DeviceNet Topology

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DeviceNet Slave

16 Digital Inputs

456 - 457

8 Digital Outputs

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INTERBUS Topology

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INTERBUS Remote Installation Bus Slave

8 Digital Inputs

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8 Digital Outputs

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INTERBUS Remote Bus Slave

8 Digital Inputs, Connection for Remote Installation Bus

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PROFIBUS DP Addressing Device

468



PROFIBUS DP Cables and Connectors

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DeviceNet Cables and Connectors

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INTERBUS Cables and Connectors

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Accessories for Fieldbus Slaves

472

IP67



Modules for Use in Severe Conditions

Continued decentralization of automation leads to the close proximity of fieldbus and device connections. They are often so close that there isn't even the space for protective cabinet around them. For these types of applications, the 755 series has been added to the WAGO-I/O-SYSTEM.

The compact WAGO-I/O-SYSTEM 755 with an IP67 degree of protection proves its worthiness in any manufacturing process under severe conditions. Quick replacement of devices in severe environments is an important subject. Also important is the wish for accurate installations and replacements. For this reason you can now find most sensors and actuators already equipped with standard IP65/67 connectors.

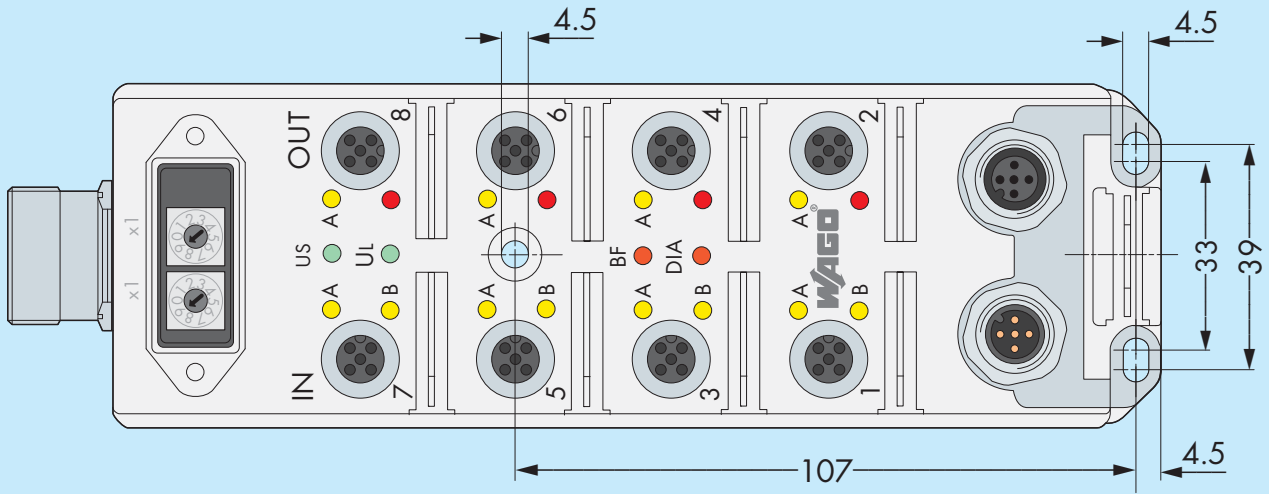
The WAGO-I/O-SYSTEM 755 meets the demands for Plug and Play solutions for sensors, actuators, power supplies, and the fieldbus. The input and output connectors, sensor and actuator connectors, even the housing dimensions and their fixing holes, everything is the same for all fieldbus systems. If the fieldbus is going to be changed, it is not necessary to replace sensors or actuators!

Features

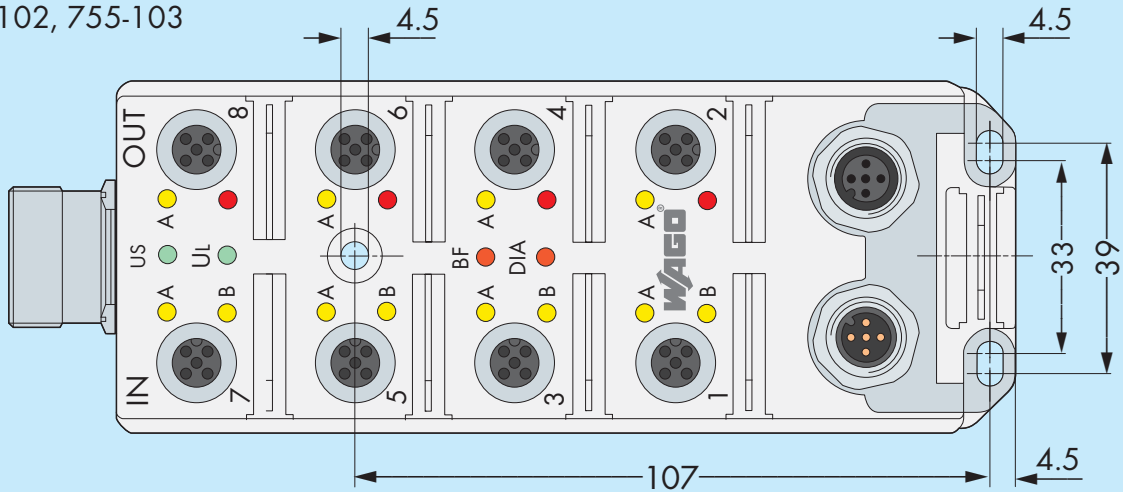
- IP67 degree of protection
- PROFIBUS, DeviceNet and INTERBUS
- Standardized connection technique
- Many different cables for sensors, actuators, fieldbus and power supply
- Reverse voltage protection
- Short circuit monitoring of the inputs and outputs
- Output current up to 2A per channel (up to 1.5A per module)
- Separate actuator power supply (E-Stop concepts)

PROFIBUS DP Slaves

755-104, 755-105, 755-106



755-101, 755-102, 755-103



Assembly dimensions (mm)

System description

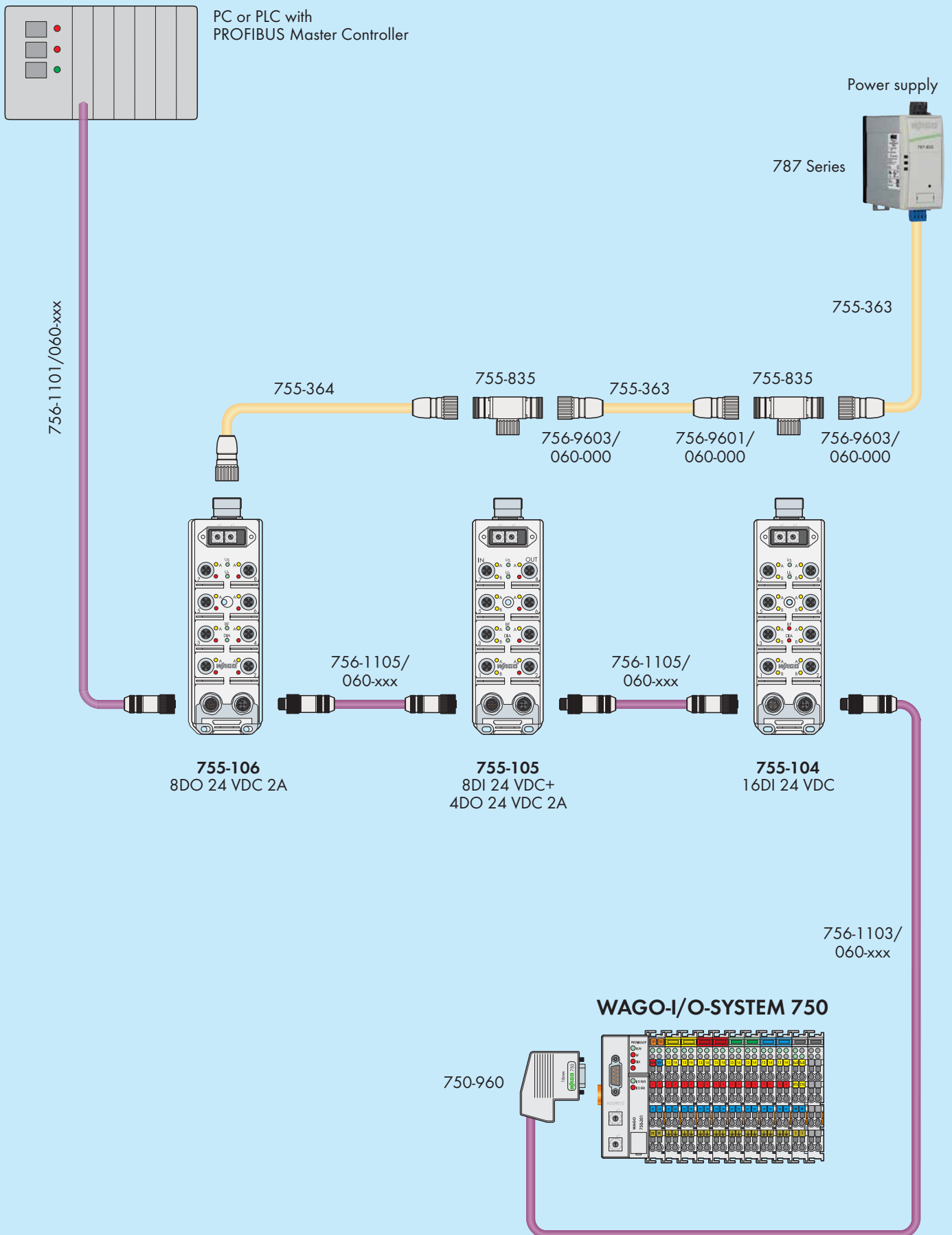
PROFIBUS DP is another member of the PROFIBUS product family. It is characterized by several special features, an important one being its capability to work in mono-master as well as in multi-master systems. The mono-master structure is often preferred due to its higher baud rate. PROFIBUS DP has been designed especially for faster data transmission. The maximum line length of the fieldbus depends on the baud rate. The baud rate, again, is dependent on the system topology and on the required response time. Therefore, the transmission speed given by the master applies to all devices on the bus.

Addressing and implementation

Setting the station address can be done via the address switch, the addressing device (Item No. 755-201) or the master configuration software. The GSD files, that are needed to implement the modules, are available free of charge (diskette, e-mail) or can be directly downloaded from the Internet (wago.com).

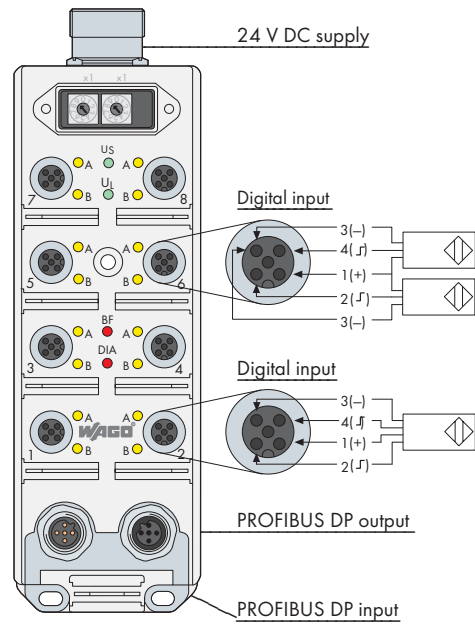
Bit assignment

The diagnostic bits of the I/O modules are in byte 7 of the diagnostic message. The message has a maximum length of 13 bytes. It corresponds to EN 50170, volume 2, PROFIBUS. The system data (e.g. master address, manufacturer ID) is in bytes 0-5. The device specific diagnostics start with byte 6. For WAGO products this diagnostic consists of 5 bytes. Byte 6 contains information about the number of diagnostic bytes (5). Byte 7 contains the proper diagnostic information. Bytes 8 to 10 don't contain any further information.



Profibus DP Slave

16 digital inputs



These items are PROFIBUS DP slaves.

Up to 16 digital inputs (see also item nos. 755-881/755-888) can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. As an alternative, up to 8 digital inputs can be used to connect standard 4-conductor PNP sensors. A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel.

The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED.

The supply voltage is supplied to the module by a M23 circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

Note: GSD files required

Description	Item No.	Pack. Unit
PROFIBUS DP Slave 16DI 24V DC with address switch	755-104	1
PROFIBUS DP Slave 16DI 24V + 24V DC (without illustration)	755-101	1
Accessories		
Addressing device	Page 468	
Bus cable, power supply cable	Page 469	
Sensor/actuator cable	See section 5, pages 494 ... 507	
Other accessories	Page 472	
GSD files	Download: www.wago.com	
Standards and Approvals		
Standard	EN 50170	
Certification	PNO	
Conformity marking	CE	

System Data	
Total length	depends on baud rate and use of repeater ; example: 400 m for 500 kbaud; 100 m for 12 Mbaud
Topology	Line structure
No. of couplers connected to Master	32 without repeater
Addressing	Address switch (755-104); Addressing device (item no. 755-201); Configuration software
Baud rate	9,6 kbaud ... 12 Mbaud
Communication	Master-slave procedure with cyclical polling
User hierarchy	Master-slave level
Cycle time	depends on number of devices and baud rate
Transmission medium	certified Cu cable
Terminating resistor	yes

Digital input



Pin	Function
1	+24 V
2	Signal B
3	0 V
4	Signal A
5	Earth

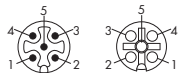
24 VDC supply



Pin	Function
1	Earth
2	n.c.
3	n.c.
4	+24 V (module supply + sensors)
5	0 V (module supply + sensors)
6	n.c.

PROFIBUS DP

Input Output

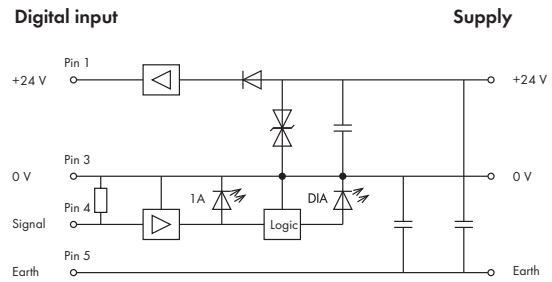


M 12 B-coded

Pin	Function
1	+5 V*
2	Line A
3	GND*
4	Line B
5	Earth

* Internal signals

Basic wiring diagram of an input



Technical Data

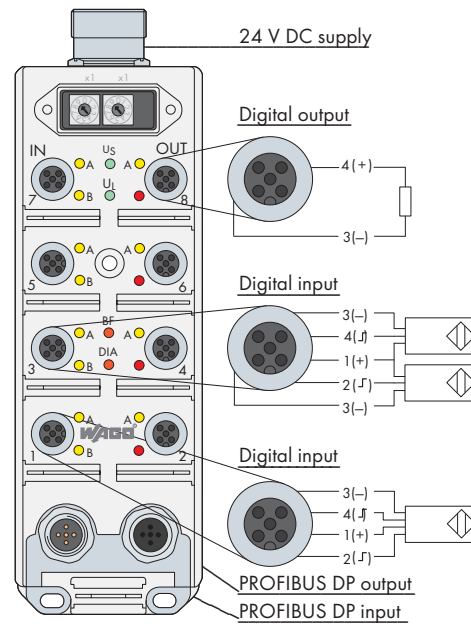
Bus system		
Address range	1...126 dec, default 99 (755-104)	
	1...126 dec, default 126 (755-101)	
ID	B755 hex	
Power supply - electronics		
Nominal voltage	24 V DC	
Voltage range	19 V ... 28.8 V DC	
Current consumption	max. 60 mA	
Reverse voltage protection	yes	
Operating indicator (U _I)	LED green	
Power supply - sensors		
Nominal voltage (V _S)	24 V DC	
Voltage range	19 V ... 28.8 V DC	
Total current of all sensors	max. 800 mA	
Short circuit protection	yes	
Sensor short circuit indication (DIA)	LED red	
Sensor supply indication (U _S)	LED green	
Inputs		
Nominal input voltage	24 V DC	
Input	high-side switching	
Number of digital channels	16	
Status indication for each channel	LED yellow	

Technical Data

General specifications		
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)	
Ambient operating temperature	0 °C ... +60 °C	
Weight	679 g (755-104)	
	540 g (755-101)	
Dimensions (mm) W x H x L	755-104: 60 x 51 x 197*	
	* including flange sockets	
	755-101: 60 x 51 x 170*	
	* including flange sockets	
Diagnostic indication		
LED 1 ... 8 A/B	Indicator yellow: channel active	
LED U _S	Indicator green: sensor supply active	
LED U _I	Indicator green: module supply active	
LED BF	Indicator red: bus error /	
	no data exchange	
LED DIA	Indicator red: module diagnosis (e.g. sensor short circuit)	
Bit assignment		
Byte 0	Bit 0 ... 7 / Sensor 1A ... 8A	
Byte 1	Bit 0 ... 7 / Sensor 1B ... 8B	
Byte 7 (diagnostic message)	Bit 4 / diagnosis: sensor overload	

Profibus DP Slave

8 digital inputs, 4 digital outputs



These items are PROFIBUS DP slaves.

Up to 8 digital inputs (see also item nos. 755-881/755-888) can be used to connect standard 3-conductor PNP sensors. As an alternative, up to 4 digital inputs can be used to connect standard 4-conductor PNP sensors. Furthermore, the module has 4 digital outputs allowing the connection of DC actuators. The inputs and outputs are connected via M12 circular connectors. The current supply of the sensors as well as the outputs are short-circuit-proof. A sensor short circuit is indicated by a collective LED. An actuator short circuit is indicated by LEDs for each channel. The status of the inputs is also indicated by LEDs for each channel.

Note: GSD files required

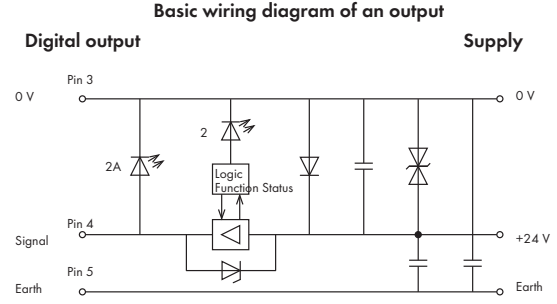
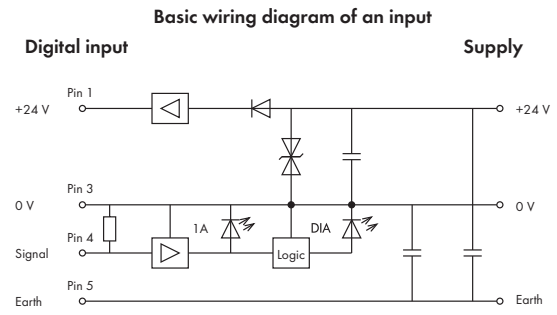
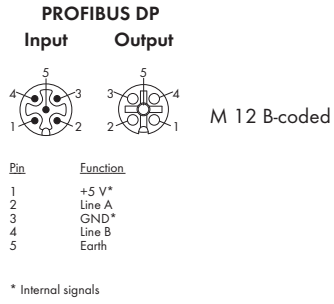
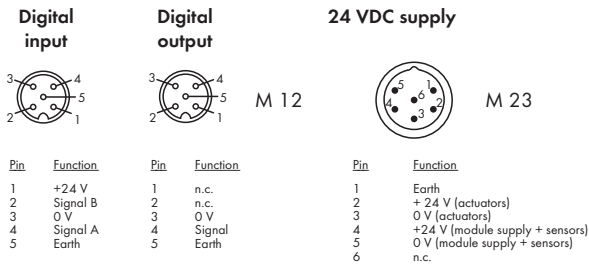
The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED.

The supply voltage is supplied to the module by a M23 circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other. The power supply of the actuators is separate.

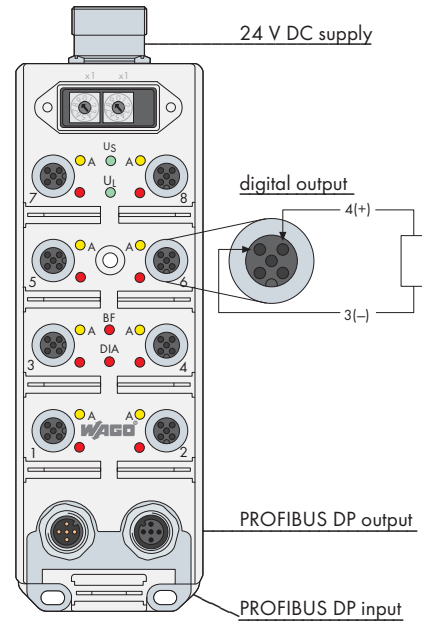
Description	Item No.	Pack. Unit
PROFIBUS DP Slave 8DI 24V + 4DO 24V DC 2A with address switch	755-105	1
PROFIBUS DP Slave 8DI 24V + 4DO 24V DC 2A (without illustration)	755-102	1
Accessories		
Addressing device	Page 468	
Bus cable, power supply cable	Page 469	
Sensor/actuator cable	See section 5, pages 494 ... 507	
Other accessories	Page 472	
GSD files	Download: www.wago.com	
Standards and Approvals		
Standard	EN 50170	
Certification	PNO	
Conformity marking	CE	

System Data	
Total length	depends on baud rate and use of repeater ; example: 400 m for 500 kbaud; 100 m for 12 Mbaud
Topology	Line structure
No. of couplers connected to Master	32 without repeater
Addressing	Address switch (755-105); Addressing device (item no. 755-201); Configuration software
Baud rate	9,6 kbaud ... 12 Mbaud
Communication	Master-slave procedure with cyclical polling
User hierarchy	Master-slave level
Cycle time	depends on number of devices and baud rate
Transmission medium	certified Cu cable
Terminating resistor	yes



Technical Data		
Bus system		
Address range	1...126 dec, default 99 (755-105)	
	1...126 dec, default 126 (755-102)	
ID	B755 hex	
Power supply - electronics		
Nominal voltage	24 V DC	
Voltage range	19 V ... 28.8 V DC	
Current consumption	max. 60 mA	
Reverse voltage protection	yes	
Operating indicator (U _I)	LED green	
Power supply - sensors		
Nominal voltage (V _S)	24 V DC	
Voltage range	19 V ... 28.8 V DC	
Total current of all sensors	max. 800 mA	
Short circuit protection	yes	
Sensor short circuit indication (DIA)	LED red	
Inputs		
Nominal input voltage	24 V DC	
Input	high-side switching	
Number of digital channels	8	
Status indication for each channel	LED yellow	
Power supply - actuators		
Nominal voltage	24 V DC	
Voltage range	15 V ... 30 V DC	
Electrical insulation	yes	
Reverse voltage protection	yes (unregulated power supply unit required, 10 A medium time-lag fuse)	
Actuator supply indication (U _S)	LED green	
Outputs		
Nominal output current	2 A per channel	
Max. current consumption per module	8 A	
Number of channels	4	
Type of channel	PNP, positive switched; short circuit proof	
Status indication for each channel	LED yellow	

Technical Data		
General specifications		
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)	
Ambient operating temperature	0 °C ... +60 °C	
Weight	645,8 g (755-105)	
	504 g (755-102)	
Dimensions (mm) W x H x L	755-105: 60 x 51 x 197*	
	* including flange sockets	
	755-102: 60 x 51 x 170*	
	* including flange sockets	
Diagnostic indication		
LED 1, 3, 5, 7 A/B	Indicator yellow: channel active	
LED 2, 4, 6, 8 A	Indicator yellow: channel active	
LED 2, 4, 6, 8	Indicator red: actuator short circuit	
LED U _S	Indicator green: actuator supply active	
LED U _I	Indicator green: module supply active	
LED BF	Indicator red: bus error /	
	no data exchange	
LED DIA	Indicator red: module diagnosis (e.g. sensor short circuit)	
Bit assignment		
Byte 0	Bit 0 ... 3 / Actuator 2, 4, 6, 8 (Bit 4 ... 7 / n.c.)	
Byte 1	Bit 0 ... 7 / Sensor 1A, 3A, 5A, 7A, 1B, 3B, 5B, 7B	
Byte 7 (diagnostic message)	Bit 4 / Diagnosis: sensor overload, Bit 5 / Diagnosis: actuator overload, Bit 6 / Diagnosis: low voltage detection	



These items are PROFIBUS DP slaves.

Up to 8 digital outputs can be used to connect DC actuators. The outputs are connected via M12 circular connectors. The outputs are short-circuit-proof. A short circuit is indicated by LEDs for each channel. The status of the inputs is also indicated by LEDs for each channel.

The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED.

The supply voltage is supplied to the module by a M23 circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus and of the module electronics are electrically isolated from each other.

Note: GSD files required

Description	Item No.	Pack. Unit
PROFIBUS DP Slave 8DO 24V DC 2A with address switch	755-106	1
PROFIBUS DP Slave 8DO 24V DC 2A (without illustration)	755-103	1

Accessories	Item No.
Addressing device	Page 468
Bus cable, power supply cable	Page 469
Sensor/actuator cable	See section 5, pages 494 ... 507
Other accessories	Page 472
GSD files	Download: www.wago.com

Standards and Approvals	
Standard	EN 50170
Certification	PNO
Conformity marking	CE

System Data	
Total length	depends on baud rate and use of repeater ; example: 400 m for 500 kbaud; 100 m for 12 Mbaud
Topology	Line structure
No. of couplers connected to Master	32 without repeater
Addressing	Address switch (755-106); Addressing device (item no. 755-201); Configuration software
Baud rate	9.6 kbaud ... 12 Mbaud
Communication	Master-slave procedure with cyclical polling
User hierarchy	Master-slave level
Cycle time	depends on number of devices and baud rate
Transmission medium	certified Cu cable
Terminating resistor	yes

Digital output



Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

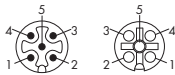
24 VDC supply



Pin	Function
1	Earth (actuators)
2	+24 V (actuators)
3	0 V (actuators)
4	+24 V (module supply + sensors)
5	0 V (module supply + sensors)
6	n.c.

PROFIBUS DP

Input Output

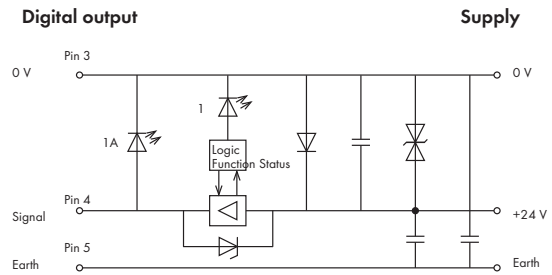


M 12 B-coded

Pin	Function
1	+5 V*
2	Line A
3	GND*
4	Line B
5	Earth

* Internal signals

Basic wiring diagram of an output

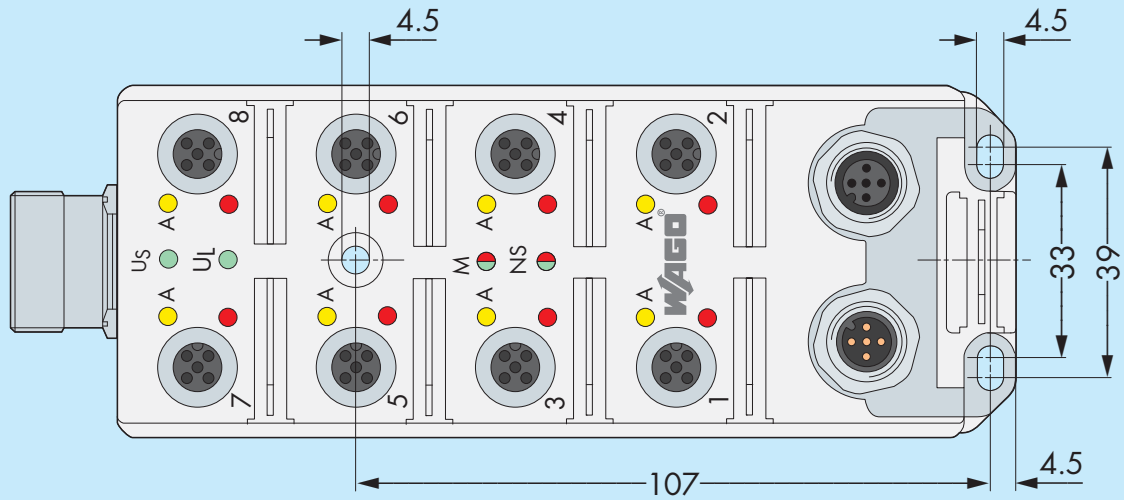


Technical Data

Bus system		
Address range	1...126 dec, default 99 (755-106)	
	1...126 dec, default 126 (755-103)	
ID	B755 hex	
Power supply - electronics		
Nominal voltage	24 V DC	
Voltage range	19 V ... 28.8 V DC	
Current consumption	max. 60 mA	
Reverse voltage protection	yes	
Operating indicator (U _I)	LED green	
Power supply - actuators		
Nominal voltage	24 V DC	
Voltage range	15 V ... 30 V DC	
Electrical insulation	yes	
Reverse voltage protection	yes (unregulated power supply unit required, 10 A medium time-lag fuse)	
Actuator supply indication (U _S)	LED green	
Outputs		
Nominal output current	2 A per channel	
Max. current consumption per module	15 A	
Number of channels	8	
Type of channel	PNP, positive switched; short circuit proof	
Status indication for each channel	LED yellow	

Technical Data

General specifications		
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)	
Ambient operating temperature	0 °C ... +60 °C	
Weight	635,2 g (755-106)	
	500 g (755-103)	
Dimensions (mm) W x H x L	755-106: 60 x 51 x 197*	
	* including flange sockets	
	755-103: 60 x 51 x 170*	
	* including flange sockets	
Diagnostic indication		
LED 1 ... 8 A	Indicator yellow: channel active	
LED 1 ... 8	Indicator red: actuator short circuit	
LED U _S	Indicator green: actuator supply active	
LED U _I	Indicator green: module supply active	
LED BF	Indicator red: bus error / no data exchange	
LED DIA	Indicator red: module diagnosis (e.g. sensor short circuit)	
Bit assignment		
Byte 0	Bit 0 ... 7 / Actuator 1 ... 8	
Byte 7 (diagnostic message)	Bit 5 / Diagnosis: actuator overload, Bit 6 / Diagnosis: low voltage detection	



Assembly dimensions (mm)

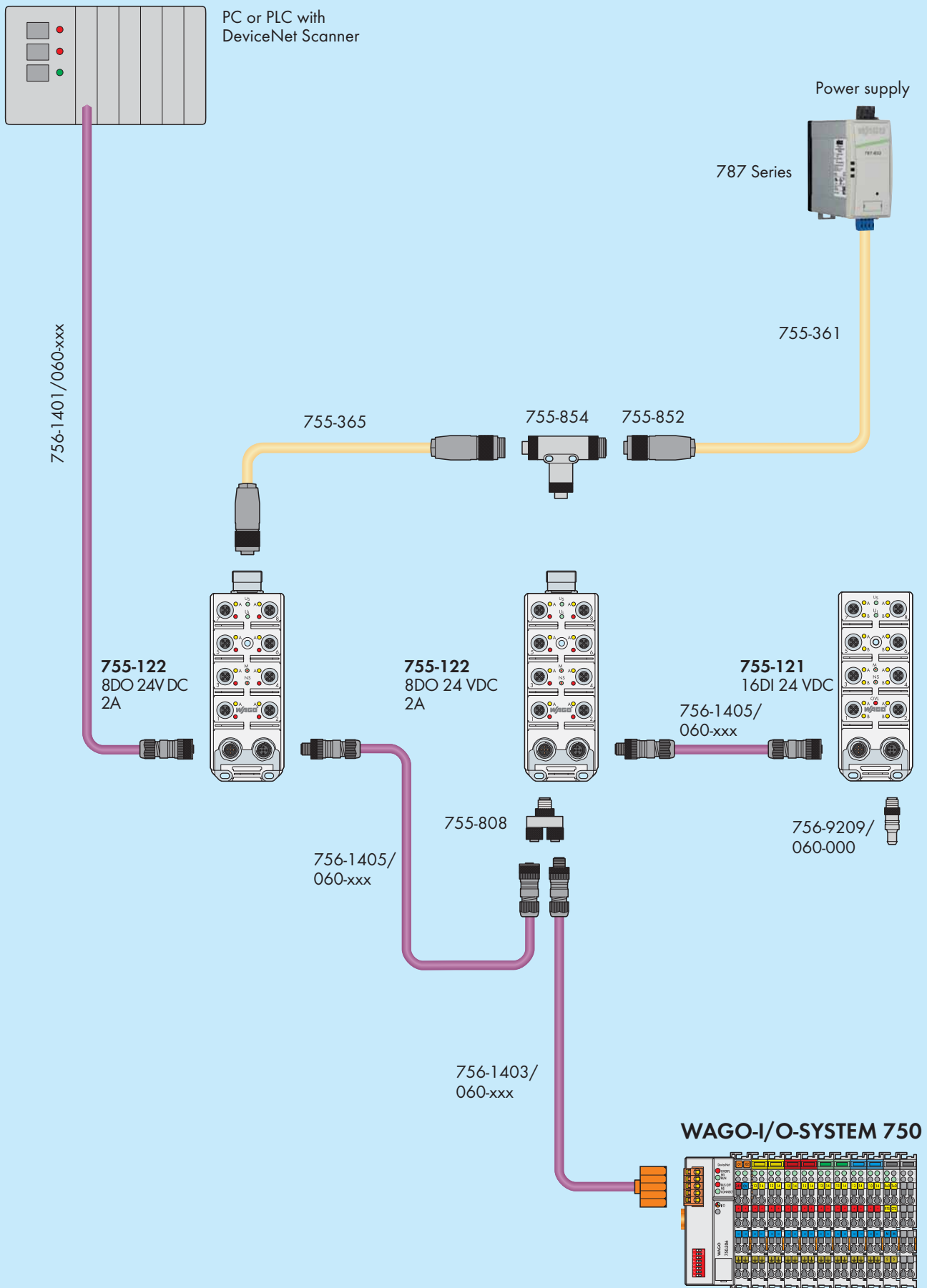
System description

DeviceNet uses a trunk cable/drop cable topology. It utilizes the Controller Area Network (CAN) as a backbone. Depending on the line length, different baud rates are possible. It has to be taken into account though, that the total length of all drop cables also depends on the baud rate. DeviceNet supports various messaging formats which allows reduced response times and increases the efficiency of the data exchange:

- **Explicit Message Connection**
In this mode direct data exchange between master and slave takes place without address priority.
- **Polled I/O Message Connection**
When requested, slaves transmit I/O data to the master.
- **Bit Strobed I/O Message Connection**
The master sends a 'Bit-Strobe' message to all slaves. The slaves respond sending their input data or output status.
- **Change of State / Cyclic Message Connection**
Due to a certain event (e.g. change of input state) a device sends the current data. In order to avoid data collision on the bus, devices are prioritized. If several devices try to send a message at the same time, the device having the highest priority will be allowed to send first.

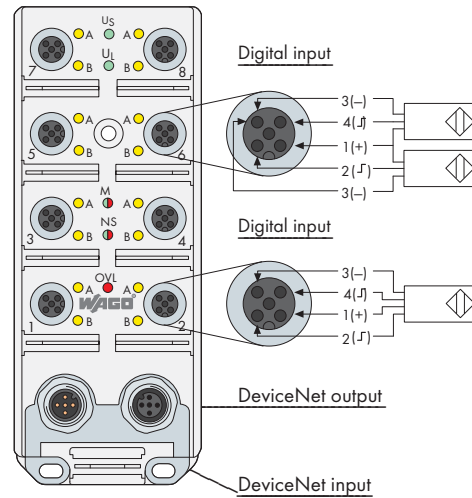
Addressing

Module addressing can either be done via a master manufacturer's configuration software (e.g. DeviceNet Manager, RS Networkx) or via the WAGO software tool (WAGO DeviceNet Node Commissioning). When addressing is done via the master, the modules are first added to the network. The modules will then carry out a self test to find out if there is another module with the same address in the fieldbus network. If so, the module is deactivated. Factory set module addresses are required to set own addresses. Addressing done via the WAGO software tool occurs in connection to the WAGO-I/O-SYSTEM. The module is addressed via the fieldbus coupler's configuration interface and the connected fieldbus. Bus network scanning will find out the addresses that have already been used.



DeviceNet Slave

16 digital inputs



This item is a DeviceNet slave. The maximum distance between two modules and the maximum line length of the entire network depends on the baud rate. Up to 16 digital inputs (see also item nos. 755-881/755-887) can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. As an alternative, up to 8 digital inputs can be used to connect standard 4-conductor PNP sensors. The current supply of the sensors is short-circuit-proof.

A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel. The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED. The supply voltage for the module and for the sensors is derived from the fieldbus connection. Various LEDs indicate the current status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

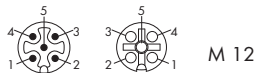
Note: EDS files required

Description	Item No.	Pack. Unit
DeviceNet Slave 16DI 24V DC	755-121	1
Accessories		
Bus cable, power supply cable	Page 470	
Sensor/actuator cable	See section 5, pages 494 ... 507	
Other accessories	Page 472	
EDS files and software tool	Download: www.wago.com	
Approvals		
Certification	ODVA	
Conformity marking	CE	

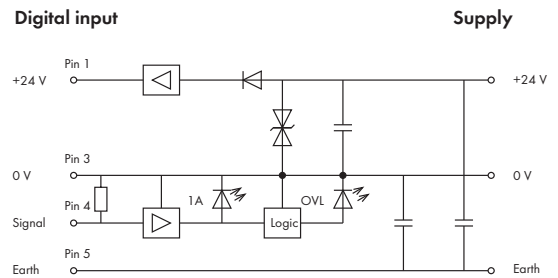
System Data	
Total length	max. 500 m trunk cable (depends on baud rate); max. 6 m drop cable
Topology	Line structure with drop cables
No. of couplers connected to Master	63
Addressing	via master; via software tool (WAGO DeviceNet Node Commissioning)
Baud rate	500 kbaud
Communication	Explicit Message Connection Polled I/O Message Connection Bit Strobed I/O Message Connection Change of State / Cyclic Message Connection
User hierarchy	Multi-Master
Cycle time	depends on number of devices and baud rate
Transmission medium	certified DeviceNet cable
Terminating resistor	yes

Digital input


Pin	Function
1	+24 V
2	Signal B
3	0 V
4	Signal A
5	Earth

DeviceNet
Input Output


Pin	Function
1	Drain
2	V+
3	V-
4	CHA_H
5	CHA_L

Basic wiring diagram of an input

Technical Data

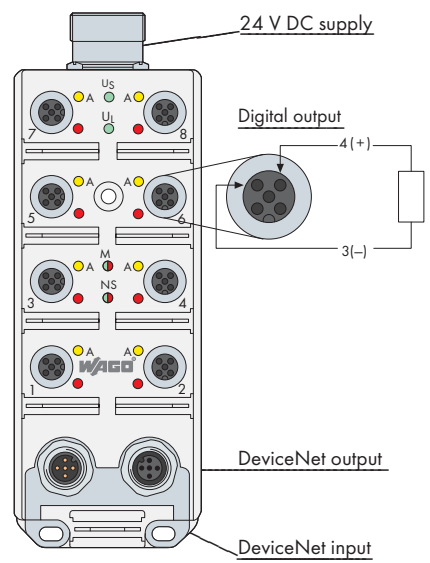
Bus system	
Type of module	Group 2 only, Server
Baud rate programmable via DN master	125 kbaud, 250 kbaud, 500 kbaud
MAC ID programmable via DN master	0 ... 63 dec.
MAC ID preset address	63 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	15 V ... 30 V DC
Current consumption	max. 80 mA
Reverse voltage protection	yes
Operating indicator (U _I)	LED green
Power supply - sensors	
Nominal voltage (V _s)	> Bus voltage ... 1.5 V
Total current of all sensors	max. 800 mA
Short circuit protection	yes
Sensor short circuit indication (OVL)	LED red
Sensor supply indication (U _s)	LED green
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	16
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	596 g
Dimensions (mm) W x H x L	60 x 51 x 152*
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A/B	Indicator yellow: channel active
LED U _s	Indicator green: sensor supply active
LED U _I	Indicator green: module supply active
LED MS (module status)	1) Indicator green: module ready, 2) Indicator red blinking: non-critical error, 3) Indicator red: critical error
LED NS (network status)	1) Indicator green: online, connected with master, 2) Indicator green, blinking: online, no connection with master, 3) Indicator red, blinking: time out status for the last I/O connection, 4) Indicator red: BUS OFF status, redundant Mac ID
LED OVL	Indicator red: sensor short circuit
Bit assignment	
Byte 0	Bit 0 ... 7 / Sensor 1A ... 8A
Byte 1	Bit 0 ... 7 / Sensor 1B ... 8B
Byte 2	Bit 7 / Diagnosis: sensor overload

DeviceNet Slave

8 digital outputs



This item is a DeviceNet slave.

The maximum distance between two modules and the maximum line length of the entire network depends on the baud rate. Up to 8 digital outputs can be used to connect DC actuators. The outputs are connected via M12 circular connectors. The outputs are short-circuit-proof. A short circuit is indicated by LEDs for each channel. The status of the inputs is also indicated by LEDs for each channel. The fieldbus is connected via M12 circular connectors. The status of the fieldbus is indicated by a LED. The actuator supply voltage is supplied to the module by a 7/8" circular connector. Various LEDs indicate the channel status.

The power supply of the fieldbus and of the module electronics are electrically isolated from each other.

Note: EDS files required

Description	Item No.	Pack. Unit
DeviceNet Slave 8DO 24V DC 2A	755-122	1
Accessories		
Bus cable, power supply cable	Page 470	
Sensor/actuator cable	See section 5, pages 494 ... 507	
Other accessories	Page 472	
EDS files and software tool	Download: www.wago.com	
Approvals		
Certification	ODVA	
Conformity marking	CE	

System Data	
Total length	max. 500 m trunk cable (depends on baud rate); max. 6 m drop cable
Topology	Line structure with drop cables
No. of couplers connected to Master	63
Addressing	via master; via software tool (WAGO DeviceNet Node Commissioning)
Baud rate	500 kbaud
Communication	Explicit Message Connection Polled I/O Message Connection Bit Strobed I/O Message Connection Change of State / Cyclic Message Connection
User hierarchy	Multi-Master
Cycle time	depends on number of devices and baud rate
Transmission medium	certified DeviceNet cable
Terminating resistor	yes

Digital output



Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

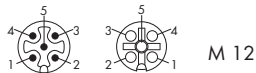
24 V DC supply



Pin	Function
1	Earth
2	+24 V DC
3	0 V

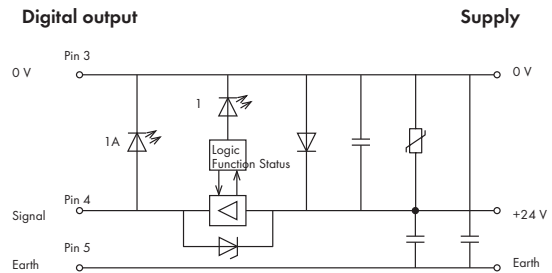
DeviceNet

Input Output



Pin	Function
1	Drain
2	V+
3	V-
4	CHA_H
5	CHA_L

Basic wiring diagram of an output



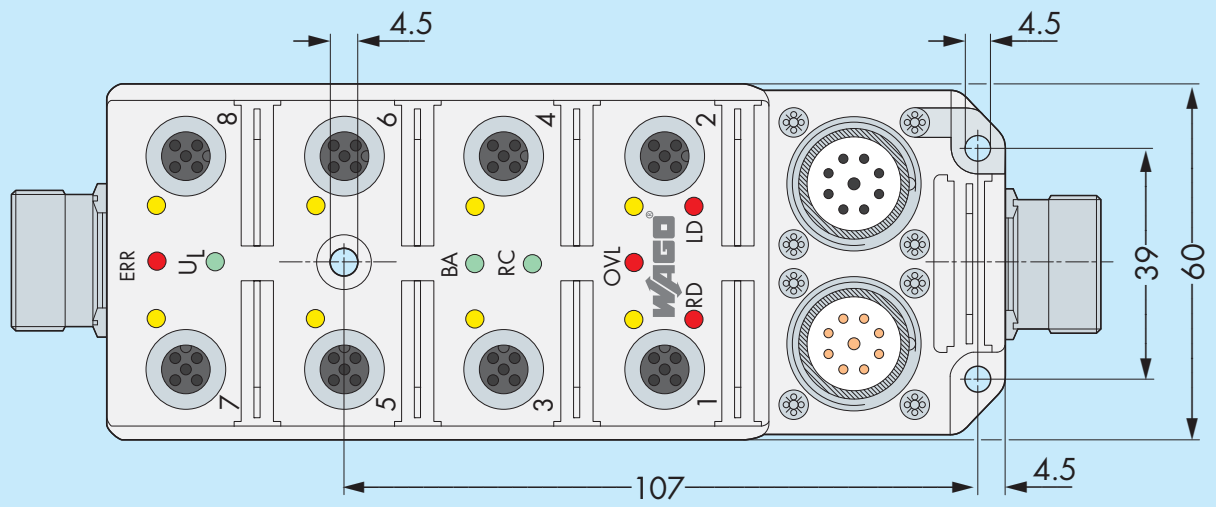
Technical Data

Bus system	
Type of module	Group 2 only, Server
Baud rate programmable via DN master	125 kbaud, 250 kbaud, 500 kbaud
MAC ID programmable via DN master	0 ... 63 dec.
MAC ID preset address	63 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	15 V ... 30 V DC
Current consumption	max. 100 mA
Reverse voltage protection	yes
Operating indicator (U _I)	LED green
Power supply - actuators	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption (no load)	max. 30 mA
Electrical insulation	yes
Reverse voltage protection	yes (unregulated power supply unit required, 10 A medium time-lag fuse)
Actuator supply indication (U _S)	LED green
Outputs	
Nominal output current	2 A per channel
Max. current consumption per module	12 A
Number of channels	8
Type of channel	PNP, positive switched; short circuit proof
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	596,55 g
Dimensions (mm) W x H x L	60 x 51 x 172*
	* including flange sockets
Diagnostic indication	
LED 1 ... 8 A	Indicator yellow: channel active
LED 1 ... 8	Indicator red: actuator short circuit
LED U _S	Indicator green: actuator supply active
LED U _I	Indicator green: module supply active
LED MS (module status)	1) Indicator green: module ready, 2) Indicator red blinking: non-critical error, 3) Indicator red: critical error
LED NS (network status)	1) Indicator green: online, connected with master, 2) Indicator green, blinking: online, no connection with master, 3) Indicator red, blinking: time out status for the last I/O connection, 4) Indicator red: BUS OFF status, redundant Mac ID
Bit assignment	
Byte 0	Input: Bit 0 ... 5, Bit 6 / Diagnosis: actuator status; Output: Bit 0 ... 7 / Actuator 1 ... 8

INTERBUS Slaves



Assembly dimensions (mm)

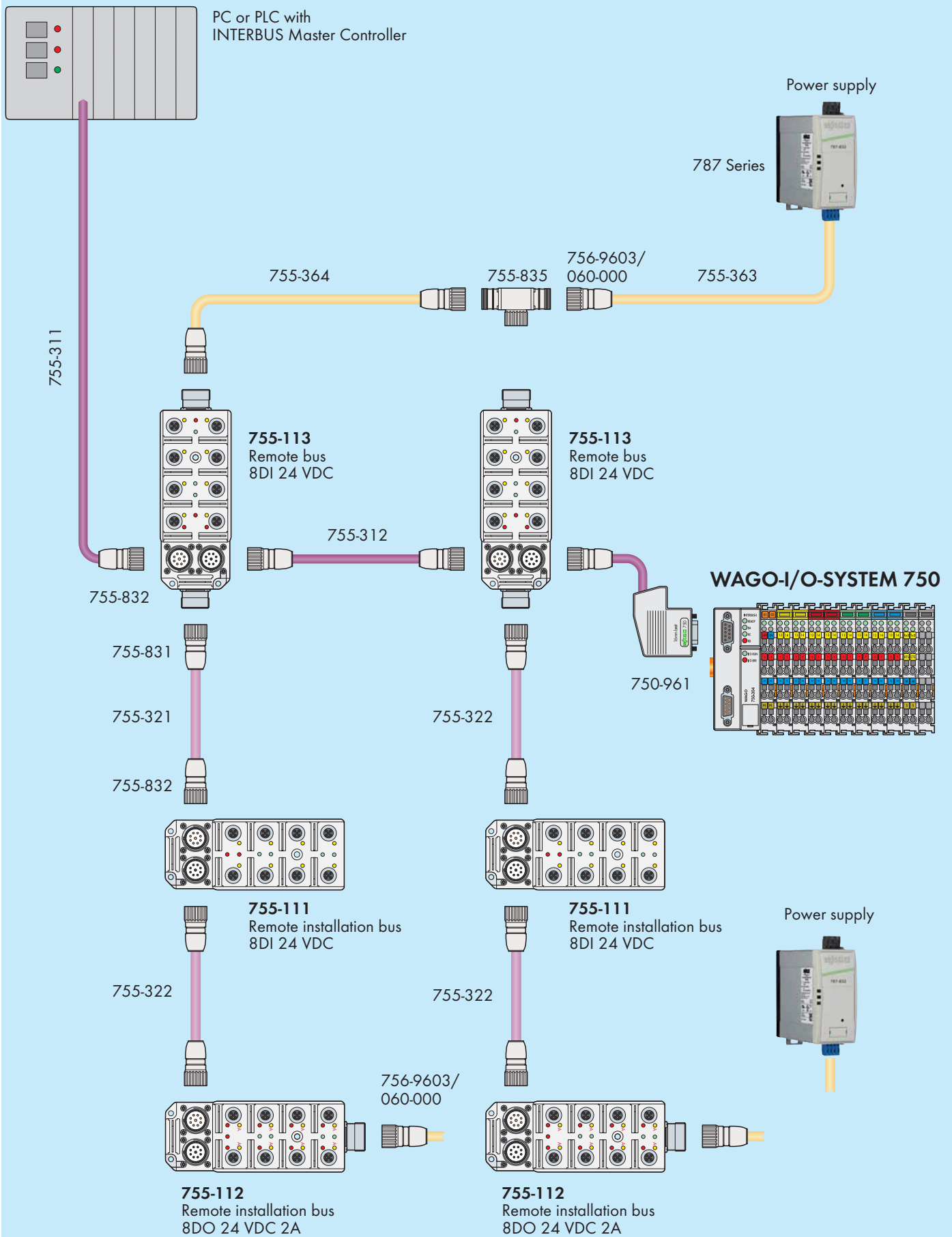
System description

The INTERBUS fieldbus is characterized by its node to node serial connections. This is a ring topology since sending and returning of data is done within one single cable. INTERBUS is divided up into several different sections, e.g. remote bus and remote installation bus. The remote bus serves to bridge great distances and achieves a broad network.

The supply voltage of the module electronics and the actuators is carried along which makes the remote installation bus especially suitable for the design of distributed substations with a direct connection to the field. The number of I/O modules that can be connected to the remote installation bus is limited by the maximum current consumption of all modules and actuators. A total of 4.5A must not be exceeded. These features, among others, are the basis for cost effective segmentation and make it possible to separate faulty parts from the bus, thus maintaining or even increasing the capabilities of an installation.

Addressing

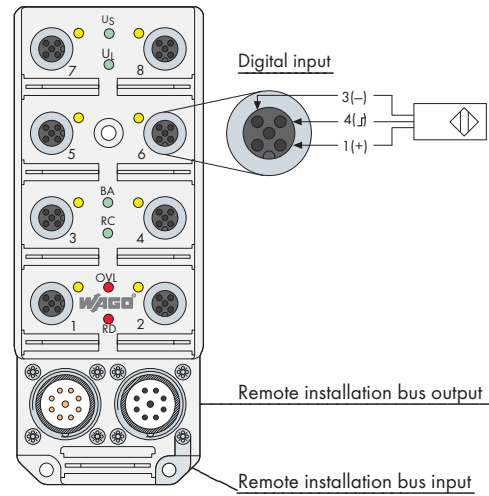
The type, number, and sequence of the modules is recognized automatically by the master. Addressing is not necessary!



Cables and accessories see pages 469 ... 472

3 INTERBUS Remote Installation Bus Slave

462 8 digital inputs



This item is a remote installation bus slave.

Up to 8 digital inputs can be used to connect standard 3-conductor PNP sensors. The inputs are connected via M12 circular connectors. The current supply of the sensors is short-circuit-proof. A short circuit is indicated by a collective LED. The status of the inputs is also indicated by LEDs for each channel.

The fieldbus is connected via M23 circular connectors. The status of the fieldbus is indicated by LEDs.

The supply voltage for the module and for the sensors is derived from the fieldbus connection. LEDs indicate the current status.

The power supply of the fieldbus, of the module electronics, and of the sensors are electrically isolated from each other.

Description	Item No.	Pack. Unit
INTERBUS Remote Installation Bus Slave 8DI 24V DC	755-111	1
Accessories		
Bus cable, power supply cable	Page 471	
Sensor/actuator cable	See section 5, pages 494 ... 507	
Other accessories	Page 472	
Standards and Approvals		
Standard	EN 50254	
Certification	INTERBUS CLUB	
Conformity marking	CE	

System Data	
Total length	Remote bus 13 km / remote installation bus 50 m
Total length	Remote bus 400 m / remote installation bus 50 m
Topology	Ring structure
No. of couplers connected to Master	256
Addressing	automatically
Baud rate	500 kbaud
Communication	Shift register message with all information for all devices
User hierarchy	Mono Master
Cycle time	depends on number of devices
Transmission medium	certified Cu cable
Terminating resistor	no

Digital input

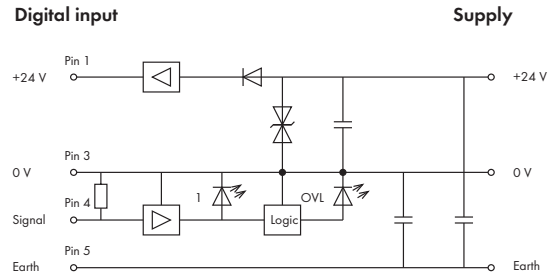

Pin	Function
1	+24 V
2	n.c.
3	0 V
4	Signal
5	Earth

Remote installation bus Input


Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+24 V
8	0 V
9	n.c.
Enclosure	Earth

Remote installation bus Output


Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+24 V
8	0 V
9	RBST
Enclosure	Earth

Basic wiring diagram of an input

Technical Data

Slave profile	
ID code	10 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption	max. 70 mA
Reverse voltage protection	yes
Operating indicator (U _I)	LED green
Power supply - sensors	
Nominal voltage (V _s)	24 V DC
Voltage range	19 V ... 30 V DC
Total current of all sensors	max. 400 mA
Short circuit protection	yes
Sensor short circuit indication (OVL)	LED red
Sensor supply indication (U _s)	LED green
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	8
Status indication for each channel	LED yellow

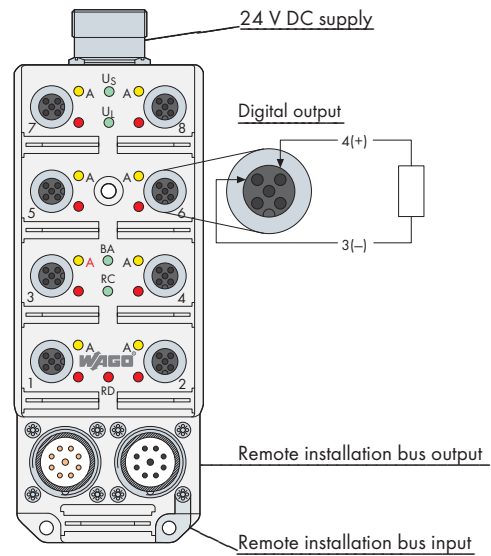
Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	500 g
Dimensions (mm) W x H x L	60 x 48 x 152*
* including flange sockets	
Diagnostic indication	
LED 1 ... 8	Indicator yellow: channel active
LED U _s	Indicator green: sensor supply active
LED U _I	Indicator green: module supply active
LED BA	Indicator green: bus active
LED RC	Indicator green: remote bus input connected
LED RD	Indicator red: remote bus output disconnected
LED OVL	Indicator red: sensor short circuit
Bit assignment	
Byte 1	Bit 0 ... 7 / Sensor 1 ... 8

3 INTERBUS Remote Installation Bus Slave

464

8 digital outputs



This item is a remote installation bus slave.

Up to 8 digital outputs can be used to connect DC actuators. The outputs are connected via M12 circular connectors. The outputs are short-circuit-proof. A short circuit is indicated by LEDs for each channel. The fieldbus is connected via M23 circular connectors. The status of the fieldbus is indicated by LEDs. The supply voltage for the module is derived from the fieldbus connection. The remote installation bus module has an auxiliary power supply (M23 circular connector) for the actuators.

The power supply of the fieldbus and of the module electronics are electrically isolated from each other.

Description	Item No.	Pack. Unit
INTERBUS Remote Installation Bus Slave 8DO 24V DC 2A	755-112	1
Accessories		
Bus cable, power supply cable	Page 471	
Sensor/actuator cable	See section 5, pages 494 ... 507	
Other accessories	Page 472	
Standards and Approvals		
Standard	EN 50254	
Certification	INTERBUS CLUB	
Conformity marking	CE	

System Data	
Total length	Remote bus 13 km / remote installation bus 50 m
Total length	Remote bus 400 m / remote installation bus 50 m
Topology	Ring structure
No. of couplers connected to Master	256
Addressing	automatically
Baud rate	500 kbaud
Communication	Shift register message with all information for all devices
User hierarchy	Mono Master
Cycle time	depends on number of devices
Transmission medium	certified Cu cable
Terminating resistor	no

Digital output



Pin	Function
1	n.c.
2	n.c.
3	0 V
4	Signal
5	Earth

24 V DC supply



Pin	Function
1	Earth
2	+ 24 V
3	0 V
4	n.c.
5	n.c.
6	n.c.

Remote installation bus Input



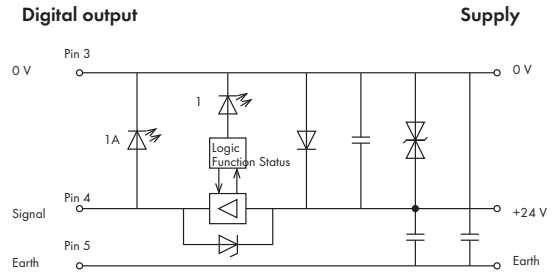
Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	n.c.
Enclosure	Earth

Remote installation bus Output



Pin	Function
1	DO
2	DO
3	DI
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	RBST
Enclosure	Earth

Basic wiring diagram of an output



Technical Data

Slave profile	
ID code	09 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption	max. 70 mA
Reverse voltage protection	yes
Operating indicator (U _I)	LED green
Power supply - actuators	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Electrical insulation	yes
Reverse voltage protection	yes (unregulated power supply unit required, 10 A medium time-lag fuse)
Actuator supply indication (U _S)	LED green
Outputs	
Nominal output current	2 A per channel
Max. current consumption per module	15 A
Number of channels	8
Type of channel	PNP, positive switched; short circuit proof
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	580 g
Dimensions (mm) W x H x L	60 x 48 x 169*
* including flange sockets	
Diagnostic indication	
LED 1 ... 8 A	Indicator yellow: channel active
LED 1 ... 8	Indicator red: actuator short circuit
LED U _S	Indicator green: actuator supply active
LED U _I	Indicator green: module supply active
LED BA	Indicator green: bus active
LED RC	Indicator green: remote bus input connected
LED RD	Indicator red: remote bus output disconnected
Bit assignment	
Byte 1	Bit 0 ... 7 / Actuator 1 ... 8

Digital input



Pin	Function
1	+ 24 V
2	n.c.
3	0 V
4	Signal
5	Earth

24 V DC supply



Pin	Function
1	Earth
2	+ 24 V (remote installation bus)
3	0 V (remote installation bus)
4	+ 24 V (module supply+sensors)
5	0 V (module supply+sensors)
6	n.c.

Remote bus Input



Pin	Function
1	DO
2	DO
3	DL
4	DI
5	GND
6	n.c.
7	n.c.
8	n.c.
9	n.c.
Enclosure	Earth

Remote bus Output



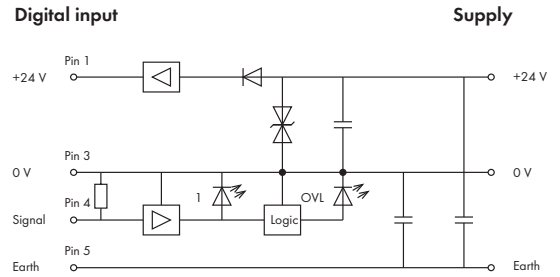
Pin	Function
1	DO
2	DO
3	DL
4	DI
5	GND
6	n.c.
7	n.c.
8	n.c.
9	RBST
Enclosure	Earth

Remote installation bus Connection



Pin	Function
1	DO
2	DO
3	DL
4	DI
5	GND
6	Earth
7	+ 24 V
8	0 V
9	LBST
Enclosure	Earth

Basic wiring diagram of an input



Technical Data

Slave profile	
ID code	11 dec.
Power supply - electronics	
Nominal voltage	24 V DC
Voltage range	19 V ... 30 V DC
Current consumption	max. 120 mA
Reverse voltage protection	yes
Operating indicator (U _I)	LED green
Power supply - sensors	
Nominal voltage (V _S)	24 V DC
Voltage range	19 V ... 30 V DC
Total current of all sensors	max. 400 mA
Short circuit protection	yes
Sensor short circuit indication (OVL)	LED red
Inputs	
Nominal input voltage	24 V DC
Input	high-side switching
Number of digital channels	8
Status indication for each channel	LED yellow

Technical Data

General specifications	
Degree of protection	IEC IP 67 (NEMA Type 4-6 P)
Ambient operating temperature	0 °C ... +60 °C
Weight	580 g
Dimensions (mm) W x H x L	60 x 48 x 186*
* including flange sockets	
Diagnostic indication	
LED 1 ... 8	Indicator yellow: channel active
LED ERR	Indicator red: remote installation bus
LED U _I	Indicator green: module supply active
LED BA	Indicator green: bus active
LED RC	Indicator green: remote bus input connected
LED RD	Indicator red: remote bus output disconnected
LED LD	Indicator red: remote installation bus disconnected
LED OVL	Indicator red: sensor short circuit
Bit assignment	
Byte 0	0 ... 7 / n.c.)
Byte 1	8 ... 15 / Sensor 1 ... 8
Note:	Depending on the master card a "byteswap" may occur, resulting in a reversion of the data byte order!

Bus cable (example)



Description		
PROFIBUS cables (with one end of cable fitted, M12 socket, straight)	see page 428	756-1101/060-xxx
PROFIBUS cables (with one end of cable fitted, M12 socket, right angle)	see page 428	756-1102/060-xxx
PROFIBUS cables (with one end of cable fitted, M12 plug, straight)	see page 428	756-1103/060-xxx
PROFIBUS cables (with one end of cable fitted, M12 plug, right angle)	see page 428	756-1104/060-xxx
PROFIBUS cables (with both ends of cable fitted, M12 socket, straight / M12 plug, straight)	see page 429	756-1105/060-xxx
PROFIBUS cables (with both ends of cable fitted, M12 socket, right angle / M12 plug, right angle)	see page 429	756-1106/060-xxx

Connectors for bus cables (example)



Terminating resistor



Description	Item No.	Pack. Unit
PROFIBUS M12 plug, B coded, straight, spring clamp technology	5-pole (see page 434) 756-9401/060-000	1
PROFIBUS M12 plug, B coded, right angle, spring clamp technology	5-pole (see page 434) 756-9403/060-000	1
PROFIBUS M12 socket, B coded, straight, spring clamp technology	5-pole (see page 434) 756-9402/060-000	1
PROFIBUS M12 socket, B coded, right angle, spring clamp technology	5-pole (see page 434) 756-9404/060-000	1
M12 PROFIBUS terminating plug, B coded, straight	5-pole (see page 436) 756-9405/060-000	1

Power supply cable



Description	Item No.	Pack. Unit
Power supply cable, twin power supply (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket 755-364/000-xxx *	1
Power supply cable, twin power supply (not fitted with connectors)	755-363/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-364/000-010)

Connectors for power supply cables



T-piece for power supply cable



Description	Item No.	Pack. Unit
Supply plug M23 plug, straight, soldering technology	6 poles 756-9601/060-000	1
Supply plug M23 plug, right angle, soldering technology	6 poles 756-9602/060-000	1
Supply socket M23 socket, straight, soldering technology	6 poles 756-9603/060-000	1
Supply socket M23 socket, right angle, soldering technology	6 poles 756-9604/060-000	1
M23 supply T-piece	6 poles 755-835	1



Description		
DeviceNet cables (with one end of cable fitted, M12 socket, straight)	see page 430	756-1401/060-xxx
DeviceNet cables (with one end of cable fitted, M12 socket, right angle)	see page 430	756-1402/060-xxx
DeviceNet cables (with one end of cable fitted, M12 plug, straight)	see page 430	756-1403/060-xxx
DeviceNet cables (with one end of cable fitted, M12 plug, right angle)	see page 430	756-1404/060-xxx
DeviceNet cables (with both ends of cable fitted, M12 socket, straight / M12 plug, straight)	see page 431	756-1405/060-xxx
DeviceNet cables (with both ends of cable fitted, M12 socket, right angle / M12 plug, right angle)	see page 431	756-1406/060-xxx

Connectors for bus cables (example)



T-piece for bus cable



Terminating resistor



Description	Item No.	Pack. Unit
DeviceNet M12 plug, A coded, straight, spring clamp technology	5-pole (see page 434)	756-9207/060-000 1
DeviceNet M12 plug, A coded, right angle, spring clamp technology	5-pole (see page 434)	756-9211/060-000 1
DeviceNet M12 socket, A coded, straight, spring clamp technology	5-pole (see page 434)	756-9208/060-000 1
DeviceNet M12 socket, A coded, right angle, spring clamp technology	5-pole (see page 434)	756-9210/060-000 1
M12 DeviceNet drop T-piece	5-pole	755-808 1
M12 DeviceNet terminating plug, A coded, straight	5-pole (see page 436)	756-9209/060-000 1

Power supply cable



Description	Item No.	Pack. Unit
Power supply cable, single power supply (fitted with 7/8" connectors)	both ends of cable are fitted with 7/8" plug/7/8" socket	755-365/000-xxx * 1
Power supply cable, single power supply (not fitted with connectors)		755-361/000-xxx * 1

* xxx = cable length given in m (e.g.: 10 m = 755-365/000-010)

Connectors for power supply cables



T-piece for power supply cable



Description	Item No.	Pack. Unit
7/8" supply plug	3-pole screw clamp connection	755-851 1
7/8" supply socket	3-pole screw clamp connection	755-852 1
7/8" supply T-piece	3-pole	755-854 1



Bus cable



Description		Item No.	Pack. Unit
Remote bus cable (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-312/000-xxx *	1
Remote bus cable (not fitted with connectors)		755-311/000-xxx *	1
Remote installation bus cable (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-322/000-xxx *	1
Remote installation bus cable (not fitted with connectors)		755-321/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-312/000-010)

Connectors for bus cables



Description		Item No.	Pack. Unit
M23 INTERBUS plug	9-pole solder contact	755-831	1
M23 INTERBUS socket	9-pole solder contact	755-832	1

M23 assembly key (755-836)

Power supply cable



Description		Item No.	Pack. Unit
Power supply cable, single power supply (fitted with M23 connectors), for output modules	both ends of cable are fitted with M23 plug/M23 socket	755-362/000-xxx *	1
Power supply cable, single power supply (not fitted with connectors), for output modules		755-361/000-xxx *	1
Power supply cable, twin power supply (fitted with M23 connectors)	both ends of cable are fitted with M23 plug/M23 socket	755-364/000-xxx *	1
Power supply cable, twin power supply (not fitted with connectors)		755-363/000-xxx *	1

* xxx = cable length given in m (e.g.: 10 m = 755-362/000-010)

* xxx = cable length given in m (e.g.: 10 m = 755-364/000-010)

Connectors for power supply cables

T-piece for power supply cable



Description		Item No.	Pack. Unit	
Supply plug	M23 plug, straight, soldering technology	6 poles	756-9601/060-000	1
Supply plug	M23 plug, right angle, soldering technology	6 poles	756-9602/060-000	1
Supply socket	M23 socket, straight, soldering technology	6 poles	756-9603/060-000	1
Supply socket	M23 socket, right angle, soldering technology	6 poles	756-9604/060-000	1
M23 supply T-piece		6 poles	755-835	1

3 Accessories for Fieldbus Modules

472 Mounting accessories



Description		Item No.	Pack. Unit
M23 assembly key	for easy installation	755-836	1
M23 protective cap (fieldbus/supply)	for unused connectors	755-837	1



Description		Item No.	Pack. Unit
7/8" protective cap (supply)	for unused fieldbus module sockets	755-853	1



Description		Item No.	Pack. Unit
M12 protective cap (fieldbus)	for unused fieldbus module sockets	755-809	1



Description		Item No.	Pack. Unit
Marker card (40 tags)		755-891	10 cards

Marking software and printer/plotter see section 10

WAGO Application: Sieghard Schiller GmbH & Co. KG
Assembly line for the production of flat panel displays

WAGO Products:
WAGO-I/O-SYSTEM 755 for connection to PROFIBUS.



**WAGO Application: Danone Group,
Ochsenfurt Plant, Germany**
Producer of yogurt and other dairy-based products

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS Couplers



System Overview

476 – 477



M12 Sensor/Actuator Box

- 4-Way, 4-Pole, 5m Connecting Cable
- 4-Way, 4-Pole, 10m Connecting Cable
- 6-Way, 4-Pole, 5m Connecting Cable
- 6-Way, 4-Pole, 10m Connecting Cable
- 8-Way, 4-Pole, 5m Connecting Cable
- 8-Way, 4-Pole, 10m Connecting Cable
- 8-Way, 4-Pole, 25m Connecting Cable

478 – 479

M12 Sensor/Actuator Box

- 4-Way, 5-Pole, 5m Connecting Cable
- 4-Way, 5-Pole, 10m Connecting Cable
- 6-Way, 5-Pole, 5m Connecting Cable
- 6-Way, 5-Pole, 10m Connecting Cable
- 8-Way, 5-Pole, 5m Connecting Cable
- 8-Way, 5-Pole, 10m Connecting Cable
- 8-Way, 5-Pole, 25m Connecting Cable

480 – 481



M12 Sensor/Actuator Box

- 4-Way, 4-Pole, M23 Connector
- 6-Way, 4-Pole, M23 Connector
- 8-Way, 4-Pole, M23 Connector

482 – 483

M12 Sensor/Actuator Box

- 4-Way, 5-Pole, M23 Connector
- 6-Way, 5-Pole, M23 Connector
- 8-Way, 5-Pole, M23 Connector
- 8-Way, 5-Pole, without LED, M23 Connector

484 – 485



M8 Sensor/Actuator Box

- 4-Way, 3-Pole, 2m Connecting Cable
- 4-Way, 3-Pole, 5m Connecting Cable
- 4-Way, 3-Pole, 10m Connecting Cable
- 6-Way, 3-Pole, 5m Connecting Cable
- 6-Way, 3-Pole, 10m Connecting Cable
- 8-Way, 3-Pole, 5m Connecting Cable
- 8-Way, 3-Pole, 10m Connecting Cable
- 10-Way, 3-Pole, 5m Connecting Cable
- 10-Way, 3-Pole, 10m Connecting Cable

486 – 487



M8 Sensor/Actuator Box

- 4-Way, 3-Pole, M16 Connector
- 6-Way, 3-Pole, M16 Connector
- 8-Way, 3-Pole, M16 Connector
- 10-Way, 3-Pole, M16 Connector

488 – 489



Accessories

490



Illustration: Sensor / Actuator boxes with spacer module

Sensor / Actuator Boxes

WAGO's IP67 Sensor/Actuator Boxes collect signals local to the machine. This allows signals to be collected and transmitted to the WAGO-I/O-SYSTEM 750 in harsh industrial environments where direct operation is impossible.

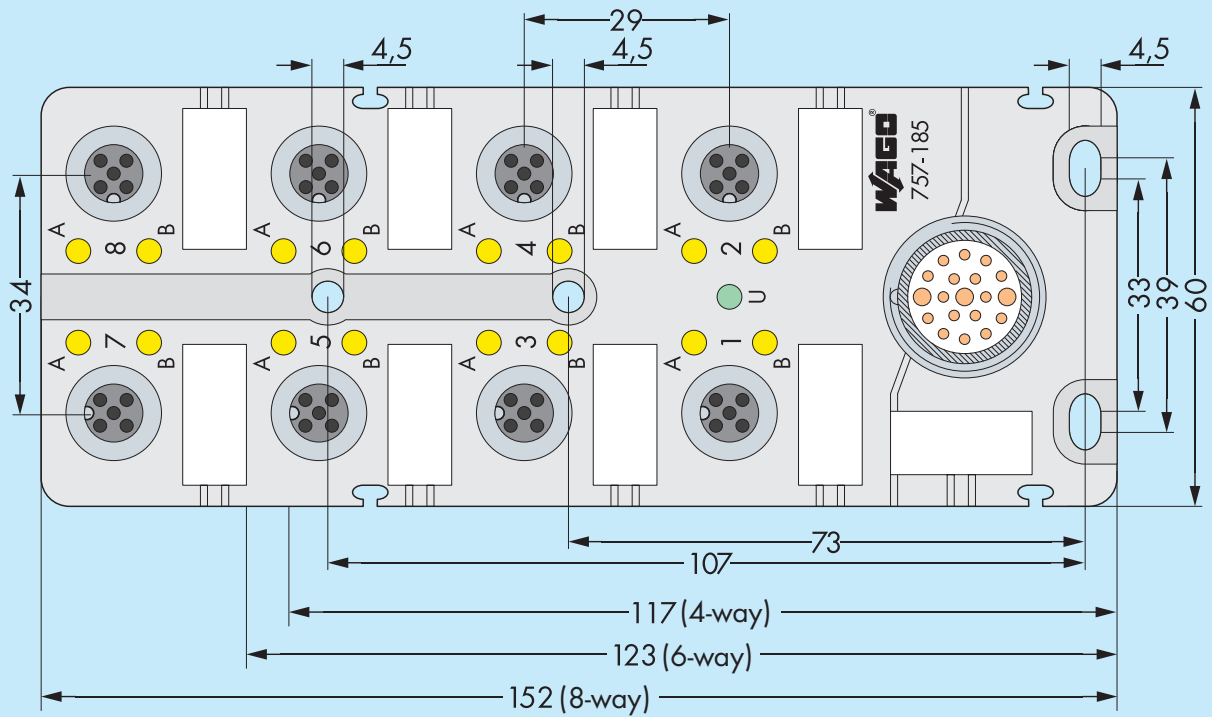
The 757 Series is available in two versions. The M16/M23 connector version is ideal when the system or machines need to be transported or a quick disconnection is required during servicing (e.g., defective cable). The pre-cabled version is best suited for applications where difficult cable routing makes it impossible to lay cables equipped with connectors or where it is difficult to make precise cable routing.

WAGO's sensor/actuator boxes have an extremely compact, robust design, and meet IP67 protection standards. The pre-cable boxes even comply with IP68 requirements (1 meter water depth for 72 hours). Furthermore, adjacent boxes can be clipped to one another using spacer modules, allowing for safe, easy installation and maintenance

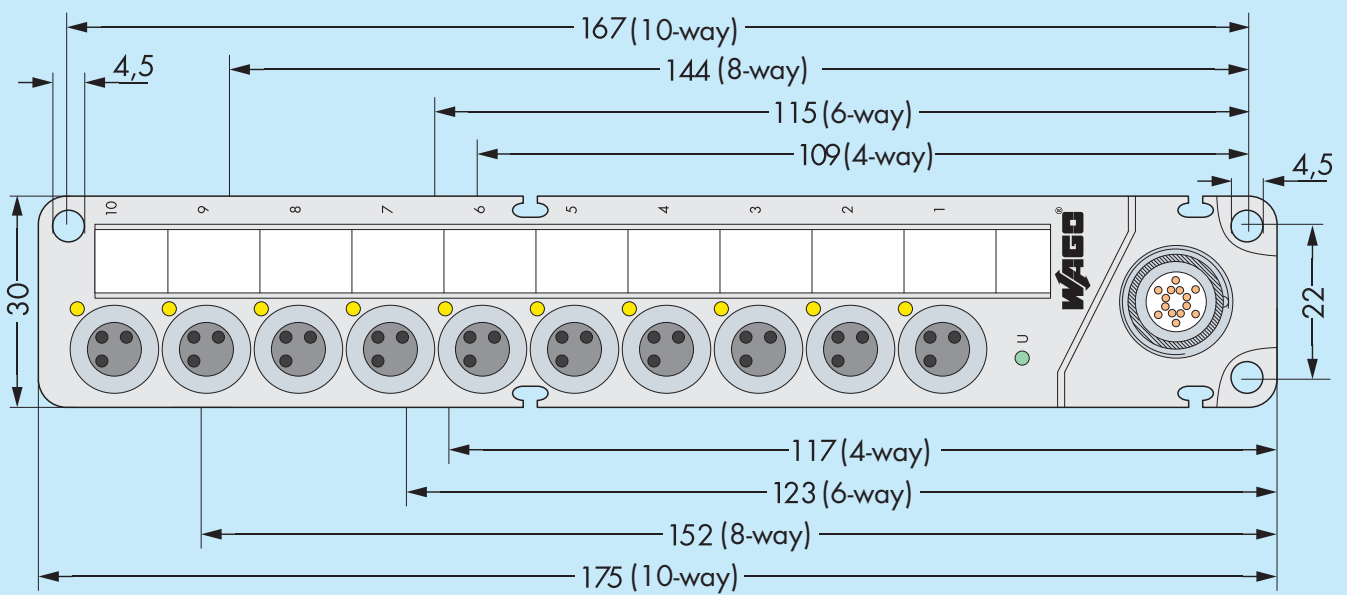
Dimensions and Mounting Dimensions of Sensor / Actuator Boxes

(also valid for M12 or M8 sensor / actuator boxes with cable connection)

M12 Sensor/Actuator box with M23 connector



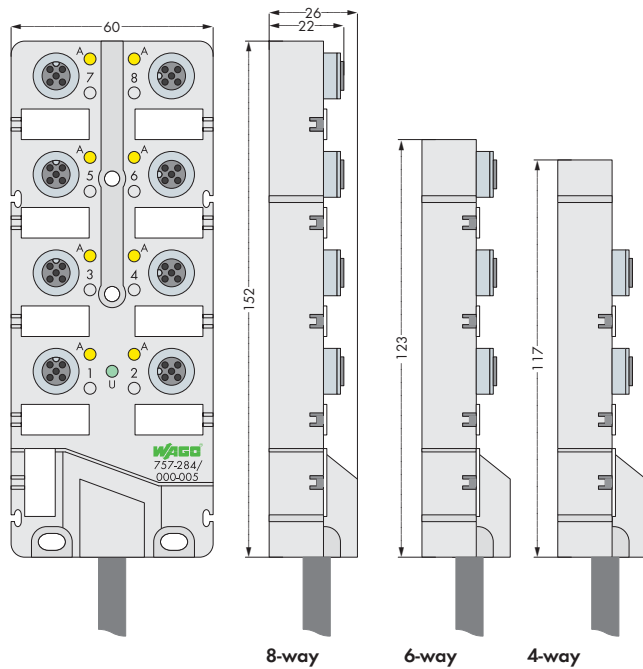
M8 Sensor/Actuator box with M16 connector



Dimensions in mm

M12 Sensor/Actuator Boxes

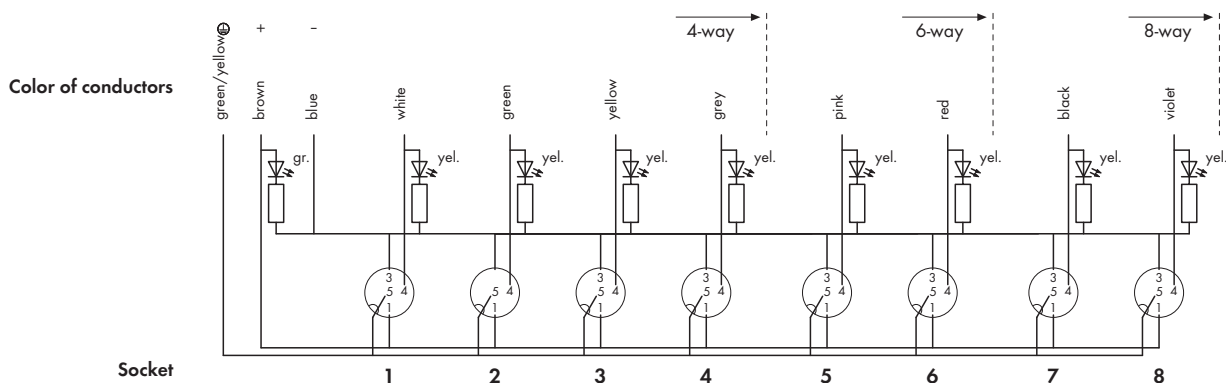
4-pole, with cable connection



- 4-, 6- and 8-way sensor/actuator boxes
- 4 poles (1 signal per contact)
- Cable length 5 and 10 m
- Green LED operating indicator
- Yellow LED status indicator
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 4-pole, 5m connecting cable	757-244/000-005	1
4-way, 4-pole, 10m connecting cable	757-244/000-010	1
6-way, 4-pole, 5m connecting cable	757-264/000-005	1
6-way, 4-pole, 10m connecting cable	757-264/000-010	1
8-way, 4-pole, 5m connecting cable	757-284/000-005	1
8-way, 4-pole, 10m connecting cable	757-284/000-010	1
8-way, 4-pole, 25m connecting cable	757-284/000-025	1
Accessories		
Marker card, marking pen, spacer module and protective cap	see page 490	
IP67 cables and connectors	see pages 494 ... 507	
Approvals		
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	

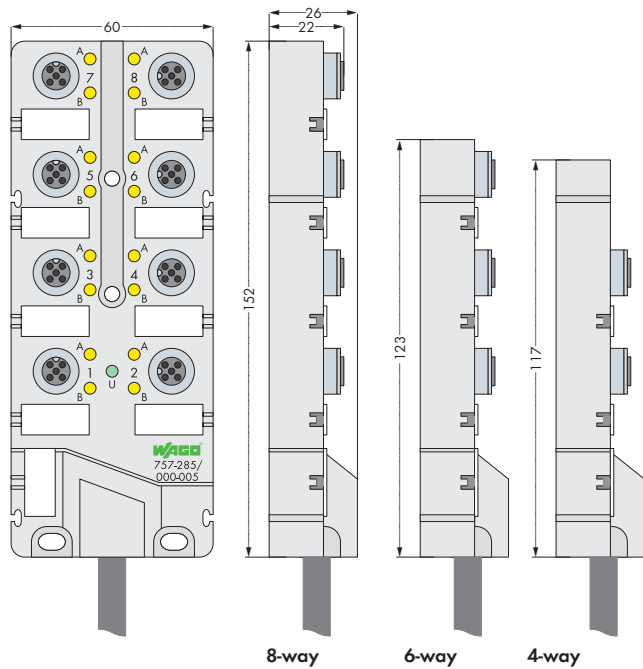
Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10 ⁹ Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data		Material Data	
Degree of protection	IP68 (1 meter water depth for 72 hours) acc. to EN 60529 In fully locked position with the appropriate plugs or protective caps	General	Silicon and halogen free
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)	Potting	Fully encapsulated with conformal coating (UL 94 V0)
Mounting	Screw mounting	Enclosure	PA 66 (UL 94 V0); RAL 7035
Dimensions (mm) W x H x L	4-way: 60 x 26 x 117 6-way: 60 x 26 x 123 8-way: 60 x 26 x 152	Contacts	I/O slot Socket, M12 x 1, 4-pole incl. PE
Weight	4-way: 165 g 6-way: 180 g 8-way: 215 g without cable	Contact	CuSn, pre-nickelized and 0.8 µm gold-plated
Mounting position	any	Tapped bush	Zn diecast nickel-plated
Vibration resistance	acc. to IEC 60068-2-6	Seal	Viton
Shock resistance	acc. to IEC 60068-2-27	Connection cycles	50
		Connecting cable	Cable design
			Outer sheath PUR halogen-free
			Black
			Cable end 100 mm stripped
		Cable Ø	7.5 mm SA box 4-way 7.8 mm SA box 6-way 8.2 mm SA box 8-way
		Conductor design	n x 0.34 mm ² + 3 x 1.00 mm ² conductor 0.34 mm ² extra-fine stranded 43 x 0.1 mm conductor 1.00 mm ² extra-fine stranded 55 x 0.15 mm
		Suitable for drag chain applications	bending radius
			min. 10 x cable Ø
			amb. temperature range
			-40 °C ... +90 °C stagnant; -5 °C ... +80 °C moving

M12 Sensor/Actuator Boxes

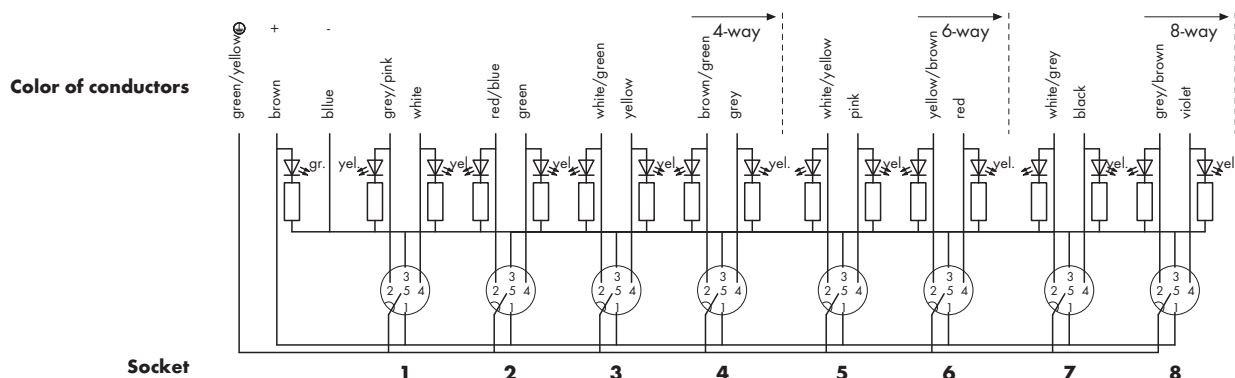
5-pole, with cable connection



- 4-, 6- and 8-way sensor/actuator boxes
- 5 poles (2 signals per contact)
- Cable length 5 and 10 m
- Green LED operating indicator
- Yellow LED status indicator
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 5-pole, 5m connecting cable	757-245/000-005	1
4-way, 5-pole, 10m connecting cable	757-245/000-010	1
6-way, 5-pole, 5m connecting cable	757-265/000-005	1
6-way, 5-pole, 10m connecting cable	757-265/000-010	1
8-way, 5-pole, 5m connecting cable	757-285/000-005	1
8-way, 5-pole, 10m connecting cable	757-285/000-010	1
8-way, 5-pole, 25m connecting cable	757-285/000-025	1
Accessories		
Marker card, marking pen, spacer module and protective cap	see page 490	
IP67 cables and connectors	see pages 494 ... 507	
Approvals		
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	

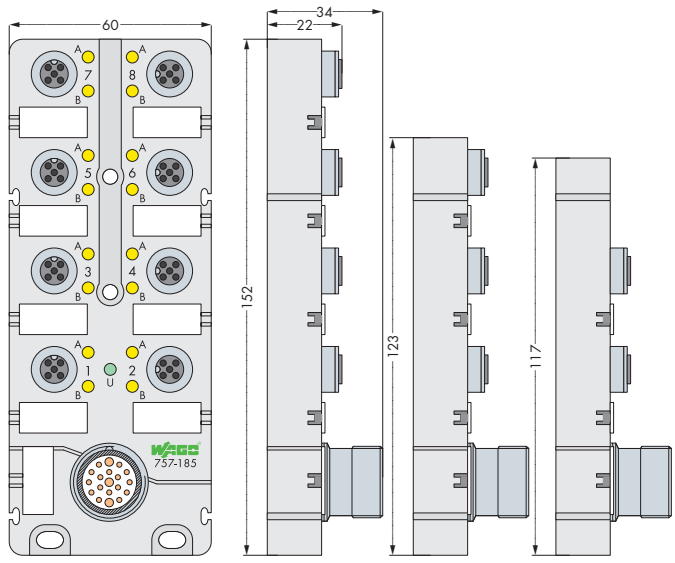
Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10 ⁹ Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data		Material Data	
Degree of protection	IP68 (1 meter water depth for 72 hours) acc. to EN 60529 In fully locked position with the appropriate plugs or protective caps	General	Silicon and halogen free
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)	Potting	Fully encapsulated with conformal coating (UL 94 V0)
Mounting	Screw mounting	Enclosure	PA 66 (UL 94 V0); RAL 7035
Dimensions (mm) W x H x L	4-way: 60 x 26 x 117	Contacts	
	6-way: 60 x 26 x 123	I/O slot	Socket, M12 x 1, 5-pole incl. PE
	8-way: 60 x 26 x 152	Contact	CuSn, pre-nickelated and 0.8 µm gold-plated
Weight	4-way: 165 g	Tapped bush	Zn diecast nickel-plated
	6-way: 185 g	Seal	Viton
	8-way: 225 g without cable	Connection cycles	50
Mounting position	any	Connecting cable	
Vibration resistance	acc. to IEC 60068-2-6	Cable design	Outer sheath PUR halogen-free
Shock resistance	acc. to IEC 60068-2-27		Black
		Cable Ø	8.2 mm SA box 4-way 8.8 mm SA box 6-way 9.7 mm SA box 8-way
		Conductor design	n x 0.34 mm ² + 3 x 1.00 mm ² conductor 0.34 mm ² extra-fine stranded 43 x 0.1 mm conductor 1.00 mm ² extra-fine stranded 55 x 0.15 mm
		Suitable for drag chain applications	
		bending radius	min. 10 x cable Ø
		amb. temperature range	-40 °C ... +90 °C stagnant; -5 °C ... +80 °C moving

M12 Sensor/Actuator Boxes

5-pole, with M23 connection



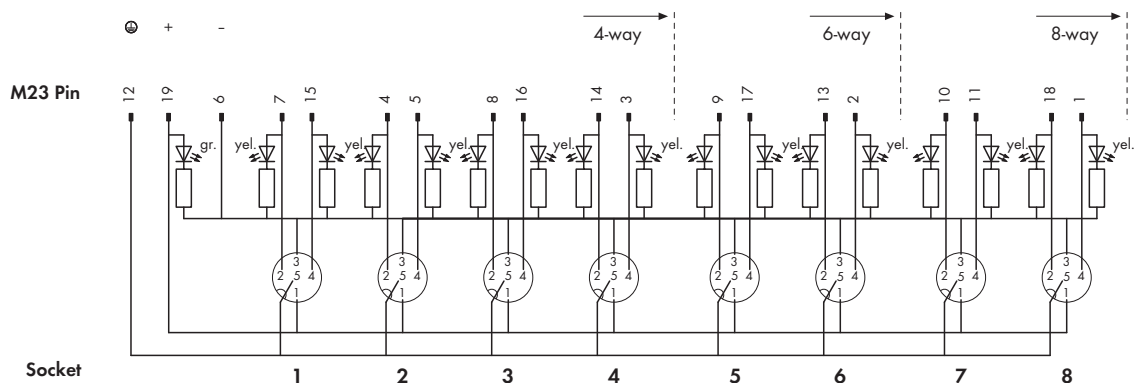
8-way 6-way 4-way

- 4-, 6- and 8-way sensor/actuator boxes
- 5 poles (2 signals per contact)
- M23 connector (19 poles)
- Green LED operating indicator
- Yellow LED status indicator (does not apply for modules marked as "without LED")
- incl. markers (10 pcs)
- incl. M12 protective caps (2 pcs)

Note: Modules without status LED can also be used to transmit analog signals

Description	Item No.	Pack. unit
M12 sensor/actuator box		
4-way, 5-pole, M23 connector	757-145	1
6-way, 5-pole, M23 connector	757-165	1
8-way, 5-pole, M23 connector	757-185	1
8-way, 5-pole, without LED, M23 connector	757-185/100-000	1
Accessories		
Marker card, marking pen, spacer	see page 490	
module and protective cap		
IP67 cables and connectors	see pages 494 ... 507	
Approvals		
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	

Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 9 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10 ⁹ Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data

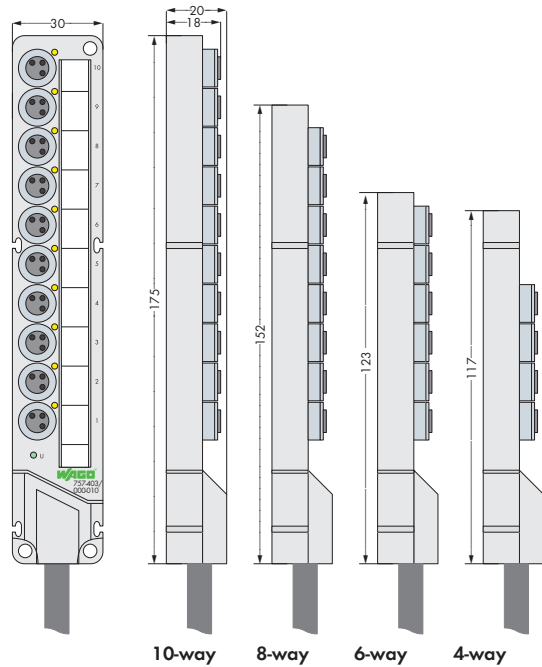
Degree of protection	IP67 acc. to EN 60529 (NEMA 6 & 6P)
	In fully locked position with the appropriate plugs or protective caps
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)
Mounting	Screw mounting
Dimensions (mm) W x H x L	4-way: 60 x 34 x 117 6-way: 60 x 34 x 123 8-way: 60 x 34 x 152
Weight	4-way: 180 g 6-way: 200 g 8-way: 245 g
Mounting position	any
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27

Material Data

General	Silicon and halogen free
Potting	Fully encapsulated with conformal coating (UL 94 V0)
Enclosure	PA 66 (UL 94 V0); RAL 7035
Contacts	
I/O slot	Socket, M12 x 1, 5-pole incl. PE
Contact	CuSn, pre-nickel and 0.8 µm gold-plated
Tapped bush	Zn diecast nickel-plated
Seal	Viton
Connection cycles	50

4 M8 Sensor/Actuator Boxes

3-pole, with cable connection

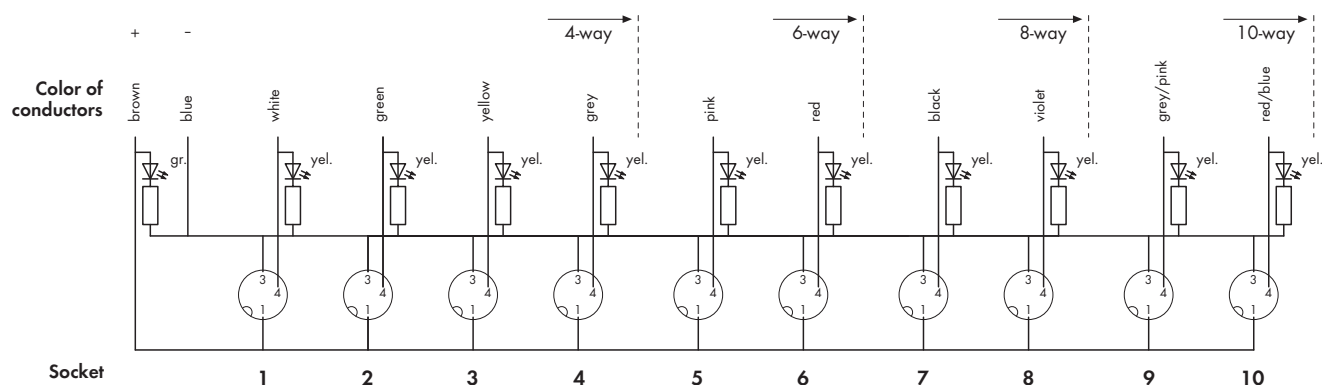


M8 sensor / actuator box with marker strips

- M8 sensor/actuator boxes, 4-, 6-, 8- and 10-way
- 3-pole (1 signal per contact)
- Cable length 5 m or 10 m (cable end 100 mm stripped), 4-way sensor/actuator box with 2 m connecting cable (cable end 200 mm stripped)
- Green LED operating indicator
- Yellow LED status indicator
- incl. marker strips (note: WMB markers can also be used)
- incl. M8 protective caps (2 pcs)

Description	Item No.	Pack. unit
M8 sensor/actuator box		
4-way, 3-pole, 2m connecting cable	757-443/000-002	1
4-way, 3-pole, 5m connecting cable	757-443/000-005	1
4-way, 3-pole, 10m connecting cable	757-443/000-010	1
6-way, 3-pole, 5m connecting cable	757-463/000-005	1
6-way, 3-pole, 10m connecting cable	757-463/000-010	1
8-way, 3-pole, 5m connecting cable	757-483/000-005	1
8-way, 3-pole, 10m connecting cable	757-483/000-010	1
10-way, 3-pole, 5m connecting cable	757-403/000-005	1
10-way, 3-pole, 10m connecting cable	757-403/000-010	1
Accessories		
Marker strips, marking pen, spacer module and protective cap	see page 490	
IP67 cables and connectors	see pages 494 ... 507	
Approvals		
UL 508	E 175199, UL 508, Class 2 Equipment Components are designed to be supplied through Class 2 power supplies in accordance with UL 1310 or Class 2 transformers in accordance with UL 1585	

Electrical data:	
Contact resistance	≤ 10 mΩ
Operating voltage	10 V ... 30 V DC
Current carrying capacity	2 A per signal; 6 A per SA box
Rated voltage	32 V ~ eff.
Insulation voltage	1 kV / 3 s
Insulation resistance	> 10 ⁹ Ω
Degree of pollution	3 acc. to VDE 0110
Switching function	PNP



Mechanical Data		Material Data	
Degree of protection	IP68 (1 meter water depth for 72 hours) acc. to EN 60529 In fully locked position with the appropriate plugs or protective caps	General	Silicon and halogen free
Operating temperature	-25 °C ... +80 °C (current load according to derating curve)	Potting	Fully encapsulated with conformal coating (UL 94 V0)
Mounting	Screw mounting	Enclosure	PA 66 (UL 94 V0); RAL 7035
Dimensions (mm) W x H x L	4-way: 30 x 20 x 117	Contacts	
	6-way: 30 x 20 x 123	I/O slot	Socket, M8 x 1, 3-pole
	8-way: 30 x 20 x 152	Contact	CuSn, pre-nickel and 0.8 µm gold-plated
	10-way: 30 x 20 x 175	Tapped bush	Zn diecast nickel-plated
Weight	4-way: 85 g	Seal	Viton
	6-way: 95 g	Connection cycles	50
	8-way: 110 g	Connecting cable	
	10-way: 130 g	Cable design	Outer sheath PUR halogen-free
Mounting position	any		Black
Vibration resistance	acc. to IEC 60068-2-6		Cable end 100 mm stripped
Shock resistance	acc. to IEC 60068-2-27		757-443/000-002: Cable end 200 mm stripped
		Cable Ø	6.4 mm SA box 4-way
			7.2 mm SA box 6-way
			7.4 mm SA box 8-way
			7.6 mm SA box 10-way
		Conductor design	n x 0.34 mm ² + 2 x 0.75 mm ² conductor 0.34 mm ² extra-fine stranded 43 x 0.1 mm conductor 0.75 mm ² extra-fine stranded 21 x 0.205 mm
		Suitable for drag chain applications	
		bending radius	min. 10 x cable Ø
		amb. temperature range	-40 °C ... +90 °C stagnant; -5 °C ... +80 °C moving

4 Accessories for the WAGO-I/O-SYSTEM 757

490

Marking cards



Marker strips for Series 757

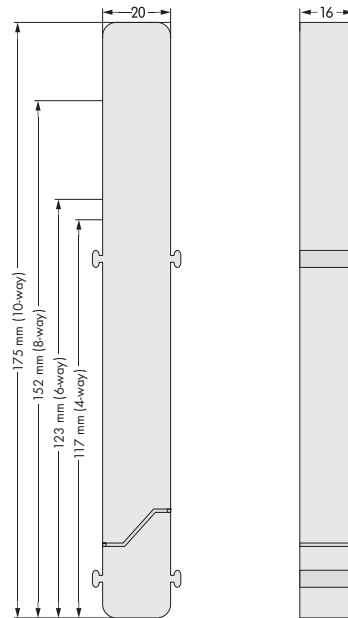
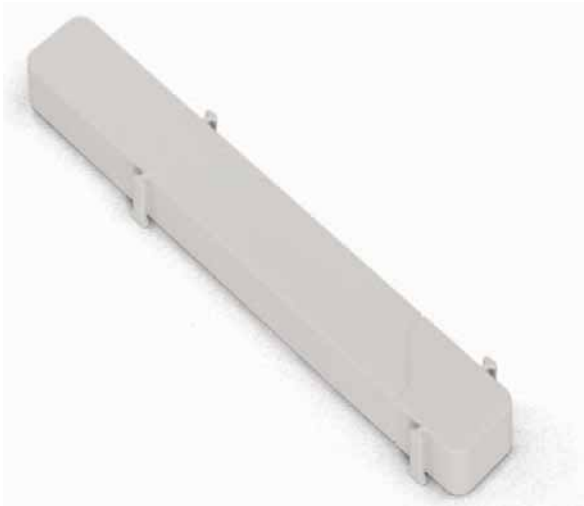


Marking pen with fibre tip



Description	Item No.	Pack. Unit
Marker card (40 tags) for M12 sensor/actuator box	755-891	10 cards
Marker strips for M8 sensor/actuator box		
4-way	757-041	100
6-way	757-061	100
8-way	757-081	100
10-way	757-001	100
Marking pen	210-110	1

Spacer module



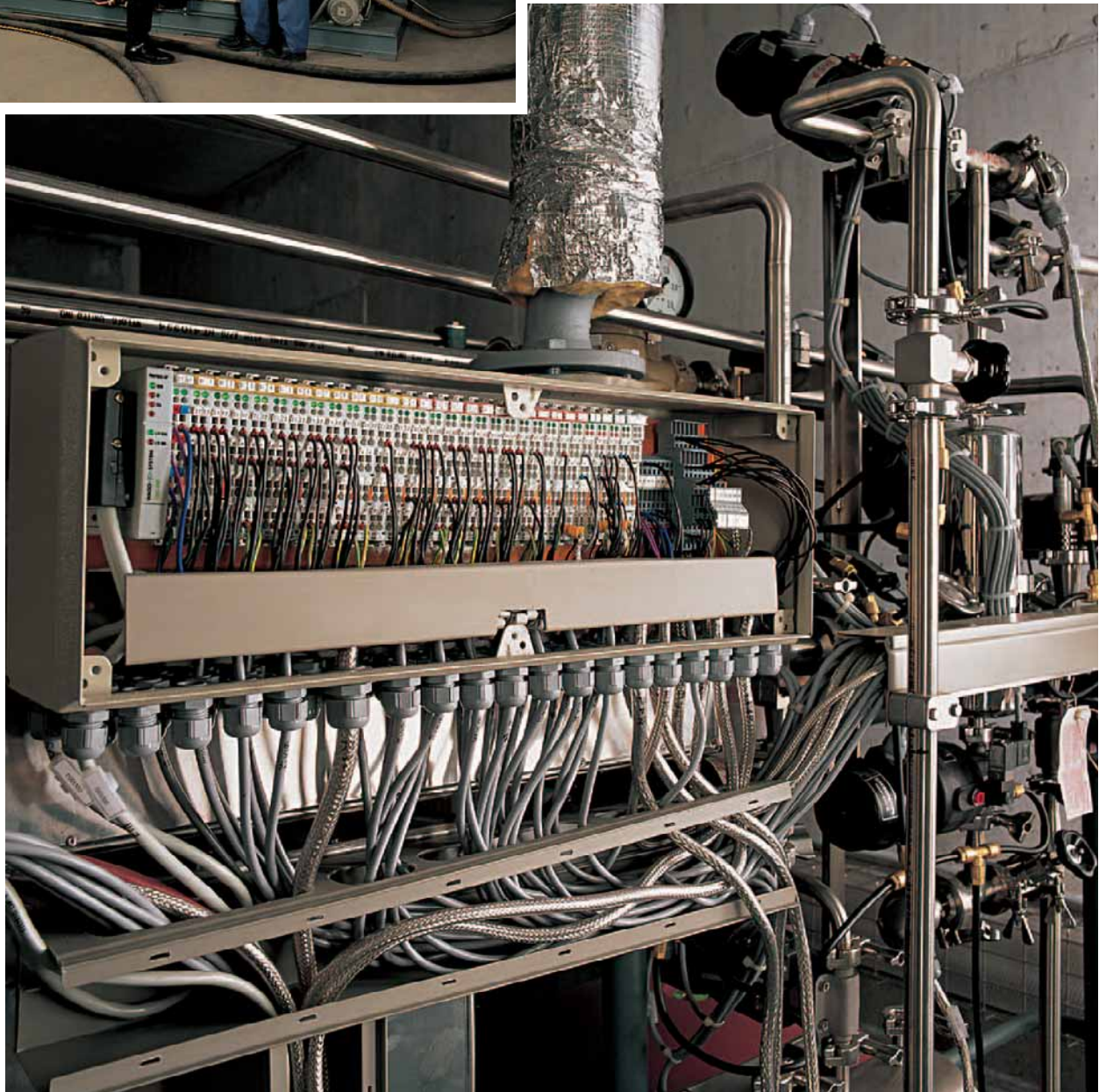
Description	Item No.	Pack. Unit
Spacer module for sensor/actuator box 4-way	757-040	10
Spacer module for sensor/actuator box 6-way	757-060	10
Spacer module for sensor/actuator box 8-way (see illustration)	757-080	10
Spacer module for sensor/actuator box 10-way	757-000	10



**WAGO Application: Amsco/Finn-Aqua
(now GEA Lyophil GmbH)**

Manufacturer of freeze drying systems

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS connection



5

System Overview

494



Sensor/Actuator Cables, with One End of Cable Fitted	
M8 and M12	495 - 496
Sensor/Actuator Cables, with Both Ends of Cable Fitted	
M8/M8	497
M8/M12	498
M12/M8	499
M12/M12	500 - 501
Sensor/Actuator Distribution Components and Accessories	
Distribution Cables, with Both Ends of Cable Fitted	
Twin Distribution Connector	
Protective Caps M8 and M12	502
Connectors for Self Assembly	
M8 and M12	503
Connecting Cables for the WAGO-I/O-SYSTEM 757	
M16 and M23	504
Technical data	
Connecting Cables	506
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WAGO-I/O-SYSTEM 756

IP67 Cables and Connectors

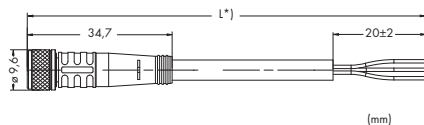
Series 756 offers a wide range of accessories for the connection of inductive or capacitive proximity switches, light barriers, flow control devices, push buttons etc. to the WAGO-I/O-SYSTEMS 751 (IP67 AS-Interface), 755 (IP67 fieldbus technology), 757 (IP67 sensor/actuator boxes) and WAGO-Speedway 767 (modular IO system IP67). The cables are not only a protection against dust and water, the design of their coupling nuts also provides protection against mechanical loosening when exposed to vibrations. In addition to that, fixed cables offer bend protection.

Cables with one or two preassembled wire ends are used. Cables with one preassembled wire end are often used when the length of the cable cannot be predetermined exactly or when the cable assembly with connectors proves to be difficult. Cables with one free wire end can therefore be adapted to individual prerequisites. Cables with two preassembled wire ends drastically reduce assembly and installation time.

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, with one end of cable fitted

M8 Socket

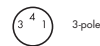
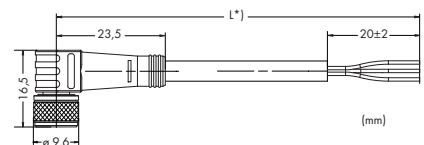


Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 3 blue (-)
- 4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight, one free cable end, 1.5 m	4.1 mm ± 0.2	756-5101/030-015	10
	M8 socket, straight, one free cable end, 5.0 m	4.1 mm ± 0.2	756-5101/030-050	10
	M8 socket, straight, one free cable end, 10 m	4.1 mm ± 0.2	756-5101/030-100	10

M8 Socket

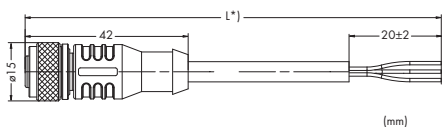


Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 3 blue (-)
- 4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle, one free cable end, 1.5 m	4.1 mm ± 0.2	756-5102/030-015	10
	M8 socket, right angle, one free cable end, 5.0 m	4.1 mm ± 0.2	756-5102/030-050	10
	M8 socket, right angle, one free cable end, 10 m	4.1 mm ± 0.2	756-5102/030-100	10

M12 Socket



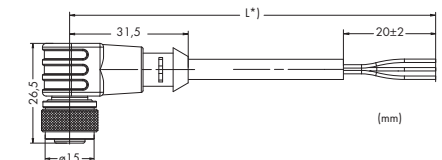
Pin 1 - 5: 0.34 mm²



- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)
- 5 gray

M12 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight, one free cable end, 1.5 m	4.3 mm ± 0.2	756-5301/030-015	10
	M12 socket, straight, one free cable end, 5.0 m	4.3 mm ± 0.2	756-5301/030-050	10
	M12 socket, straight, one free cable end, 10 m	4.3 mm ± 0.2	756-5301/030-100	10
4-pole,	M12 socket, straight, one free cable end, 1.5 m	4.7 mm ± 0.2	756-5301/040-015	10
	M12 socket, straight, one free cable end, 5.0 m	4.7 mm ± 0.2	756-5301/040-050	10
	M12 socket, straight, one free cable end, 10 m	4.7 mm ± 0.2	756-5301/040-100	10
5-pole,	M12 socket, straight, one free cable end, 1.5 m	5.0 mm ± 0.2	756-5301/050-015	10
	M12 socket, straight, one free cable end, 5.0 m	5.0 mm ± 0.2	756-5301/050-050	10
	M12 socket, straight, one free cable end, 10 m	5.0 mm ± 0.2	756-5301/050-100	10
5-pole, shielded	M12 socket, straight, one free cable end, 1.5 m	6.5 mm ± 0.2	756-5301/060-015	10
	M12 socket, straight, one free cable end, 5.0 m	6.5 mm ± 0.2	756-5301/060-050	10
	M12 socket, straight, one free cable end, 10 m	6.5 mm ± 0.2	756-5301/060-100	10

M12 Socket



Pin 1 - 5: 0.34 mm²



- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)
- 5 gray

M12 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle, one free cable end, 1.5 m	4.3 mm ± 0.2	756-5302/030-015	10
	M12 socket, right angle, one free cable end, 5.0 m	4.3 mm ± 0.2	756-5302/030-050	10
	M12 socket, right angle, one free cable end, 10 m	4.3 mm ± 0.2	756-5302/030-100	10
4-pole,	M12 socket, right angle, one free cable end, 1.5 m	4.7 mm ± 0.2	756-5302/040-015	10
	M12 socket, right angle, one free cable end, 5.0 m	4.7 mm ± 0.2	756-5302/040-050	10
	M12 socket, right angle, one free cable end, 10 m	4.7 mm ± 0.2	756-5302/040-100	10
5-pole,	M12 socket, right angle, one free cable end, 1.5 m	5.0 mm ± 0.2	756-5302/050-015	10
	M12 socket, right angle, one free cable end, 5.0 m	5.0 mm ± 0.2	756-5302/050-050	10
	M12 socket, right angle, one free cable end, 10 m	5.0 mm ± 0.2	756-5302/050-100	10
5-pole, shielded	M12 socket, right angle, one free cable end, 1.5 m	6.5 mm ± 0.2	756-5302/060-015	10
	M12 socket, right angle, one free cable end, 5.0 m	6.5 mm ± 0.2	756-5302/060-050	10
	M12 socket, right angle, one free cable end, 10 m	6.5 mm ± 0.2	756-5302/060-100	10

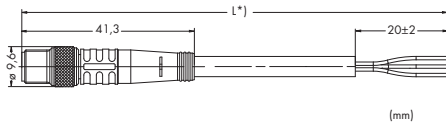
* Cable length

Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, with one end of cable fitted

M8 Plug

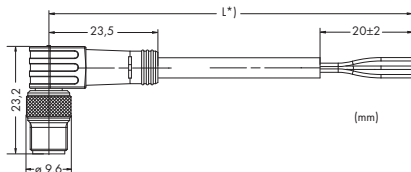


Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 3 blue (-)
- 4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M8 plug, straight, one free cable end, 1.5 m	4.1 mm ± 0.2	756-5111/030-015	10
	M8 plug, straight, one free cable end, 5 m	4.1 mm ± 0.2	756-5111/030-050	10
	M8 plug, straight, one free cable end, 10 m	4.1 mm ± 0.2	756-5111/030-100	10

M8 Plug

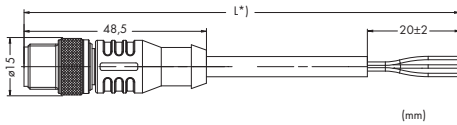


Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 3 blue (-)
- 4 black (S)

M8 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M8 plug, right angle, one free cable end, 1.5 m	4.1 mm ± 0.2	756-5112/030-015	10
	M8 plug, right angle, one free cable end, 5 m	4.1 mm ± 0.2	756-5112/030-050	10
	M8 plug, right angle, one free cable end, 10 m	4.1 mm ± 0.2	756-5112/030-100	10

M12 Plug



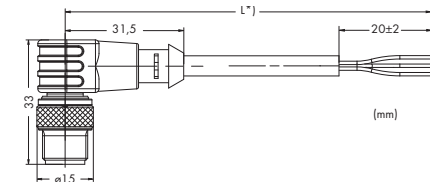
Pin 1 - 5: 0.34 mm²



- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)
- 5 gray

M12 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M12 plug, straight, one free cable end, 1.5 m	4.3 mm ± 0.2	756-5311/030-015	10
	M12 plug, straight, one free cable end, 5 m	4.3 mm ± 0.2	756-5311/030-050	10
	M12 plug, straight, one free cable end, 10 m	4.3 mm ± 0.2	756-5311/030-100	10
4-pole	M12 plug, straight, one free cable end, 1.5 m	4.7 mm ± 0.2	756-5311/040-015	10
	M12 plug, straight, one free cable end, 5 m	4.7 mm ± 0.2	756-5311/040-050	10
	M12 plug, straight, one free cable end, 10 m	4.7 mm ± 0.2	756-5311/040-100	10
5-pole	M12 plug, straight, one free cable end, 1.5 m	5.0 mm ± 0.2	756-5311/050-015	10
	M12 plug, straight, one free cable end, 5 m	5.0 mm ± 0.2	756-5311/050-050	10
	M12 plug, straight, one free cable end, 10 m	5.0 mm ± 0.2	756-5311/050-100	10
5-pole, shielded	M12 plug, straight, one free cable end, 1.5 m	6.5 mm ± 0.2	756-5311/060-015	10
	M12 plug, straight, one free cable end, 5 m	6.5 mm ± 0.2	756-5311/060-050	10
	M12 plug, straight, one free cable end, 10 m	6.5 mm ± 0.2	756-5311/060-100	10

M12 Plug



Pin 1 - 5: 0.34 mm²



- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)
- 5 gray


M12 Sensor/actuator cables, with one end of cable fitted		Cable Ø	Item No.	Pack. Unit
3-pole	M12 plug, right angle, one free cable end, 1.5 m	4.3 mm ± 0.2	756-5312/030-015	10
	M12 plug, right angle, one free cable end, 5 m	4.3 mm ± 0.2	756-5312/030-050	10
	M12 plug, right angle, one free cable end, 10 m	4.3 mm ± 0.2	756-5312/030-100	10
4-pole	M12 plug, right angle, one free cable end, 1.5 m	4.7 mm ± 0.2	756-5312/040-015	10
	M12 plug, right angle, one free cable end, 5 m	4.7 mm ± 0.2	756-5312/040-050	10
	M12 plug, right angle, one free cable end, 10 m	4.7 mm ± 0.2	756-5312/040-100	10
5-pole	M12 plug, right angle, one free cable end, 1.5 m	5.0 mm ± 0.2	756-5312/050-015	10
	M12 plug, right angle, one free cable end, 5 m	5.0 mm ± 0.2	756-5312/050-050	10
	M12 plug, right angle, one free cable end, 10 m	5.0 mm ± 0.2	756-5312/050-100	10
5-pole, shielded	M12 plug, right angle, one free cable end, 1.5 m	6.5 mm ± 0.2	756-5312/060-015	10
	M12 plug, right angle, one free cable end, 5 m	6.5 mm ± 0.2	756-5312/060-050	10
	M12 plug, right angle, one free cable end, 10 m	6.5 mm ± 0.2	756-5312/060-100	10

* Cable length
Custom cable lengths upon request

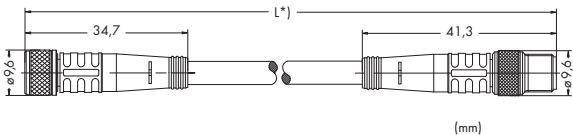
WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M8 Socket




M8 Plug



(mm)


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

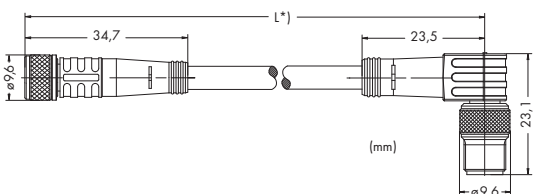


M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5201/030-010	10
	M8 socket, straight/M8 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5201/030-020	10

M8 Socket




M8 Plug



(mm)


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

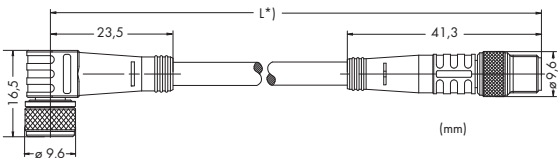


M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M8 plug, right angle, 1.0 m	4.3 mm ± 0.2	756-5202/030-010	10
	M8 socket, straight/M8 plug, right angle, 2.0 m	4.3 mm ± 0.2	756-5202/030-020	10

M8 Socket




M8 Plug



(mm)


Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

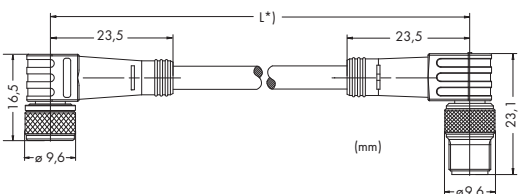


M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5203/030-010	10
	M8 socket, right angle/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5203/030-020	10

M8 Socket




M8 Plug



(mm)

Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)



M8/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M8 plug, right angle, 1.0m	4.3 mm ± 0.2	756-5204/030-010	10
	M8 socket, right angle/M8 plug, right angle, 2.0m	4.3 mm ± 0.2	756-5204/030-020	10

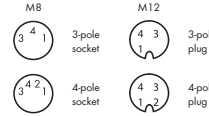
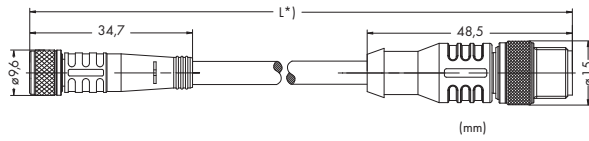
* Cable length
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M8 Socket

M12 Plug



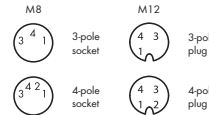
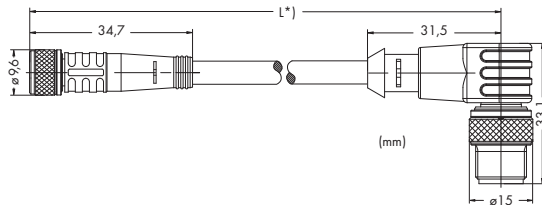
Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5507/030-010	10
	M8 socket, straight/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5507/030-020	10
4-pole,	M8 socket, straight/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5507/040-010	10
	M8 socket, straight/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5507/040-020	10

M8 Socket

M12 Plug



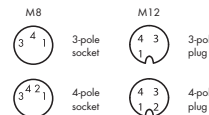
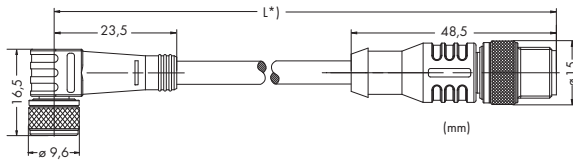
Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, straight/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	756-5508/030-010	10
	M8 socket, straight/M12 plug, right angle, 2.0 m	4.0 mm ± 0.1	756-5508/030-020	10
4-pole,	M8 socket, straight/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	756-5508/040-010	10
	M8 socket, straight/M12 plug, right angle, 2.0 m	4.0 mm ± 0.1	756-5508/040-020	10

M8 Socket

M12 Plug



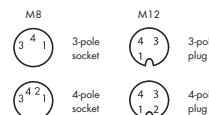
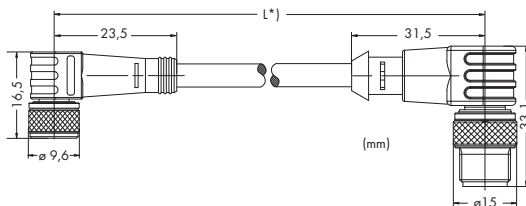
Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)

M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5509/030-010	10
	M8 socket, right angle/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5509/030-020	10
4-pole,	M8 socket, right angle/M12 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5509/040-010	10
	M8 socket, right angle/M12 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5509/040-020	10

M8 Socket

M12 Plug



Pin 1 - 4: 0.25 mm²

- 1 brown (+)
- 2 white (0)
- 3 blue (-)
- 4 black (S)


M8/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M8 socket, right angle/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	756-5510/030-010	10
	M8 socket, right angle/M12 plug, right angle, 2.0m	4.0 mm ± 0.1	756-5510/030-020	10
4-pole,	M8 socket, right angle/M12 plug, right angle, 1.0 m	4.0 mm ± 0.1	756-5510/040-010	10
	M8 socket, right angle/M12 plug, right angle, 2.0 m	4.0 mm ± 0.1	756-5510/040-020	10

* Cable length
Custom cable lengths upon request

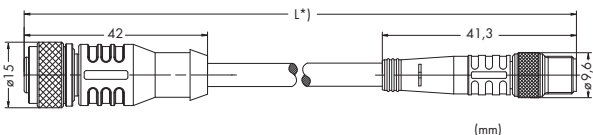
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Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M12 Socket

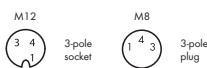


M8 Plug




Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

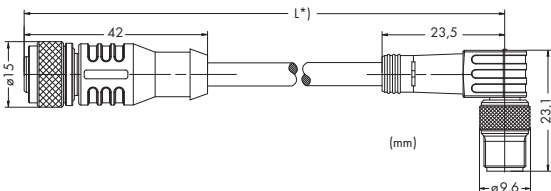


M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5501/030-010	10
	M12 socket, straight/M8 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5501/030-020	10

M12 Socket

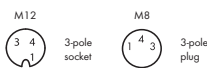


M8 Plug




Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

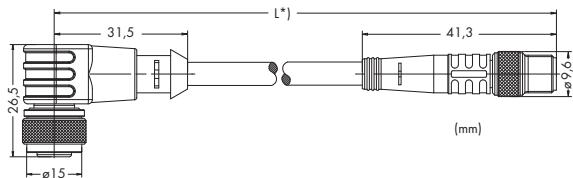


M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M8 plug, right angle, 1.0 m	4.3 mm ± 0.2	756-5502/030-010	10
	M12 socket, straight/M8 plug, right angle, 2.0 m	4.3 mm ± 0.2	756-5502/030-020	10

M12 Socket

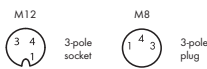


M8 Plug




Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)

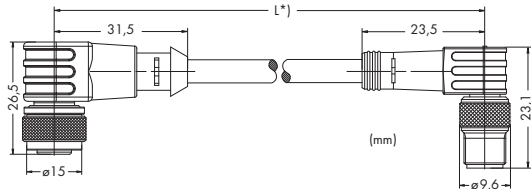


M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M8 plug, straight, 1.0 m	4.0 mm ± 0.1	756-5503/030-010	10
	M12 socket, right angle/M8 plug, straight, 2.0 m	4.0 mm ± 0.1	756-5503/030-020	10

M12 Socket

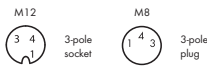


M8 Plug



Pin 1 - 4: 0.25 mm²

1 brown (+)
3 blue (-)
4 black (S)




M12/M8 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M8 plug, right angle, 1.0 m	4.3 mm ± 0.2	756-5504/030-010	10
	M12 socket, right angle/M8 plug, right angle, 2.0 m	4.3 mm ± 0.2	756-5504/030-020	10

* Cable length
Custom cable lengths upon request

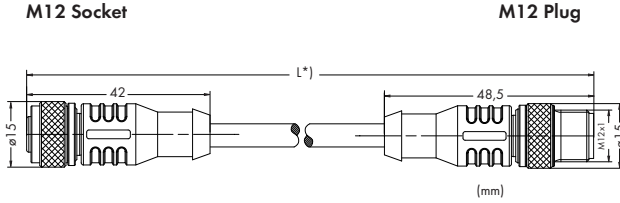
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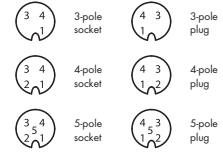
Sensor/actuator cables, both ends of the cable are fitted with plug/socket

M12 Socket



M12 Plug






Pin 1 - 5: 0.34 mm²

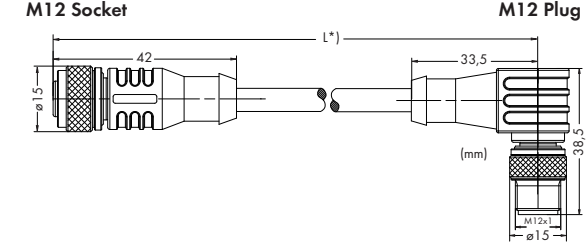
1 brown (+)
2 white (0)
3 blue (-)
4 black (S)
5 gray

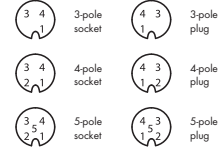
M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M12 plug, straight, 1.0 m	4.3 mm ± 0.2	756-5401/030-010	10
	M12 socket, straight/M12 plug, straight, 2.0 m	4.3 mm ± 0.2	756-5401/030-020	10
4-pole,	M12 socket, straight/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	756-5401/040-010	10
	M12 socket, straight/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	756-5401/040-020	10
5-pole,	M12 socket, straight/M12 plug, straight, 1.0 m	5.0 mm ± 0.2	756-5401/050-010	10
	M12 socket, straight/M12 plug, straight, 2.0 m	5.0 mm ± 0.2	756-5401/050-020	10
5-pole, shielded	M12 socket, straight, M12 plug, straight, 1.0 m	6.5 mm ± 0.2	756-5401/060-010	10
	M12 socket, straight, M12 plug, straight, 2.0 m	6.5 mm ± 0.2	756-5401/060-020	10

M12 Socket



M12 Plug






Pin 1 - 5: 0.34 mm²

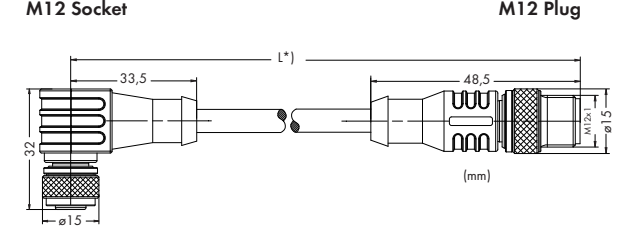
1 brown (+)
2 white (0)
3 blue (-)
4 black (S)
5 gray

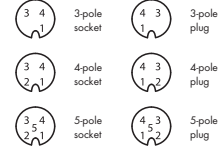
M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, straight/M12 plug, right angle, 1.0 m	4.3 mm ± 0.2	756-5402/030-010	10
	M12 socket, straight/M12 plug, right angle, 2.0 m	4.3 mm ± 0.2	756-5402/030-020	10
4-pole,	M12 socket, straight/M12 plug, right angle, 1.0 m	4.7 mm ± 0.2	756-5402/040-010	10
	M12 socket, straight/M12 plug, right angle, 2.0 m	4.7 mm ± 0.2	756-5402/040-020	10
5-pole,	M12 socket, straight/M12 plug, right angle, 1.0 m	5.0 mm ± 0.2	756-5402/050-010	10
	M12 socket, straight/M12 plug, right angle, 2.0 m	5.0 mm ± 0.2	756-5402/050-020	10
5-pole, shielded	M12 socket, straight, M12 plug, right angle, 1.0 m	6.5 mm ± 0.2	756-5402/060-010	10
	M12 socket, straight, M12 plug, right angle, 2.0 m	6.5 mm ± 0.2	756-5402/060-020	10

M12 Socket



M12 Plug





Pin 1 - 5: 0.34 mm²

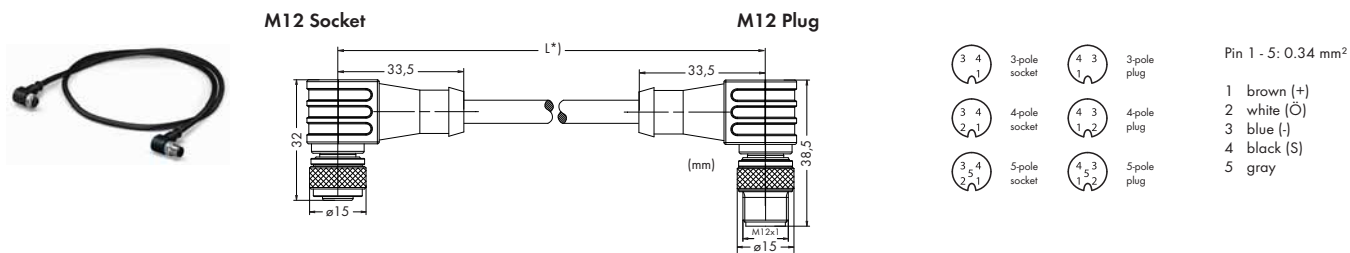
1 brown (+)
2 white (0)
3 blue (-)
4 black (S)
5 gray

M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M12 plug, straight, 1.0 m	4.3 mm ± 0.2	756-5403/030-010	10
	M12 socket, right angle/M12 plug, straight, 2.0 m	4.3 mm ± 0.2	756-5403/030-020	10
4-pole,	M12 socket, right angle/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	756-5403/040-010	10
	M12 socket, right angle/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	756-5403/040-020	10
5-pole,	M12 socket, right angle/M12 plug, straight, 1.0 m	5.0 mm ± 0.2	756-5403/050-010	10
	M12 socket, right angle/M12 plug, straight, 2.0 m	5.0 mm ± 0.2	756-5403/050-020	10
5-pole, shielded	M12 socket, right angle, M12 plug, straight, 2.0 m	6.5 mm ± 0.2	756-5403/060-010	10
	M12 socket, right angle, M12 plug, straight, 2.0 m	6.5 mm ± 0.2	756-5403/060-020	10

* Cable length
Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator cables, both ends of the cable are fitted with plug/socket



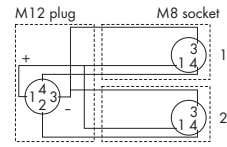
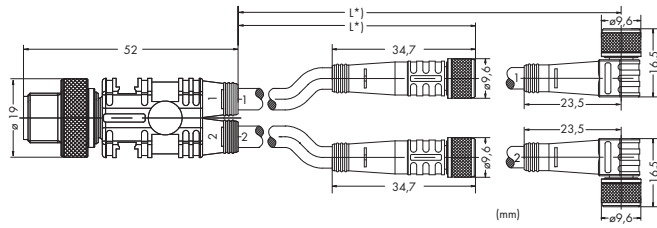
M12/M12 Sensor/actuator cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
3-pole,	M12 socket, right angle/M12 plug, right angle, 1.0 m	4.3 mm ± 0.2	756-5404/030-010	10
	M12 socket, right angle/M12 plug, right angle, 2.0 m	4.3 mm ± 0.2	756-5404/030-020	10
4-pole,	M12 socket, right angle/M12 plug, right angle, 1.0 m	4.7 mm ± 0.2	756-5404/040-010	10
	M12 socket, right angle/M12 plug, right angle, 2.0 m	4.7 mm ± 0.2	756-5404/040-020	10
5-pole,	M12 socket, right angle/M12 plug, right angle, 1.0 m	5.0 mm ± 0.2	756-5404/050-010	10
	M12 socket, right angle/M12 plug, right angle, 2.0 m	5.0 mm ± 0.2	756-5404/050-020	10
5-pole, shielded	M12 socket, right angle, M12 plug, right angle, 1.0 m	6.5 mm ± 0.2	756-5404/060-010	10
	M12 socket, right angle, M12 plug, right angle, 2.0 m	6.5 mm ± 0.2	756-5404/060-020	10

* Cable length
 Custom cable lengths upon request

WAGO-I/O-SYSTEM 756

Sensor/actuator distribution components

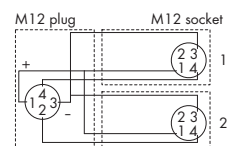
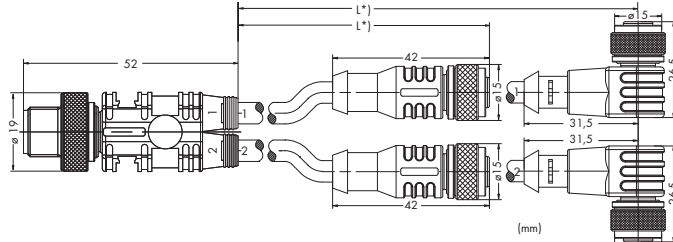
M12 Distribution Plug



Pin 1 - 4: 0.25 mm²

M8/M12 Sensor/actuator distribution cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
4-pole,	2 x M8 socket, straight/M12 plug, straight, 1.0 m	4.1 mm ± 0.2	756-5513/040-010	10
	2 x M8 socket, straight/M12 plug, straight, 2.0 m	4.1 mm ± 0.2	756-5513/040-020	10
	2 x M8 socket, right angle/M12 plug, straight, 1.0 m	4.1 mm ± 0.2	756-5514/040-010	10
	2 x M8 socket, right angle/M12 plug, straight, 2.0 m	4.1 mm ± 0.2	756-5514/040-020	10

M12 Distribution Plug

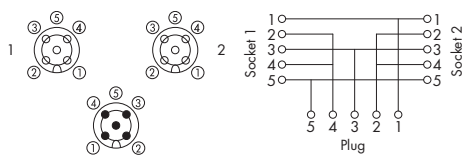


Pin 1 - 4: 0.34 mm²

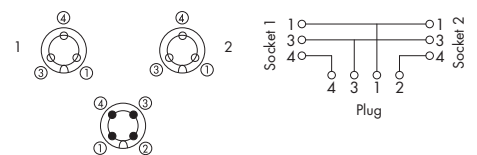
M12/M12 Sensor/actuator distribution cables, both ends of the cable are fitted with plug/socket		Cable Ø	Item No.	Pack. Unit
4-pole,	2 x M12 socket, straight/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	756-5516/040-010	10
	2 x M12 socket, straight/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	756-5516/040-020	10
	2 x M12 socket, right angle/M12 plug, straight, 1.0 m	4.7 mm ± 0.2	756-5517/040-010	10
	2 x M12 socket, right angle/M12 plug, straight, 2.0 m	4.7 mm ± 0.2	756-5517/040-020	10

Custom cable lengths upon request

M12/M12

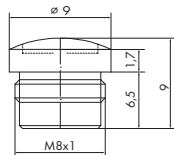


M8/M12

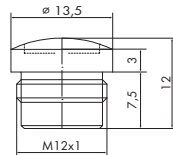


Sensor/actuator twin distribution connector		Item No.	Pack. Unit
M12/M12 twin distribution connector		756-9301/050-000	10
M8/M12 twin distribution connector		756-9301/040-000	10

M8



M12

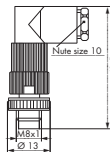
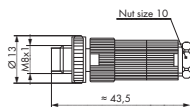


Protective caps (for covering unused sensor/actuator connectors)		Item No.	Pack. Unit
M8 protective cap		756-8101	10
M12 protective cap		756-8102	10

WAGO-I/O-SYSTEM 756

Connectors for self assembly

M8 Plug



3-pole

Conductor sizes
Ø 4 ... 5 mm/0.14 ... 0.34 mm²

M8 Plug, for self assembly, unshielded

Item No.

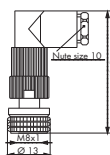
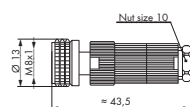
Pack. Unit

3-pole M8 plug, straight, pin penetration
M8 plug, right angle, pin penetration

756-9102/030-000 5

756-9105/030-000 5

M8 Socket



3-pole

Conductor sizes
Ø 4 ... 5 mm/0.14 ... 0.34 mm²

M8 Socket, for self assembly, unshielded

Item No.

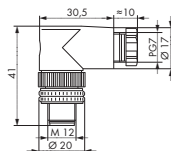
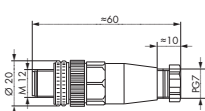
Pack. Unit

3-pole M8 socket, straight, pin penetration
M8 socket, right angle, pin penetration

756-9112/030-000 5

756-9115/030-000 5

M12 Plug



4-pole



5-pole

Conductor sizes
Ø 4 ... 6 mm/0.25 ... 0.75 mm² (screw clamp connection)
Ø 4 ... 6 mm/0.14 ... 0.50 mm² (spring clamp connection)

M12 Plug, for self assembly, unshielded

Item No.

Pack. Unit

4-pole M12 plug, straight, screw clamp connection
M12 plug, right angle, screw clamp connection
M12 plug, straight, spring clamp technology
M12 plug, right angle, spring clamp technology
5-pole M12 plug, straight, screw clamp connection
M12 plug, right angle, screw clamp connection
M12 plug, straight, spring clamp technology
M12 plug, right angle, spring clamp technology

756-9201/040-000 5

756-9204/040-000 5

756-9202/040-000 5

756-9205/040-000 5

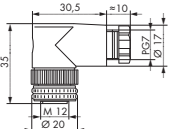
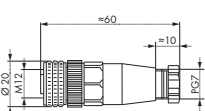
756-9201/050-000 5

756-9204/050-000 5

756-9202/050-000 5

756-9205/050-000 5

M12 Socket



4-pole



5-pole

Conductor sizes
Ø 4 ... 6 mm/0.25 ... 0.75 mm² (screw clamp connection)
Ø 4 ... 6 mm/0.14 ... 0.50 mm² (spring clamp connection)

M12 Socket, for self assembly, unshielded

Item No.

Pack. Unit

4-pole M12 socket, straight, screw clamp connection
M12 socket, right angle, screw clamp connection
M12 socket, straight, spring clamp technology
M12 socket, right angle, spring clamp technology
5-pole M12 socket, straight, spring clamp technology
M12 socket, right angle, spring clamp technology

756-9211/040-000 5

756-9214/040-000 5

756-9212/040-000 5

756-9215/040-000 5

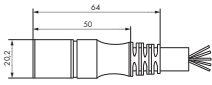
756-9212/050-000 5

756-9215/050-000 5

WAGO-I/O-SYSTEM 756

Distribution cables for the WAGO-I/O-SYSTEM 757

M16 Socket



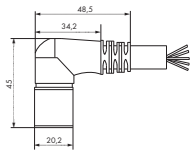
14-pole

Pin A, L: 0.75 mm²
Pin C - J, N - T: 0.34 mm²

- | | |
|-------------------|-------------------|
| A brown | N pink-brown |
| C white-pink | O violet |
| E black | P white |
| G pink | R red |
| J green | S gray |
| L blue | T yellow |
| M commoned with A | U commoned with L |

M16 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
14-pole,	M16 socket, straight, one free wire end, 5 m	9.1 mm ± 0.2	756-3205/140-050	1
	M16 socket, straight, one free wire end, 10 m	9.1 mm ± 0.2	756-3205/140-100	1
	M16 socket, straight, one free wire end, 15 m	9.1 mm ± 0.2	756-3205/140-150	1

M16 Socket



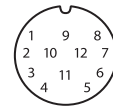
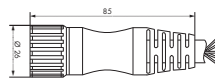
14-pole

Pin A, L: 0.75 mm²
Pin C - J, N - T: 0.34 mm²

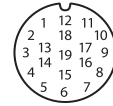
- | | |
|-------------------|-------------------|
| A brown | N pink-brown |
| C white-pink | O violet |
| E black | P white |
| G pink | R red |
| J green | S gray |
| L blue | T yellow |
| M commoned with A | U commoned with L |

M16 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
14-pole,	M16 socket, right angle, one free wire end, 5 m	9.1 mm ± 0.2	756-3206/140-050	1
	M16 socket, right angle, one free wire end, 10 m	9.1 mm ± 0.2	756-3206/140-100	1
	M16 socket, right angle, one free wire end, 15 m	9.1 mm ± 0.2	756-3206/140-150	1

M23 Socket



12-pole

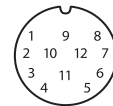
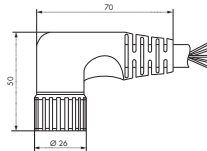


19-pole

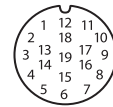
- Pin 9, 11, 12: 1.00 mm²; Pin 1 - 8: 0.34 mm²
- | | | |
|----------|----------|--------------------|
| 1 white | 5 pink | 9 blue |
| 2 green | 6 red | 10 commoned with 9 |
| 3 yellow | 7 black | 11 brown |
| 4 gray | 8 violet | 12 green-yellow |
- Pin 6, 12, 19: 1.00 mm²; Pin 1 - 5, 7 - 11, 13 - 19: 0.34 mm²
- | | | |
|-------------|-----------------|---------------|
| 1 violet | 8 white-green | 15 white |
| 2 red | 9 white-yellow | 16 yellow |
| 3 gray | 10 white-gray | 17 pink |
| 4 red-blue | 11 black | 18 gray-brown |
| 5 green | 12 green-yellow | 19 brown |
| 6 blue | 13 yellow-brown | |
| 7 gray-pink | 14 brown-green | |

M23 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
12-pole,	M23 socket, straight, one free wire end, 5 m	8.6 mm ± 0.3	756-3201/120-050	1
	M23 socket, straight, one free wire end, 10 m	8.6 mm ± 0.3	756-3201/120-100	1
	M23 socket, straight, one free wire end, 15 m	8.6 mm ± 0.3	756-3201/120-150	1
19-pole,	M23 socket, straight, one free wire end, 5 m	9.7 mm ± 0.3	756-3203/190-050	1
	M23 socket, straight, one free wire end, 10 m	9.7 mm ± 0.3	756-3203/190-100	1
	M23 socket, straight, one free wire end, 15 m	9.7 mm ± 0.3	756-3203/190-150	1

M23 Socket



12-pole



19-pole

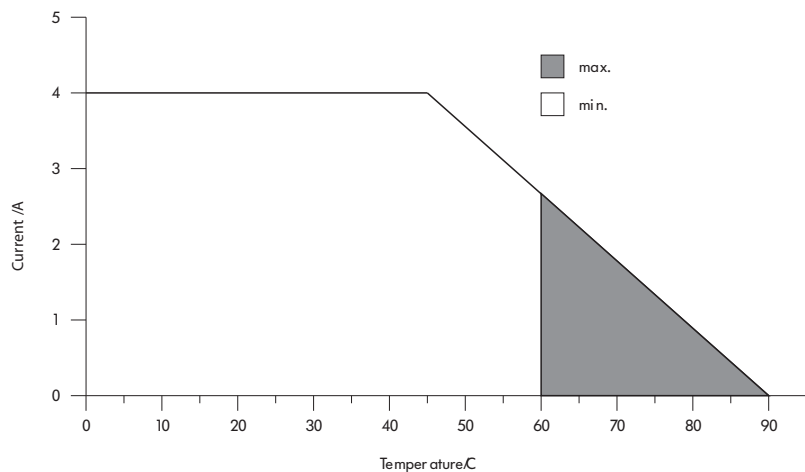
- Pin 9, 11, 12: 1.00 mm²; Pin 1 - 8: 0.34 mm²
- | | | |
|----------|----------|--------------------|
| 1 white | 5 pink | 9 blue |
| 2 green | 6 red | 10 commoned with 9 |
| 3 yellow | 7 black | 11 brown |
| 4 gray | 8 violet | 12 green-yellow |
- Pin 6, 12, 19: 1.00 mm²; Pin 1 - 5, 7 - 11, 13 - 19: 0.34 mm²
- | | | |
|-------------|-----------------|---------------|
| 1 violet | 8 white-green | 15 white |
| 2 red | 9 white-yellow | 16 yellow |
| 3 gray | 10 white-gray | 17 pink |
| 4 red-blue | 11 black | 18 gray-brown |
| 5 green | 12 green-yellow | 19 brown |
| 6 blue | 13 yellow-brown | |
| 7 gray-pink | 14 brown-green | |

M23 Distribution cables for connecting M8 sensor /actuator boxes		Cable Ø	Item No.	Pack. Unit
12-pole,	M23 socket, right angle, one free wire end, 5 m	8.6 mm ± 0.3	756-3202/120-050	1
	M23 socket, right angle, one free wire end, 10 m	8.6 mm ± 0.3	756-3202/120-100	1
	M23 socket, right angle, one free wire end, 15 m	8.6 mm ± 0.3	756-3202/120-150	1
19-pole,	M23 socket, right angle, one free wire end, 5 m	9.7 mm ± 0.3	756-3204/190-050	1
	M23 socket, right angle, one free wire end, 10 m	9.7 mm ± 0.3	756-3204/190-100	1
	M23 socket, right angle, one free wire end, 15 m	9.7 mm ± 0.3	756-3204/190-150	1

Custom cable lengths upon request

Technical Data	M8 connecting cable	M12 connecting cable
General		
Operating voltage		
3-pole	60 V AC/DC	250 V AC/DC
4-pole	60 V AC/DC	250 V AC/DC
5-pole	-/-	50 V AC/DC
Operating current (see also derating curve)		max. 4 A
Rated surge voltage (IEC 61076-2-101)		
3-pole (0.25 mm ² and 0.34 mm ² conductors)	3.0 kV bzw. 2.5 kV	-/-
4-pole	3.0 kV	2.5 kV
5-pole	-/-	1.5 kV
Insulation resistance (IEC 61076-2-101)		≥ 10 ⁹ Ω
Contact resistance (IEC 61076-2-101)		≤ 10 mΩ
Resistance of conductor		≤ 60 Ω/km
Degree of pollution (VDE 0110)		III
Degree of protection (IEC 60529)		IP68 (in fully locked position)
Operating temperature (see also derating curve)		
moved		-25 °C ... +90 °C ¹⁺²⁾
static		-50 °C ... +90 °C ¹⁾
		¹⁾ according to UL max. 80 °C
		²⁾ in drag chains or under high mechanical stress +60 °C
Suitable for drag chain applications		
Bending radius		min. 10 x cable Ø
Bending cycles		≥ 2 million
Acceleration		max. 5 m/s ²
Path feed rate		max. 200 m/min
Path		max. 5 m horizontal, max. 2 m vertical ± 180° per meter length
		Silicone and CFC free, resistant to oil, hydrolysis and microbes
Cables		
Designation (0.25 mm ² and 0.34 mm ² conductors)	LiF9Y11Y and Li9YH-11YH	Li9YH-11YH
Comment	designed according to UL + CSA, UL AWM style 21198, core style 10493	
Conductor (3/4/5 conductor 0.25 mm ² and 0.34 mm ²)	fine-stranded bare copper conductors, (32 x 0.1 mm and 43 x 0.1 mm)	
Conductor insulation	PP9Y or TPM, halogen free	
Outer jacket	Polyurethane (OPUR) halogen free acc. to DIN VDE 0472 part 815 flame retardant acc. to IEC 332-2, self-extinguishing color: black (≈ RAL 9005)	
Cable Ø 3-pole (0.25 mm ² and 0.34 mm ² conductors)	Ø 4.0 mm ± 0.1 and Ø 4.3 mm ± 0.2	Ø 4.3 mm ± 0.2
Cable Ø 4-pole	Ø 4.0 mm ± 0.1	Ø 4.7 mm ± 0.2
Cable Ø 5-pole	-/-	Ø 5.0 mm ± 0.2
Connectors		
Moulded body/housing material	PA, Polyurethane (PUR), black (≈ RAL 9005)	
Contact material	CuSn (BZ4)	
Contact plating	Cu/Au 0.6	
Knurled nut	Zinc die cast (ZnAlCu)	
Knurled nut (surface)	Zn/CuNi	
Sealing ring	Viton	

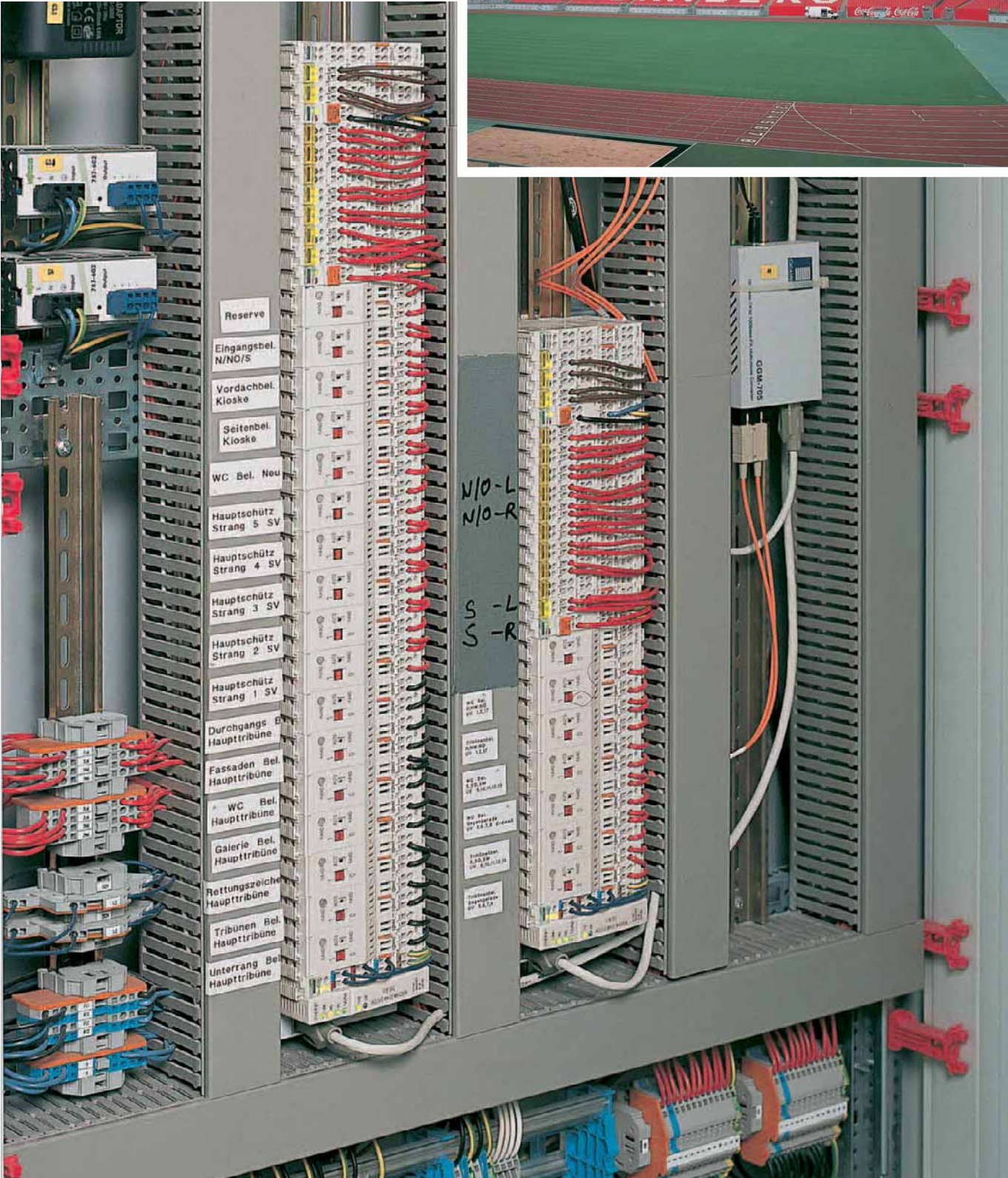
Derating curve (DIN IEC 512 part 2: 5/94)



Technical Data	M16 connecting cable	M23 connecting cable
General		
Operating voltage		
12-pole	-/-	300 V
14-pole	150 V	-/-
19-pole	-/-	150 V
Operating current		
12-pole	-/-	8 A
14-pole	4 A (0.34mm ²); 6 A (0.75 mm ²)	-/-
19-pole	-/-	10 A (contacts 6, 12, 19); 8 A (other contacts)
Rated surge voltage		
12-pole	-/-	2.5 kV AC
14-pole	1.2 kV	-/-
19-pole	-/-	1.5 kV AC
Insulation resistance	-/-	≥ 10 ¹² Ω
Contact resistance	-/-	≤ 3 mΩ
Resistance of conductor		
0.34 mm ²	≤ 53.5 Ω/km	≤ 54.1 Ω/km
0.75 mm ²	≤ 26.0 Ω/km	-/-
1.0 mm ²	-/-	≤ 18.7 Ω/km
Degree of pollution (VDE 0110)	II/III	III
Degree of protection (IEC 60529)	IP67 (in fully locked position)	
Operating temperature		
moved	-30 °C ... +90 °C	-5 °C ... +80 °C
static		-40 °C ... +90 °C
Suitable for drag chain applications		
Bending radius		min 10 x Cable Ø
Bending cycles		≥ 2 million
Acceleration		max. 5 m/s ²
Path feed rate		max. 200 m/min
Path		max. 5 m horizontal, max. 2 m vertical
Other characteristics	Oil resistant acc. to DIN/VDE 0472 part 803	Silicone/PVC free, resistant to oil, chemicals, hydrolysis and microbes
Cables		
Designation	LiYwYw11Y	Li9YH-11Y
Comment		designed according to UL style 21198, core style 10493
Conductor		100 mm stripped wire end fine-stranded bare copper conductors
12-polig (8 wires 0.34 mm ² ; 3 wires 1.0 mm ²)	-/-	43 x 0.1 mm; 128 x 0.1 mm
14-polig (10 wires 0.34 mm ² ; 2 wires 0.75 mm ²)	42 x 0.1 mm; 95 x 0.1 mm	-/-
19-polig (16 wires 0.34 mm ² ; 3 wires 1.0 mm ²)	-/-	43 x 0.1 mm; 55 x 0.1 mm
Conductor insulation	PVC YI 8 acc. to DIN VDE 0207	PP9Y halogen free
Core wrapping		Fleece
Outer jacket	PUR Polyurethane	Polyurethane (PUR) halogen free flame retardant acc. to DIN VDE 0472, part 804 color: black (≈ RAL 9005)
Cable Ø 12-pole	-/-	Ø 8.6 mm ± 0.3
Cable Ø 14-pole	Ø 9.1 mm ± 0.2	-/-
Cable Ø 19-pole	-/-	Ø 9.7 mm ± 0.3
Connectors		
Mechanical life		50 mating cycles
Moulded body	Polyamide (PA)/UL 94 V0	Thermoplastic Polyester (PBT), Polyamide (PA 66)/UL 94 V0
Housing material	CuZn/Ni	Machined part of Copper-Zinc alloy (CuZn), Die cast part of Zinc (GD-Zn) Polyurethane (PUR), plastic injection moulding
Contact material		CuZn
Contact plating	Gold (Au)	Nickel (Ni) with gold plating (Au) or passivated finish
Sealing and O-ring	CR (Neoprene)	Fluorocarbon rubber (FPM)

WAGO Application: Lighting Control System, easyCredit Stadium in Nuremberg, Germany

WAGO Products:
WAGO I/O-SYSTEM with ETHERNET Controllers,
Power Supply Units and
Rail-Mounted Terminal Blocks



System Overview

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PERSPECTO TM, Touch Monitor

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PERSPECTO CP, Control Panel with Target Visualisation

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WAGO Automation Cockpit

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PERSPECTO® – Monitors and Panels

Perfect Integration into the WAGO-I/O-SYSTEM

PERSPECTO is a comprehensive WAGO monitor and panel system for operating and monitoring the process data of machines, systems and control technology.

PERSPECTO® is optimized

Ideally suited to one another, the WAGO-I/O-SYSTEM and PERSPECTO guarantee smooth, trouble-free communication with a controller or the system's IPC.

PERSPECTO® is fast

Enhanced runtime systems and programs guarantee consistently high performance.

PERSPECTO® is flexible

Available for a variety of sizes as a Web, visualization or automation panel model, PERSPECTO provides solutions to suit any customer need.

PERSPECTO® is adaptable

Customer-driven designs, complete with reconfigurable displays, enable PERSPECTO units to seamlessly integrate into virtually any application.

Clearly in view and clearly in control

Clear Advantages

- Tuned for the WAGO-I/O-SYSTEM
- Expert support from product specialists
- Short boot time
- High computing power
- Outstanding energy efficiency
- Monitor sizes from 3.5" to 15"
- Flat design
- Multiple interfaces
- Optional IEC-61131-compatible control functionality

The WAGO software package for creating visualization and control applications



PERSPECTO® TM

for the display
of IPC content



PERSPECTO® TM - Touch Monitor

The Touch Monitors directly connect to DVI-D and USB interfaces. They are an ideal addition to the WAGO-I/O-IPC. The content shown is processed and saved on the connected controller.

PERSPECTO® WP

for controllers with
Web servers



PERSPECTO® WP - Web Panel

The display of CoDeSys 2.3 Web visualization is optimized for the Web Panel

PERSPECTO® CP with Target Visualization

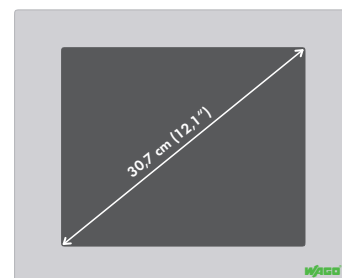
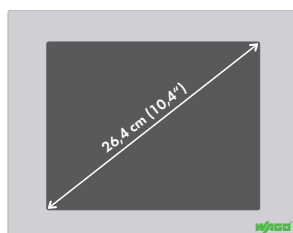
Control Panel with full CoDeSys
functionality for complete
automation solutions



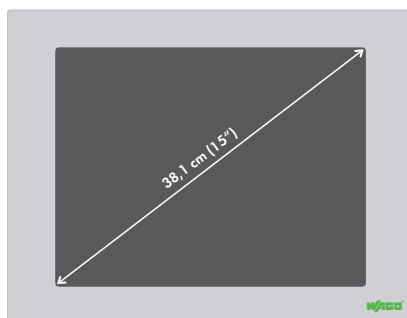
PERSPECTO® Control Panel with CoDeSys Target Visualization

The Control Panel with Target Visu (TV) features full CoDeSys runtime. The CoDeSys development environment allows full application programming in CoDeSys. Existing projects may be almost entirely converted and upgraded.

The Touch Monitors directly connect to DVI-D and USB interfaces. They are an ideal addition to the WAGO-I/O-IPC. The content shown is processed and saved on the connected controller.



Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
PERSPECTO TM, Touch Monitor	TM 104 VGA	762-104	1	TM 121 SVGA	762-121	1
Technical Data						
Display type	TFT			TFT		
Screen size (diagonal)	26,4 cm (10.4")			30.7 cm (12.1")		
Display colors	65.536 colors			65.536 colors		
Graphics resolution	640 x 480 pixels			800 x 600 pixels		
Contrast ratio	500:1			500:1		
Viewing angle, horizontal/vertical	-65° ... 65° / -45° ... 65°			-65° ... 65° / -75° ... 45°		
Brightness	430 cd/m ²			400 cd/m ²		
HBT *	50000 hrs.			50000 hrs.		
Panel	Touch screen (analog, resistive)			Touch screen (analog, resistive)		
Light transmission	typ. 80 %			typ. 80 %		
Durability	10 million finger touches			10 million finger touches		
Interfaces (USB)	2 x USB 2.0 (Type A), 1 x USB Device (Type B)			2 x USB 2.0 (Type A), 1 x USB Device (Type B)		
Interfaces (DVI)	1 x DVI-D			1 x DVI-D		
Display setting	OSD, 5 buttons (back)			OSD, 5 buttons (back)		
Front panel	Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film		
Housing material	Sheet steel, painted			Sheet steel, painted		
Dimensions (W x H x D)	284 x 222 x 59 mm			330 x 268 x 60 mm		
Panel cutout (W x H)	268 x 206 mm			312 x 250 mm		
Mounting	6 x clamping elements			6 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
Max. input current (24 V)	500 mA			500 mA		
Operating power	10 W ... 18 W			10 W ... 18 W		
Operating temperature	0 °C ... +50 °C			0 °C ... +50 °C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %			10 % ... 85 %		
Weight	2100 g			2600 g		
Degree of protection	Front IP65, back IP20			Front IP65, back IP20		
Approvals	CE			CE		
Accessories	see pages 518 ... 520			see pages 518 ... 520		
* The HBT (Half Brightness Time) is defined as the LED chip brightness decreases to 50% than original brightness, based on Ta = 25 ± 2 °C; RH = 60 ± 10 % condition.						

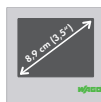


Description	Description	Item No.	Pack. Unit
PERSPECTO TM, Touch Monitor	TM 150 XGA	762-150	1
Technical Data			
Display type	TFT		
Screen size (diagonal)	38.1 cm (15")		
Display colors	16 million colors		
Graphics resolution	1024 x 768 pixels		
Contrast ratio	500:1		
Viewing angle, horizontal/vertical	-75° ... 75° / -60° ... 60°		
Brightness	250 cd/m ²		
HBT *	50000 hrs.		
Panel	Touch screen (analog, resistive)		
Light transmission	typ. 80 %		
Durability	35 million finger touches		
Interfaces (USB)	2 x USB 2.0 (Type A), 1 x USB Device (Type B)		
Interfaces (DVI)	1 x DVI-D		
Display setting	OSD, 5 buttons (back)		
Front panel	Anodized aluminum, natural, polyester film		
Housing material	Sheet steel, painted		
Dimensions (W x H x D)	398 x 306 x 61 mm		
Panel cutout (W x H)	383 x 291 mm		
Mounting	6 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)		
Max. input current (24 V)	1000 mA		
Operating power	20 W ... 28 W		
Operating temperature	0 °C ... +50 °C		
Storage temperature	-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %		
Weight	3000 g		
Degree of protection	Front IP65, back IP20		
Approvals	CE		
Accessories	see pages 518 ... 520		
* The HBT (Half Brightness Time) is defined as the LED chip brightness decreases to 50% than original brightness, based on Ta = 25 ± 2 °C; RH = 60 ± 10 % condition.			

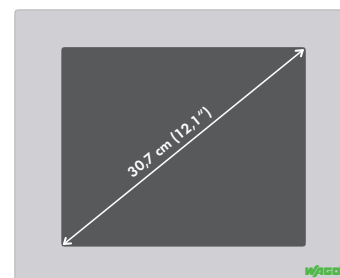
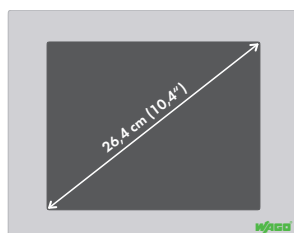
Featuring specialized software, the Web Panel functions as Web browser, connecting a controller with its own Web server. The display of CoDeSys 2.3 Web visualization is optimized for the Web Panel.

Software configuration:

- Internet browser
- Java Virtual Machine
- Panel configuration software



Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
PERSPECTO WP, Web Panel	WP 35 QVGA	762-1035	1	WP 57 QVGA	762-1057	1
Technical Data						
Display type	TFT			TFT		
Screen size (diagonal)	8.9 cm (3.5")			14.5 cm (5.7")		
Display colors	262000 colors			262000 colors		
Graphics resolution	320 x 240 pixels			320 x 240 pixels		
Contrast ratio	800:1			500:1		
Viewing angle, horizontal/vertical	-60° ... 60° / -60° ... 45°			-70° ... 70° / 70° ... 60°		
Brightness	560 cd/m ²			400 cd/m ²		
HBT *	50000 hrs.			50000 hrs.		
Operating system	Windows CE 6.0			Windows CE 6.0		
Processor	32-bit ARM9 200 MHz			32-bit ARM9 240 MHz		
RAM / Flash / SRAM	64 Mbytes / 64 Mbytes / 1 Mbyte			64 Mbytes / 64 Mbytes / 1 Mbyte		
Memory expansion	MicroSD card (max. 2 GB)			SD card (max. 2 GB)		
Panel	Touch screen (analog, resistive)			Touch screen (analog, resistive)		
Light transmission	typ. 80 %			typ. 75 %		
Durability	100.000 stylus touches			100.000 stylus touches		
Interfaces (USB)	1 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)		
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45		
Interface (CAN)	1 x CANopen RJ-45			1 x CANopen RJ-45		
Interface (serial)	RS-485 integrated in CAN			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9		
Front panel	Plastic, polyester film			Plastic, polyester film		
Housing material	plastic			plastic		
Dimensions (W x H x D)	96 x 96 x 29 mm			208 x 150 x 42 mm		
Panel cutout (W x H)	91 x 91 mm			198 x 140 mm		
Mounting	2 x clamping elements			4 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
Max. input current (24 V)	500 mA			500 mA		
Operating power	8 W ... 12 W			8 W ... 12 W		
Operating temperature	0 °C ... +55 °C			0 °C ... +55 °C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %			10 % ... 85 %		
Weight	170 g			630 g		
Degree of protection	Front IP65, back IP20			Front IP65, back IP20		
Approvals	CE, RoHS, REACH			CE, RoHS, REACH		
Accessories	see pages 518 ... 520			see pages 518 ... 520		
CAN and serial interfaces are not supported by software						
* The HBT (Half Brightness Time) is defined as the LED chip brightness decreases to 50% than original brightness, based on Ta = 25 ± 2 °C; RH = 60 ± 10 % condition.						

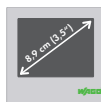






Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
PERSPECTO WP, Web Panel	WP 104 VGA	762-1104	1	WP 121 SVGA	762-1121	1
Technical Data						
Display type	TFT			TFT		
Screen size (diagonal)	26.4 cm (10.4")			30.7 cm (12.1")		
Display colors	65.536 colors			65.536 colors		
Graphics resolution	640 x 480 pixels			800 x 600 pixels		
Contrast ratio	500:1			500:1		
Viewing angle, horizontal/vertical	-65° ... 65° / -45° ... 65°			-65° ... 65° / -75° ... 45°		
Brightness	430 cd/m ²			400 cd/m ²		
HBT *	50000 hrs.			50000 hrs.		
Operating system	Windows CE 5.0			Windows CE 5.0		
Processor	32-bit XScale 520 MHz			32-bit XScale 520 MHz		
RAM / Flash / SRAM	64 Mbytes / 32 Mbytes / 1 Mbyte			64 Mbytes / 32 Mbytes / 1 Mbyte		
Memory expansion	CF card (max. 2 GB)			CF card (max. 2 GB)		
Panel	Touch screen (analog, resistive)			Touch screen (analog, resistive)		
Light transmission	typ. 80 %			typ. 80 %		
Durability	10 million finger touches			10 million finger touches		
Interfaces (USB)	2 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)		
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45		
Interface (CAN)	1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9		
Interface (serial)	1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub		
Front panel	Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film		
Housing material	Sheet steel, painted			Sheet steel, painted		
Dimensions (W x H x D)	284 x 222 x 46 mm			330 x 268 x 47 mm		
Panel cutout (W x H)	268 x 206 mm			312 x 250 mm		
Mounting	6 x clamping elements			6 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
Max. input current (24 V)	500 mA			500 mA		
Operating power	10 W ... 18 W			10 W ... 18 W		
Operating temperature	0 °C ... +50 °C			0 °C ... +50 °C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %			10 % ... 85 %		
Weight	2100 g			2600 g		
Degree of protection	Front IP65, back IP20			Front IP65, back IP20		
Approvals	CE			CE		
Accessories	see pages 518 ... 520			see pages 518 ... 520		
CAN and serial interfaces are not supported by software						
* The HBT (Half Brightness Time) is defined as the LED chip brightness decreases to 50% than original brightness, based on Ta = 25 ± 2 °C; RH = 60 ± 10 % condition.						

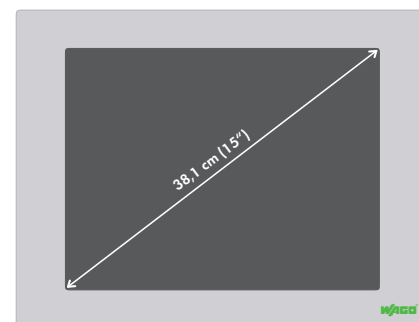
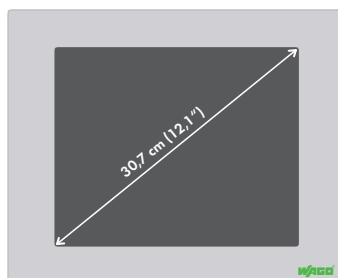
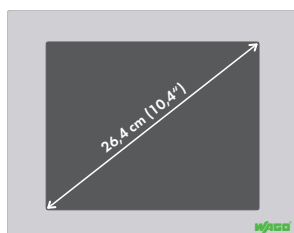
In addition to the HMI, the Control Panel also has a CoDeSys runtime, making it a full-fledged automation device. It provides configurable functions for operation and monitoring, and independently performs control tasks.

Software configuration:

- WAGO-Runtime (PLC, HMI)
- Panel configuration software
- CoDeSys-PLC with CoDeSys-Target-Visualisierung



Description	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
PERSPECTO CP, Control Panel with Target Visualisation	CP 35 QVGA TV	762-3035/000-001	1	CP 57 QVGA TV	762-3057/000-001	1
Technical Data						
Display type	TFT			TFT		
Screen size (diagonal)	8.9 cm (3.5")			14.5 cm (5.7")		
Display colors	262000 colors			262000 colors		
Graphics resolution	320 x 240 pixels			320 x 240 pixels		
Contrast ratio	800:1			500:1		
Viewing angle, horizontal/vertical	-60° ... 60° / -60° ... 45°			-70° ... 70° / -60° ... 70°		
Brightness	560 cd/m ²			400 cd/m ²		
HBT *	50000 hrs.			50000 hrs.		
Operating system	Windows CE 6.0			Windows CE 6.0		
Processor	32-bit ARM9 200 MHz			32-bit ARM9 240 MHz		
RAM / Flash / SRAM	64 Mbytes / 64 Mbytes / 1 Mbyte			64 Mbytes / 64 Mbytes / 1 Mbyte		
Memory expansion	MicroSD card (max. 2 GB)			SD card (max. 2 GB)		
Panel	Touch screen (analog, resistive)			Touch screen (analog, resistive)		
Light transmission	typ. 80 %			typ. 75 %		
Durability	100.000 stylus touches			100.000 stylus touches		
Interfaces (USB)	1 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)		
Interface (ETHERNET)	1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45		
Interface (CAN)	1 x CANopen RJ-45			1 x CANopen RJ-45		
Interface (serial)	RS-485 integrated in CAN			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485 D-Sub 9		
Front panel	Plastic, polyester film			Plastic, polyester film		
Housing material	plastic			plastic		
Dimensions (W x H x D)	96 x 96 x 29 mm			208 x 150 x 42 mm		
Panel cutout (W x H)	91 x 91 mm			198 x 140 mm		
Mounting	2 x clamping elements			4 x clamping elements		
Voltage supply	24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
Max. input current (24 V)	500 mA			500 mA		
Operating power	8 W ... 12 W			8 W ... 12 W		
Operating temperature	0 °C ... +55 °C			0 °C ... +55 °C		
Storage temperature	-10 °C ... +60 °C			-10 °C ... +60 °C		
Relative air humidity (no condensation)	10 % ... 85 %			10 % ... 85 %		
Weight	170 g			630 g		
Degree of protection	Front IP65, back IP20			Front IP65, back IP20		
Approvals	CE,  , 			CE,  , 		
Accessories	see pages 518 ... 520			see pages 518 ... 520		
* The HBT (Half Brightness Time) is defined as the LED chip brightness decreases to 50% than original brightness, based on Ta = 25 ± 2 °C; RH = 60 ± 10 % condition.						



Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit	Description	Item No.	Pack. Unit
CP 104 VGA TV	762-3104/000-001	1	CP 121 SVGA TV	762-3121/000-001	1	CP 150 XGA TV	762-3150/000-001	1
						CP 150 XGA CAN TV	762-3150/000-003	1
TFT			TFT			TFT		
26.4 cm (10.4")			30.7 cm (12.1")			38.1 cm (15")		
65.536 colors			65.536 colors			16 million colors		
640 x 480 pixels			800 x 600 pixels			1024 x 768 pixels		
500:1			500:1			500:1		
-65° ... 65° / -45° ... 65°			-65° ... 65° / -75° ... 45°			-75° ... 75° / -60° ... 60°		
430 cd/m ²			400 cd/m ²			250 cd/m ²		
50000 hrs.			50000 hrs.			50000 hrs.		
Windows CE 5.0			Windows CE 5.0			Windows CE 6.0		
32-bit XScale 520 MHz			32-bit XScale 520 MHz			Intel Atom® N270; 1.6 GHz		
64 Mbytes / 32 Mbytes / 1 Mbyte			64 Mbytes / 32 Mbytes / 1 Mbyte			256 Mbytes / 128 Mbytes / -		
CF card (max. 2 GB)			CF card (max. 2 GB)			CF card (max. 2 GB)		
Touch screen (analog, resistive)			Touch screen (analog, resistive)			Touch screen (analog, resistive)		
typ. 80 %			typ. 80 %			typ. 80 %		
10 million finger touches			10 million finger touches			35 million finger touches		
2 x USB 2.0 Host (Type A)			2 x USB 2.0 Host (Type A)			4 x USB 2.0 Host (Type A)		
1 x 10/100 Mbit RJ-45			1 x 10/100 Mbit RJ-45			1 x 10/100/1000 Mbit RJ-45		
1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			1 x CAN0 RJ-45, 1 x CAN1 D-Sub 9			Option (RJ-45 or D-Sub 9)		
1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub			1 x RS-232 D-Sub 9, 1 x RS-232 + RS-485/-422 D-Sub		
Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film			Anodized aluminum, natural, polyester film		
Sheet steel, painted			Sheet steel, painted			Sheet steel, painted		
284 x 222 x 46 mm			330 x 268 x 47 mm			398 x 306 x 77 mm		
268 x 206 mm			312 x 250 mm			383 x 291 mm		
6 x clamping elements			6 x clamping elements			6 x clamping elements		
24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)			24 V DC (18 V ... 30 V)		
500 mA			500 mA			1300 mA		
10 W ... 18 W			10 W ... 18 W			28 W ... 35 W		
0 °C ... +50 °C			0 °C ... +50 °C			0 °C ... +45 °C		
-10 °C ... +60 °C			-10 °C ... +60 °C			-10 °C ... +60 °C		
10 % ... 85 %			10 % ... 85 %			10 % ... 85 %		
2100 g			2600 g			3500 g		
Front IP65, back IP20			Front IP65, back IP20			Front IP65, back IP20		
CE,			CE,			CE,		
see pages 518 ... 520			see pages 518 ... 520			see pages 518 ... 520		

Accessories

Memory cards, connection cables and mounting sets

Memory Cards	Item No.	Pack. Unit	Technical Data
CF memory card, 1 GB	758-879/000-000	1	Flash memory: 1 GByte Write/Read cycles max.: Single: 20 Mbytes/s (max.) / 10 Mbytes/s (max.); Dual: 40 Mbytes/s (max.) / 20 Mbytes/s (max.) MTBF: 300,000 hrs. Service life: 2,000,000 program/operating cycles Operating temperature: -40 °C ... +85 °C Storage temperature: -55 °C ... +95 °C Relative humidity (without condensation): 95 % Dimensions (mm) W x H x L: 42.8 x 36.4 x 3.3 Vibration resistance: acc. to IEC 60068-2-6 Shock resistance: acc. to IEC 60068-2-27
SD memory card, 1 GB	758-879/000-001	1	Memory: 1 GByte Write/Read cycles max.: 16 Mbytes/s / 22 Mbytes/s MTBF: 4,000,000 hrs. Service life: 2,000,000 program/operating cycles Operating temperature: -45 °C ... +90 °C Storage temperature: -45 °C ... +90 °C Relative humidity (without condensation): 95 % Dimensions (mm) W x H x L: 24 x 32 x 2.1 Vibration resistance: 15 G Shock resistance: 50 G (operating), 1000 G (not operating) Data transmission rate: Up to 22 Mbytes/s
MicroSD memory card, 1 GB	758-879/000-002	1	Memory: 1 GByte Write/Read cycles max.: 18 Mbytes/s / 16 Mbytes/s MTBF: 5,000,000 hrs. Service life: 2,000,000 program/operating cycles Operating temperature: -40 °C ... +85 °C Storage temperature: -40 °C ... +85 °C Relative humidity (without condensation): 95 % Dimensions (mm) W x H x L: 15 x 11 x 1 Vibration resistance: 15 G Shock resistance: 1000 G Data transmission rate: Up to 18 Mbytes/s

Connection Cables	Item No.	Pack. Unit
DVI-D cable, 3 m	758-879/000-100	1
USB A-B cable, 3 m	758-879/000-101	1

Mounting Sets	Item No.	Pack. Unit
Mounting set for WP, CP 35	758-879/000-300	1
Mounting set for WP, CP 57	758-879/000-301	1
Mounting set for WP, CP 104	758-879/000-302	1
Mounting set for WP, CP 121	758-879/000-303	1
Mounting set for CP 150	758-879/000-304	1
Mounting set for TM 104	758-879/000-305	1
Mounting set for TM 121, TM 150	758-879/000-306	1

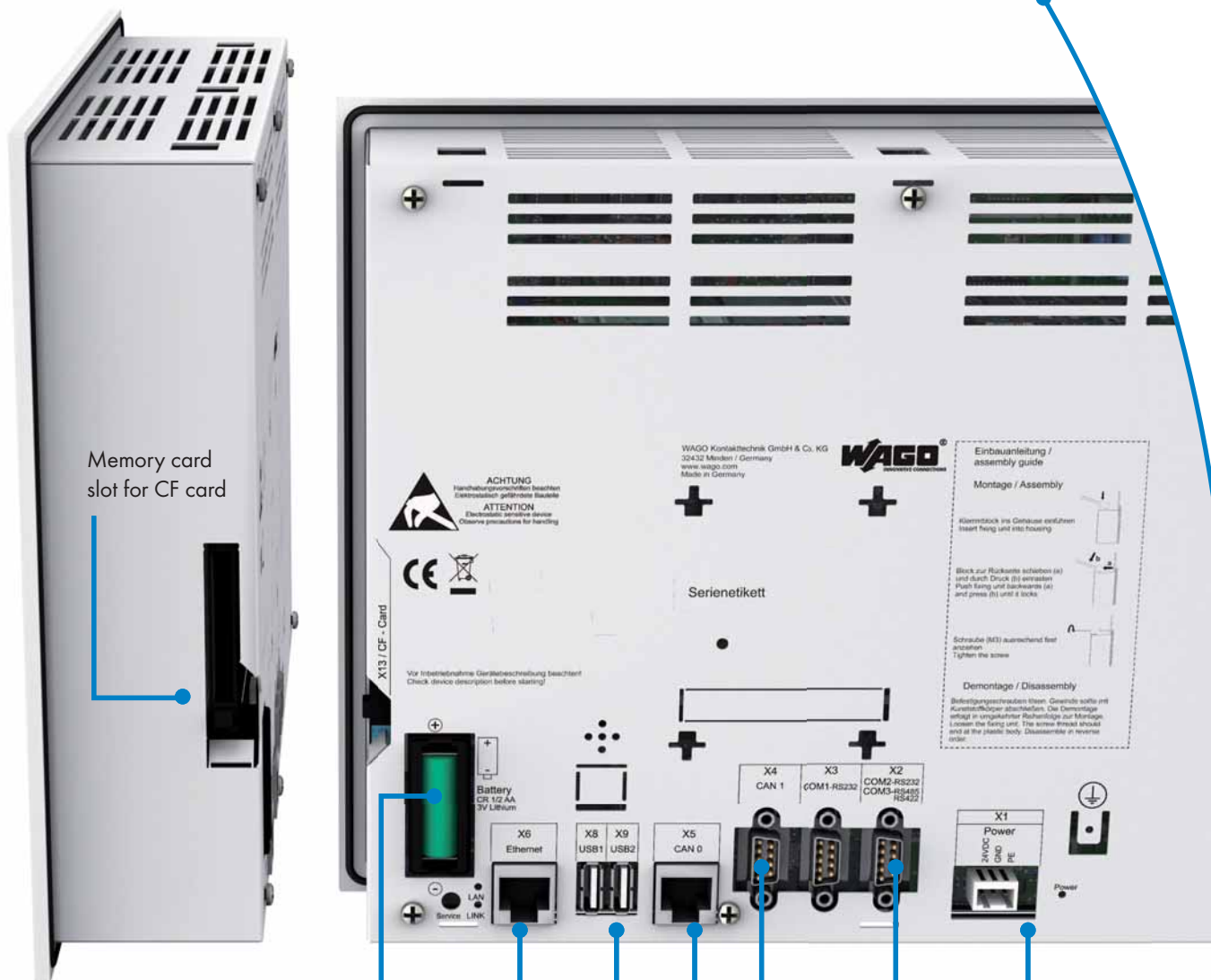
Out of sight, but always in reach

This is why *PERSPECTO* carries multiple interfaces, connection ports and other important elements on the back side.

3.5" version



10.4" version



Memory card slot for CF card

Battery for data buffering in event of a power outage

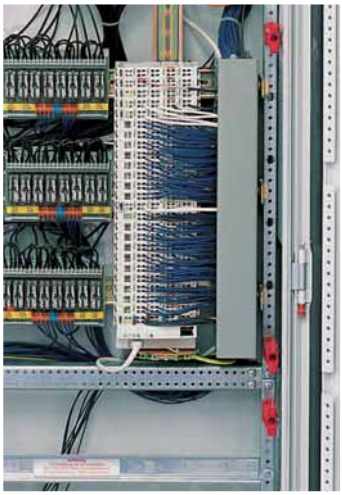
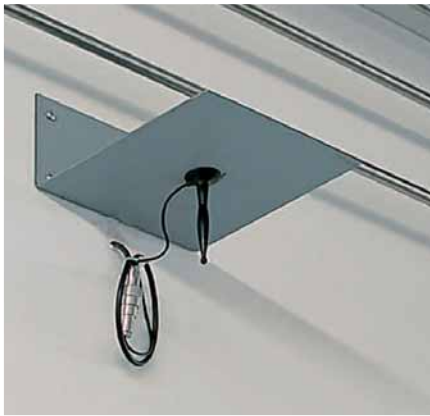
ETHERNET 10 /100 Mbit RJ-45

USB host interfaces

CAN bus with CANopen protocol

RS-232 or RS-485

24 V DC power supply



WAGO Application: Plastic Technology Center (SKZ) in Würzburg, Germany

WAGO Products:
WAGO-I/O-SYSTEM with ETHERNET
Controllers, DALI and EnOcean Components



System Overview

524 - 525



Radio Receiver Module
Bluetooth® I/O Module

526
527



Bluetooth® ETHERNET Gateway

528



Radio Receiver and Transmitter
WAGO Radio Adapter
External Antenna
Radio Transmitter, EnOcean

529
530



789 Series – EnOcean Radio Receiver in DIN-Rail Mount Enclosure
4-channel EnOcean Radio Receiver with 4 Changeover Contacts, 8 A
4-channel EnOcean Radio Receiver with 4 Make Contacts, 16 A

532

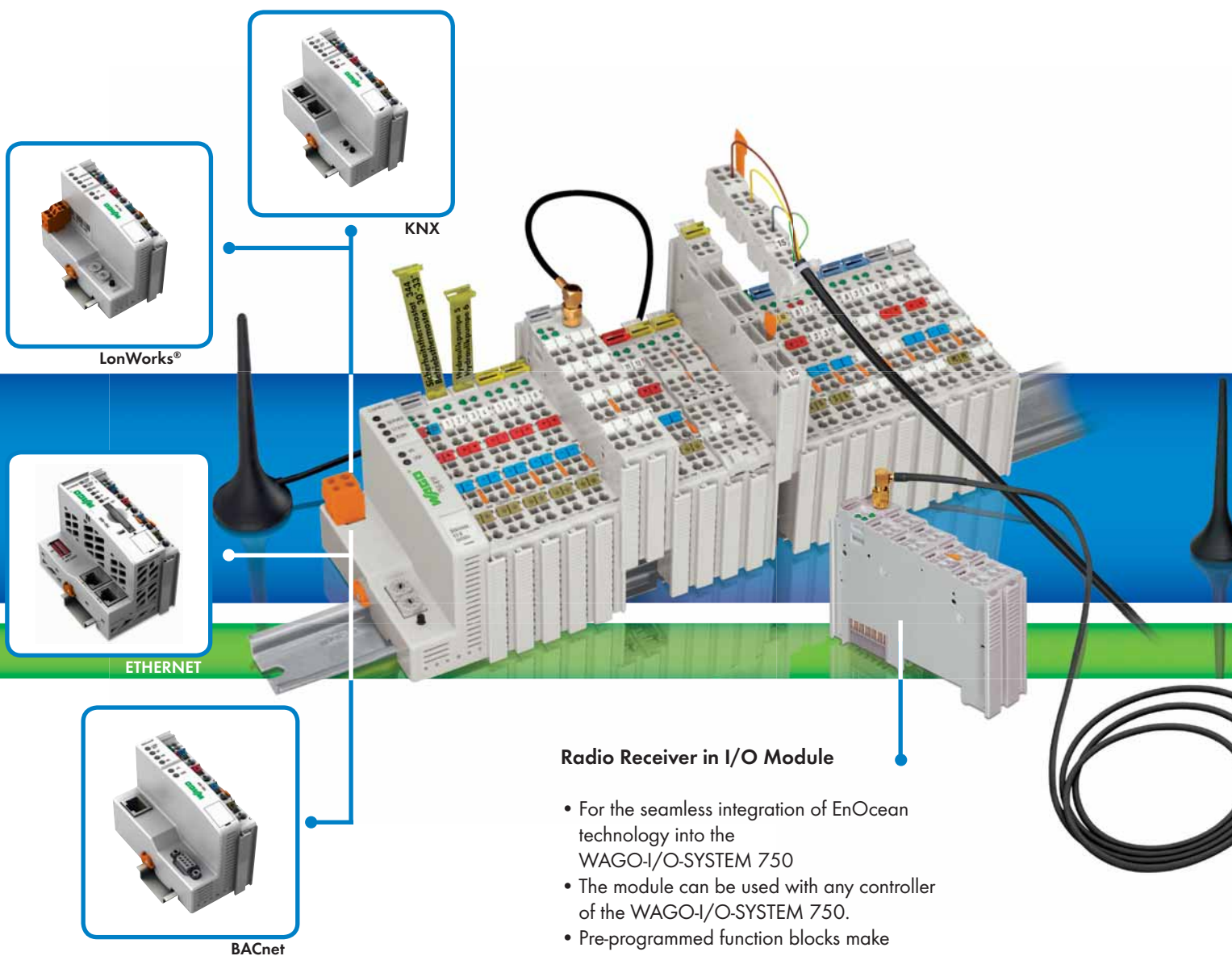
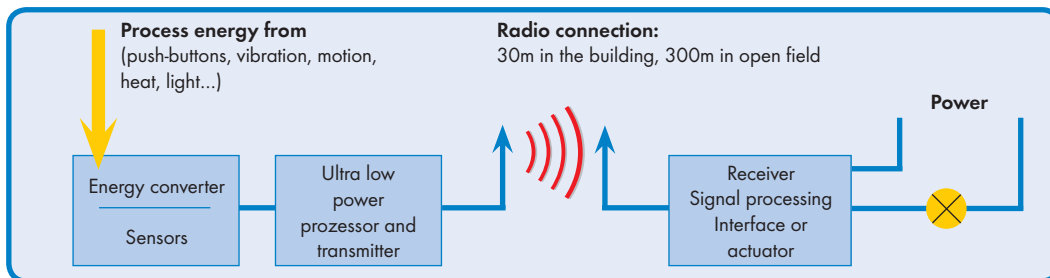


770 Series – WINSTA® Radio Receiver
4-channel Radio Receiver with 4 Make Contacts
2-channel Radio Receiver with Sunblind Outputs

533

WAGO Radio Receiver with EnOcean Technology

The Benefits for Electronic and Radio Technology



Radio Receiver in I/O Module

- For the seamless integration of EnOcean technology into the WAGO-I/O-SYSTEM 750
- The module can be used with any controller of the WAGO-I/O-SYSTEM 750.
- Pre-programmed function blocks make integration easy
- The number of sensors is almost illimited

Item No. 750-642



enocean®

Radio Receiver in DIN-Rail Mount Enclosure

The stand-alone solution for DIN-rail mounting: 4-channel radio receiver module in 70mm DIN-rail mount enclosure.

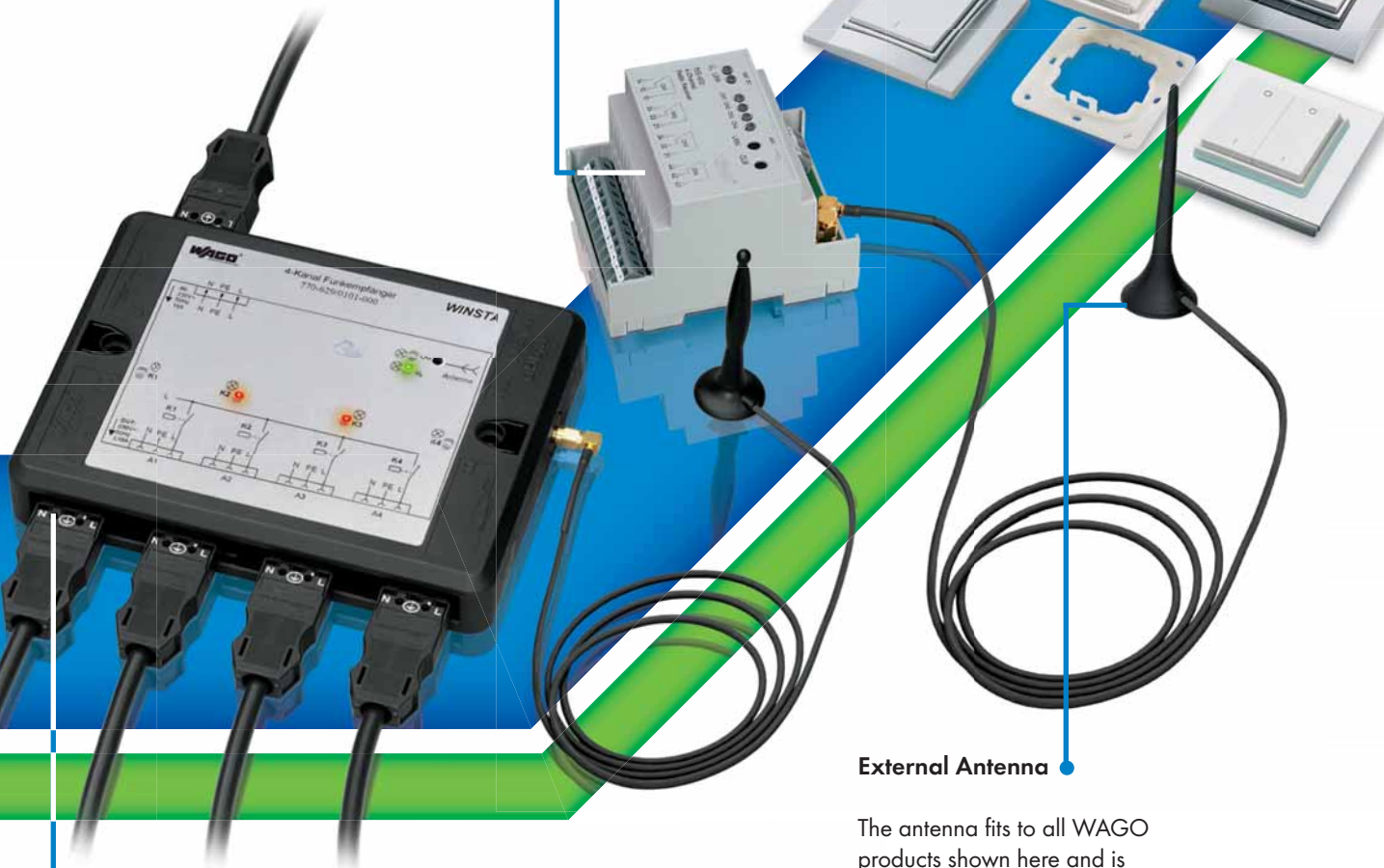
Version 1: 4 make contacts, up to 16 A load carrying capacity
Version 2: 4 changeover contacts, up to 8 A load carrying capacity per channel.

Item No. 789-601 (make contacts)
Item No. 789-602 (changeover contacts)

Radio Transmitter

Radio transmitter integrated in universal switch insert.

Item No.
758-940/001-000 (2-channel light)
758-940/003-000 (4-channel light)
758-940/002-000 (2-channel roller blinds)
758-940/004-000 (4-channel roller blinds)



Radio Receiver in WINSTA® Box

All integrated: e.g. a complete blinds control (2-way sunblind outputs for 230V/2A) or a 4-channel module for lighting control (4-way switch output 230V/16A) with receiver and all required switching relay. The WINSTA® boxes are suitable for wall-, floor- and ceiling-mounting.

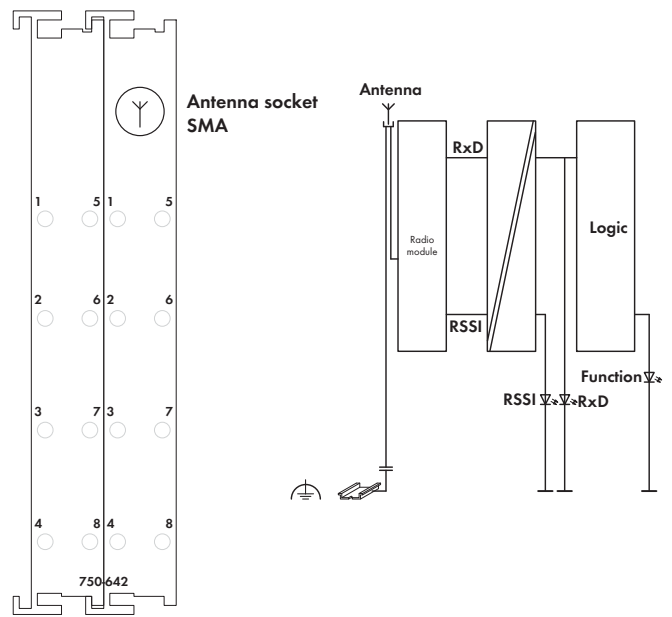
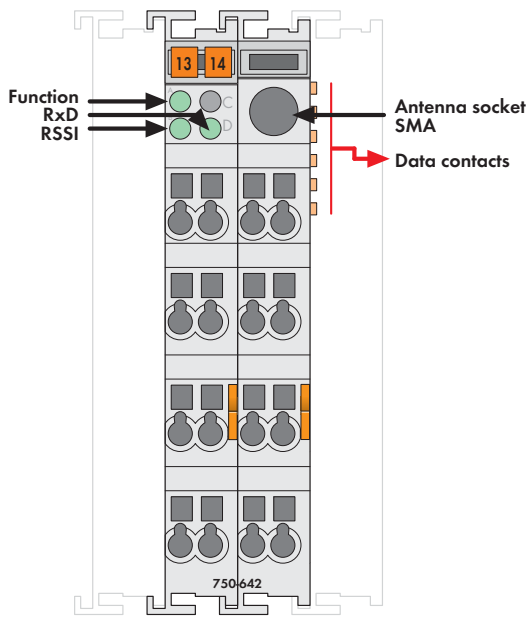
Item No. 770-629/102-000 (sunblinds control)
Item No. 770-629/101-000 (lighting control)

External Antenna

The antenna fits to all WAGO products shown here and is connected using an SMA socket. The antenna has a magnetic stand and a 2.5m long coax cable.

Item No. 758-910


7 Radio Receiver Module



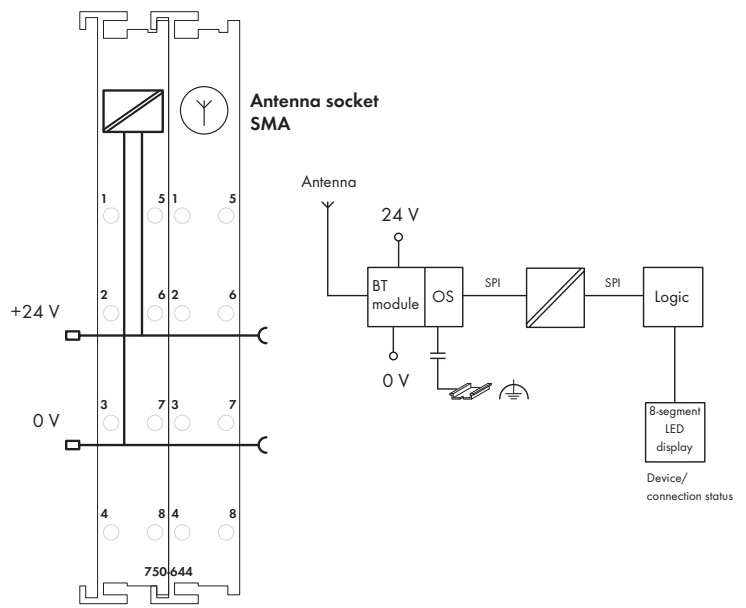
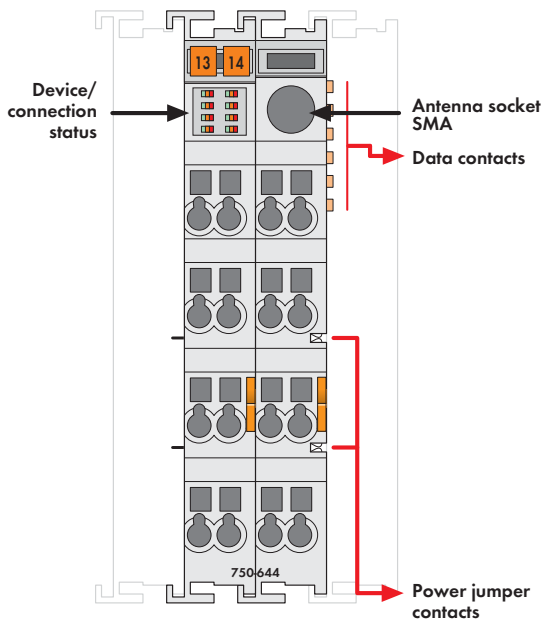
Delivered without miniature WSB markers

The 750-642 I/O Module receives radio telegrams from maintenance-free, battery-less and wireless switches and sensors based on EnOcean radio technology. The module can be used with any controller of the WAGO-I/O-SYSTEM 750. Preprogrammed function blocks make integration easy. The energy required for switch or sensor operation is produced by converting one type of energy (heat, solar or mechanical energy) into usable electrical energy. The radiated energy from the transmitter modules is around one million times smaller than mobile phones. Almost any number of sensors is possible. However, the maximum number is around 100 transmitters per module, due to the increasing density of switches/sensors.

Four billion code numbers provide for clear transmitter/receiver assignment. Repeated, time-shifted transmission of the radio telegrams, at very short transmission times, results in a high level of protection against external interference. The maximum transmission range is approx. 300 meters in open field. Depending on the building materials used and on the spatial geometry, the range may be reduced to typically 30 meters (see manual for more information). The LED (RSSI) indicates a sufficient input level. *Documentation available in German and English. An SMA socket which is integrated into the housing allows the connection of an external antenna. The 758-910 external antenna has a magnetic stand and a 2.5m long coax cable with SMA plug (available as an accessory).

Description	Item No.	Pack. Unit
Radio Receiver Module	750-642	1
Accessories		
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
External antenna	758-910	1
Approvals		
Also see "Approvals Overview" in Section 1		
Conformity marking RTTE	www.wago.com	
Conformity marking	CE	
UL 508		
ANSI/ISA 12.12.01	Class I, Div. 2, Grp. ABCD, T4	
EN 60079-0, -15	I M2 / II 3 GD Ex nL IIC T4	
EN 61241-0, -1		

Technical Data	
Frequency band	868.3 MHz
Transmission range	300 m in open field (typ. in buildings see manual)
Transmission protocol (radio telegram)	EnOcean
Current consumption (internal)	80 mA
Power supply	via system voltage DC/DC
Isolation	500 V antenna connection/system
Internal bit width	1 x 24 bits in/out (3 bytes user data)
	1 x 8 bits control/status
Dimensions (mm) W x H x L	24 x 64* x 100
	* + excess length of the SMA socket
Weight	80 g
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)







Delivered without miniature WSB markers

The 750-644 I/O Module enables wireless exchange of process data with up to seven other devices using Bluetooth® 2.0 radio technology. Interoperability with Bluetooth® devices is provided via the Bluetooth® PAN and SPP profiles and is not restricted to any one manufacturer. A special profile for time-critical applications is also available.

The I/O module can be operated with all standard fieldbus couplers/controllers from the WAGO-I/O-SYSTEM 750. Module configuration is performed locally via WAGO-I/O-CHECK.

Reliable connections over distances of up to 1000m are possible using the WAGO 758-912 external antenna.

The module's extended diagnostic functions include cyclic and acyclic state information. For quick on-site diagnostics, main information on operational status and radio connection is also displayed via 8 LEDs.

Description	Item No.	Pack. Unit
Bluetooth®/RF Transceiver	750-644	1
Accessories	Item No.	Pack. Unit
Miniature WSB Quick marking system		
 plain	248-501	5
with marking	see pages 352 ... 353	
External antenna WLAN/Bluetooth 2.4 GHz	758-912	1
Approvals	Also see "Approvals Overview" in Section 1	
 FCC	FCC approval (This device complies with part 15 of FCC rules)	
 Bluetooth®	Bluetooth® approval	
Conformity marking	CE	
 UL 508		
Technical Data		
Dimensions (mm) W x H x L	24 x 64* x 100 * + excess length of the SMA socket	
Weight	85 g	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005), EN 61131-2 (2003)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007), EN 61131-2 (2003)	

Technical Data	
Wireless technology	Bluetooth® 2.0 + EDR
Topology	Piconet (1 master, max. 7 slaves)
Coexistence	AFH and adaptive transmission power
Profiles	SPP, PAN
Operating modes	Communication mode with ad-hoc profile for high connectivity and real-time profile for time-critical applications, as well as configuration mode
Frequency band	2402-2480 MHz (license-free ISM band)
Transmitter power	up to 20 dBm (Bluetooth® Class 1)
Receiver sensitivity	-94 dBm
Transmission range	max. 1000 m in open field, 100 m in buildings (using a WAGO external antenna, item no. 758-912)
Voltage supply (Bluetooth)	via 24 V DC field supply
Voltage supply (internal)	via system voltage DC/DC
Current consumption (Bluetooth)	approx. 8 mA, max. 35 mA
Current consumption (internal)	approx. 20 mA
Isolation	500 V antenna/system
Internal bit width	12, 24, 48 bytes configurable; incl. 1 byte control/status
Diagnostics (via visual indicator)	Device status, connection status ¹⁾
Diagnostics (via process image)	Device status, connection status ¹⁾ , time monitoring
Configuration	WAGO-I/O-CHECK and WAGO-I/O-PRO
¹⁾ Quality of radio connection, signal strength, interference	

7 Bluetooth® ETHERNET Gateway

Wireless transmission link for ETHERNET protocols



Power connector:

M12 plug, A-coded



- 1: Vin + (DC 9 ... 30 V)
- 2: External Trigger Ground
- 3: Vin GND (0 V)
- 4: External Trigger + (DC 9 ... 30 V)
- 5: n.c.

ETHERNET connector:

M12 socket, D-coded



- 1: Transmit +
- 2: Receive +
- 3: Transmit -
- 4: Receive -

The 758-915 Bluetooth® ETHERNET gateway simplifies creation of a wireless transmission link for ETHERNET protocols (e.g., PROFINET, MODBUS/TCP, Ethernet/IP).

The gateway is used as a cable substitute to create a robust, industry-proven Bluetooth® 2.0 link between two automation devices.

The IP65 housing and circularly polarized antenna allow the gateway to be used even in harsh industrial environments. Simple, push-button operation provides very fast connection between two Bluetooth® ETHERNET gateways. Additional settings can be made via Web-based management.

Bluetooth® Adaptive Frequency Hopping (AFH) and Low Emission Mode™ provide excellent coexistence with other wireless systems, such as WLAN.

Note:

Two Bluetooth® ETHERNET gateways are required to establish a point-to-point connection.

Description	Item No.	Pack. Unit
Bluetooth® ETHERNET Gateway	758-915	1
Accessories	Item No.	Pack. Unit
IP67 cables and connectors	see section 2 and 5	
Approvals		
	R&TTE (Europe)	
	FCC/CFR 47 part 15	
	IC (Industry Canada)	
Conformity marking	CE	

Technical Data	
Wireless technology	Bluetooth® 2.0
Topology	Point-to-point connection
Coexistence	AFH, Low Emission Mode™
Profiles supported	Generic Access Profile (GAP), Personal Area Networking Profile (PANU, NAP)
Frequency band	License-free ISM band, 2402-2480 MHz
Transmission range	up to 400 m (class 1)
Antenna	Internal, circularly polarized, directional antenna
Voltage supply	24 V DC
Voltage range	9 V ... 30 V DC
Current consumption	46 mA at 24 V DC
Ports	ETHERNET connector: M12 socket, D-coded Power connector: M12 plug, A-coded
Configuration	Simple, push-button operation and Web-based management
Number of inputs	1 (trigger input)
Dimensions (mm) W x H x L	66 x 36.2 x 91
Weight	120 g
Operating temperature	-30 °C ... +65 °C
Storage temperature	-40 °C ... +85 °C
Degree of protection	IP65
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)



The radio adapter from WAGO provides a wireless link between a notebook computer featuring Bluetooth functionality and the service interface of the buscouplers/controllers.

Thus, as a cable replacement, the radio adapter offers a simple solution for communicating with the WAGO software tools (WAGO-I/O-CHECK, WAGO-I/O-PRO, ...)

If required, the adapter may be configured via AT commands.

The adapter is supplied via the service interface and, therefore, via the power supply unit of the buscoupler/controller.

Description	Item No.	Pack. Unit	Technical Data																																								
WAGO Radio Adapter	750-921	1	<table border="1"> <tr><td>Data transfer rate</td><td>9600 ... 115000 bps</td></tr> <tr><td>Frequency range</td><td>2.4 ... 2.4835 GHz (ISM band)</td></tr> <tr><td>Type of communication</td><td>Point-to-point connection</td></tr> <tr><td>Profiles supported</td><td>Serial Port Profile (SPP)</td></tr> <tr><td>Bluetooth-Version</td><td>2.1</td></tr> <tr><td>Radio class</td><td>Class 2</td></tr> <tr><td>RF output power</td><td>max. +4 dBm (class 2)</td></tr> <tr><td>RF input sensitivity</td><td>typ. -82 dBm</td></tr> <tr><td>Antenna</td><td>integrated</td></tr> <tr><td>Ports</td><td>4-pole service connectors</td></tr> <tr><td>Configuration</td><td>AT commands (e.g. via Hyper Terminal)</td></tr> <tr><td>Function</td><td>Master or Slave</td></tr> <tr><td>LED</td><td>Operating status</td></tr> <tr><td>Operating temperature</td><td>-20 °C ... +60 °C</td></tr> <tr><td>Current consumption (internal)</td><td>60 mA</td></tr> <tr><td>Security authentication</td><td>PIN code or configurable access list</td></tr> <tr><td>Security encryption</td><td>128-bit encryption</td></tr> <tr><td>Dimensions (mm) W x H x L</td><td>15 x 50 x 19</td></tr> <tr><td>Weight</td><td>7 g</td></tr> <tr><td>Coexistence</td><td>Frequency Hopping Spread Spectrum (FHSS), Adaptive Frequency Hopping (AFH), Adaptive transmission power with configurable upper limit, configurable channel blacklist, supports coexistence optimized inquiry (transmission time ≤ 0.1 s; transmission cycle ≥ 2.9 s)</td></tr> </table>	Data transfer rate	9600 ... 115000 bps	Frequency range	2.4 ... 2.4835 GHz (ISM band)	Type of communication	Point-to-point connection	Profiles supported	Serial Port Profile (SPP)	Bluetooth-Version	2.1	Radio class	Class 2	RF output power	max. +4 dBm (class 2)	RF input sensitivity	typ. -82 dBm	Antenna	integrated	Ports	4-pole service connectors	Configuration	AT commands (e.g. via Hyper Terminal)	Function	Master or Slave	LED	Operating status	Operating temperature	-20 °C ... +60 °C	Current consumption (internal)	60 mA	Security authentication	PIN code or configurable access list	Security encryption	128-bit encryption	Dimensions (mm) W x H x L	15 x 50 x 19	Weight	7 g	Coexistence	Frequency Hopping Spread Spectrum (FHSS), Adaptive Frequency Hopping (AFH), Adaptive transmission power with configurable upper limit, configurable channel blacklist, supports coexistence optimized inquiry (transmission time ≤ 0.1 s; transmission cycle ≥ 2.9 s)
Data transfer rate	9600 ... 115000 bps																																										
Frequency range	2.4 ... 2.4835 GHz (ISM band)																																										
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Profiles supported	Serial Port Profile (SPP)																																										
Bluetooth-Version	2.1																																										
Radio class	Class 2																																										
RF output power	max. +4 dBm (class 2)																																										
RF input sensitivity	typ. -82 dBm																																										
Antenna	integrated																																										
Ports	4-pole service connectors																																										
Configuration	AT commands (e.g. via Hyper Terminal)																																										
Function	Master or Slave																																										
LED	Operating status																																										
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Current consumption (internal)	60 mA																																										
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Approvals																																											
Conformity marking	CE																																										
	Bluetooth®																																										

External antenna, GSM 900/1800



External antenna, WLAN/Bluetooth 2.4 GHz



Description	Item No.	Pack. Unit	Technical Data
External antenna	GSM 900/1800	758-910	1
			Frequency band: 870 MHz ... 960 MHz; 1710 MHz ... 1880 MHz
			VSWR: 870 MHz ... 960 MHz < 1.5; 1710 MHz ... 1880 MHz < 1.5
			Gain: 870 MHz ... 960 MHz 0 dB; 1710 MHz ... 1880 MHz 0 dB
			Max. Power: 20 W
			Cable length: 250 cm
			Connector: SMA right angle plug + ferrite bead
External antenna	WLAN/Bluetooth 2.4 GHz	758-912	1
			Frequency band: 2400 MHz ... 2485 MHz
			Gain: 2 dBi
			Cable length: 250 cm
			Connector: SMA right angle plug

Notes on operating the antenna with WAGO EnOcean radio receivers: The antenna is to be mounted on a plate measuring at least 9.8 x 9.8 inches (25 x 25 mm). The distance of interfering sources to the antenna and antenna line must be at least 11.8 inches (30 mm) and the free space between the antenna and the next wall must be at least 13.78 inches (35 mm). The antenna cable should, under no circumstances, be bent sharply, since irreversible damage may result to the antenna (RG 174 bend radius > 0.6 inches/15mm)

Radio transmitter, EnOcean easyfit PTM 250



Description	Item No.	Pack. Unit	Technical Data
2-channel light	758-940/001-000	1	Integrated radio transmitter: EnOcean PTM 200
4-channel light	758-940/003-000	1	Energy harvesting source: electrodynamic energy generator, maintenance free
2-channel roller blind	758-940/002-000	1	Radio technology /range: EnOcean 868 MHz, RPS Type 2; 300 m free field, typ. 30 m within buildings
4-channel roller blind	758-940/004-000	1	Total installation height: 14 mm (frame lies directly against the wall)
			Dimensions of rocker /frame cut-out /central plate: 50 x 50 mm / 55 x 55 mm / 71 x 71 mm
			Color: white

The universal switch insert can be integrated into numerous control programmes by different manufacturers, e.g.: BERKER, GIRA, JUNG and MERTEN. Delivery is without frame. Frames of the desired control programm have been ordered separately.

4-channel EnOcean radio receiver
with 4 make contacts, 16 A

4-channel EnOcean radio receiver
with 4 changeover contacts, 8 A

The 4-channel radio receiver in DIN-rail mount enclosure is used to switch 4 independent electrical devices or loads.

The radio receiver processes telegrams transmitted by sensors (binary information) using EnOcean radio technology (PTM + STM modules).

The outputs are switched via relay contacts.

- Radio receiver for battery-less and wireless sensors
- LED indication of switch status
- External antenna for optimum transmission range (required)
- Frequency band 868 MHz
- Transmitter-to-receiver assignment via learn mode



Description	Item No.	Pack. Unit	Item No.	Pack. Unit
4-channel EnOcean radio receiver	789-601	1	789-602	1

Technical Data

Voltage supply	24 V DC	24 V DC
Voltage range	-15 % ... +20 %	-15 % ... +20 %
Current consumption (internal)	max. 90 mA	max. 90 mA
Number of receive channels	40 (10 per output)	40 (10 per output)
Number of channels	4 (relay outputs)	4 (relay outputs)
Output current (per channel)	max. 16 A, AC1	max. 8 A, AC1
Type of load	resistive / lamp load	resistive / motor load
Switching frequency	max. < 5 Hz	max. < 5 Hz
Delay time transmitter /output command	< 100 ms; 40 ms ... 70 ms typ.	< 100 ms; 40 ms ... 70 ms typ.
Switching voltage	230 V AC	230 V AC
Fuse protection	Loads: wire breaker, max. 16 A	Loads: wire breaker, max. 16 A
Isolation	potential free contacts	potential free contacts
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Relative air humidity (no condensation)	85 %	85 %
Degree of pollution	2	2
Degree of protection	IP20	IP20
Mounting position	any	any
Dimensions (mm) W x H x L	70 x 55 x 90	70 x 55 x 90
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP®	CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12 (THHN, THWN)	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12 (THHN, THWN)
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Standards/Specifications	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27
Accessories: RF magnetic antenna incl. 3m connecting cable with SMA connector	758-910	758-910

	4-channel radio receiver with 4 make contacts	2-channel radio receiver with sunblind outputs
--	--	---

The 4-channel radio receiver is used to switch 4 independent electrical devices. The 2-channel radio receiver has 2 sunblind outputs that can be controlled independently from each other. The radio receiver processes telegrams transmitted by switches using EnOcean radio technology (STM modules). The outputs are switched via relay contacts.

- Radio receiver for battery-less and wireless sensors
- LED indication of switch status
- External antenna for optimum transmission range (required)
- Frequency band 868 MHz
- Transmitter-to-receiver assignment via learn mode
- The state of outputs can be predefined for a power failure scenario
- Wire connection using WINSTA connectors

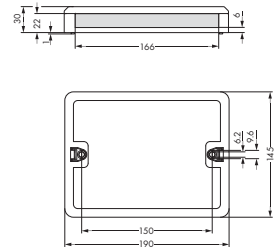
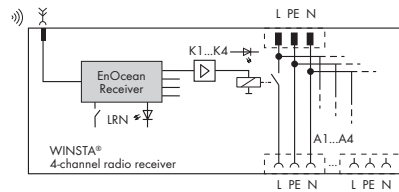


Illustration and block diagram for 770-629/101-000



Description	Item No.	Pack. Unit	Item No.	Pack. Unit
WINSTA® radio receiver	770-629/101-000	1	770-629/102-000	1

Technical Data

	770-629/101-000	770-629/102-000
Voltage supply	230 V AC, 50 Hz ... 60 Hz, max. 16 A	230 V AC, 50 Hz ... 60 Hz, max. 16 A
Voltage range	± 10 %	± 10 %
Current consumption (internal)	max. 21 mA	max. 21 mA
Number of channels	4	2
Output current (per channel)	max. 16 A / 4 A	2 A motor load
Total current	max. 16 A	max. 4 A
Inrush current	max. 120 A / 50 ms	25 A
Type of load	resistive / lamp load	resistive / inductive
Switching frequency	max. 5 Hz	max. 5 Hz
Isolation	isolated internal voltage supply 2500 V impulse withstand voltage	isolated internal voltage supply 2500 V impulse withstand voltage
Fuse protection	External, 16 A max.	External, 16 A max.
Ambient operating temperature	0 °C ... +55 °C	0 °C ... +55 °C
Storage temperature	-25 °C ... +85 °C	-25 °C ... +85 °C
Relative air humidity (no condensation)	85 %	85 %
Degree of pollution	2	2
Degree of protection	IP20	IP20
Mounting position	any	any
Dimensions (mm) W x H x L	190 x 145 x 30	190 x 145 x 30
Type of mounting	Wall screw adapter	Wall screw adapter
Standards/Specifications	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27	Vibration and shock resistance acc. to IEC 60068-2-6 and IEC 60068-2-27
Accessories: RF magnetic antenna incl. 3m connecting cable with SMA connector	758-910	758-910
Connection accessories WINSTA connectors	Input: socket, 3 poles, e.g. 770-103; 4-channel output: plug, 3 poles, e.g. 770-113	Input: socket, 3 poles, e.g. 770-103; 2-channel output: plug, 4 poles, e.g. 770-114



WAGO Application: Traffic Control System in Canton of Tessin (Gotthard Route), Switzerland

WAGO Products:
WAGO-I/O-SYSTEM (ETHERNET, CANopen),
WAGO X-COM®-SYSTEM,
MULTICONNECTION SYSTEM,
TOPJOB®S Rail-Mounted Terminal Blocks

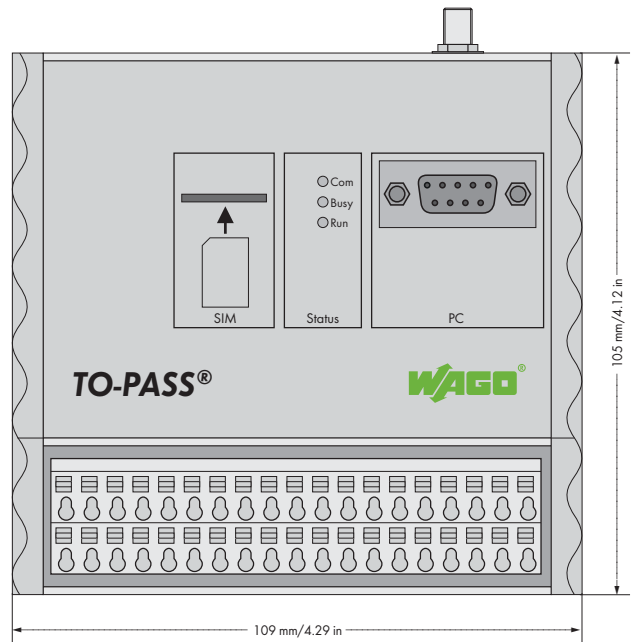
8



TO-PASS® Telecontrol Module	
Compact	536
Compact, 2 AI	537
Compact, Web	538
Compact, 2 AI, Web	539
TO-PASS® Telecontrol Module	
Compact	540
Compact, 8 AI, Elog, Dlog	541
Compact, 8 AI, Web, MODBUS	542
TO-PASS® Telecontrol Module	
Mobile, 4 AI	543
Mobile, 4 AI, Web, MODBUS	544
TO-PASS® Web Portal	545
TO-PASS® GPRS Modem, RS-232	546
TO-PASS® GPRS Modem, VPN Router	547
TO-PASS® Configuration Software	548
Accessories for Telecontrol Modules	549 - 550
TO-PASS® Outdoor	551

TO-PASS® Compact

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. Switching of outputs is performed via SMS.

4 digital inputs, 4 digital outputs and 2 analog inputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

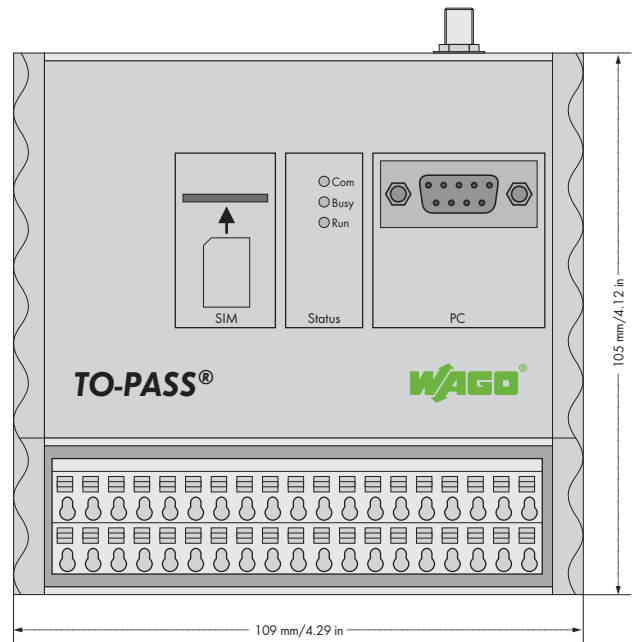
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

Description	Item No.	Pack. Unit
TO-PASS® Compact	761-110	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
	Approvals for other countries on request	
UL 508		
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm / 0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	4 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A/ 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS® Compact, 2 AI

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. Switching of outputs is performed via SMS. 4 digital inputs, 4 digital outputs and 2 analog inputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

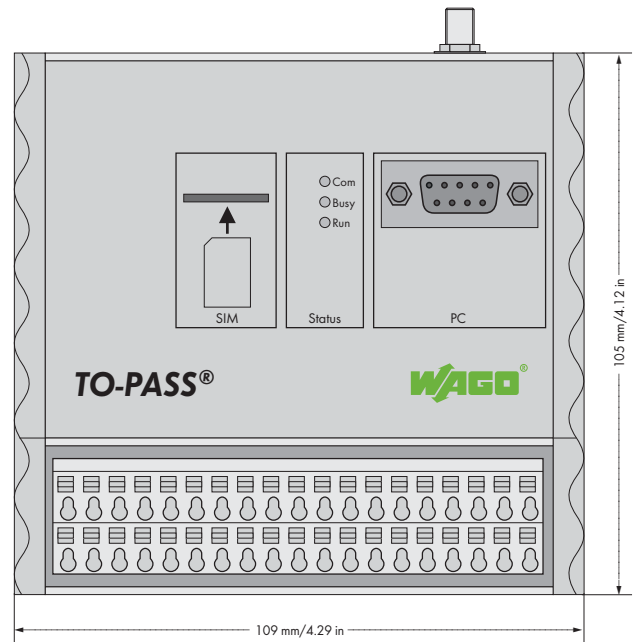
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

Description	Item No.	Pack. Unit
TO-PASS® Compact, 2 AI	761-111	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
	Approvals for other countries on request	
UL 508		
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm /0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	4 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Analog inputs:	
Number of inputs	2 (0/4 mA ... 20 mA)
Internal resistance	approx. 200 Ω / 20 mA
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A/ 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS® Compact, WEB

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. Switching of outputs is performed via SMS. 4 digital inputs and 4 digital outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to $+70^{\circ}\text{C}$. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

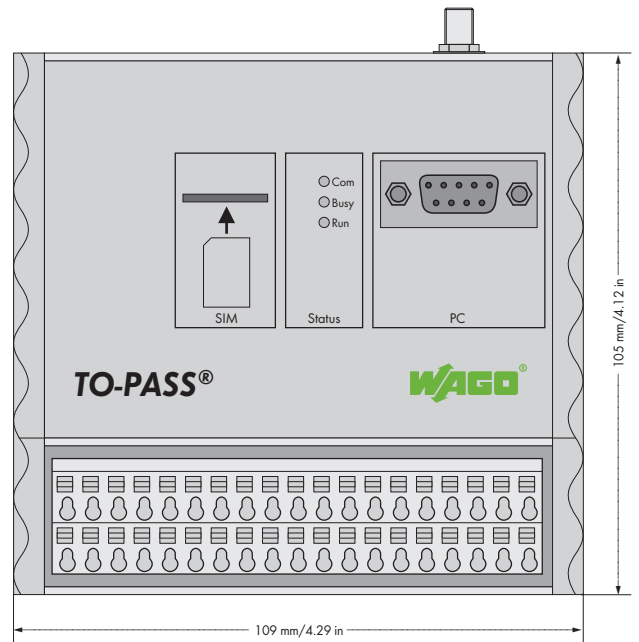
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)

Description	Item No.	Pack. Unit
TO-PASS® Compact, WEB	761-112	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
UL 508	Approvals for other countries on request	
Technical Data		
Operating temperature	-20°C ... $+70^{\circ}\text{C}$	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm^2 ... 1.5 mm^2 / AWG 22 ... 14	
Stripped lengths	9 mm / 0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40°C ... $+85^{\circ}\text{C}$	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	4 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A / 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
	GPRS connection to Internet
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS[®] Compact, 2 AI, WEB

Telecontrol module for fault detection/indication, monitoring and remote control



Compact telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. Switching of outputs is performed via SMS.

4 digital inputs, 4 digital outputs and 2 analog inputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

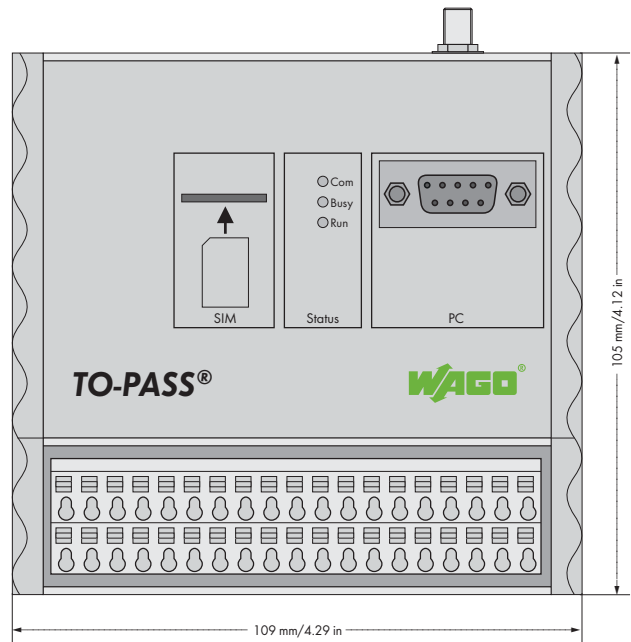
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)

Description	Item No.	Pack. Unit
TO-PASS [®] Compact, 2 AI, WEB	761-113	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
	Approvals for other countries on request	
UL 508		
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm /0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	4 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Analog inputs:	
Number of inputs	2 (0/4 mA ... 20 mA)
Internal resistance	approx. 200 Ω / 20 mA
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A / 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD), GPRS connection to Internet
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS® Compact

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. Switching of outputs is performed via SMS. 8 digital inputs, 4 digital outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

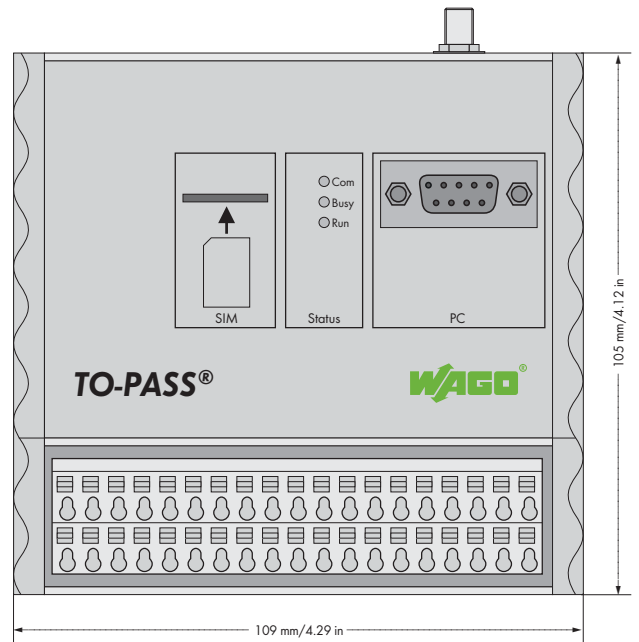
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office

Description	Item No.	Pack. Unit
TO-PASS® Compact	761-210	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
	Approvals for other countries on request	
UL 508		
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm / 0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	8 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A / 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS[®] Compact, 8 AI, ELog, DLog

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and monitoring of machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. An integrated event logger creates the process image of all occurring events and stores all digital and analog values available at the telecontrol module. The data memory stores up to 4096 process images in an adjustable cycle time. Switching of outputs is performed via SMS.

8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

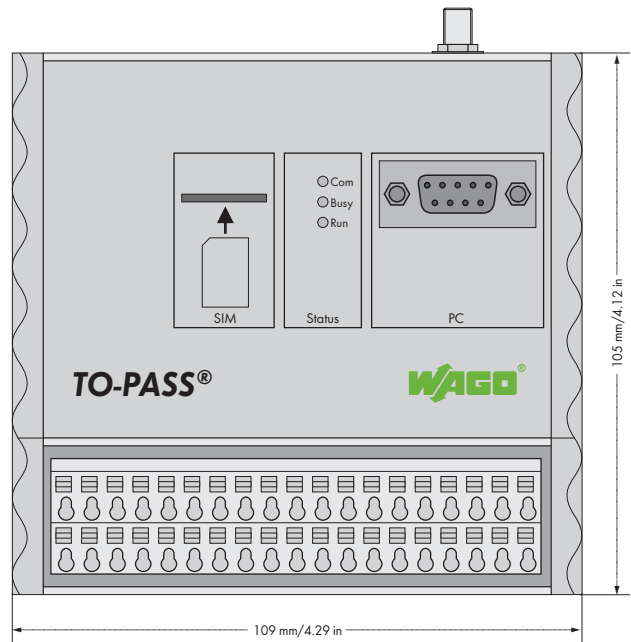
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and remote control conveniently performed from the office
- Event logger: Saves all occurring status changes
- Data logger: Saves all process values with adjustable cycle

Description	Item No.	Pack. Unit
TO-PASS [®] Compact, 8 AI, ELog, DLog	761-214	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
	Approvals for other countries on request	
UL 508		
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm / 0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	8 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Analog inputs:	
Number of inputs	8 (0/4 mA ... 20 mA)
Internal resistance	approx. 200 Ω / 20 mA
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A / 30 V DC, short-circuit protected
Analog outputs:	
No. of outputs	2 (0/4 mA ... 20 mA)
Load impedance	≤ 600 Ω
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS® Compact, 8 AI, WEB, MODBUS

Telecontrol module for fault detection/indication, monitoring and remote control



Universal telecontrol module for fault detection/indication and Internet connectivity for machines and installations over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. The data memory stores up to 4096 process images in an adjustable cycle time. In addition, the process image can be transmitted in an adjustable cycle to a user-selected Internet address. A Modbus slave (e.g., 750-816) can be connected via RS-232 interface to link additional process values. Switching of outputs is performed via SMS. 8 digital inputs, 8 analog inputs, 4 digital outputs and 2 analog outputs with integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage ranges from +10V to 30VDC.

Special functions:

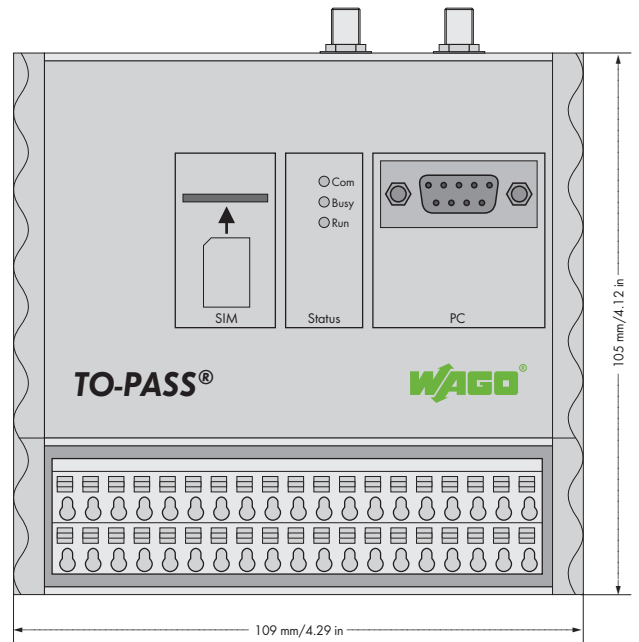
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parametrization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)
- Event logger: Saves all occurring status changes
- Data logger: Saves all process values with adjustable cycle

Description	Item No.	Pack. Unit
TO-PASS® Compact, 8 AI, WEB, MODBUS	761-216	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries	
	Approvals for other countries on request	
UL 508		
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm / 0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)	
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)	

Technical Data	
Digital inputs:	
Number of inputs	8 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Analog inputs:	
Number of inputs	8 (0/4 mA ... 20 mA)
Internal resistance	approx. 200 Ω / 20 mA
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Digital outputs:	
No. of outputs	4 contacts
Output current (max.)	0.5 A / 30 V DC, short-circuit protected
Analog outputs:	
No. of outputs	2 (0/4 mA ... 20 mA)
Load impedance	≤ 600 Ω
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
	GPRS connection to Internet
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 20 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage

TO-PASS® Mobile, 4 AI

Telecontrol module for fault detection/indication, position monitoring and remote control



Universal telecontrol module for fault detection/indication and position monitoring of machines and products over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. The data memory stores up to 4096 process images in an adjustable cycle time. Switching of outputs is performed via SMS.

The module is equipped with 4 digital inputs, 4 analog inputs, 2 digital outputs and GPS position data, including an integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20°C to $+70^{\circ}\text{C}$. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage $+10\text{V} \dots +30\text{V DC}$.

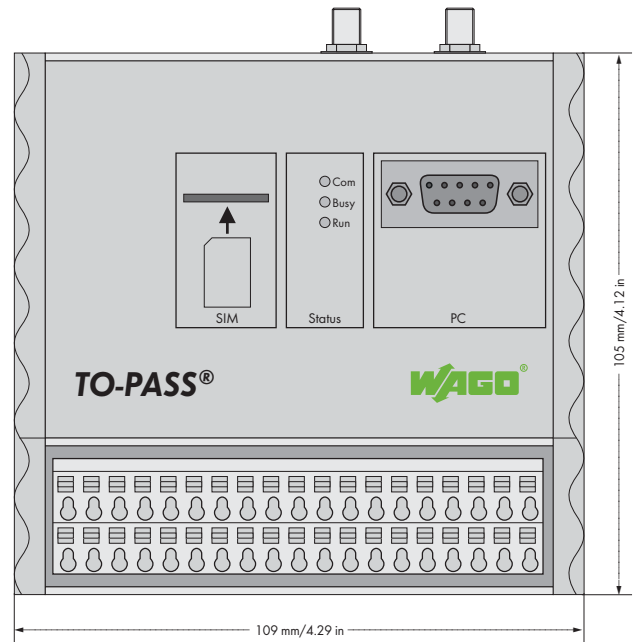
Special functions:

- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parameterization: Programming and remote control conveniently performed from the office
- Event logger: Saves all occurring status changes
- Data logger: Saves all process values with adjustable cycle

Description	Item No.	Pack. Unit
TO-PASS® Mobile, 4 AI	761-314	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries Approvals for other countries on request	
Technical Data		
Operating temperature	$-20^{\circ}\text{C} \dots +70^{\circ}\text{C}$	
Type of mounting	DIN 35 rail	
Antenna connection	SMA socket (for both GSM and GPS)	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	$0.5\text{ mm}^2 \dots 1.5\text{ mm}^2$ / AWG 22 ... 14	
Stripped lengths	9 mm /0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	$-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$	
Degree of protection	IP20	

Technical Data	
Digital inputs:	
Number of inputs	4 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Analog inputs:	
Number of inputs	4 (0/4 mA ... 20 mA)
Internal resistance	approx. $200\ \Omega$ / 20 mA
Measuring error (25°C)	$< \pm 1\%$ of the full scale value
Temperature coefficient	$< \pm 0.1\%$ / K of the full scale value
Digital outputs:	
No. of outputs	2 contacts
Output current (max.)	0.5 A/ 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD)
Signaling	3 LEDs for operating status indication
Operating voltage	$+10\text{V} \dots +30\text{V DC}$
Closed current	approx. 35 mA at $+24\text{V}$ operating voltage
Current during transmission	$< 500\text{ mA}$ at $+24\text{V}$ operating voltage
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

Telecontrol module for fault detection/indication, position monitoring and remote control



Universal telecontrol module for fault detection/indication, position monitoring and Internet connectivity of machines/products over a GSM network. The module can be used in many countries via an integrated quad-band GSM modem. Messages are sent via SMS, e-mail, fax or phone call. The data memory stores up to 4096 process images in an adjustable cycle time. In addition, the process image and GPS position data can be transmitted in an adjustable cycle to a user-selected Internet address. A MODBUS slave (e.g., 750-816) can be connected via RS-232 interface to link additional process values. Switching of outputs is performed via SMS. The module is equipped with 4 digital inputs, 4 analog inputs, 2 digital outputs and GPS position data, including an integrated GSM modem. Ideal for applications in distributed stations for temperatures ranging from -20 °C to +70 °C. Ability to mount on DIN-rail and intuitive user software make unit easy to handle. Operating voltage +10V ... +30V DC.

Special functions:

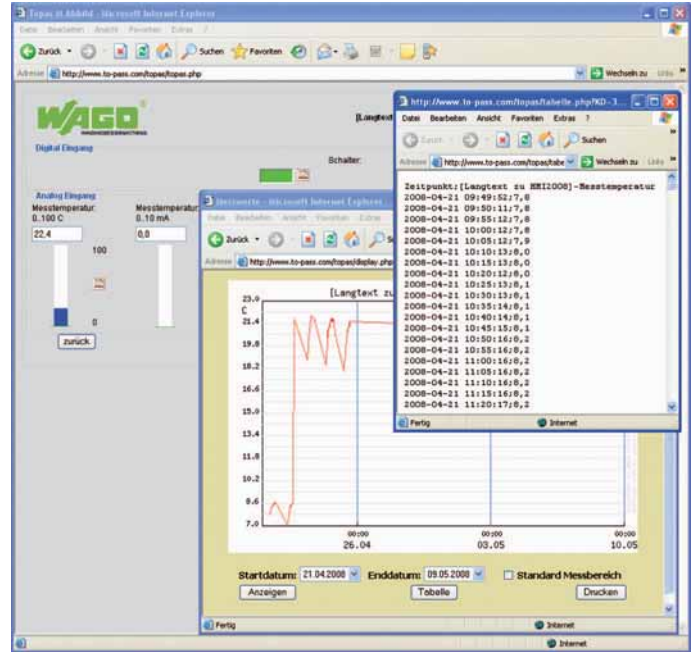
- Acknowledgment: Acknowledging any fault message
- Stand-by: Automatic remote switching of the stand-by service
- Remote parameterization: Programming and process visualization conveniently performed from the office
- GPRS-dedicated line: Permanent online connection to the process on a WEB server or PC with fixed IP address (e.g., DSL connection)
- Event logger: Saves all occurring status changes
- Data logger: Saves all process values with adjustable cycle

Description	Item No.	Pack. Unit
TO-PASS® Mobile, 4 AI, Web, MODBUS	761-316	1
Accessories		
Antennas, USB adapter, GSM modem and power supply units	see pages 546 ... 551	
Approvals		
Approvals	for all EU countries Approvals for other countries on request	
Technical Data		
Operating temperature	-20 °C ... +70 °C	
Type of mounting	DIN 35 rail	
Antenna connection	SMA socket (for both GSM and GPS)	
Wire connection	Terminal strips (WAGO 250 Series) with push-wire connection	
Cross sections	0.5 mm ² ... 1.5 mm ² / AWG 22 ... 14	
Stripped lengths	9 mm / 0.35 in	
Dimensions (mm) W x H x L	109 x 105 x 78	
Weight	412 g	
Storage temperature	-40 °C ... +85 °C	
Degree of protection	IP20	

Technical Data	
Digital inputs:	
Number of inputs	4 (Type 3)
Input current	max. 2.9 mA at 30 V DC
Signal voltage (0)	0 V ... 5 V DC
Signal voltage (1)	7 V ... 30 V DC
Analog inputs:	
Number of inputs	4 (0/4 mA ... 20 mA)
Internal resistance	approx. 200 Ω / 20 mA
Measuring error (25 °C)	< ± 1 % of the full scale value
Temperature coefficient	< ± 0.1 % / K of the full scale value
Digital outputs:	
No. of outputs	2 contacts
Output current (max.)	0.5 A / 30 V DC, short-circuit protected
Communication	GSM quad-band
Communication types	SMS (bidirectional), telecommunication dial-up connection (CSD) GPRS connection to Internet
Signaling	3 LEDs for operating status indication
Operating voltage	+10 V ... +30 V DC
Closed current	approx. 35 mA at +24V operating voltage
Current during transmission	< 500 mA at +24V operating voltage
EMC: CE - immunity to interference	acc. to EN 61000-6-2 (2005)
EMC: CE - emission of interference	acc. to EN 61000-6-3 (2007)

TO-PASS® WEB Portal

WEB portal for visualizing and archiving measured values and messages



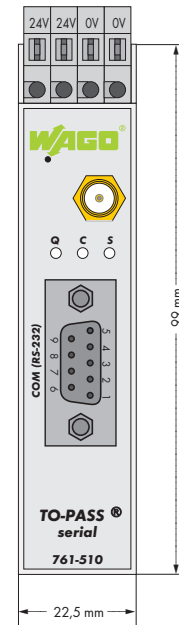
The TO-PASS® product family is designed for wireless communication of signals and messages. Connection is established via global mobile radio network "GSM." Beyond traditional communication channels (e.g., e-mail, SMS or fax), the devices can also transmit data to a Web server via web functionality. This allows the creation of a permanent GPRS connection similar to a dedicated line. The process image (i.e., states and values of all digital and analog inputs of a TO-PASS® telecontrol module) is transmitted to the Web server with time stamp at a variably configurable interval and then stored in a database. TO-PASS® eliminates standard data loggers, as well as cumbersome process of reading out data. Controlling and managing data is simplified by using an Internet browser via: <http://www.to-pass.com>

With the basic module, a user's own area is provided on the Web portal. Access is protected with a username and password. Depending on the expansion level (starter, standard, unlimited), a varying number of devices can log into the portal. The data recorder function allows digital, analog and MODBUS data of the connected devices to be recorded and displayed from 90 minutes to over 512 days. Data can also be exported in CSV format. The "Admin" option is an addition to the basic module. It allows the user to administrate additional usernames with passwords, as well as customers and devices with different access authorizations. The "Alarm" option is a further addition to the basic module. It allows the module to display and administrate alarms generated from analog, digital and +MODBUS values. Using analog values, up to 4 limit values can be configured for each measurement. An alarm list allows all alarms to be displayed and acknowledged. This option also allows the user to configure the persons and the time at which an alarm will be sent to them via SMS or e-mail. The usage rights for the basic module with "Admin" and "Alarm" options must be purchased once. Afterwards, only a low flat-rate fee will be charged every month.

Description	Item No.	Pack. Unit
TO-PASS® WEB portal setup	761-700	1
TO-PASS® WEB-Portal Basic Starter ²⁾	761-700/000-005	1
TO-PASS® WEB-Portal Basic Standard ³⁾	761-700/000-020	1
TO-PASS® WEB portal monthly user fee	761-701	12
TO-PASS® WEB-Portal Admin Unlimited ¹⁾	761-702	1
TO-PASS® WEB-Portal Admin Starter ²⁾	761-702/000-005	1
TO-PASS® WEB-Portal Admin Standard ³⁾	761-702/000-020	1
TO-PASS® WEB-Portal Alarm Unlimited ¹⁾	761-703	1
TO-PASS® WEB-Portal Alarm Starter ²⁾	761-703/000-005	1
TO-PASS® WEB-Portal Alarm Standard ³⁾	761-703/000-020	1
Individual TO-PASS® WEB-Portal	761-704	1

¹⁾ Unlimited number of devices
²⁾ Maximum 5 devices
³⁾ Maximum 20 devices

Technical Data	
System requirements:	
WEB browser	Microsoft® Internet Explorer with Internet access
User administration	via user name and password
No. of devices	unlimited
Device activation	via Internet
Configuration of measured values	via Internet
History of measured values	unlimited number of data sets
Display of measured values	Table and graphical display
Evaluation of measured values	Graphical evaluation of measured values
Export of measured values	CSV format (MS Excel compatible)

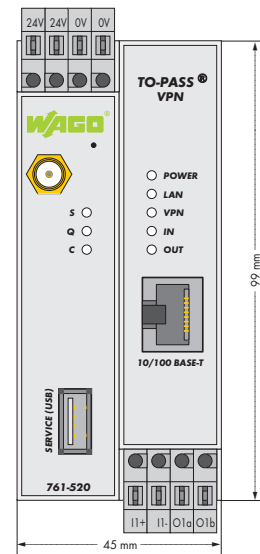


The TO-PASS® modem replaces a conventional AT-controlled switched-line or dedicated-line modem. Applications can communicate with a control center or with one another bi-directionally via GPRS. A TSC-capable remote station is required for communication and establishing connections.

A serial RS-232 interface makes it possible to easily integrate this GPRS modem into existing technical infrastructures. Regardless of the operating system used by the application, this GPRS modem uses TCP/IP networks for communication. Incoming and outgoing GSM/CSD data calls are supported.

Description	Item No.	Pack. Unit
TO-PASS® Modem GPRS RS-232	761-510	1
Accessories		
Antenna	see page 550	
Serial cable, crossed	761-9011	1
D-sub 9-pin plug on both ends, 30 cm cable length		
Approvals		
Conformity marking	CE; R&TTE (GSM)	
other approvals	GSM/GPRS module with GCF approval	
Approvals	for all EU countries	
	Approvals for other countries on request	

Technical Data	
Application interface	RS-232 (ITU V.24/V.28) socket: DSub-9
Baud rate	300 bit/s up to 57,600 bit/s
Connection control	AT commands, DTR control, Always Online, TSC
Power supply	12 V ... 30 V DC (24 V DC nominal)
Input current	I typ. 500 mA at 12 V (peak 1.3 A)
	I typ. 200 mA at 24 V
GPRS connection	Class 10, up to 2 uplinks/up to 4 downlinks,
	max. 5 slots;
	Coding: CS-1, CS-2, CS-3, CS-4
GSM data	CSD 9,600 bit/s
Transmitter power	Quad band; GSM 850/900 MHz:
	max. 2 watts
	DCS 1800 MHz/PCS 1900 MHz:
	max. 1 watt
Antenna connection	Nominal impedance: 50 Ω, socket: SMA
Dimensions (mm) W x H x L	22.5 x 99 x 114.5
	Height from upper-edge of DIN 35 rail
Weight	150 g
Operating temperature	-20°C ... +55°C
Relative air humidity (no condensation)	95 %
Fixing	DIN 35 rail
Housing material	PC
Degree of protection	IP40



The TO-PASS® modem for industrial ETHERNET networks unites GPRS/EDGE wireless modem, VPN (Virtual Private Network) router and firewall in a single device. Highly sensitive data can thus be transmitted wirelessly and safely via GSM network. In addition, the application is effectively protected against unauthorized access via integrated firewall, providing maximum safety and flexibility.

Intelligent communication management ensures stability and high availability of the connection. Thus, remote stations can be easily integrated into an IP network

- VPN protocol: IPSec (tunnel and transport mode)
- VPN encryption: 3DES, AES, DES
- VPN packet authentication: MD5, SHA-1; Internet Key Exchange (IKE); Pre-Shared Key (PSK); X.509v3 certificates;
- Firewall: Stateful inspection firewall; NAT (IP masquerading); Port forwarding; Anti-spoofing
- Other: DNS cache; DHCP server; NTP; remote logging, NAT-T, DynDNS, Dead Peer Detection (DPD)
- Management: Web-based administration, https or SSH remote access via EDGE/GPRS or CSD

Description	Item No.	Pack. Unit
TO-PASS® Modem GPRS VPN Router	761-520	1
Accessories		
Antenna	see page 550	
Approvals		
Conformity marking	CE; R&TTE (GSM)	
other approvals	GSM/GPRS module with GCF approval PTCRB	
Approvals	for all EU countries Approvals for other countries on request	
Technical Data		
Dimensions (mm) W x H x L	45 x 99 x 114.5	
	Height from upper-edge of DIN 35 rail	
Weight	371 g	
Operating temperature	-20°C ... +55°C	
Relative air humidity (no condensation)	95 %	
Fixing	DIN 35 rail	
Housing material	PC	
Degree of protection	IP20 acc. to DIN 40050	

Technical Data	
Application interface	10/100 Base-T (RJ-45 socket) ETHERNET
	IEEE802
Baud rate	10/100 Mbit/s; Auto Cross Over
Service port	USB-A
Power supply	12 V ... 30 V DC (24 V DC nominal)
Input current	typ. 365 mA ... 180 mA
	Idle mode: 174 mA ... 120 mA
	(connection, no data transfer)
	Burst: 1.26 A (at full transmitter power)
Burst repeat rate	4.62 ms
Power consumption P (max.)	4.4 W (12 V); 4.0 W (24 V); 5.5 W (60 V)
Input voltage	Relay, 5 V ... 30 V DC, potential-free
Output voltage	max. 30 V DC
Output current (max.)	20mA
EDGE* (EGPRS) connection	Class 12, up to 4 uplinks/downlinks, max. 5 slots;
	Coding process:
	MCS-1 to 9; Mobile station class B
GPRS connection	Class 12, up to 4 uplinks/downlinks, max. 5 slots;
	Coding process: CS-1, CS-2, CS-3, CS-4;
	Mobile station class B;
	Full PBCCH support
CSD/MTC connection	V.110, RLP, non-transparent 2.4, 4.8, 9.6, 14.4 kbps; SMS (TX): Point-to-point MO
Transmitter power	Quad band; GSM 850/900 MHz: max. 2 watts
	DCS 1800 MHz/PCS 1900 MHz: max. 1 watt
Antenna connection	Nominal impedance: 50 Ω, socket: SMA

Self-adhesive antenna



Rod antenna



Magnetic foot antenna



Theft-proof antenna



Theft-proof combination antenna



Description		Item No.	Pack. Unit
Self-adhesive antenna with 2.5m cable and SMA straight plug	GSM/UMTS/Bluetooth®/WLAN 850/900/1800/1900/2100/2400 MHz	758-961	1
	Dimension: 117 mm x 12 mm Cable length: 2.5 m Cable type: RG174 Gain: 2.15 dBi VSWR: <1.5 Connector: SMA straight plug		
Theft-proof antenna with 1m cable and SMA straight plug	GSM/UMTS 850/ 900/ 1800/ 1900/ 2100 MHz	758-962	1
	Dimension: 29 mm x 49 mm Cable length: 1 m Cable type: RG174 Max. gain: 2.2 dBi VSWR: <2.0 Connector: SMA straight plug		
Rod antenna with 1m cable and SMA straight plug	GSM/ 850/900/1800/1900 MHz	758-963	1
	Height: 298 mm Cable length: 1 m Cable type: RG58 Gain: 2.2 dBi VSWR: <1.6 Connector: SMA straight plug		
Magnetic foot antenna with 2.5m cable and SMA straight plug	GSM/ UMTS 850/900/1800/1900/2100 MHz	758-965	1
	Height: 88 mm Cable length: 2.5 m Cable type: RG174 Gain: 2.2 dBi VSWR: <2.0 Connector: SMA straight plug		
Theft-proof combination antenna with 2.5m cable and SMA straight plugs	GSM/ UMTS 850/ 900/ 1800/ 1900/ 2100 MHz additional GPS antenna connection	758-966	1
	Dimension: 29 mm x 52 mm Cable length: 2.5 m Cable type: RG174 Max. gain: 2.0 dBi VSWR: <2.0 Connector: SMA straight plug		

Adaptor 758-964



Adaptor 758-967



Adaptor 758-968



Cable, SMA socket/
SMA plug



Antenna splitter



RF lighting protector



Description		Item No.	Pack. Unit
Adaptor, FME plug to SMA plug	GSM/UMTS/Bluetooth®/WLAN	758-964	1
Adaptor, FME socket to SMA socket	GSM/UMTS/Bluetooth®/WLAN	758-967	50
Adaptor, SMA plug to SMA plug	GSM/UMTS/Bluetooth®/WLAN	758-968	1
Cable with SMA socket and SMA plug, 1 m long, H155 type	GSM/UMTS/Bluetooth®/WLAN	758-970/000-100	1
Cable with SMA socket and SMA plug, 3 m long, H155 type	GSM/UMTS/Bluetooth®/WLAN	758-970/000-300	1
Cable with SMA socket and SMA plug, 5 m long, H155 type	GSM/UMTS/Bluetooth®/WLAN	758-970/000-500	1
Cable with SMA socket and SMA plug, 10 m long, H155 type	GSM/UMTS/Bluetooth®/WLAN	758-970/000-1000	1
Antenna splitter with 3 SMA sockets	GSM/UMTS/Bluetooth®/WLAN	758-971	1
RF lighting protector, SMA socket to SMA socket	GSM/UMTS/Bluetooth®/WLAN	758-969	1

Antenna Accessories

USB adapter



Description	Item No.	Pack. Unit	
USB adapter with 1 m connection cable	761-9005	1	
Serial cable, crossed	D-sub 9-pin plug on both ends, 30 cm cable length	761-9011	1

Battery



Description	Item No.	Pack. Unit	
Battery	12 VDC 1.2 Ah lead-acid	761-9008	1
Angled mounting carrier for 761-9008 Battery		761-9010	1



TO-PASS® Outdoor is a compact unit for the installation of TO-PASS® telecontrol modules in an IP 66 enclosure with an integrated GSM antenna, 230 V AC to 24 V DC power supply unit, power failure protection provided by 2 batteries and terminal block connections for the supply of additional sensors (TO-PASS® telecontrol modules are not a component of the delivery).

Description	Item No.	Pack. Unit
Outdoor enclosure	761-9009	1
Accessories		
TO-PASS telecontrol modules	see pages 536 ... 542	

Technical Data	
Degree of protection	IP66
Enclosure	Polycarbonate
Supply $S_{ant, in}$	Wide range of input voltages 85 V ... 264 V AC, 120 V ... 375 V DC
Energy consumption	approx. 2.9 W at 230 VAC (for full batteries and a TO-PASS® module without sensors and heating)
Battery capacity	24 V / 1.2 Ah
Heating	8 W
Heater switch	at 3 °C ON, at 15 °C OFF
Dimensions (mm) W x H x L incl. cable grips	280 x 130 x 310
Weight	3687.392 g
Cable grip	10 x M16, 2 x M25
Assembly	4 x drilled holes of 7mm diameter

WAGO Application: Francia Mozzarella, Tempelhof Plant

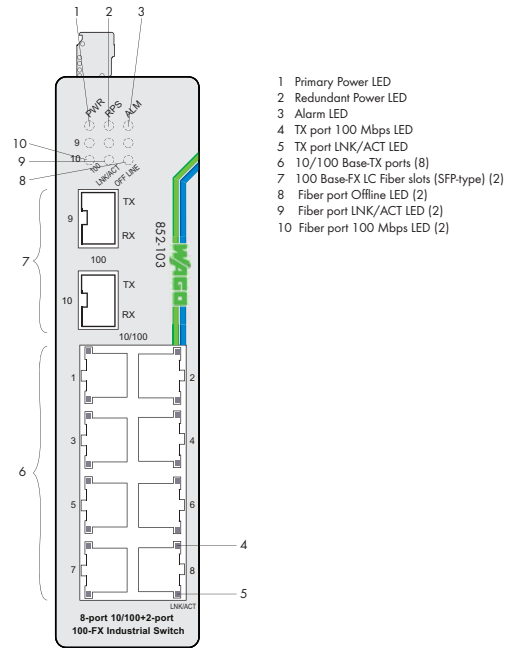
WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS Couplers



9



Industrial Switch, 5 Ports 100Base-TX	554
Industrial Switch, 8 Ports 100Base-TX	555
Industrial Switch, 8 Ports 100Base-TX, 2 Slots 100Base-FX	556
Industrial Managed Switch, 7 Ports 100Base-TX, 2 Slots 100Base-FX	557
Industrial Eco Switch, 5 Ports 100Base-TX	558
Industrial Eco Switch, 8 Ports 100Base-TX	559
SFP Module, 100Base-FX, LC	560



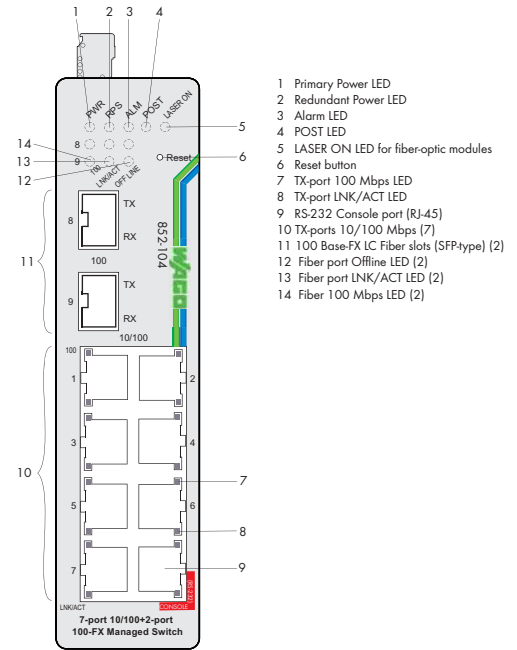
The 852-103 Industrial Switch is an 8-port 10/100Base-TX with dual SFP 100Base-FX port (SFP modules are optional) ETHERNET switch. The switch has a rugged housing, a redundant power supply and function monitoring with relay, making it ideal for a wide range of applications.

Features:

- Redundant DC power supply
- Large supply voltage range: 9 V ... 48 V
- DIP switch enables alarm functions
- Full compliance with IEEE802.3, 802.3u standards
- Non-blocking, store-and-forward switching
- Auto-negotiation on all 10/100Base-TX ports
- Auto-MDI/MDIX (crossover) on all 10/100Base-TX ports

Description	Item No.	Pack. Unit
8/2 Port 100BASE-TX/FX Industrial Switch	852-103	1
8/2 Port 100BASE-TX/FX Industrial Switch T (Operating temperature -40 °C ... +70 °C)	852-103/040-000	1
Accessories		
SFP Module 2: 1310nm, 100Base-FX Multi-mode LC, 2 km	852-201/107-002	
SFP Module 30: 1310nm, 100Base-FX Single-mode LC, 30 km	852-201/107-030	
SFP Module 2 T: 1310nm, 100Base-FX, Multi-mode, LC, 2 km, (Operating temperature -40 °C ... +70 °C)	852-201/040-002	
Approvals		
Conformity marking	CE	
UL 508	to 60 °C (852-103/040-000) (Approvals for product variations upon request)	

Technical Data	
Ports	8 x 10/100Base-TX (RJ-45); 2 x SFP 100Base-FX Fiber
Standards	IEEE 802.3u 100Base-TX/FX; IEEE 802.3 10Base-T
Throughputs	14,880/148,800 packets per second (pps) to 10/100 Mbps ports
Wavelength (optical fibers)	depend on SFP module
Maximum length	10/100Base-TX: 100 m; Fiber optic: up to 30 km
Supply voltage	9 V ... 48 V DC (line length < 3 m)
Energy consumption max.	6.08 W
Energy consumption typ. (24 V)	5.76 W
Operating temperature	0 °C ... +60 °C (852-103) -40 °C ... +70 °C (852-103/040-000)
Storage temperature	-20 °C ... +80 °C (852-103) -40 °C ... +85 °C (852-103/040-000)
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	50 x 123 x 162 Height from upper-edge of DIN 35 rail
Weight	922 g
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP30
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)



The 852-104 Industrial Switch is a 7-port 10/100Base-TX with dual SFP 100Base-FX port (SFP modules are optional) configurable ETHERNET switch. The switch has a rugged housing, a redundant power supply and function monitoring with relay. These functions along with extensive ETHERNET switch options make it ideal for a wide range of applications.

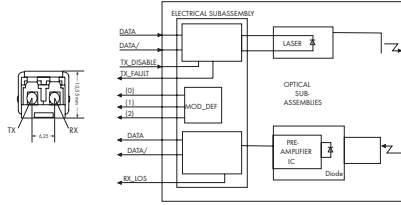
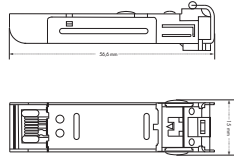
Features:

- Web-based/SNMP management
- Redundant DC power supply
- Large supply voltage range: 9 V ... 48 V

- DIP switch to enable alarm functions
- Full compliance with IEEE802.3, 802.3u, 802.3x, 802.1d, 802.1q, 802.1p standards
- Xpress Ring (redundant ring recovery < 50 ms)
- Non-blocking, store-and-forward switching
- Auto-negotiation on all 10/100Base-TX ports
- Auto-MDI/MDIX (crossover) on all 10/100Base-TX ports
- VLAN (802.1q) VID
- IGMP Snooping for multicast filtering
- Port configuration, status, statistics
- Port Trunking
- SNMP v1/v2 and RMON

Description	Item No.	Pack. Unit
7/2-Port 100BASE-TX/FX Industrial Managed Switch	852-104	1
7/2-Port 100BASE-TX/FX Industrial Managed Switch T (Operating temperature -40 °C ... +70 °C)	852-104/040-000	1
Accessories		
SFP Module 2: 1310nm, 100Base-FX Multi-mode LC, 2 km	852-201/107-002	
SFP Module 30: 1310nm, 100Base-FX Single-mode LC, 30 km	852-201/107-030	
SFP Module 2 T: 1310nm, 100Base-FX, Multi-mode, LC, 2 km, (Operating temperature -40 °C ... +70 °C)	852-201/040-002	
Approvals		
Conformity marking	CE	
UL 508	to 60 °C (852-103/040-000)	
	(Approvals for product variations upon request)	
Technical Data		
Ports	7 x 10/100Base-TX (RJ-45); 2 x SFP 100Base-FX Fiber; 1 x RS-232 (RJ-45)	

Technical Data	
Standards	IEEE 802.3u 100Base-TX/FX; IEEE 802.3ad Port Trunking; IEEE 802.3 10Base-T; IEEE 802.1d Spanning Tree Protocol; IEEE 802.3x Flow Control; IEEE 802.1p Priority Queues; IEEE 802.1q VLAN Tagging
MAC table	Up to 2K addresses
VLANs	Port-based and Tag-based (64VIDs)
Throughputs	14,880/148,800 packets per second (pps) to 10/100 Mbps ports
Wavelength (optical fibers)	depend on SFP module
Maximum length	10/100Base-TX: 100 m; Fiber optic: up to 30 km; RS-232: 15 m
Supply voltage	9 V ... 48 V DC (line length < 3 m)
Energy consumption max.	10.08 W
Energy consumption typ. (24 V)	8.4 W
Operating temperature	0 °C ... +60 °C (852-104) -40 °C ... +70 °C (852-104/040-000)
Storage temperature	-20 °C ... +80 °C (852-104) -40 °C ... +85 °C (852-104/040-000)
Relative air humidity (no condensation)	95 %
Dimensions (mm) W x H x L	50 x 123 x 162 Height from upper-edge of DIN 35 rail
Weight	1050 g
Vibration resistance	acc. to IEC 60068-2-6
Shock resistance	acc. to IEC 60068-2-27
Degree of protection	IP30
EMC CE-Immunity to interference	acc. to EN 61000-6-2 (2005)
EMC CE-Emission of interference	acc. to EN 61000-6-4 (2007)



ETHERNET via fiber optic cables offers a multitude of advantages for industrial applications. High immunity to interference, electrical isolation, and long ranges are important parameters here.

Description		Item No.	Pack. Unit
SFP Module 2: 1310nm, 100Base-FX Multi-mode LC, 2 km	Connector Duplex LC, Wavelength 1310 nm, Fiber type Multi-mode 62.5/125 µm, 50/125 µm, Maximum length 2000 m, Operating temperature 0 °C ... +60 °C, Storage temperature -20 °C ... +80 °C, Dimensions (mm) W x H x D: 13.4 x 13.3 x 56.6; Laser Class 1 acc. to EN 60825-1	852-201/107-002	1
SFP Module 30: 1310nm, 100Base-FX Single-mode LC, 30 km	Connector Duplex LC, Wavelength 1310 nm, Fiber type Single-mode 9/125 µm, Maximum length 30000 m, Operating temperature 0 °C ... +60 °C, Storage temperature -20 °C ... +80 °C, Dimensions (mm) W x H x D: 13.4 x 13.3 x 56.6; Laser Class 1 acc. to EN 60825-1	852-201/107-030	1
SFP Module 2 T: 1310nm, 100Base-FX, Multi-mode, LC, 2 km, (Operating temperature -40 °C ... +70 °C)	Connector Duplex LC, Wavelength 1310 nm, Fiber type Multi-mode 62.5/125 µm, 50/125 µm, Maximum length 2000 m, Operating temperature -40 °C ... +70 °C, Storage temperature -40 °C ... +80 °C, Dimensions (mm) W x H x D: 13.4 x 13.3 x 56.6; Laser Class 1 acc. to EN 60825-1	852-201/040-002	1

Characteristics:

- Duplex LC optical connector
- Industry standard small form pluggable (SFP) package
- Compliant with Fast ETHERNET standard;
- Differential LVPECL inputs and outputs;
- Single 3.3V power supply;
- TTL signal detect indicator;
- Hot pluggable capability

**WAGO Application: Stockholm-Arlanda Airport,
Sweden
Automated Passenger Boarding Bridges**

WAGO Products:
WAGO I/O-SYSTEM with DeviceNet Couplers and
Rail-Mounted Terminal Blocks



10



787 Series

Power Supplies Overview	564 – 565
Back-up Capacitor Module	566
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704, 706 and 857 Series

Interface Modules for System Wiring	570 – 575
WAGO Ribbon Cables	
JUMPFLEX® Interface Adapter for System Wiring, Input and Output Modules	576 – 583



Configuration

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Fieldbus Connectors

PROFIBUS, ETHERNET, PROFINET	
CANopen, INTERBUS, CC-Link	586 – 594



IP65 Enclosures

Stainless Steel, Sheet Steel, Aluminum, Polyester	596 – 601
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810 Series

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ProServe

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WMB Inline, Marker Cards and Group Marker Carriers	622 – 623

211 Series

WAGO Wire and Cable Marking	624 – 625
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210, 249 and 209 Series

Carrier Rails	626
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206, 210 Series

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Power Supplies - 288, 289, 787, 859 Series

For additional technical data, see INTERFACE ELECTRONIC Full Line Catalog or visit www.wago.com

EPSITRON® COMPACT Power



Low-profile, single-phase power supplies with wide input voltage range, as well as 12V and 24V output voltages.

787-1001	12 VDC, 2 A
787-1011	12 VDC, 4 A
787-1021	12 VDC, 6.5 A
787-1002	24 VDC, 1.3 A
787-1012	24 VDC, 2.5 A
787-1022	24 VDC, 4 A

ECO Power



Single-phase power supplies with a wide input voltage range and 24V output voltage.

787-712	24 VDC, 2.5 A
787-722	24 VDC, 5 A
787-732	24 VDC, 10 A

PRO Power

Single- and three-phase power supplies with a wide input voltage range and 12V, 24V or 48V output voltages; also included are PowerBoost, TopBoost and optional LineMonitor features.

1-phase (with TopBoost and PowerBoost):

787-819	12 VDC, 6 A
787-821	12 VDC, 10 A
787-831	12 VDC, 15 A
787-818	24 VDC, 3 A
787-822	24 VDC, 5 A
787-832	24 VDC, 10 A
787-834	24 VDC, 20 A
787-833	48 VDC, 5 A
787-835	48 VDC, 10 A

3-phase (with TopBoost and PowerBoost):

787-840	24 VDC, 10 A
787-842	24 VDC, 20 A
787-844	24 VDC, 40 A
787-845	48 VDC, 10 A
787-847	48 VDC, 20 A

3-phase (with TopBoost and PowerBoost, as well as LineMonitor):

787-850	24 VDC, 10 A
787-852	24 VDC, 20 A
787-854	24 VDC, 40 A



EPSITRON® CLASSIC Power



Single-phase power supplies with wide input voltage range and 12V, 24V, 30.5V or 48V output voltages.

787-601	12 VDC, 2 A
787-611	12 VDC, 4 A
787-621	12 VDC, 8 A
787-602	24 VDC, 1,3 A
787-612	24 VDC, 2,5 A
787-622	24 VDC, 5 A
787-632	24 VDC, 10 A
787-613	48 VDC, 1 A
787-623	48 VDC, 2 A
787-633	48 VDC, 5 A
787-692	AS-Interface, 30.5 VDC, 3 A
787-1675	24 VDC, 5 A (with integrated UPS charger and controller)

EPSITRON®

Uninterruptible Power Supplies (UPS)

Reliable compensation for longer power failures via UPS charger, controller and connected battery modules



UPS charger and controller:

787-870	24 VDC, max. 10 A
787-875	24 VDC, max. 20 A
787-1675	24 VDC, 5 A (with integrated UPS charger and controller)

Battery module (with built-in temperature sensor):

787-876	24 VDC, 1.2 Ah
787-871	24 VDC, 3.2 Ah
787-872	24 VDC, 7 Ah
787-873	24 VDC, 12 Ah

Electronic Circuit Breakers

Configurable protection via 4-channel electronic circuit breakers, integrated current and voltage monitoring.



787-860	24 V DC, 4x6 A
787-861	24 V DC, 4x8 A, current-limited
787-862	24 VDC, 4x 10 A
787-1664	24 VDC, 4 x 10 A (without Display)
787-1668	24 VDC, 8 x 10 A (without Display)

Capacitive Buffer Modules

Reliable operation in the event of short voltage fluctuations via maintenance-free, capacitive buffer modules.



787-880	24 VDC, max. 10 A for 400 ms
787-881	24 VDC, max. 20 A for 400 ms


Redundancy Modules

Parallel connection of power supplies for higher availability and load current via redundancy module.




787-885	24 VDC, 2x20 A or 1x40 A
787-886	48 VDC, 2x20 A or 1x40 A


Rail-Mounted Modules - Constant Voltage Sources

	289-907	24 VDC, 3 A Input 27 ... 35 VDC
	288-800	24 VDC, 3 A Input 24 VAC +10 % 50 Hz ... 60 Hz
	288-801	24 VDC, 5 A Input 24 VAC +10 % electronic overload protection


Rail-Mounted Modules - Power Supplies

	288-809	24 VDC, 0.5 A Input AC 115 V ±10 %
	288-810	24 VDC, 0.5 A Input 230 VAC ±10 %
	288-808	12 VDC, 0.5 A Input 230 VAC ±10 %
	288-813	24 VDC, 2 A Input 115 VAC ±10 %
	288-812	24 VDC, 2 A Input 230 VAC ±10 %
	288-814	±12 VDC, 2 x 0.5 A Input 230 VAC ±10 %
	288-815	±15 VDC, 2 x 0.5 A Input 230 VAC ±10 %
	288-816	±15 VDC, 2 x 1 A Input 230 VAC ±10 %

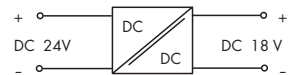
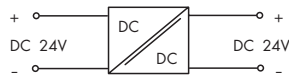
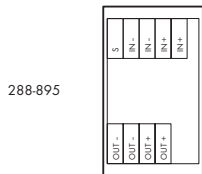
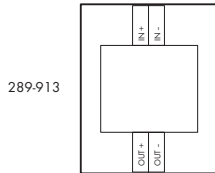
Rail-Mounted Terminal Blocks with DC/DC Converter

	859-801	DC/DC Converter 24 VDC / 5 V, 0.5 A
	859-802	DC/DC Converter 24 VDC / 10 V, 0.5 A
	859-804	DC/DC Converter 12 VDC / 24 V, 250 mA
	859-805	DC/DC Converter 24 VDC / 12 V, 0.5 A

Rail-Mounted Modules - DC/DC Converter

	289-913	24 VDC / 24 VDC; 0.21 A
	288-895	24 VDC / 18 VDC; 0.4 A

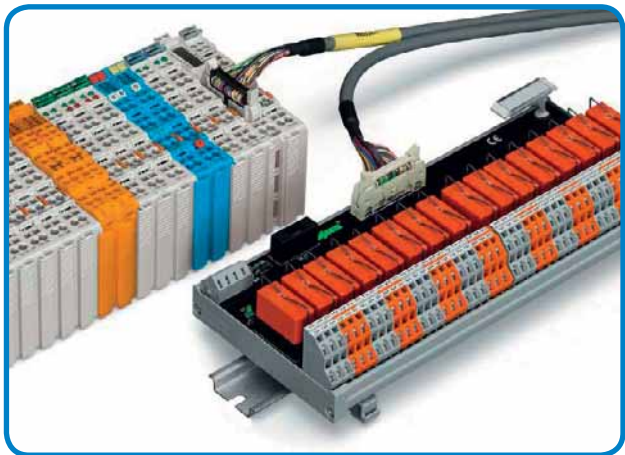
	24 V / 24 V; 0.21 A DC Mounting feet for DIN 35 rail	24 V / 18 V; 0.4 A DC Mounting carrier for DIN 35 rail
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Description	Item No.	Pack. Unit	Item No.	Pack. Unit
DC/DC converter	289-913	1	288-895	1

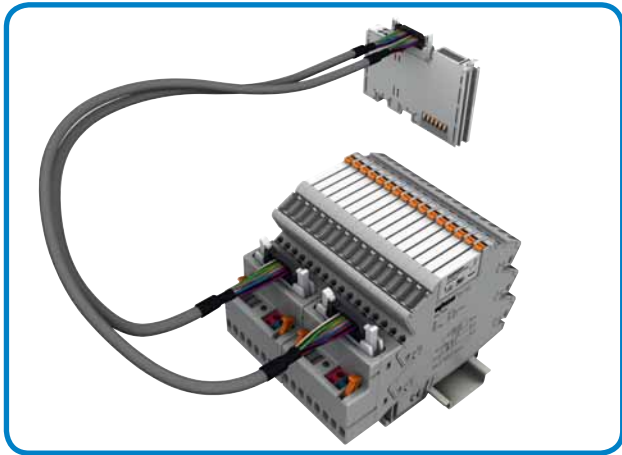
Technical Data

Input voltage	24 V DC	24 V DC
Input voltage range	± 10%	18 V ... 36 V DC
Output voltage	24 V DC (± 3 %)	18 V DC (± 1 %)
Nominal output current	210 mA	400 mA
Peak output current	315 mA	
Efficiency	65 % ... 75 %	82%
Test voltage input/output	DC 500 V	DC 1500 V
Short circuit protection	Thermal cut-out	permanent
Ambient operating temperature	-25 °C ... +40 °C	-25 °C ... +70 °C
Weight	77 g	75 g
Dimensions (mm) W x H x L	83 x 25 x 77	50 x 25 x 85
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP®	Height from upper-edge of DIN 35 rail CAGE CLAMP®
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)	0.08 mm² ... 2.5 mm² / AWG 28 ... 12 (THHN, THWN)
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
EMC: CE - immunity to interference		acc. to EN 61000-6-2 (2005) * * Only in conjunction with DALI/DSI Master Module 750-641
EMC: CE - emission of interference		acc. to EN 61000-6-3 (2007) * * Only in conjunction with DALI/DSI Master Module 750-641
Accessories		
WMB Multi marking system for mounting carrier		see page 622
Marker strips for mounting carrier		white 709-198 / translucent 709-196



Digital input and output modules with ribbon cable connector provide easy and fast connection of WAGO interface modules to the WAGO-I/O-SYSTEM. WAGO pre-assembled ribbon cables eliminate discrete wiring, while reducing costs for system wiring applications. Furthermore, modules can be pre-wired, also allowing the connection level to be relocated.

WAGO-I/O -SYSTEM 750				WAGO Ribbon Cable		WAGO Interface Modules	
	Item No.	I/O Modules		Item No.			
DI	750-1400	16 DI 24V DC 3.0 ms ribbon cable		706-3057 / 0300-XXXX (see page 576)		Input module, 20-pole (see page 575)	
	750-1402	16 DI 24V DC 3.0 ms ribbon cable, low-side switch		706-7753 / 0302-XXXX (see page 576)		Input module, 10-pole (see page 575)	
DO	750-1500	16 DO 24V DC 0.5 A ribbon cable		706-3057 / 0300-XXXX (see page 576)		Relay module, 16-channel (see pages 570-573)	
				706-7753 / 0302-XXXX (see page 576)		Relay module, 8-channel (see page 574)	
DI/DO	750-1502	8DI 8DO 24V DC 0.5 A ribbon cable		706-7753 / 0302-XXXX (see page 576)		Input module, 10-pole (see page 575)	
						Relay module, 8-channel (see page 574)	
WAGO-I/O -SYSTEM 753				WAGO Ribbon Cable		WAGO Interface Modules	
DI	753-430 753-431 753-436 753-437	8 DI 8 DI 8 DI 8 DI		706-7753 / 0300-XXXX (see page 577)		Input module, 10-pole (see page 575)	
	753-430 (x2) 753-431 (x2) 753-436 (x2) 753-437 (x2)	2 x 8 DI 2 x 8 DI 2 x 8 DI 2 x 8 DI		706-7753 / 0301-XXXX (see page 577)		Input module, 20-pole (see page 575)	
DO	753-530	8 DO		706-7753 / 0300-XXXX (see page 577)		Relay module, 8-channel (see page 574)	
	753-530 (x2)	2 x 8 DO		706-7753 / 0301-XXXX (see page 577)		Relay module, 16-channel (see pages 570-573)	



WAGO Interface Adapter, 857 Series

WAGO's Interface Adapter provides a fast wiring solution for relay and optocoupler modules within the JUMPFLEX® 857 Series. On the module side, pre-assembled WAGO Ribbon Cables (706 Series) connect to the WAGO-I/O-SYSTEM (PLC). This eliminates cumbersome discrete wiring between 750 Series I/O modules and 857 Series relays/optocouplers.

As a result, both installation time and costs are reduced.

Depending on the application, the WAGO interface adapters can be used with D-sub or ribbon cable connectors.

WAGO's interface adapters are equipped with status indicator.

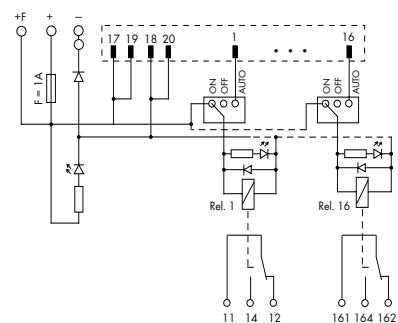
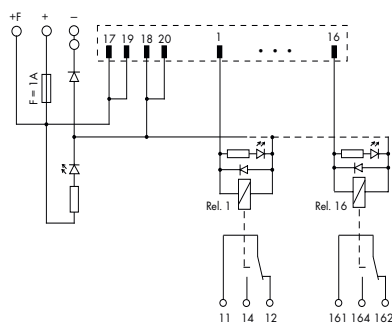
They also feature integrated test ports for each channel.

The interface adapters are simply plugged into the 857 Series relay/optocoupler modules via jumper slot.

Furthermore, WAGO's interface adapter features locking devices for secure connection.

WAGO-I/O -SYSTEM 750		WAGO Ribbon Cable		WAGO Interface Modules	
	Item No.	I/O Modules		Item No.	
DI	750-1400	16 DI 24V DC 3.0 ms ribbon cable		706-7753/304-100 (see page 580)	 Item No.: 857-982 Output, positive switching 8-channel adapter with 14-pin ribbon cable connector acc. to DIN 41651 (see page 578)
	750-1402	16 DI 24V DC 3.0 ms ribbon cable, low-side switch			
DO	750-1500	16 DO 24V DC 0.5 A ribbon cable		706-7753/306-100 (see page 581)	 Item No.: 857-986 Input, positive switching 8-channel adapter with SUB-D male connector (see page 579)
				706-7753/304-100 (see page 580)	
DI/DO	750-1502	8DI 8DO 24V DC 0.5 A ribbon cable		706-7753/304-100 (see page 580)	 Item No.: 857-982 Output, positive switching 8-channel adapter with 14-pin ribbon cable connector acc. to DIN 41651 (see page 578)
				706-7753/306-100 (see page 581)	
				706-7753/306-100 (see page 581)	 Item No.: 857-986 Input, positive switching 8-channel adapter with SUB-D male connector (see page 579)

	<p>Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication, 20-pole ribbon cable connector to DIN 41651</p>	<p>Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication and manual operation, 20-pole ribbon cable connector to DIN 41651</p>
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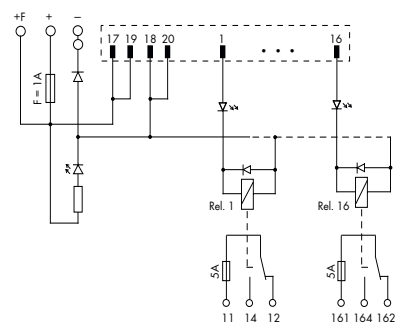
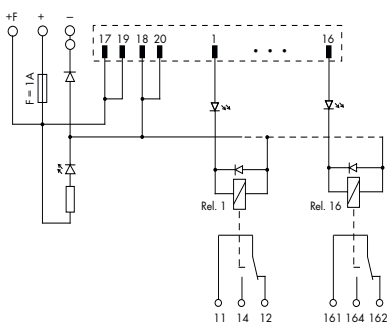
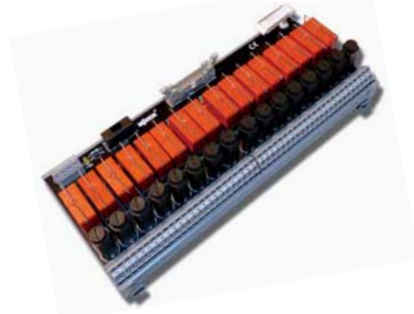
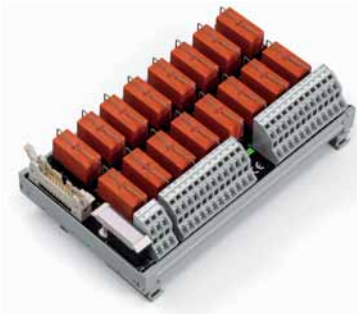


Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	704-5024	1	704-5044	1

Technical Data				
Contact material	AgNi 90/10		AgNi 90/10	
Contact type	1 changeover contact		1 changeover contact	
Operating voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC		250 V AC / 48 V DC	
Max. continuous current	5 A		5 A	
Max. switching power (resistive)	1250VA / 50W		1250VA / 50W	
Status indication	LED green : Channel LED yellow : Power supply		LED green : Channel LED yellow : Power supply	
Mechanical life	10 x 10 ⁶ switching operations		10 x 10 ⁶ switching operations	
Dielectric strength contact-coil (AC, 1 min)	4 kV		4 kV	
Dielectric strength contact-contact	1 kV		1 kV	
Fuse	Supply: 1 A Relay output: -		Supply: 1 A Relay output: -	
Ambient operating temperature	-25 °C ... +40 °C		-25 °C ... +40 °C	
Storage temperature	-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) L x W x H incl. mounting carrier and relay	111 x 65 x 105		111 x 65 x 105	
Wire connection	Height from upper-edge of DIN 35 rail Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®		Height from upper-edge of DIN 35 rail Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®	
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12		0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Application examples	see page 568		see page 568	
Accessories	Spare relay 857-152		Spare relay 857-152	

	<p>Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication, 20-pole ribbon cable connector to DIN 41651</p>	<p>Relay output module with miniature switching relay for 16 channels, 1 changeover contact each (1 u) with integrated status indication and output fuse, 20-pole ribbon cable connector to DIN 41651</p>
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Note:
Independent of the relay used, the maximum continuous current is 5A per channel.



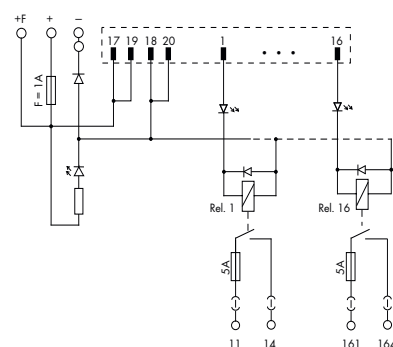
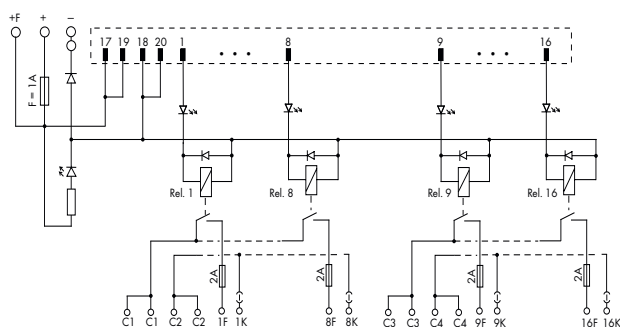
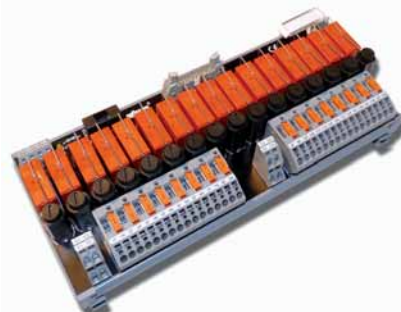
Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	704-5004	1	704-5034	1
Switching relay module without miniature switching relay,	704-5014	1		

Technical Data

Contact material	AgNi 90/10	AgNi 90/10
Contact type	1 changeover contact	1 changeover contact
Operating voltage	24 V DC (± 10 %)	24 V DC (± 10 %)
Max. switching voltage	250 V AC / 48 V DC	250 V AC / 48 V DC
Max. continuous current	5 A	5 A
Inrush current	2s, 16A	2s, 16A
Max. switching power (resistive)	1250VA / 50W	1250VA / 50W
Status indication	LED green : Channel LED yellow : Power supply	LED green : Channel LED yellow : Power supply
Mechanical life	30 x 10 ⁶ switching operations	30 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	3 kV	4 kV
Dielectric strength contact-contact	1 kV	1 kV
Fuse	Supply: 1 A Relay output: -	Supply: 1 A Relay output: 5 A
Ambient operating temperature	-25 °C ... +50 °C	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) L x W x H incl. mounting carrier and relay	180 x 50 x 105 Height from upper-edge of DIN 35 rail	247 x 55 x 105 Height from upper-edge of DIN 35 rail
Wire connection	Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®	Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12
Stripped lengths	5 ... 6 mm / 0.22 in	5 ... 6 mm / 0.22 in
Application examples	see page 568	see page 568
Accessories	Spare relay 788-154	Spare relay 788-154

	<p>Relay output module with miniature switching relay for 16 channels, 1 make contact each (1 a) with integrated status indication, disconnect terminal block and output fuse, 20-pole ribbon cable connector to DIN 41651</p>	<p>Relay output module with miniature switching relay for 16 channels, 1 make contact each (1 a) with integrated status indication, double disconnect terminal block and output fuse, 20-pole ribbon cable connector to DIN 41651</p>
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Note:
Independent of the relay used, the maximum continuous current is 2A (704-5054) or 5A (704-5074) per channel.



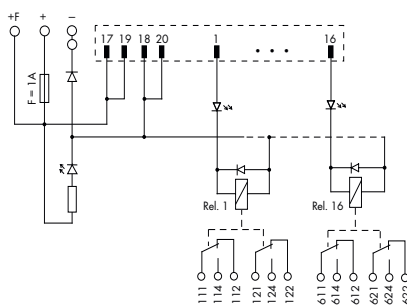
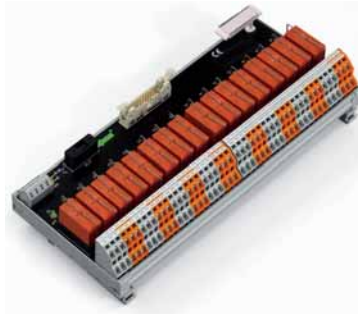
Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	704-5054	1	704-5074	1

Technical Data				
Contact material	AgNi 90/10		AgNi 90/10	
Contact type	1 make contact		1 make contact	
Operating voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC		250 V AC / 48 V DC	
Max. continuous current	2 A		5 A	
Max. switching power (resistive)	500VA / 50W		1250VA / 50W	
Status indication	LED green : Channel LED yellow : Power supply		LED green : Channel LED yellow : Power supply	
Mechanical life	30 x 10 ⁶ switching operations		30 x 10 ⁶ switching operations	
Dielectric strength contact-coil (AC, 1 min)	4 kV		4 kV	
Dielectric strength contact-contact	1 kV		1 kV	
Fuse	Supply: 1 A Relay output: 2 A		Supply: 1 A Relay output: 5 A	
Ambient operating temperature	-25 °C ... +50 °C		-25 °C ... +50 °C	
Storage temperature	-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) L x W x H incl. mounting carrier and relay	240 x 55 x 105		240 x 55 x 105	
Wire connection	Height from upper-edge of DIN 35 rail Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®		Height from upper-edge of DIN 35 rail Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®	
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12		0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Application examples	see page 568		see page 568	
Accessories	Spare relay 788-154		Spare relay 788-154	

Relay output module with miniature switching relay for 16 channels, 2 changeover contacts each (2 u) with integrated status indication, 20-pole ribbon cable connector to DIN 41651

Note:

Independent of the relay used, the maximum continuous current is 5A per channel.

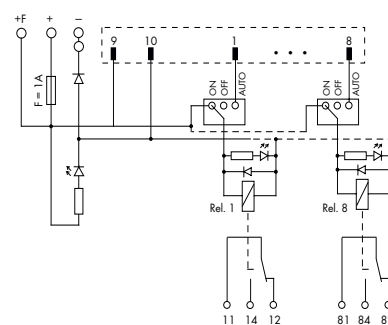
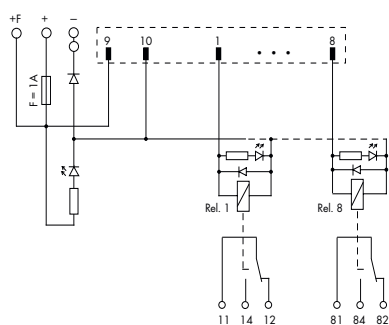
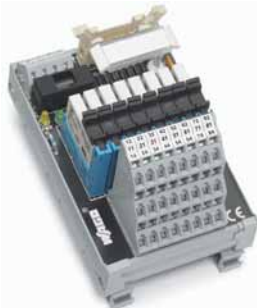


Description	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	704-5064	1

Technical Data

Contact material	AgNi 90/10
Contact type	2 changeover contact
Operating voltage	24 V DC (± 10 %)
Max. switching voltage	250 V AC / 48 V DC
Max. continuous current	5 A
Inrush current	2s, 8A
Max. switching power (resistive)	1000VA / 50W
Status indication	LED green : Channel LED yellow : Power supply
Mechanical life	30 x 10 ⁶ switching operations
Dielectric strength contact-coil (AC, 1 min)	4 kV
Dielectric strength contact-contact	1 kV
Fuse	Supply: 1 A Relay output: -
Ambient operating temperature	-25 °C ... +50 °C
Storage temperature	-40 °C ... +70 °C
Dimensions (mm) L x W x H incl. mounting carrier and relay	247 x 50 x 105 Height from upper-edge of DIN 35 rail
Wire connection	Input: 20-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12
Stripped lengths	5 ... 6 mm / 0.22 in
Application examples	see page 568
Accessories	Spare relay 788-156

	<p>Relay output module with miniature switching relay for 8 channels, 1 changeover contact each (1 u) with integrated status indication, 10-pole ribbon cable connector to DIN 41651</p>	<p>Relay output module with miniature switching relay for 8 channels, 1 changeover contact each (1 u) with integrated status indication and manual operation, 10-pole ribbon cable connector to DIN 41651</p>
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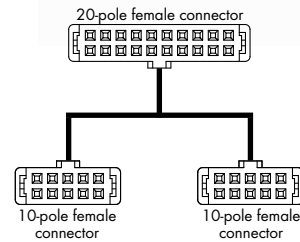
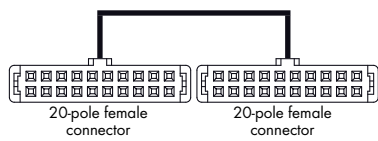


Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Switching relay module, for DIN 35 rail	704-5003	1	704-5013	1

Technical Data				
Contact material	AgNi 90/10		AgNi 90/10	
Contact type	1 changeover contact		1 changeover contact	
Operating voltage	24 V DC (± 10 %)		24 V DC (± 10 %)	
Max. switching voltage	250 V AC / 48 V DC		250 V AC / 48 V DC	
Max. continuous current	5 A		5 A	
Max. switching power (resistive)	1250VA / 50W		1250VA / 50W	
Status indication	LED green : Channel LED yellow : Power supply		LED green : Channel LED yellow : Power supply	
Mechanical life	10 x 10 ⁶ switching operations		10 x 10 ⁶ switching operations	
Dielectric strength contact-coil (AC, 1 min)	4 kV		4 kV	
Dielectric strength contact-contact	1 kV		1 kV	
Fuse	Supply: 1 A Relay output: -		Supply: 1 A Relay output: -	
Ambient operating temperature	-25 °C ... +40 °C		-25 °C ... +40 °C	
Storage temperature	-40 °C ... +70 °C		-40 °C ... +70 °C	
Dimensions (mm) L x W x H incl. mounting carrier and relay	70 x 65 x 105		70 x 65 x 105	
Wire connection	Height from upper-edge of DIN 35 rail Input: 10-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®		Height from upper-edge of DIN 35 rail Input: 10-pole ribbon cable connector to DIN 41651 Output: CAGE CLAMP®	
Cross sections	0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12		0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12	
Stripped lengths	5 ... 6 mm / 0.22 in		5 ... 6 mm / 0.22 in	
Application examples	see page 568		see page 568	
Accessories	Spare relay 857-152		Spare relay 857-152	

WAGO Ribbon Cables

for 289/704 Series



WAGO ribbon cables provide fast and easy connection of WAGO I/O modules equipped with a ribbon cable connector (750-1400, -1402, -1500, -1501, 1502) to appropriate interface or relay modules (16-channel) featuring a 20-pole female connector. The cables are available in 1-, 2- and 3-meter lengths; each has one 20-pole female connector at both ends.

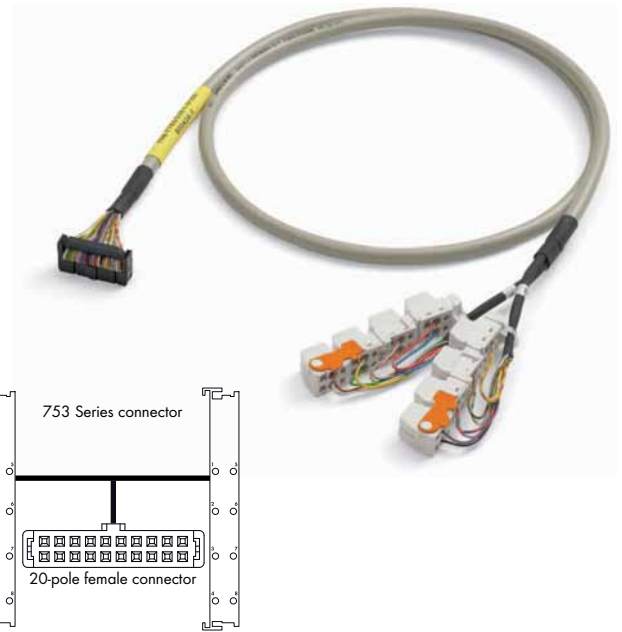
WAGO ribbon cables provide fast and easy connection of WAGO I/O modules equipped with a ribbon cable connector (750-1400, -1402, -1500, -1501, 1502) to appropriate interface or relay modules featuring a 10-pole female connector. For example, this cable connects 2 relay modules (8-channel) to a WAGO I/O module. The cables are available in 1- and 2-meter lengths; each has one 20-pole and two 10-pole female connectors on the ends.

Description	Item No.	Pack. Unit
WAGO ribbon cable 20/20, length 1 m	706-3057/300-100	1
WAGO ribbon cable 20/20, length 2 m	706-3057/300-200	1
WAGO ribbon cable 20/20, length 3 m	706-3057/300-300	1
WAGO ribbon cable 20/20, length 2 m, UL Approval	706-3057/1300-200	1
Technical Data		
Ports	2 x 20-pole female connector acc. to DIN 41651	
Wire cross-section	0.14 mm ² LiYY	
Color coding	acc. to DIN VDE 47100	
Current per channel	max. 1A	
Operating temperature	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	1 m (706-3057/300-100) 2 m (706-3057/300-200, 706-3057/1300-200) 3 m (706-3057/300-300)	

Description	Item No.	Pack. Unit
WAGO ribbon cable 20/2x10, length 1 m	706-7753/302-100	1
WAGO ribbon cable 20/2x10, length 2 m	706-7753/302-200	1
Technical Data		
Ports	1 x 20-pole / 2 x 10-pole female connector	
Wire cross-section	0.14 mm ² LiYY	
Color coding	acc. to DIN VDE 47100	
Current per channel	max. 1A	
Operating temperature	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	1 m (706-7753/302-100) 2 m (706-7753/302-200)	



WAGO ribbon cables provide fast and easy connection of WAGO I/O modules equipped with pluggable connectors (e.g., 753-430, -431, -530) to appropriate interface or relay modules featuring a 10-pole female connector.



WAGO ribbon cables provide fast and easy connection of WAGO I/O modules equipped with pluggable connectors (e.g., 753-430, -431, -530) to appropriate interface or relay modules featuring a 20-pole female connector.

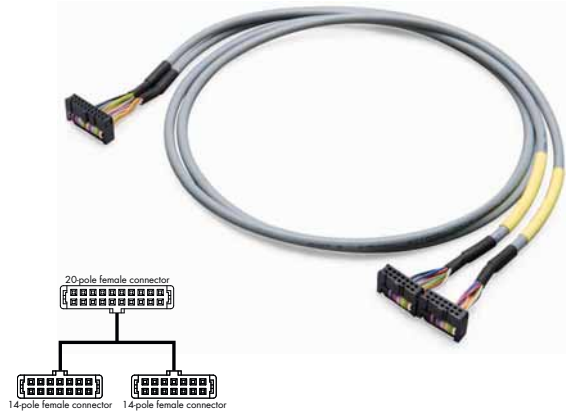
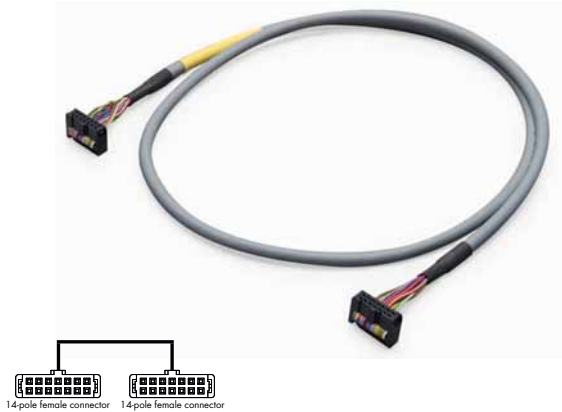
For example, this cable connects two WAGO I/O modules to one relay output module (16-channel).

Description	Item No.	Pack. Unit
WAGO ribbon cable with 753 Series pluggable connector/10-pole, 1 m long	706-7753/300-100	1
For other cable lengths, please contact factory		
Technical Data		
Wire cross-section	0,14 mm ² LiYY	
Color coding	nach DIN VDE 47100	
Current per channel	max. 1 A	
Operating temperature *	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	1 m	

Description	Item No.	Pack. Unit
WAGO ribbon cable, 2 x 753 Series pluggable connector/20-pole, 2 m long	706-7753/301-200	1
For other cable lengths, please contact factory		
Technical Data		
Wire cross-section	0,14 mm ² LiYY	
Color coding	nach DIN VDE 47100	
Current per channel	max. 1 A	
Operating temperature *	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	2 m	

* Maximale Betriebstemperatur der verwendeten WAGO-I/O-Klemmen beachten.

WAGO Ribbon Cables for 857 Series



The 14-pin cables transmit signals one-to-one from the 14-pole female connector and are available in 1-, 2- and 3-meter lengths.

Suitable for system wiring when combined with the JUMPFLEX® Interface Adapter (Item No. 857-981 and 857-982)

The cables provide fast and easy connection of WAGO I/O modules featuring ribbon cable connectors. The following WAGO I/O modules and adapters are compatible:
750-1500 (16 DO) -> 857-981 (DO)

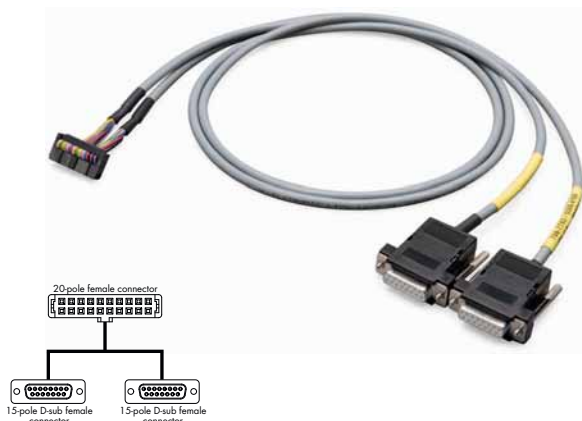
750-1502 (8 DO / 8 DI) -> 857-981 (DO) and 857-982 (DI)

The ribbon cables are available in 1-, 2- and 3-meter lengths - each has one 20-pole or two 14-pole female connectors on the ends.

Suitable for system wiring when combined with the JUMPFLEX® Interface Adapter (Item No. 857-981 and 857-982)

Description	Item No.	Pack. Unit
WAGO ribbon cable 14/14, 1m long	706-753/300-100	1
WAGO ribbon cable 14/14, 2m long	706-753/300-200	1
WAGO ribbon cable 14/14, 3m long	706-753/300-300	1
Technical Data		
Ports	2 x 14-pole female connector acc. to DIN 41651	
Wire cross-section	0.14 mm ² LiYY	
Color coding	acc. to DIN VDE 47100	
Current per channel	max. 1 A	
Operating temperature	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	1 m (706-753/300-100) 2 m (706-753/300-200) 3 m (706-753/300-300)	

Description	Item No.	Pack. Unit
WAGO ribbon cable 20/2x14, 1m long	706-7753/304-100	1
WAGO ribbon cable 20/2x14, 2m long	706-7753/304-200	1
WAGO ribbon cable 20/2x14, 3m long	706-7753/304-300	1
Technical Data		
Ports	1 x 20-pole female connector / 2 x 14-pole female connector to DIN 41651	
Wire cross-section	0.14 mm ² LiYY	
Color coding	acc. to DIN VDE 47100	
Current per channel	max. 1 A	
Operating temperature	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	1 m (706-7753/304-100) 2 m (706-7753/304-200) 3 m (706-7753/304-300)	



The cables provide fast and easy connection of WAGO I/O modules featuring ribbon cable connectors. The following WAGO I/O modules and D-sub adapters are compatible:

750-1500 (16 DO) → 857-986 (DO)

The ribbon cables are available in 1-, 2- and 3-meter lengths – each has one 20-pole or two 15-pole female connectors on the ends.

Suitable for system wiring when combined with the JUMPFLEX® Interface Adapter (Item No. 857-986)

Description	Item No.	Pack. Unit
WAGO ribbon cable 20/2x15, 1m long	706-7753/306-100	1
WAGO ribbon cable 20/2x15, 2m long	706-7753/306-200	1
WAGO ribbon cable 20/2x15, 3m long	706-7753/306-300	1
Technical Data		
Ports	1 x 20-pole female connector to DIN 41651 / 2 x 15-pole D-sub female connector to DIN 41652	
Wire cross-section	0.14 mm ² LiYY	
Color coding	acc. to DIN VDE 47100	
Current per channel	max. 1 A	
Operating temperature	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	1 m (706-7753/306-100) 2 m (706-7753/306-200) 3 m (706-7753/306-300)	

Description	Item No.	Pack. Unit
WAGO ribbon cable, 10-pole/one free cable end, length 2 m	706-100/1301-200	1
WAGO ribbon cable, 16-pole/one free cable end, length 2 m	706-100/1602-200	1
WAGO ribbon cable, 20-pole/one free cable end, length 2 m	706-100/1300-200	1
WAGO ribbon cable, 14-pole/one free cable end, length 2 m	706-100/1303-200	1
Technical Data		
Ports	female connector/one free cable end 10-pole (706-100/1301-200) 16-pole (706-100/1602-200) 20-pole (706-100/1300-200) 14-pole (706-100/1303-200)	
Wire cross-section	0,14 mm ² LiYY	
Color coding	acc. to DIN VDE 47100	
Current per channel	max. 1 A	
Operating temperature	-25 °C ... +70 °C	
Degree of protection	IP20	
Length	2 m	

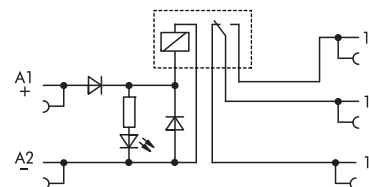
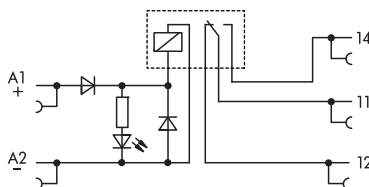
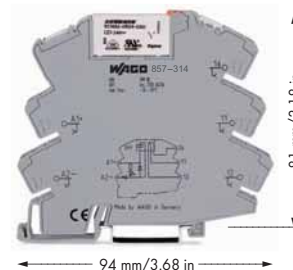
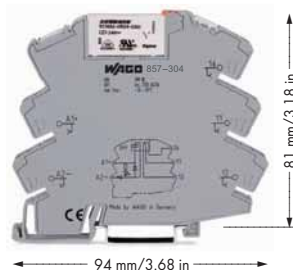
JUMPFLEX® Relay Socket with Miniature Switching Relay

	Relay with 1 changeover contact (1u) for normal switching power Nominal input voltage V_N 12 V, 24 V, 48 V, 60 V, 110 V, 220 V DC	Relay with 1 changeover contact (1u) (gold contacts) for normal switching power Nominal input voltage V_N 24 V, 110 V, 220 V DC
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Note: Inductive loads have to be attenuated by an appropriate protective circuit in order to protect relay coils and contacts.

* In order to prevent the gold layer from being damaged these values should not be exceeded. Higher switching power leads to evaporation of the gold layer. The resulting deposits in the enclosure may cause sparkovers between the coil and the contact.

The values in brackets are valid if the gold layer is damaged.

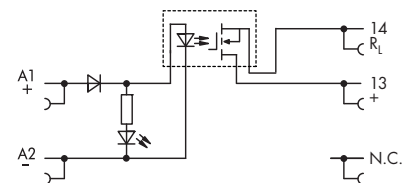
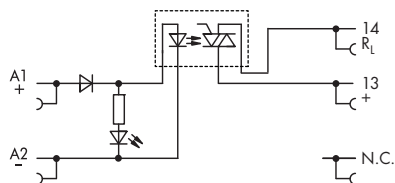
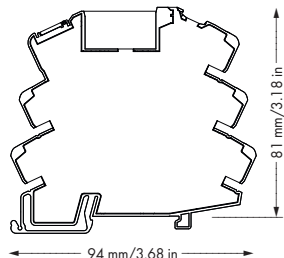


Description	V_N	I_N	Item No.	Pack. Unit	V_N	I_N	Item No.	Pack. Unit
JUMPFLEX® relay socket with miniature switching relay, for DIN 35 rail	12 V DC	17 mA	857-303	1	24 V DC	10 mA	857-314	1
	24 V DC	10 mA	857-304	1	110 V DC	3.5 mA	857-317	1
	48 V DC	6.5 mA	857-305	1	220 V DC	3.2 mA	857-318	1
	60 V DC	5.2 mA	857-306	1				
	110 V DC	3.5 mA	857-307	1				
	220 V DC	3.2 mA	857-308	1				

Technical Data

	AgSnO ₂	AgSnO ₂ + 5 μ Au
Contact material	AgSnO ₂	AgSnO ₂ + 5 μ Au
Input voltage range	V_N -15 % ... +20 %	V_N -15 % ... +20 %
Max. switching voltage	250 V AC	36 V* DC / (250 V AC/DC)
Max. continuous current (terminal blocks in a row)	6A	50mA* / (6A)
Max. Switching power (resistive)	1250 VA AC	1250 VA AC
Recommended minimum load	≥ 100 mA / 12 V AC/DC	≥ 1 V / 1 mA / 50 mW
Max. switching rate with/without load	6 min ⁻¹ / 20 s ⁻¹	6 min ⁻¹ / 20 s ⁻¹
Operating power	< 300 mW / < 700 mW	< 300 mW / < 700 mW
Pull-in/drop-out/bounce time typ.	5 ms / 6 ms / 5 ms	5 ms / 6 ms / 5 ms
Nominal operating mode	continuous duty	continuous duty
Dielectric strength contact-coil	4 kV _{eff}	4 kV _{eff}
Surge capacity open contact	1 kV _{eff}	1 kV _{eff}
Nominal voltage acc. to VDE 0110 Part 1/4.97, IEC 60664-1	250 V / 4 kV / 3	250 V / 4 kV / 3
Mechanical life	5 x 10 ⁶ switching operations	5 x 10 ⁶ switching operations
Mechanical life at max. load (resistance)	5 x 10 ⁴ switching operations	5 x 10 ⁴ switching operations
Ambient operating temperature (V_N)	-25 °C ... +60 °C	-25 °C ... +60 °C
Storage temperature	-40 °C ... +70 °C	-40 °C ... +70 °C
Dimensions (mm) W x H x L	6 x 81 x 94	6 x 81 x 94
Wire connection	Height from upper-edge of DIN 35 rail CAGE CLAMP® S	Height from upper-edge of DIN 35 rail CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12 fine-stranded: 0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	solid: 0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12 fine-stranded: 0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Stripped lengths	9 ... 10 mm / 0.37 in	9 ... 10 mm / 0.37 in
Standards/Specifications	VDE 0110 / EN 60664; VDE 0435 / EN 61810-1; Ⓢ	VDE 0110 / EN 60664; VDE 0435 / EN 61810-1; Ⓢ

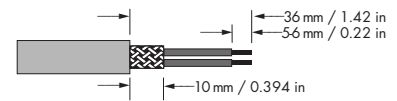
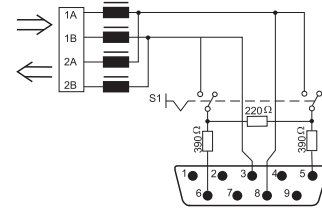
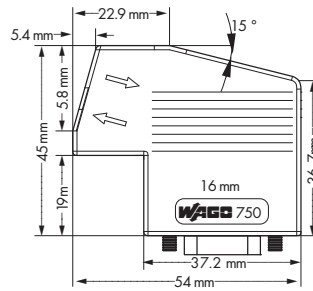
	Solid state relay Input: 24 V DC Output: 24 V ... 240 V AC / 1 A	Solid state relay Input: 24 V DC Output: 0 V ... 24 V DC / 2 A
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Description	Item No.	Pack. Unit	Item No.	Pack. Unit
JUMPFLEX® relay socket with solid state relay, for DIN 35 rail	857-714	1	857-727	1

Technical Data

Control circuit:		
Nominal input voltage (V _N)	24VDC	115V AC/DC
Input voltage range (low level)	0 - 10V	0 - 25V
Input voltage range (high level)	20 - 28.8V	90 - 138V
Nominal input current (I _N)	9.2 mA	3.9 mA
Load circuit:		
Switching voltage	24 V ... 240 V AC	0 V ... 24 V DC
Peak reverse voltage	600 V	33 V
Max. switching current	1A AC	2ADC
Forward voltage at max. switching current	< 1VAC	< 120mV DC
Switch on/switch off time		5ms / 14ms
Ambient operating temperature	-20°C ... +60°C	-20°C ... +60°C
Storage temperature	-40°C ... +70°C	-40°C ... +70°C
Dielectric strength control/switching circuit	2.5 kV	2.5 kV
Dimensions (mm) W x H x L	6 x 81 x 94	6 x 81 x 94
	Height from upper-edge of DIN 35 rail	Height from upper-edge of DIN 35 rail
Wire connection	CAGE CLAMP® S	CAGE CLAMP® S
Cross sections	solid: 0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12 fine-stranded: 0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12	solid: 0.08 mm ² ... 2.5 mm ² / AWG 28 ... 12 fine-stranded: 0.34 mm ² ... 2.5 mm ² / AWG 22 ... 12
Stripped lengths	9 ... 10 mm / 0.37 in	9 ... 10 mm / 0.37 in
Standards/Specifications	EN 60664-1	EN 61000-6-2 with protection module 859-890, EN 61000-6-4, EN 60664-1
Approvals	CE, UL 508	CE, ®, UL 508



The fieldbus connector links a PROFIBUS device to a PROFIBUS line.

The fieldbus connector has the following features:

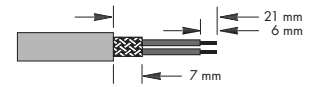
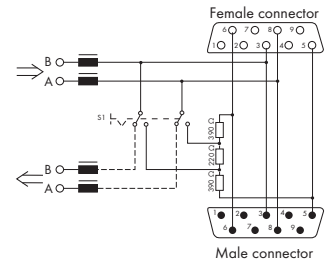
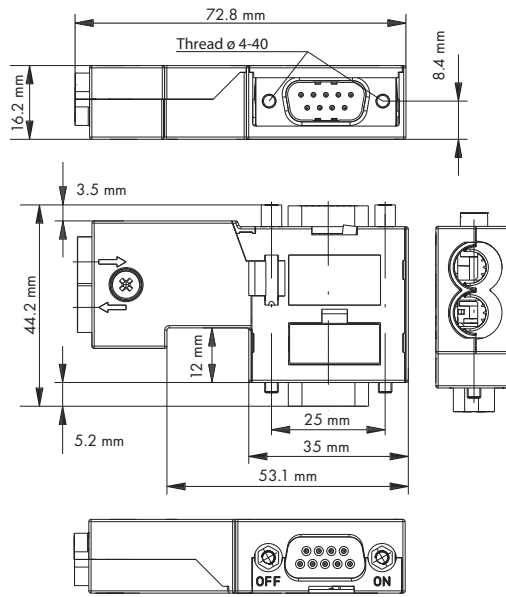
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

For the first and last station on the bus, the switch must be set to "ON" (terminating resistor activated). Switch setting to "OFF" for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	750-960	1
Accessories		
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Operating tool, with partially insulated shaft, Type 2, blade (3.5 x 0.5) mm	210-720	1
Operating tool for strain relief Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	735-500	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		
Approvals		
Shipbuilding	see "Approvals Overview" in section 1	
UL 508		

Technical Data	
Double cable input	min. Ø 4.5 mm/0.177 in / max. Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to PROFIBUS specification up to 12 Mbits/s
Power supply	4.75 V ... 5.25 V DC
Max. current consumption (internal)	5 mA
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm ² ... 0.5 mm ² / AWG 28 ... 20 sep. connection 0.75 mm ² / AWG 18 possible
Stripped length	see graphic

PROFIBUS Fieldbus Connector;



The fieldbus connector links a PROFIBUS device to a PROFIBUS line.

The fieldbus connector has the following features:

- Compact design. It is particularly well-suited for the connection to an S7 PLC.
- No losable parts.
- PG interface
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

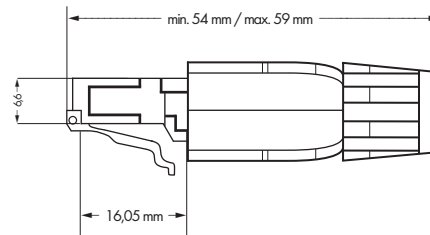
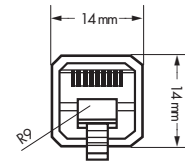
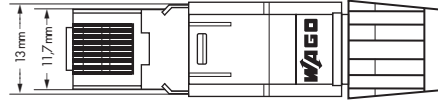
For the first and last station on the bus, the switch must be set to "ON" (terminating resistor activated, outgoing bus line disconnected). Switch setting to "OFF" for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub male and female connectors; 9 poles	750-972	1
Accessories		
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Test pin, 1 mm / 0.039 in Markers	735-500	1

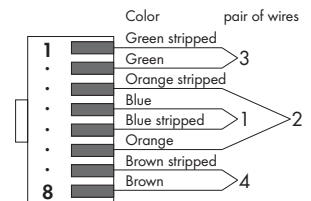
Technical Data	
Double cable input	∅ 8.5 mm
Data transmission rate	corresponding to PROFIBUS specification up to 12 Mbits/s
Power supply	4.75 V ... 5.25 V DC
Max. current consumption (internal)	5 mA
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PC-V0
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

ETHERNET RJ-45 Connector, IP20

ETHERNET 10/100 Mbits/s; for field assembly



Pin assignment TIA-568A



Versatile RJ-45 connector for industrial, office and building wiring.

The compact RJ-45 uses IDC technology for easy field assembly – connection is made without tools.

The connector is compliant with all required standards. Large conductor cross sections can also be connected.

The connector satisfies Category 5e.

Description	Item No.	Pack. Unit
ETHERNET RJ-45 connector, IP20	750-975	1
Technical Data		
General Specifications		
No. of Poles	8	
Contact material	Bronze (CuSn6)	
Contact plating	> 1.2 µm gold over 1.2 µm nickel	
Insulation material	Connector, polycarbonate (UL94-V0)	
Housing material	Plastic, gray, (UL94-V0)	
Mating cycles	min. > 1000	
Wire connection	IDC acc. to 60352-4	
IDC surface treatment	Tin-plated, approx. 5 µm	
Cross sections	solid: 0.13 mm ² ... 0.24 mm ² / AWG 26/1 ... 23/1 stranded: 0.14 mm ² ... 0.36 mm ² / AWG 26/7 ... 22/7	
Admissible insulation Ø	≤ 1.6 mm	
Cable jacket Ø	4.5 mm ... 8.0 mm	
Wire strain relief	With plastic ribs	
Cable strain relief	> 50N	
Shield contacting	Large surface >180° (on cable shield)	
Shield material	Brass (CuZn), hot-dip tinned 3 µm	
Ambient operating temperature	-20 °C ... +70 °C	
Storage temperature	-40 °C ... +70 °C	
Degree of protection	IP20	

Technical Data

Electrical data:

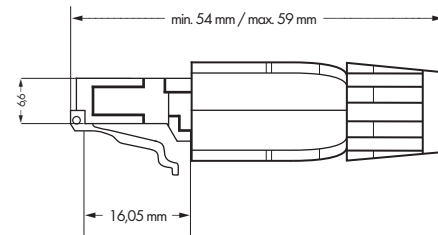
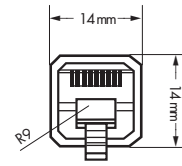
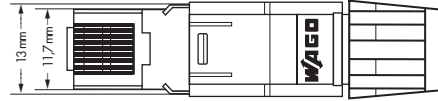
Contact resistance	(wire - IDC) < 1 mΩ; (strand - IDC) < 5 mΩ
Connector shield	< 20 mΩ
Insulation resistance	(100 V) > 500 MΩ
Dielectric strength	(contact-contact) > 1000 V, 1 min.; (shield-contact) > 1500 V, 1 min.
Nominal current	1.75 A / 20 °C
Standards/Specifications	- Basic standard: IEC 60603-7 RJ-45 Category 5 - CD ISO/IEC 11801: 2002 - EN 50173: 2002 - EIA/TIA 568A: 2002

Approvals

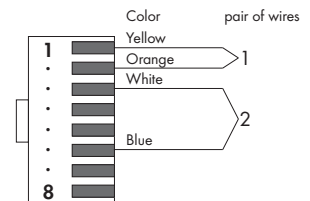
Shipbuilding	see "Approvals Overview" in section 1
UL 508	

10 PROFINET RJ-45 Connector, IP20

PROFINET 10/100 Mbits/s; for field assembly



Pin assignment PROFINET

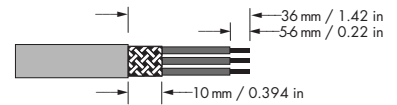
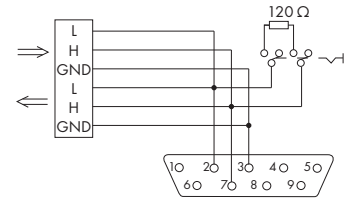
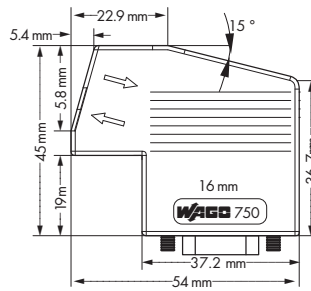


Versatile RJ-45 connector for industrial, office and building wiring

The compact RJ-45 PROFINET connector uses IDC technology for tool-free connections in the field. Both solid and stranded conductors can be connected. The connector is compliant with all required standards and complies with Category 5e.

Description	Item No.	Pack. Unit
PROFINET RJ-45 connector	750-976	1
Technical Data		
General Specifications		
No. of Poles	8	
Contact material	Bronze (CuSn6)	
Contact plating	> 1.2 µm gold over 1.2 µm nickel	
Insulation material	PC (UL94-V0)	
Housing material	PA (UL94-V0)	
Mating cycles	min. > 1000	
Wire connection	IDC acc. to 60352-4	
IDC surface treatment	Tin-plated, approx. 5 µm	
Cross sections	Solid: 0.24 mm ² ... 0.32 mm ² / AWG 23 ... 22 Stranded: 0.26 mm ² ... 0.36 mm ² / AWG 23/7 ... 22/7	
Admissible insulation Ø	≤ 1.6 mm	
Cable jacket Ø	4.5 mm ... 8.0 mm	
Wire strain relief	With plastic ribs	
Cable strain relief	> 50N	
Shield contacting	Large surface >180° (on cable shield)	
Shield material	Brass (CuZn), hot-dip tinned 3 µm	
Ambient operating temperature	-20 °C ... +70 °C	
Storage temperature	-40 °C ... +70 °C	
Degree of protection	IP20	

Technical Data	
Electrical data:	
Contact resistance	(wire - IDC) < 1 mΩ; (strand - IDC) < 5 mΩ
Connector shield	< 20 mΩ
Insulation resistance	(100V) > 1 GΩ
Dielectric strength	(contact-contact) > 1000 V, 1 min.; (shield-contact) > 1500 V, 1 min.
Nominal current	1.75 A / 20 °C
Standards/Specifications	- Basic standard: IEC 60603-7 RJ-45 Category 5 - CD ISO/IEC 11801: 2002 - EN 50173: 2002
Approvals	
UL 508	



The fieldbus connector links a CANopen device to a CANopen line.

The fieldbus connector has the following features:

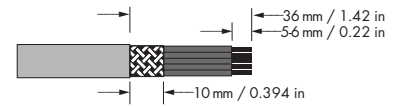
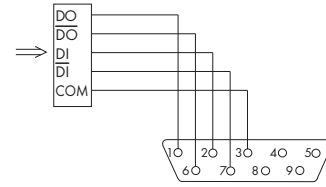
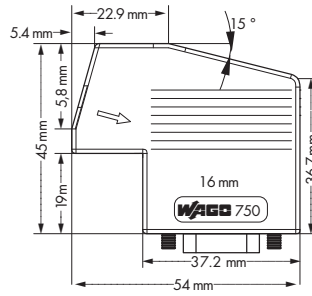
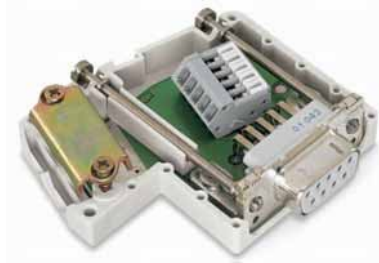
- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the network terminating resistor.

For the first and last station on the bus, the switch must be set to "ON" (terminating resistor activated). Switch setting to "OFF" for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub female connector; 9 poles	750-963	1
Accessories		
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Operating tool, with partially insulated shaft, Type 2, blade (3.5 x 0.5) mm	210-720	1
Operating tool for strain relief Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	735-500	1
Marking possibilities Miniature WSB Quick marking system or WMB Multi marking system		
Approvals		
Shipbuilding	see "Approvals Overview" in section 1	
UL 508		

Technical Data	
Double cable input	min. Ø 4.5 mm/0.177 in / max. Ø 9.5
Data transmission rate	corresponding to CANopen specification
	10 kbaud ... 1 Mbaud
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20
	sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

10 INTERBUS Fieldbus Connector (IN)



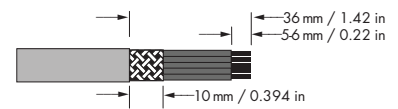
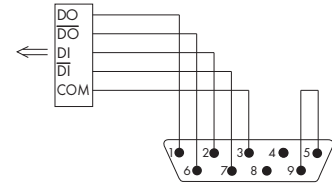
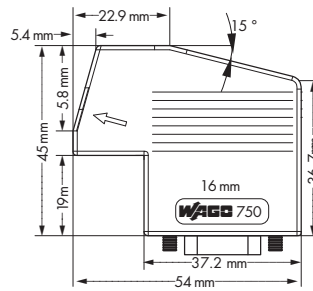
The fieldbus connector links an INTERBUS device to an INTERBUS line.

The fieldbus connector has the following features:

- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.

Description	Item No.	Pack. Unit
Bus connector with D-Sub female connector; 9 poles	750-961	1
Accessories		
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Operating tool, with partially insulated shaft, Type 2, blade (3.5 x 0.5) mm	210-720	1
Operating tool for strain relief Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	735-500	1
Marking possibilities Miniature WSB Quick marking system or WMB Multi marking system		
Approvals		
UL 508		
EN 60079-0, -15		I M2 / II 3 GD Ex nA IIC T4

Technical Data	
Easy wire connection	min Ø 4.5 mm/0.177 in / max Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to INTERBUS specification 2 Mbaud
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic



The fieldbus connector links an INTERBUS device to an INTERBUS line.

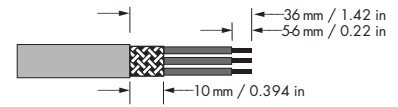
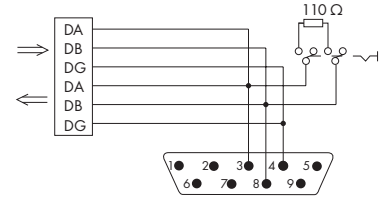
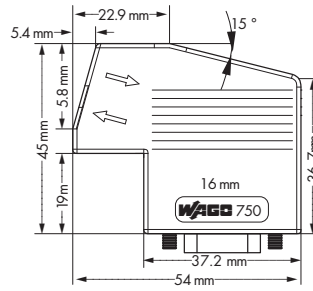
The fieldbus connector has the following features:

- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.

Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	750-962	1
Accessories		
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Operating tool, with partially insulated shaft, Type 2, blade (3.5 x 0.5) mm	210-720	1
Operating tool for strain relief Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	735-500	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		
Approvals		
UL 508		
EN 60079-0, -15 I M2 / II 3 GD Ex nA IIC T4		

Technical Data	
Easy wire connection	min Ø 4.5 mm / 0.177 in / max Ø 9.5 mm / 0.374 in
Data transmission rate	corresponding to INTERBUS specification 2 Mbaud
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic

CC-Link Fieldbus Connector



The fieldbus connector connects a CC-Link device to a CC-Link line. The fieldbus connector has the following features:

- 2 horizontal cable entries. One input and one output.
- Fast and maintenance-free CAGE CLAMP® connection, can be held in the open position with the help of an actuation slide mechanism.
- Externally operable switch to activate and/or deactivate the termination resistor.

For the first and last station on the bus, the switch must be set to "ON" (terminating resistor activated). Switch setting to "OFF" for the intermediate stations on the bus (terminating resistor deactivated).

Description	Item No.	Pack. Unit
Bus connector with D-Sub male connector; 9 poles	750-965	1
Accessories		
Operating tool, with partially insulated shaft, Type 1, blade (2.5 x 0.4) mm	210-719	1
Operating tool, with partially insulated shaft, Type 2, blade (3.5 x 0.5) mm	210-720	1
Operating tool for strain relief Phillips screwdriver (PH 0)		
Test pin, 1 mm / 0.039 in Test wire for soldering	735-500	1
Marking possibilities		
Miniature WSB Quick marking system or WMB Multi marking system		

Technical Data	
Double cable input	min. Ø 4.5 mm/0.177 in / max. Ø 9.5 mm/0.374 in
Data transmission rate	corresponding to CC-Link specification
Fixing screw	UNC- 2 A 4-40
Max. tightening torque	0.4 Nm
Housing material	PA66-105-V2
Housing color	light gray
Degree of protection	IP20
Ambient operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Relative air humidity (no condensation)	95 %
Wire connection	CAGE CLAMP® terminal strip with locking slide (218 Series)
Cross sections	0.08 mm² ... 0.5 mm² / AWG 28 ... 20 sep. connection 0.75 mm² / AWG 18 possible
Stripped length	see graphic



- 1 Stainless steel
- 3 Die-cast aluminum
- 5 Sheet steel with cable entry plates

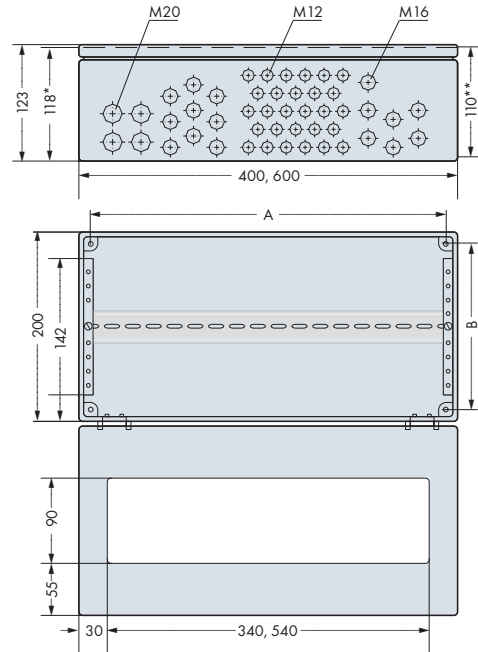
- 2 Sheet steel
- 4 Polyester

Enclosures for the WAGO-I/O-SYSTEM

The growing importance of industrial fieldbus systems in the field of process engineering, for example the chemical industry or food industry, demands enclosures that protect both the system equipment and the products.

WAGO offers enclosures that allow the use of the WAGO-I/O-SYSTEM 750 in installations where severe conditions exist.

The IP65 enclosures come equipped with the WAGO-I/O-SYSTEM 750, meeting these requirements. They have the appropriate number of cable grips with metric or cable entry plates. Each enclosure is available in four different sizes. Delivery time and other types of enclosures are available upon request!



Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Accessories: Pole mounting



Description	Item No.	Pack. Unit	M 12	M 16	M 20	Mounting dimension A	Mounting dimension B	Width	Height	Length	No. of I/O modules
Stainl. steel	850-804	1	28	16	4	376	176	400	123	200	≤ 24
Stainl. steel	¹⁾ 850-804/000-001	1	32	13	2	376	176	400	123	200	≤ 24
Stainl. steel	850-805	1	67	19	4	576	176	600	123	200	≤ 40

Description	Item No.	Pack. Unit
Pole mounting	2 molded rails, 600 mm long and 4 clamping profiles, sheet steel, galvanized; 2 tightening straps, stainless steel 1.4301; 4 angle brackets (pole diameter: 40 - 190 mm; pole dimensions: 50 mm x 50 mm to 150 mm x 150 mm)	850-903 1

Included:

- Stainless steel enclosure 1.4301 streak finish
- With hinged cover 90°, (850-804/000-001: 180°), with cellular rubber gasket made of natural rubber, 2 to 3 quick disconnects
- Hinges made of chromed GdZn (Gadolinium Zinc) with M5 countersunk screws
- Macrolon inspection glass
- Metric cable grips (brass, nickel-plated), **incl. filler plugs**;
M12 cable grip, cable diameter 3–6mm;
M16 cable grip, cable diameter 5–9mm;
M20 cable grip, cable diameter 9–13mm
- 1 DIN 35/7.5 rail

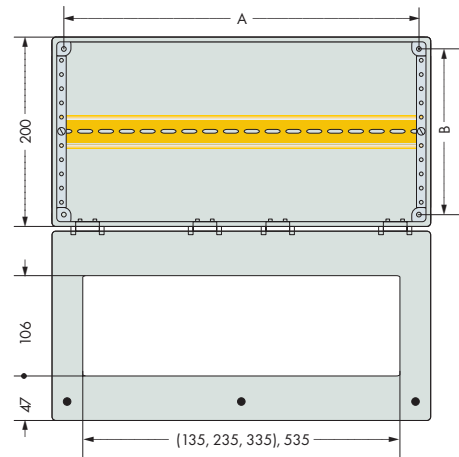
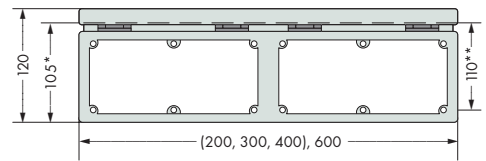
The "number of I/O modules" also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

1) Note:

Arrangement of the cable grips differs from standard enclosures

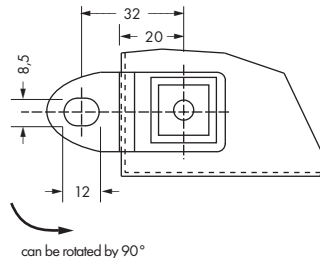
Steel IP65 Enclosures

Fig. 850-817 sheet steel, type 4



Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Accessories: Wall mounting system



Description	Item No.	Pack. Unit	Mounting dimension A	Mounting dimension B	Width	Height	Length	No. of I/O modules	Accessories Flange plates (available separately)
Sheet steel, type 1	850-814	1	160	160	200	120	200	≤ 8	1 x F200 or F200-1 or F200-2 or F204
Sheet steel, type 2	850-815	1	260	160	300	120	200	≤ 16	1 x F300 or F300-1 or F300-2 or F304
Sheet steel, type 3	850-816	1	360	160	400	120	200	≤ 24	2 x F200 or 1 x F200-1 + 1 x F200-2 or 2 x F204
Sheet steel, type 4	850-817	1	560	160	600	120	200	≤ 40	2 x F300 or 1 x F300-1 + 1 x F300-2 or 2 x F304
Sheet steel, type 4 ¹⁾	850-817/ 002-000	1	560	160	600	120	200	≤ 40	2 x F300 or 1 x F300-1 + 1 x F300-2 or 2 x F304

Description	Item No.	Pack. Unit
Wall mounting system, set with 4 mounting angles	850-904	1

Included:

- Powder-coated, sheet steel enclosure
- Box with narrow beveled edge, sturdy gutter profile
- With hinged cover 180° (PA), with foam PU seal, 2 to 3 quick disconnects
- Quick-release fasteners in plastic bushes
- Mounting holes (incl. sealing plugs)
- Large Macrolon inspection glass
- Removable, yellow-chromized interior profiles
- Galvanized carrier rail (contact with enclosure) DIN 35/7.5, adjustable in 12.5mm/0.49in. spacing
- Grounding lug for cover and flanges with quick-release ribbon cable connectors
- Pebble gray, RAL 7032

Accessories:

Fitted and unfitted flange plates, wall mounting

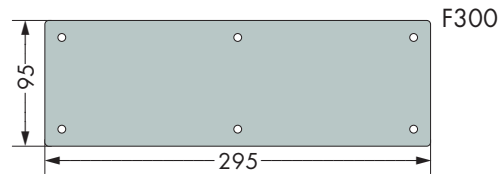
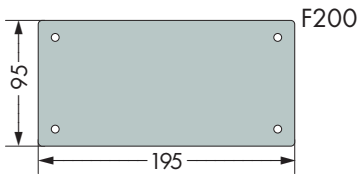
The "number of I/O modules" also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

1) Note:

Enclosure type in RAL 7035

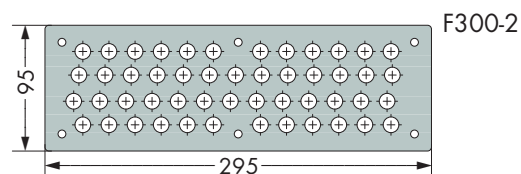
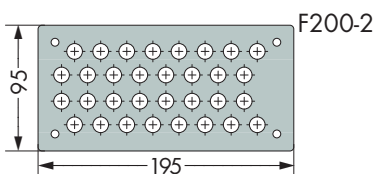
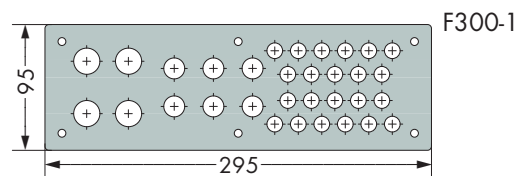
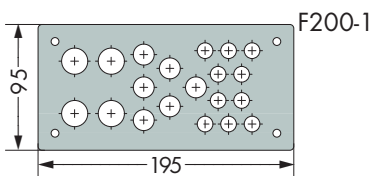
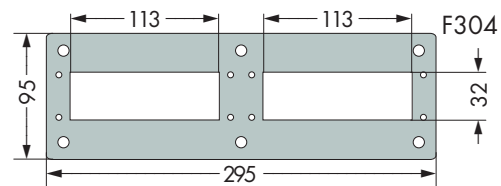
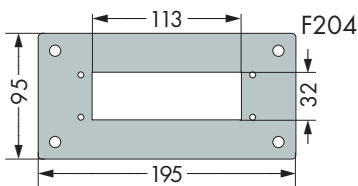
Accessories: Flange Plates and Cable Entry Plates

Flange plates, blind, incl. fixing accessories



Description	Item No.	Pack. Unit
F200, Flange plate, blind	850-818	1
F300, Flange plate, blind	850-819	1

Flange plates with and without cable grips/cable entry plate, incl. fixing accessories



Description	Item No.	Pack. Unit
F204, flange plate without cable entry plate (1 cut-out)	850-818/000-005	1
F304, flange plate without cable entry plate (2 cut-outs)	850-819/000-005	1
Cable entry plate KDP 22 for flange plates F204 + F304 (16 x size 1, 4 x size 2, 2 x size 3)	850-820/000-001	1
Cable entry plate KDP 29 for flange plates F204 + F304 (29 x size 1)	850-820/000-002	1
F200-1, flange plate without cable grips (bore holes: 4 x M20, 6 x M16, 10 x M12)	850-818/000-001	1
F200-1, flange plate with cable grips (cable grips: 4 x M20, 6 x M16, 10 x M12)	850-818/000-002	1
F200-2, flange plate without cable grips (bore holes: 32 x M12)	850-818/000-003	1
F200-2, flange plate with cable grips (cable grips: 32 x M12)	850-818/000-004	1
F300-1, flange plate without cable grips (bore holes: 4 x M20, 6 x M16, 22 x M12)	850-819/000-001	1
F300-1, flange plate with cable grips (cable grips: 4 x M20, 6 x M16, 22 x M12)	850-819/000-002	1
F300-2, flange plate without cable grips (bore holes: 50 x M12)	850-819/000-003	1
F300-2, flange plate with cable grips (cable grips: 50 x M12)	850-819/000-004	1



F200-1 with bore holes and cable grip

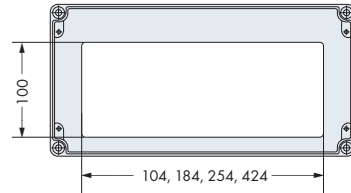
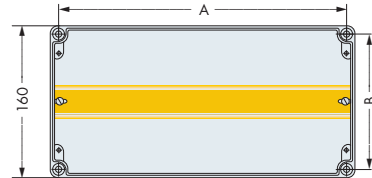
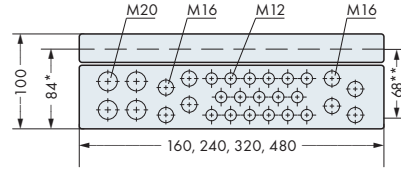
Brass, nickel-plated, incl. filler plugs
 M12 cable grip: cable \varnothing 3 ... 6 mm
 M16 cable grip: cable \varnothing 5 ... 9 mm
 M20 cable grip: cable \varnothing 9 ... 13 mm



F204 with KDF 22 (tool-less cable entry technique in IP65)

Cable entry plate, polyamide
 Size 1: Cable \varnothing 3.0 ... 6.5 mm
 Size 2: Cable \varnothing 5.0 ... 9.2 mm
 Size 3: Cable \varnothing 8.0 ... 12.5 mm

Aluminum IP65 Enclosures



Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Accessories: Pole mounting



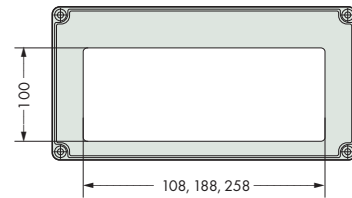
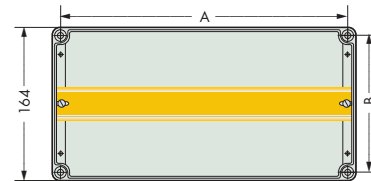
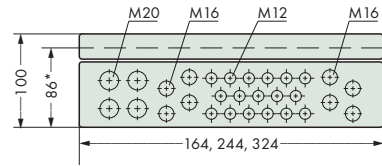
Description	Item No.	Pack. Unit	M 12	M 16	M 20	Mounting dimension A	Mounting dimension B	Width	Height	Length	No. of I/O modules
Aluminium	850-825	1	9		4	142	142	160	100	160	≤ 4
Aluminium	850-826	1	14	4	4	222	142	240	100	160	≤ 11
Aluminium	¹⁾ 850-826/002-000	1	14	4	4	222	142	240	100	160	≤ 11
Aluminium	850-827	1	17	8	4	302	142	320	100	160	≤ 18
Aluminium	¹⁾ 850-827/002-000	1	17	8	4	302	142	320	100	160	≤ 18
Aluminium	850-828	1	35	10	4	462	142	480	100	160	≤ 31
Aluminium	¹⁾ 850-828/002-000	1	35	10	4	462	142	480	100	160	≤ 31
Description									Item No.	Pack. Unit	
Pole mounting	2 molded rails, 600 mm long and 4 clamping profiles, sheet steel, galvanized; 2 tightening straps, stainless steel 1.4301; 4 angle brackets (pole diameter: 40 - 190 mm; pole dimensions: 50 mm x 50 mm to 150 mm x 150 mm)								850-903	1	

Included:

- Aluminum enclosure, G AL Si 12 alloy / DIN 1725
- Stainless steel cover screws, captive
- Inspection glass, incl. attachment panel for customer marking (marking not included in scope of supply)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Metric cable grips (brass, nickel-plated), **incl. filler plugs;**
M12 cable grip, cable diameter 3-6mm;
M16 cable grip, cable diameter 5-9mm;
M20 cable grip, cable diameter 9-13mm
- 1 DIN 35/7.5 rail
- Tongue and groove system, seal with groove in enclosure cover
- Oil and petroleum-resistant neoprene round chord seal
- Grounding link in enclosure
- Pebble gray, RAL 7032

The "number of I/O modules" also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

1) Note:
Enclosure type in RAL 7035



Dimensions in mm
* internal dimension
** from upper-edge of DIN 35 rail

Accessories: Pole mounting



Description	Item No.	Pack. Unit	M 12	M 16	M 20	Mounting dimension A	Mounting dimension B	Width	Height	Length	No. of I/O modules
Polyester	850-834	1	9		4	142	142	164	100	164	≤ 4
Polyester	850-835	1	14	4	4	222	142	244	100	164	≤ 11
Polyester	850-836	1	17	8	4	302	142	324	100	164	≤ 18

Description	Item No.	Pack. Unit
Pole mounting 2 molded rails, 600 mm long and 4 clamping profiles, sheet steel, galvanized; 2 tightening straps, stainless steel 1.4301; 4 angle brackets (pole diameter: 40 - 190 mm; pole dimensions: 50 mm x 50 mm to 150 mm x 150 mm)	850-903	1

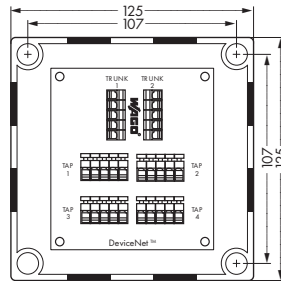
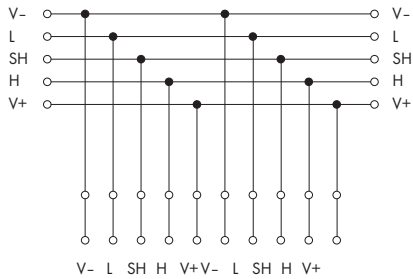
Included:

- Polyester enclosure, glass fiber-reinforced, halogen-free, as V0 version (self-extinguishing)
- Polyamide cover screws, captive
- Inspection glass, incl. attachment panel for customer marking (marking not included in scope of supply)
- Mounting holes (4 mounting channels located outside the sealed enclosure)
- Metric cable grips (polyamide PA 6), **incl. filler plugs;**
M12 cable grip, cable diameter 3-6mm;
M16 cable grip, cable diameter 5-9mm;
M20 cable grip, cable diameter 9-13mm
- 1 DIN 35/7.5 rail
- Oil and petroleum-resistant neoprene round chord seal
- Pebble gray, RAL 7032

The "number of I/O modules" also takes fieldbus couplers and bus end modules into account. This applies to 12mm-wide I/O modules. I/O modules with a width of 24mm count as two I/O modules.

Multi-Port Device Taps

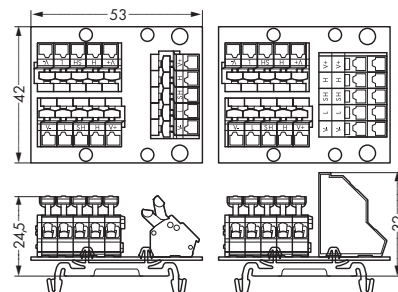
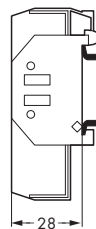
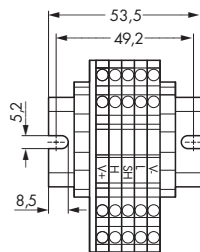
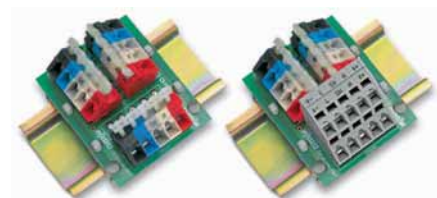
Multi-port device tap
2 trunk cables (input, output)
4 drop cables
IP 65/NEMA 4 enclosure



DeviceNet requires a terminating resistor to be installed at each end of the trunk. The resistor (metal film resistor) requirements are: 121 Ohm ± 1 %, 1/4 W. Termination resistor should not be installed at the end of a drop; only at the two ends of the main trunk, as required.

Description	Item No.	Pack. Unit
Multi-port device tap	4 drop cables 810-900/000-001	1
Technical Data		
CAGE CLAMP® connections for trunk cable	2 x 256-405 (PCB terminal strips)	
CAGE CLAMP® connections for drop cable	4 x 255-405 (PCB terminal strips)	
Enclosure	with knockouts for cable grips	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12	
Cable diameter when using cable grips (see accessories below)		
- trunk cable	Ø 10 ... 14 mm	
- drop cable	Ø 6 ... 12 mm	
Degree of protection (enclosure)	IP 65/NEMA 4	
Accessories		
Test adapter for mini banana plug	810-900/004-000	1
Grips for - trunk cable	Ø 10 ... 14 mm 810-900/001-000	1
Grips for - drop cable	Ø 6 ... 12 mm 810-900/002-000	1
Termination resistor	810-900/003-000	200

	Multi-port device tap 2 trunk cables (input, output) 2 drop cables "open-style"	Multi-port device tap 2 trunk cables (input, output) 2 drop cables "open-style"
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DeviceNet requires a terminating resistor to be installed at each end of the trunk. The resistor (metal film resistor) requirements are: 121 Ohm ± 1 %, ¼ W. Termination resistor should not be installed at the end of a drop; only at the two ends of the main trunk, as required.

Description	Item No.	Pack. Unit	Item No.	Pack. Unit
Multi-port device tap	2 drop cables	810-901/000-001	1	Single tap 810-902/000-001 5 Double taps 810-902/000-002 1

Technical Data

CAGE CLAMP® connections for trunk cable		2 x 5 x 256 Series (PCB terminal strips)
CAGE CLAMP® connections for drop cable		1 x 5 x 256 Series / 1 x 5 x 736 Series (PCB terminal strips)
Terminal blocks	5 x 280-633	
End stops	2 x 249-116	
Mounting rail	DIN 35 rail, slotted as shown	
Cross sections	0.08 mm² ... 2.5 mm² / AWG 28 ... 12	0.08 mm² ... 2.5 mm² / AWG 28 ... 12

Accessories

Accessories	Item No.	Pack. Unit	Item No.	Pack. Unit
Test adapter for mini banana plug	810-901/001-000	1	810-901/001-000	1
Termination resistor	810-900/003-000	200	810-900/003-000	200

10 Shield (Screen) Connecting System

Description and Handling

604



Carrier with grounding foot
45 mm/1.772 in long, busbar 90° to the rail
Item No. 790-113

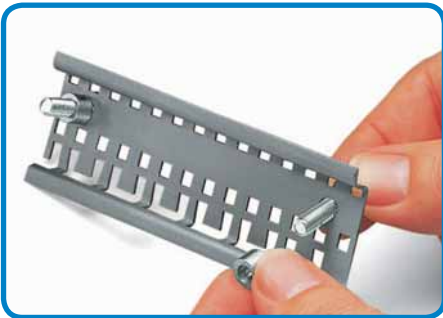


Carrier with grounding foot
45 mm/1.772 in long, busbar parallel to the rail
Item No. 790-114

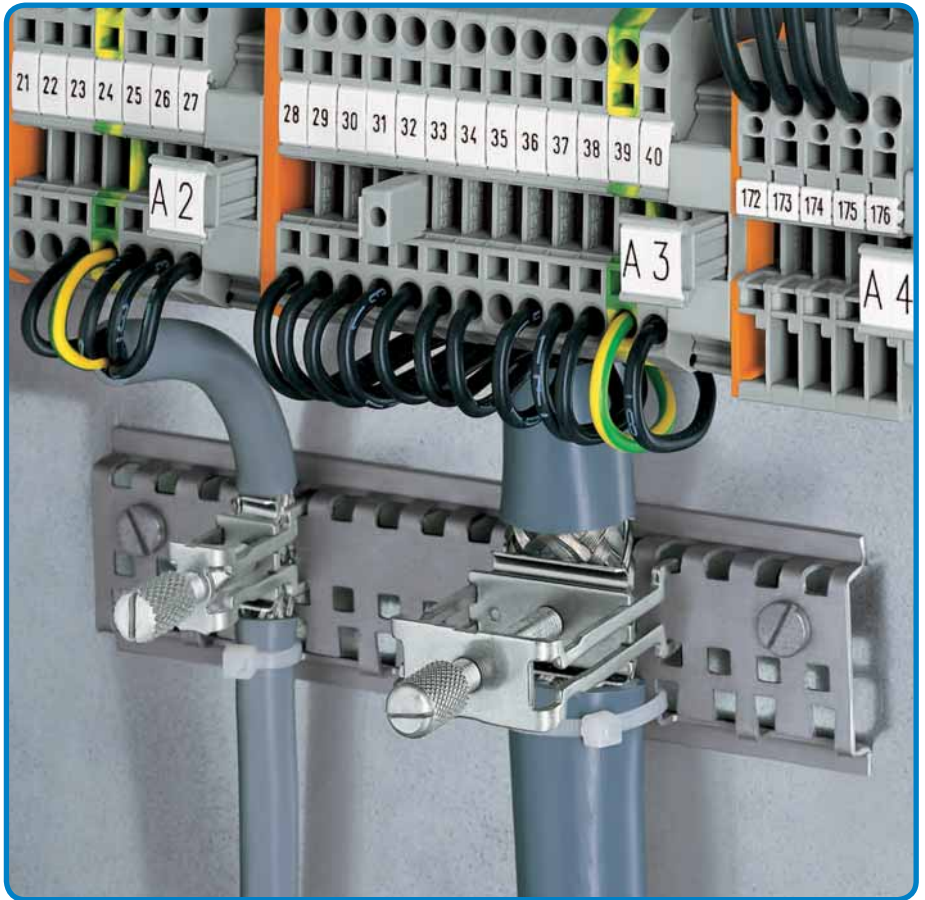


Carrier with 2 grounding feet
125 mm/4.921 in long, busbar parallel to the rail
Item No. 790-115

for all sizes of shield (screen) clamping saddles



Using a stand off
with a special slotted carrier rail



Addition of a shield (screen) clamping saddle.



Tightening/releasing a shield (screen) clamping saddle. To attach the clamping saddle, tighten the knurled screw. To remove, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

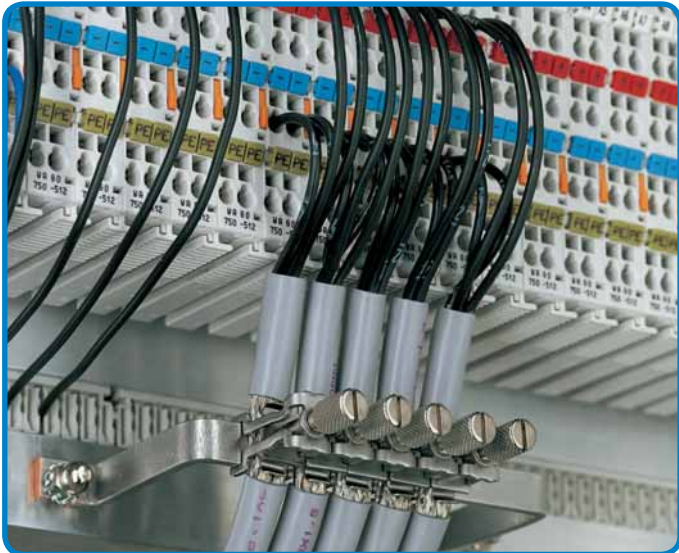
Mounting Options Based on Application



- carrier with grounding foot, busbar parallel to the rail



- isolated mounting carriers for a common shield (screen) reference potential, independent of the housing potential

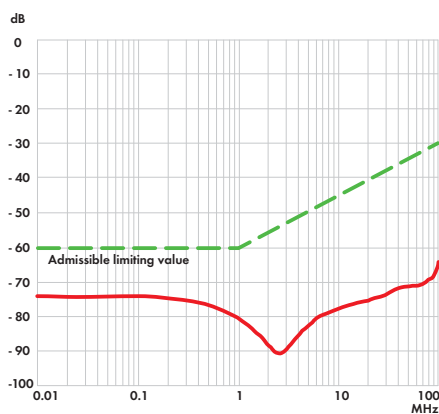


- U-shaped copper busbar 10 mm (0.394 in) x 3 mm (0.118 in)



- snap into any metal plate up to max. thickness 3 mm/0.118 in

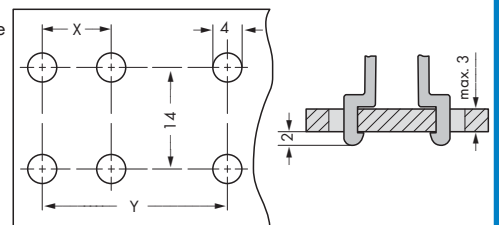
Negative shield (screen) attenuation



Shield (screen) clamping saddle size

Distance X
11 mm 9.5 mm

Distance Y
19 mm 17.5 mm
27 mm 25.5 mm
43 mm 41.5 mm



Hole dimensions for panel mounting

The WAGO shield (screen) connecting system is highly effective because the clamping unit can be brought very close to the unshielded part of the cable. Additionally, the spring material is part of the clamping saddle, giving good electrical connection and compensating for any deformation in the braiding. The system also acts as a partial strain relief.

Shield (Screen) Clamping Saddles and Shield (Screen) Clamps

Shield (screen) clamping saddles



Description	Diameter of Connectable Conductor		Item No.	Pack. Unit
Shield (screen) clamping saddle, incl. knurled screw	11 mm/0.433 in wide	up to 8 mm/0.315 in	790-108	50 (5x10)
	19 mm/0.748 in wide	7 mm/0.276 in to 16 mm/0.63 in	790-116	50 (5x10)
	27 mm/1.063 in wide	6 mm/0.236 in to 24 mm/0.944 in	790-124	50 (5x10)
	43 mm/1.693 in wide	22 mm/0.866 in to 40 mm/1.575 in	790-140	50 (5x10)

Note: Not for ground connections!

Recommended tightening torque: 0.5 Nm

Assembly: The shield (screen) clamping saddle is shipped ready for direct connection to the busbar 10 mm (0.394 in) x 3 mm (0.118 in) or to a drilled mounting plate. After connection, tighten the knurled screw to complete the installation.

Removal: To remove a shield (screen) clamping saddle, unscrew until ratcheted mechanism is released, then slightly tip saddle and remove the clamping saddle.

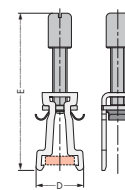
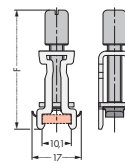
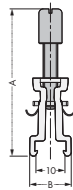
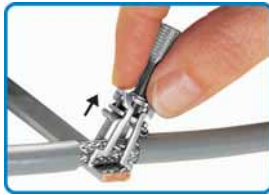
Assembly

Removal

Installation position delivery

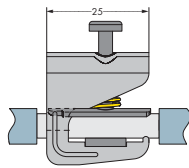
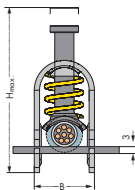
Closed position

Removal position



Item No.	Dimensions in mm					
	A	B	C	D	E	F
790-108	51	15	8	16	55	42
790-116	53	15	16	16	57	45
790-124	78	15	24	16	83	58
790-140	97	15	40	16	100	73

Shield (screen) clamps



Description	Diameter of Connectable Conductor		Item No.	Pack. Unit
Shield (screen) clamps	H _{max} 40 mm, B 10 mm	1.5 mm/0.059 in to 6.5 mm/0.256 in	791-107	50
	H _{max} 47 mm, B 17 mm	5 mm/0.197 in to 11 mm/0.434 in	791-111	50
	H _{max} 63 mm, B 23 mm	10 mm/0.394 in to 17 mm/0.670 in	791-117	50
	H _{max} 78 mm, B 30 mm	16 mm/0.631 in to 24 mm/0.946 in	791-124	50

Note: Not for ground connections!

Carrier with grounding foot



Description	Item No.	Pack. Unit
Carrier with grounding foot bar 90° to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot - Cu with tin plating, 45 mm/1.774 in long	790-113	25
Carrier with grounding foot bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot - Cu with tin plating, 15 mm/0.591 in long	790-110	25
Carrier with grounding foot bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot - Cu with tin plating, 25 mm/0.986 in long	790-112	25
Carrier with grounding foot bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot - Cu with tin plating, 45 mm/1.774 in long	790-114	25
Carrier with 2 grounding feet bar parallel to the rail, 10 mm (0.394 in) x 3 mm (0.118 in), bar a. foot - Cu with tin plating, 125 mm/4.929 in long	790-115	25

Suitable shield (screen) clamping saddle or shield (screen)

clamps for carrier with grounding foot 790-110 = 790-108;

Carrier with grounding foot 790-112 = 790-108, 790-116, 791-111, 791-117;

Carrier with grounding foot 790-114 = 790-108, 790-116, 790-124, 790-140, 791-107, 791-111, 791-117, 791-124

Carrier rail



Stand off



Shield termination



Description	Item No.	Pack. Unit
Carrier rail special slotted, 1000 mm/3'3" long, Cu with tin plating, special lengths on request	790-145	1
Stand off for special slotted carrier rail, use M 5 size screw	790-144	200 (2x100)
Shield termination including cable tie for shield diameter 5 mm /0.197 in to 10 mm /0.394 in 55 mm/2.169 in long	709-350	100 (4x25)
150 mm/ 5.914 in long	709-352	100 (4x25)

Straight busbar



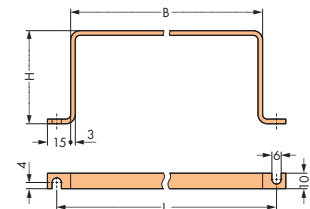
Isolated mounting foot



Isolated mounting foot

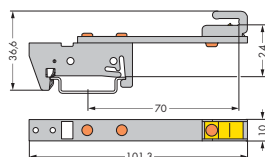


U-shaped busbar

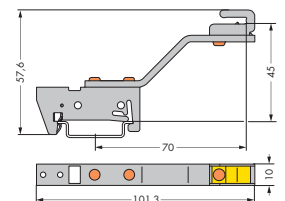


Description	Item No.	Pack. Unit
Straight busbar, 10 mm (0.394 in) x 3 mm (0.118 in), bar - Cu with tin plating 1000 mm/3'3" long	210-133	20 (20x1)
30 mm/1.181 in long	790-133	20 (20x1)
50 mm/1.969 in long	790-134	20 (20x1)
Isolated mounting foot for busbar, with standard screw M 4 x 8 mm	790-100	50 (2x25)
Isolated mounting foot for busbar, with sheet metal screw (3.5 x 9) mm	790-101	50 (2x25)
U-shaped busbar, 10 mm (0.394 in) x 3 mm (0.118 in), Cu with tin plating Dimensions (W x H x L) mm; 63 x 60 x 83	790-190	25 (5x5)
Dimensions (W x H x L) mm; 100 x 60 x 118	790-191	25 (25x1)
Dimensions (W x H x L) mm; 63 x 35 x 83	790-192	25 (5x5)
Dimensions (W x H x L) mm; 100 x 35 x 118	790-193	25 (25x1)

Busbar carrier



Busbar carrier, angulate



Description	Item No.	Pack. Unit
Busbar carrier for busbars, 10 mm (0.394 in) x 3 mm (0.118 in) - Cu with tin plating	790-300	10
Busbar carrier, angulate for busbars, 10 mm (0.394 in) x 3 mm (0.118 in) - Cu with tin plating	790-301	10

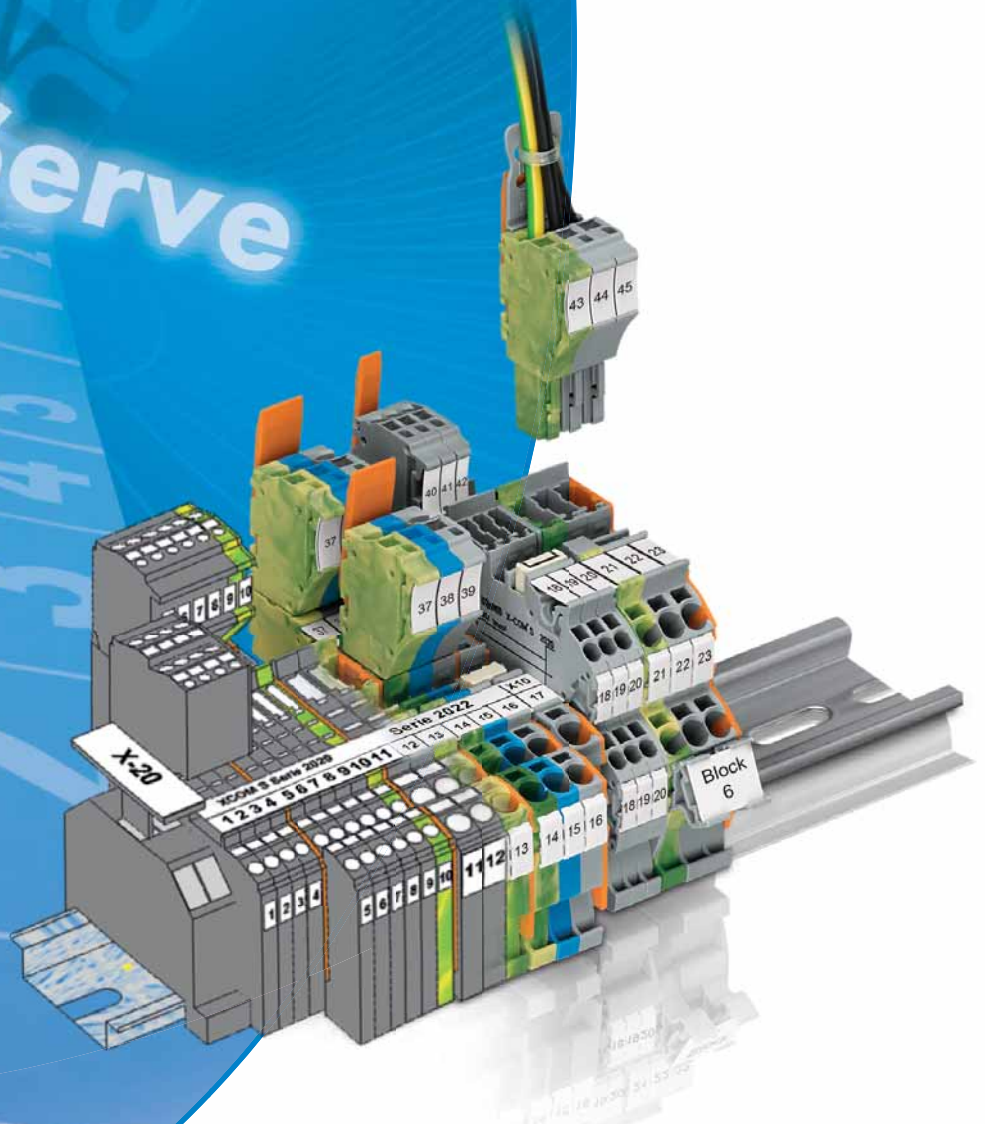
WAGO ProServe®

Designing, Assembling and Marking

ProServe

Motor 1 Motor 2

1 2 3 4 5





WAGO-I/O-SYSTEM 750



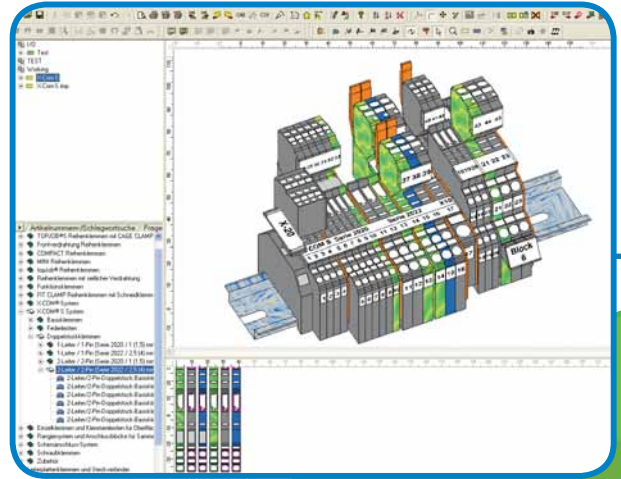
● The advantages of ProServe are at your disposal every day. With unique features such as AutoAudit accuracy checking, ProServe performs much of the work for you, saving time and money.

Immediate access to professional and sophisticated features allows for error-free applications, greater flexibility in your daily business and better customer service. With 50 years of WAGO expertise at your disposal, put ProServe to work for you in your next application.

Benefits:

- Quick design
- Quick ordering
- User-friendly
- Extensive and user-specific documentation
- Network compatibility
- Different software products on a single CD (smartDESIGNER, productLOCATOR, smartSCRIPT)
- A price list is included

...all for free!



ProServe® – Planning

at a New Level



smartDESIGNER

productLOCATOR



smartDESIGNER and productLOCATOR

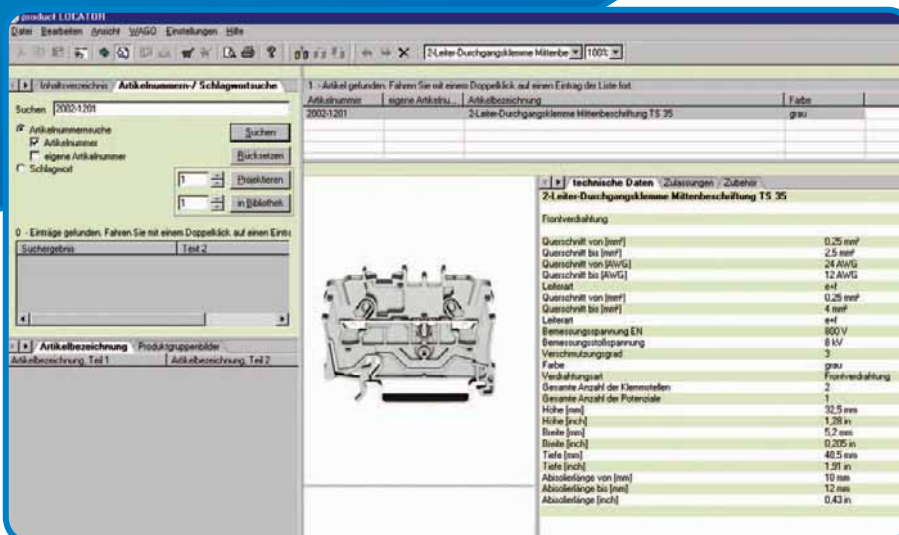
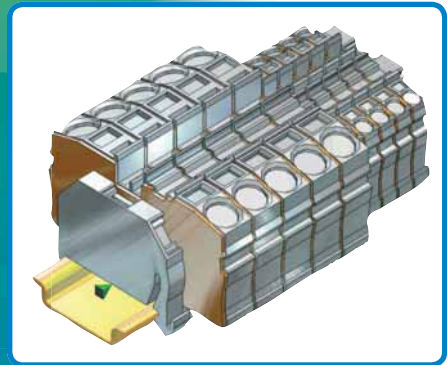
- Interfaces to CAE and M-CAD programs
- Output in PDF and HTML
- Different search functions provide quick item selection
- Creation of part lists including product pictures and custom part numbers
- Complex rail assemblies can be easily designed in 3D
- Easy creation of custom part numbers
- Creation of custom items to design third-party products
- Default parts (favorites) can be defined individually, streamlining design time
- Intelligent, user-optimized accuracy check features
- 18 languages available
- 25.000 sales items

Marking:

- Direct creation and output of marking data to plotter or thermal transfer printer

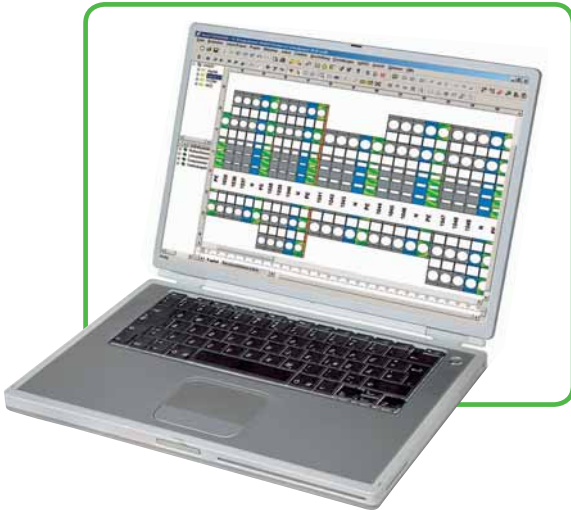


STEP – IGES – DXF – DWG



ProServe: Planning at a New Level

Configuration and marking of rail assemblies and I/O nodes, stand-alone or combined with CAE systems.



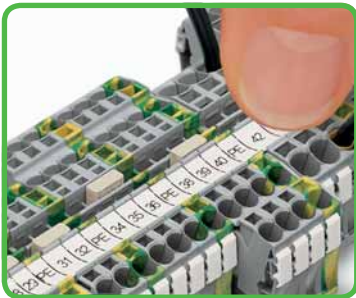
Designing:

Both custom rail assembly and marking can be easily designed via WAGO ProServe® Software.



Snapping:

The marking strip is snapped into the center marker receptacle profile.



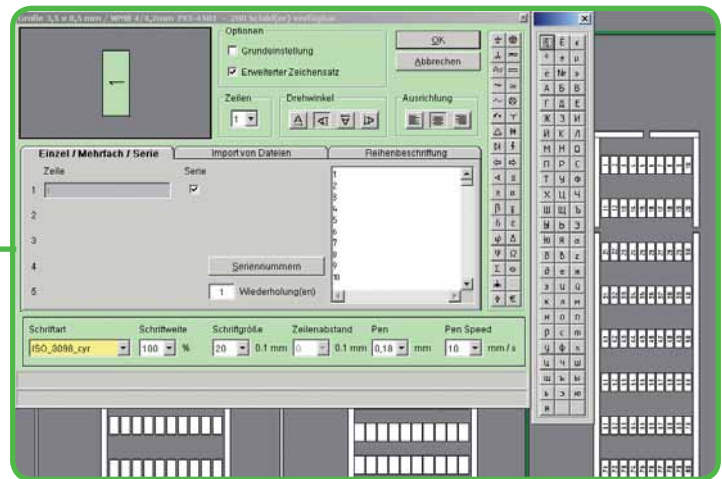
Combining marking strips with individual WMB markers



Alternative: Miniature WSB markers can be printed on a plotter

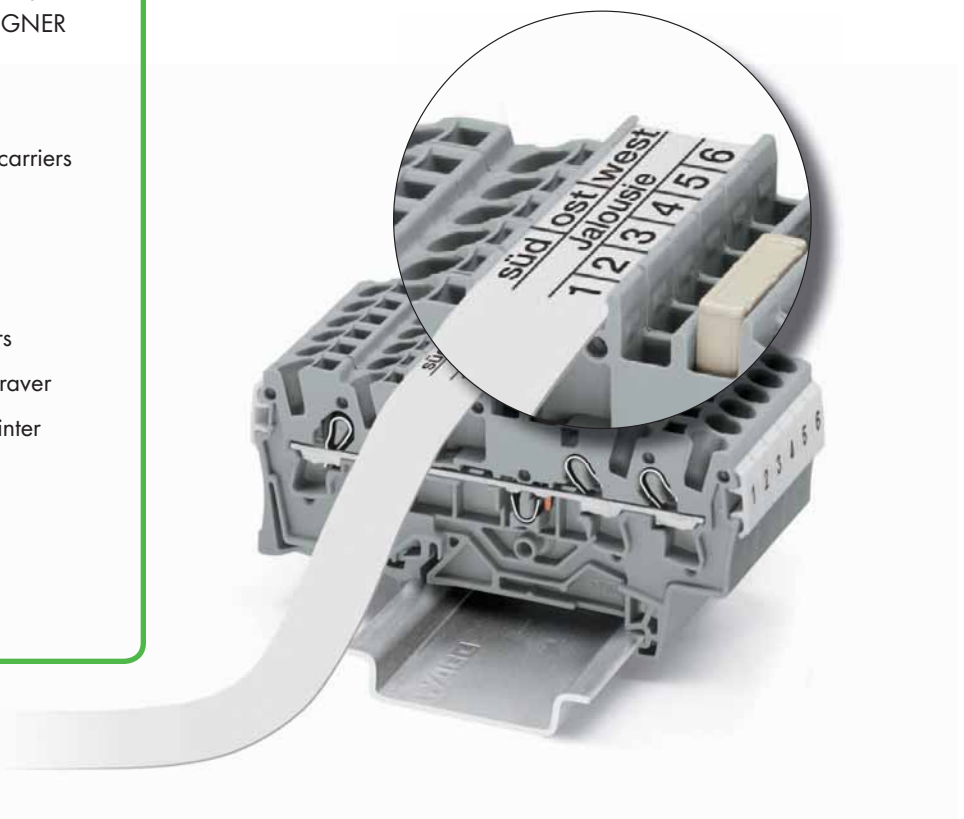


WMB Inline markers on continuous reel can be used in three positions: In the center and on each side



smartMARKING

- Extensive import functions from CAE systems, MS Office and WAGO smartDESIGNER
- WYSIWYG marking
- Automatic plotter calibration
- Extensive library including marker carriers
- Symbol library
- Text length verification
- Several languages available
- Output of East European characters
- Fully compatible with EG 450 Engraver
- Direct output to thermal transfer printer
- Creation of custom markers for engraver/plotter



Printing:

Marking strips (2009 Series) or WMB Inline markers on continuous reel are printed on a thermal transfer printer.

Three-Line Printing:

... for clear marking.
This makes it immediately clear which function corresponds with each terminal block.

Thermal Transfer Printers

WAGO TP 343 and TP 298



Description	Item No.	Pack. Unit
	258-343	1
TP 343 Thermal Transfer Printer		
Resolution 300 dpi, incl. ProServe software; for 2009 and 709 Series marking strips		
Technical Data		
Printing method	Thermal/thermal transfer	
Printhead system	Thin-film transfer head	
Print resolution	300 dpi	
Print speed	up to 76 mm/sec.	
Print width	6 - 104 mm (0.25" - 4.09")	
Print length	up to 990 mm (39")	
RAM memory	2 MB DRAM, 1 MB Flash	
Interfaces	Parallel Centronics (LPT), RS-232 (COM), USB, ETHERNET 10/100 Base T	
Sensors	Label sensor (material end, foil end, bottom reflective sensor)	
Other	2 cardboard cores (104 mm) for ink ribbon rewinder; operating instructions in German and English	
Power supply	Universal power supply unit	
Operating voltage	100 V ... 240 V AC / 50 Hz ... 60 Hz	
Dimensions (mm) W x H x L	230 x 200 x 290 (length with unwinder: approx. 450 mm)	
Enclosure	Double-walled plastic	
Weight	1000 g	
Safety approvals	CE, FCC Class A, UL, CUL, TUV	
Accessories	1 x USB cable; 1 x ETHERNET cable; unwinder set; marking strips (1 x 2009-110); ink ribbon (1 x 258-145)	

Description	Item No.	Pack. Unit
	258-298	1
TP 298 Thermal Transfer Printer		
Resolution 300 dpi, incl. ProServe software and 258-178 print roller for WMB Inline and 2009 and 709 Series marking strips		
Technical Data		
Printing method	Thermal/thermal transfer	
Printhead system	Thick-film	
Print resolution	300 dpi	
Print speed	100 mm/sec.	
Print width	108.4 mm	
See-through/reflective sensor	standard	
Processor 32 Bit ColdFire/clock rate	64 MHz	
RAM memory	8 MB RAM	
Program memory	4 MB Flash	
Slot for memory card	CompactFlash Type 1	
Interfaces	ETHERNET 10/100 Base T, RS-232 (COM), USB	
Accessories (optional)	Cutter, external unwinder, external rewinder, CompactFlash memory card	
	16-512 MB	
Operating voltage	100 V ... 240 V AC / 50 Hz ... 60 Hz, PFC	
Dimensions (mm) W x H x L	242 x 274 x 446	
Weight	10000 g	
Operating temperature	10°C ... 35°C	
Rel. humidity	30 % ... 85 %	
Safety approvals	CE, FCC class 1	
Accessories	1 x USB cable; 1 x serial cable; marking strips (1 x 2009-110); ink ribbon (1 x 258-149)	

Application table for ink ribbon/markings accessories/printer

Item No.	Width	Ink Ribbon	Marking Accessories	Printer
258-143	60 mm	resin/wax	Labels (paper)	all types
258-144	100 mm	resin/wax	Labels (paper) for cable marking 211-155 / 211-156	all types
258-145	38 mm	resin	2009 Series marking strip 2009-xxx 709 Series marking strip 709-xxx WMB Inline (not printable with TP 343)	TP 298 & TP 343
258-149	50 mm	resin	Marking Strip Series 2009 2009-xxx Marking Strip Series 709 709-xxx WMB Inline (not printable with TP 343)	TP 298+
258-150	76 mm	resin	Marking cards for wire marking 211-111 and 211-121 Labels (polyester) up to 76 mm	all types
258-157	100 mm	resin	Labels (polyester) up to 100 mm	all types

Accessories

Accessories for 3M PL300 Mobile Printer

Marking strips



Self-adhesive marking



Self-adhesive marking



Heat shrink tube



Heat shrink tube



Description		Item No.
Marking strips	white, 11 mm width x 5.5 m	211-611
Adhesive strips	white, 9 mm width x 7 m	211-612
Adhesive strips	white, 19 mm width x 7 m	211-613
Heat shrink tube	white, 9 mm width x 1,5 m	211-614
Heat shrink tube	white, 19 mm width x 1.5 m	211-615

Accessories for TT Printer

Ink ribbon for labels



Ink ribbon for marker strips



Description		Item No.
Ink ribbon for marker strips and WMB Inline	resin, 38 mm x 300 m	258-145
	resin, 50 mm x 300 m	258-149
Ink ribbon for cable marking	76 mm wide x 300 m	258-150
	100 mm wide x 300 m	258-157
Ink ribbon for labels	resin/wax, width 60 mm x 300 m	258-143
	resin/wax, width 100 mm x 300 m	258-144

All ink ribbons are suitable for TP 298 and TP 343 printers. For detailed ordering information, please refer to the "Application table for ink ribbon/marketing accessories/printer"

External coil mounting system



Cutter TP 298



Spare roller TP 298



Description		Item No.
External coil mounting system	for 8,000 WMB Inline markers (2009-135)	258-169
Cutter TP 298		258-161
Spare roller TP 298 for labels	(up to device series no. 40,000)	258-162
Spare roller TP 298 for labels	(from device series no. 40,000)	258-177
Spare roller TP 298 for WMB Inline	(device series no. 40,000)	258-166
Spare roller TP 298 for WMB Inline	(from device series no. 40,000)	258-178
Carrying case for TP 298		258-171
Carrying case for TP 343		258-342
Retractable handle for carrying case TP 298 / TP 343		258-173

WMB Inline



Marking strips



Description		Item No.
WMB Inline, pitch 4 mm, stretchable, 4 mm ... 4.2 mm, on roll	white, 2,000 markers	2009-114
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on reel	white, 1,500 markers	2009-115
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on reel	white, 8,000 markers	2009-135
Marking strips for TOPJOB®S Series, white, plain, 11 mm wide	50 m coil	2009-110
Marking strips for 870, 869, 862, 270 Series	50 m coil	709-178
white, plain, 7.5 mm wide		
Marking strips for 870, 869, 862, 270 Series, transparent, plain, 7.5 mm wide	50 m coil	709-177

Marker card (12 mm) for TT Printer



Marker card (12 mm) for plotters



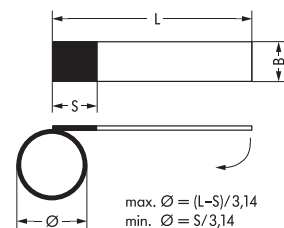
Labels on roll



Labels on DIN A4 sheets



Dimensions of self-laminating label



Description		Item No.
Marker card for thermal transfer printer	12 mm	211-121
	23 mm	211-111
Marker card for plotter (258-370 carrier plates are required for plotting)	12 mm	211-120
	23 mm	211-110
Cable tie marker	25 x 10 mm, white, 3,500 pieces per roll	211-135
Labels on roll for thermal transfer printer	Marker surface: "S"=8 mm, "B"=18 mm, "L"=35 mm for max. 9 mm cable Ø, 9,000 labels per roll	211-155
	Marker surface: "S"=13 mm, "B"=23 mm, "L"=51 mm for max. 12 mm cable Ø, 5,000 labels per roll	211-156
Wire marker for thread-on mounting	for 0.75 - 1.5 mm ² , 2,000 markers per roll	211-161
	for 2.5 - 6 mm ² , 2,000 markers per roll	211-162
Labels on DIN A4 sheets for laser printer (258-383 carrier plates are required for plotting)	Marker surface: "S"=9 mm, "B"=17 mm, "L"=35 mm for max. 8 mm cable Ø, 70 labels per roll	211-150
	Marker surface: "S"=13 mm, "B"=21 mm, "L"=56 mm for max. 14 mm cable Ø, 32 labels per roll	211-151
Marking sleeve 12 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm ² ... 1.5 mm ²	211-112
	2.2 mm ... 4.5 mm or 0.5 mm ² ... 4 mm ²	211-113
	3.7 mm ... 5.9 mm or 2.5 mm ² ... 6 mm ²	211-114
	4.8 mm ... 7.5 mm or 6 mm ² ... 16 mm ²	211-115
Marking sleeve 23 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm ² ... 1.5 mm ²	211-122
	2.2 mm ... 4.5 mm or 0.5 mm ² ... 4 mm ²	211-123
	3.7 mm ... 5.9 mm or 2.5 mm ² ... 6 mm ²	211-124
	4.8 mm ... 7.5 mm or 6 mm ² ... 16 mm ²	211-125
Marking sleeve for cable tie	23 mm, for 10 mm ² wires and larger	211-129
Cable tie (2.5 x 100) mm		807-090/101-100
Label for I/O marking (258-371 carrier plates are required for plotting)	Plotter, 12 x 7 mm	211-211
Marking strips	15 mm, white 50 m roll	210-701
Receptacle for marking strips	transp. 1 m long	709-120
Carrier through element	adjustable in height	709-118
Carrier end element	adjustable in height	709-119
Continuous label	3 mm, white 12 lengths at 25 m	210-732
Label roll	70 x 100 mm, white 500 labels/reel	210-703
	70 x 100 mm, silver 500 labels/reel	210-704
	6 x 15 mm, white 3000 labels/reel	210-705
	6 x 15 mm, yellow 3000 labels/reel	210-705/000-002
	9 x 15 mm, white 3000 labels/reel	210-706
	9 x 15 mm, yellow 3000 labels/reel	210-706/000-002
	8 x 20 mm, white 3000 labels/reel	210-707
	8 x 20 mm, yellow 3000 labels/reel	210-707/000-002
	9.5 x 25 mm, white 3000 labels/reel	210-708
	35 x 5 mm, white, 4,000 labels/roll	210-710

More labels at www.marschall-pw.de

Plotters with EG 450 Engraver

IP 350 A3 Plotter / IP 350 A4 Plotter



Description	Item No.	Pack. Unit
IP 350 A3 Plotter	258-350	1
incl. ProServe software		
IP 350 A4 Plotter	258-451	1
incl. ProServe software		
Technical Data		
Plotting area	440 mm x 305 mm (258-350) 220 mm x 305 mm (258-451)	
Interfaces	parallell (centronics); USB 1.1	
Language	based on HP-GL 7475A	
Data buffer	16 MB	
Speed	max. 400 mm/sec.	
Drive system	Two-phase stepper motor	
Pen storage unit	max. 4 pens (optimum seal)	
Plotter pen	Special plotter pens with HP receptacle	
Addressable resolution	0.01 mm	
Repeat accuracy	0.05 mm	
Repeatability after changing the pen	0.05 mm using high-quality pens	
Power supply	via separate desktop power supply unit equipped with exchangeable supply line	
Operating voltage	120 V ... 240 V AC / 50 Hz ... 60 Hz	
Voltage range	90 V ... 264 V AC	
Current consumption (internal)	0.3 A max. at 220 V AC	
Dimensions (mm) W x H x L	125 x 660 x 440	
Weight	11,069 g	
Operating temperature	10°C ... 35°C	
Rel. humidity	35 % ... 75 %	
Safety approvals	acc. to UL-UL1950 CSA-950/VDE EN60950	
Immunity to interference	acc. to FCC Class B FCC Part 15 and VDE Class B EN 55022	

Description	Item No.	Pack. Unit
EG 450 Engraver	258-450	1
Extension module for IP 350 Flat Plotter. Consists of "EC 450" Control Unit and "VC 450" Vacuum Cleaner, including graver 0.3 mm + 0.4 mm		
Technical Data		
1. Engraving spindle		
Speed	min. 5,000 rpm, max. 50,000 rpm	
Torque	6 Ncm	
Frequency	83 - 830 Hz	
Energy consumption	max. 60 W	
Collets	3 mm shaft diameter	
Clamping mechanism	Head clamping	
Run-out with collet	0.03 mm	
Motor type	three-phase, asynchronous, brushless	
Enclosure	Aluminium	
Clamping diameter	25 mm	
Ball bearing type	permanent lubrication, double	
Cooling	Internal air via integrated fan	
Application	Engraving only	
Guaranteed bearing operation	min. 1,000 hrs if handled properly	
Notice: Never clean engraving spindle using compressed air, do not use lubricants when engraving.		
2. VEB 500 Control Unit		
Operating voltage	100 V ... 240 V AC / 50 Hz ... 60 Hz	
3. VC Vacuum Cleaner		
Vacuum cleaner bag	Type Y98	
General Specifications		
Dimensions (mm) W x H x L	Control unit + vacuum cleaner (an top of each other): 240 x 290 x 315	
Weight	Engraving spindle + control unit + vacuum cleaner + accessories: 8,000 g	

Flatbed Plotter

IP200



- Rugged, aluminum construction
- Plotting area, A4: 220 mm x 305 mm
- Easy replacement of marker receptacles
- Auto calibration
- Up to 10.5 mm wide markers can be plotted
- Special solutions for up to 15 mm wide markers are available
- Universal power supply, 100-240 VAC
- Neat plotting right from the very first marker
- PC interfaces: USB ports
- Command language: HPGL
- IP200 firmware can be updated via PC and Internet

Description	Item No.	Pack. Unit	Technical Data
IP200 Flatbed Plotter	258-200	1	Plotting area 200 mm x 305 mm
			Interfaces USB Level 1.1
			Language Based on HP-GL 7475A
			Data buffer 16 MB
			Speed max. 40 mm/s
			Drive system Two-phase step motor
			Plotter pen Special plotter pens with HP receptacle
			Addressable resolution 0.01 mm
			Repeat accuracy 0.05 mm
			Repeat accuracy after pen change 0.05 mm with optimun pen
			Power supply Separate power supply with exchangeable plug adapters
			Operating voltage 100 V ... 240 V AC / 50 Hz ... 60 Hz
			Current consumption (internal) 0.7 A max. at 220 V AC
			Dimensions (mm) W x H x L 125 x 440 x 440
			Operating temperature 10 °C ... 35 °C
			Rel. humidity 35 % ... 75 %
			Safety approvals EN 60950-1
			Immunity to interference EN 55022 B
			Included: IP200 Plotter, power supply, USB data cable, operating manual + ProServe software

WAGO plotter pen
(disposable)
0.18 mm line width



WAGO plotter pen
(disposable)
0.25 mm line width



WAGO plotter pen
(disposable)
0.35 mm line width



Service kit



Graver set



Description		Item No.
WAGO plotter pen	0.18 mm line width	258-226
	0.25 mm line width	258-227
	0.35 mm line width	258-228
	0.50 mm line width	258-229
WAGO ink cartridges	black, for permanent marking, not refillable (5 x 1 ml)	258-141
WAGO plotter pen (disposable)	0.18 mm line width	258-326
	0.25 mm line width	258-327
	0.35 mm line width	258-328
	0.50 mm line width	258-329
Cover		258-146
Service kit	(4 spare pen stations)	258-147
WAGO cleaning set	suitable for cleaning all EKS Pens	258-139
WAGO pen cleaner		258-140
Calibration aid		258-453
Graver set	0.2/0.3/0.4/0.5/0.7/1.0 mm line width	258-452
Graver	0.2 mm graver width	258-452/000-002
	0.3 mm graver width	258-452/000-003
	0.4 mm graver width	258-452/000-004
	0.5 mm graver width	258-452/000-005
	0.7 mm graver width	258-452/000-007
	1.0 mm graver width	258-452/000-010
Vacuum cleaner bag for Engraver EG 450		258-457
Graver (stainless steel)	0.2 mm graver width	258-458/000-002
	0.4 mm graver width	258-458/000-004
WAGO plotter pen (disposable, black)	0.18 mm line width, for inside marking only	258-426
	0.25 mm line width, for inside marking only	258-427
	0.35 mm line width, for inside marking only	258-428
	0.50 mm line width, for inside marking only	258-429
WAGO plotter pen (disposable, red)	0.18 mm line width, for inside marking only	258-426/000-005
	0.25 mm line width, for inside marking only	258-427/000-005
	0.35 mm line width, for inside marking only	258-428/000-005
	0.50 mm line width, for inside marking only	258-429/000-005

WAGO plotter pens are suitable for any kind of smooth surfaces. No additional adapter is required.

Marker card carrier plates for plotter IP 350



Description		Item No.
Carrier plates for marker cards	WSB 5 mm/0.197 in (209-501)	258-361
	WSB 4 mm/0.157 in (209-701)	258-362
	Miniature WSB (248-501)	258-363
	WCB (249-200)	258-366
	WMB 5/5.2 mm (793-5501); WMB 4/4.2 mm (793-4501)	258-368
	T-marking strips (209-290)	258-365
	Marker strips (2009-110 + 2009-130 and 790-...)	258-410
	WTB (799-501)	258-367
	Group marking carriers (209-112)	258-364
	Marker tags (209-199 + 209-200)	258-369
Carrier plates for murrplastik	MP-400; KS 4/12, 4/18, 4/23, 4/30	258-370
	MP-401; KES, KLG, KMR, KPX, KS 15x17/27/49/67, KSA, KSF, KSI, KSK, KSO, KSS, KTE, KWI, SKS, WGO, KAB	258-371
	BS 5/6	258-397
	KSEX; 10/500	258-470
	KPX	258-396
	KSEX; 18/500	258-471
Universal engraver and plotter carrier plates	90 mm x 100 mm x 3	258-454
	60 mm x 100 mm x 4	258-455
	30 mm x 100 mm x 9	258-456
Carrier plates for Phoenix	ZBM	258-372
	ZB	258-373
	ZBN	258-374
	ZBFM	258-375
	BNZ	258-377
	BN-ZB	258-378
	SS-ZB	258-379
	LBHZ	258-380
	PAB	258-381
GPE	258-382	
Universal engraver and plotter carrier plates	DIN A4	258-383
	DIN A3	258-472
Carrier plates for Weidmüller	MC Universal	258-387
	MC SF4-6	258-388
Carrier plates for Wörtz/Allen Bradley	Universal	258-389
Carrier plates for Möller	XB M22-XST	258-390
Carrier plates for Partex	PA+1	258-391
	PA+2	258-392
Carrier plates for ABB Entelec	Universal	258-394
	Siemens SPS	258-473
Carrier plates for Conta-Clip	Universal	258-398
	PK2 PVC	258-393
	PA+ 2	258-399

Marking System

WMB Multi marking system



Miniature quick marking card



Colored marker cards



WMB Inline



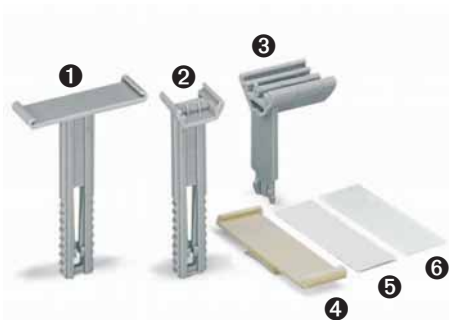
Description		Item No.	Item No.	Pack. Unit
WMB Multi marking system for terminal block width 3.5 mm	plain	793-3501		5 cards
WMB Multi marking system for terminal block width 4 - 4.2 mm, stretchable 4 - 4.2 mm	plain	793-4501		5 cards
WMB Multi marking system for terminal block width 5 - 17.5 mm, stretchable 5 - 5.2 mm	plain	793-5501		5 cards
Miniature WSB quick marking system for terminal block width 5 - 17.5 mm	plain	248-501		5 cards
WSB Quick marking system for module width 5 - 17.5 mm	plain	209-501		5 cards
Item number suffix for colored marker cards	yellow		.../000-002	5 cards
	red		.../000-005	5 cards
	blue		.../000-006	5 cards
	gray		.../000-007	5 cards
	orange		.../000-012	5 cards
	light green		.../000-017	5 cards
	green		.../000-023	5 cards
	violet		.../000-024	5 cards
WMB Inline, pitch 4 mm, stretchable, 4 mm ... 4.2 mm, on roll	white, 2,000 markers	2009-114		
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on roll	white, 1,500 markers	2009-115		1 Coil
WMB Inline, pitch 5 mm, stretchable, 5 mm ... 5.2 mm, on roll	white, 8,000 markers	2009-135		1 Coil



Separation of a strip from the WMB Marker card

Stretching of a strip, stretchable from 4 mm up to 4.2 mm, stretchable from 5 mm up to 5.2 mm

Group marker carrier



249-118 height-adjustable group marker carrier for end stops



209-112 group marker carrier for 788 Series relay sockets with pluggable miniature switching relay



Description		Item No.	Pack. Unit
Height-adjustable group marker carrier (43.5 mm ... 60 mm), for end stops 249-116 and 249-117	for 1 marker or self-adhesive label and transparent protection cover	249-119 ①	50 (2x25)
	for 2 WSB Quick markers or 1 x continuous marking strip	249-118 ②	100 (4x25)
Group marker carrier	with marker surface 41 mm/1.61 in, 6 mm/0.23 in wide	249-120	50 (2x25)
	for up to 3 WMB markers, 15 mm/0.591 in wide	209-140 ③	50 (2x25)
Group marker carrier	for snapping into screwless end stops, 10 mm/0.394 in wide	209-112 ④	100 (2x50)
Marker card	from white cardboard, for self-marking, 100 markers per sheet	209-113 ⑤	1 (1x1)
Protection cover	transparent	209-114 ⑥	50 (1x50)

10 WAGO Wire and Cable Marking

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Wire marking



The following marker cards are available:
Marker cards for plotter marking ...



... or marker cards on roll
for thermal transfer printing



Slide the marker card into the marking sleeve
receptacle.
Changing the marking is also
possible after the wire has been connected



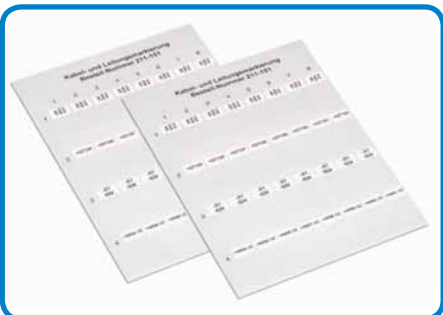
Remove the rest of the card by twisting it off



Fix the 211-129 marking sleeve using cable ties to
individual wire or cable



Cable marking



Self-laminating labels are available on A4 sheets
for the laser printer (plotter) ...



... or are supplied on roll for the thermal transfer
printer



Remove the printed label from the sheet or roll and
wrap it around the wire or cable.
The transparent laminate protects the marking

Marking sleeve 12 mm

Marking sleeve 23 mm

Marking sleeve 23 mm, for cable tie



Description		Item No.	Pack. Unit
Marking sleeve 12 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm ² ... 1.5 mm ²	211-112	2000
	2.2 mm ... 4.5 mm or 0.5 mm ² ... 4 mm ²	211-113	2000
	3.7 mm ... 5.9 mm or 2.5 mm ² ... 6 mm ²	211-114	1000
	4.8 mm ... 7.5 mm or 6 mm ² ... 16 mm ²	211-115	1000
Marking sleeve 23 mm, for wire Ø	1.6 mm ... 3.2 mm or 0.25 mm ² ... 1.5 mm ²	211-122	2000
	2.2 mm ... 4.5 mm or 0.5 mm ² ... 4 mm ²	211-123	2000
	3.7 mm ... 5.9 mm or 2.5 mm ² ... 6 mm ²	211-124	1000
	4.8 mm ... 7.5 mm or 6 mm ² ... 16 mm ²	211-125	1000
Marking sleeve for cable tie	23 mm, for wires from 10 mm ²	211-129	1000
Cable tie (2.5 x 100) mm		807-090/101-100	1000

Marker card (12 mm) for Printer

Marker card (12 mm) for Plotter

Marker card (23 mm) for Printer

Marker card (23 mm) for Plotter

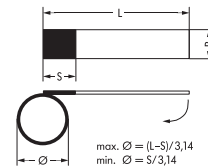


Description		Item No.	Pack. Unit
Marker card for TT Printer	12 mm	211-121	1
	23 mm	211-111	1
Marker card for Plotter	12 mm	211-120	30
	23 mm (258-370 Carrier Plates are required for plotting)	211-110	18

Labels on roll

Labels on DIN A4 sheets

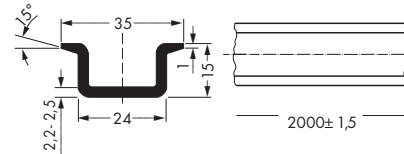
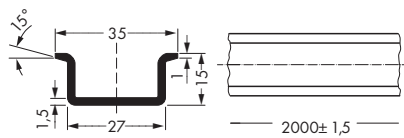
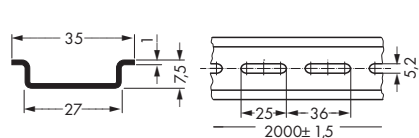
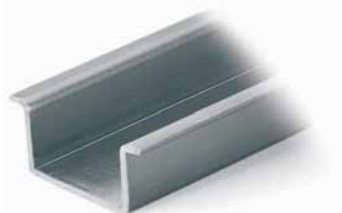
Dimensions of self-laminating label



Description		Item No.	Pack. Unit
Labels on roll for thermal transfer printer	Marker surface "S"=8 mm, "B"=18 mm, "L"=35 mm for max. cable Ø 9 mm, 9.000 labels per roll	211-155	1
	Marker surface "S"=13 mm, "B"=23 mm, "L"=51 mm for max. cable Ø 12 mm, 5.000 labels per roll	211-156	1
Labels on DIN A4 sheets for laser printer (258-383 Carrier Plates are required for plotting)	Marker surface "S"=9 mm, "B"=17 mm, "L"=35 mm for max. cable Ø 8 mm, 70 labels per roll	211-150	20
	Marker surface "S"=13 mm, "B"=21 mm, "L"=56 mm for max. cable Ø 14 mm, 32 labels per roll	211-151	25

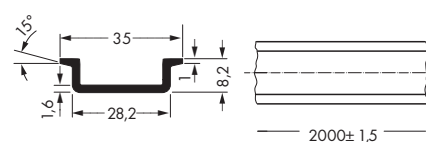
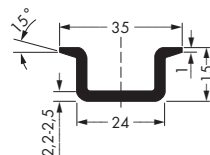
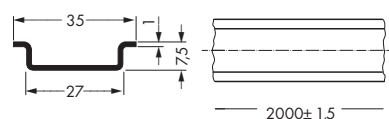
Carrier Rails

Steel carrier rail acc. to EN 60715	Steel carrier rail	Steel carrier rail acc. to EN 60715
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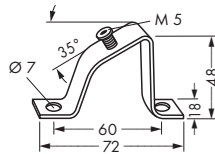
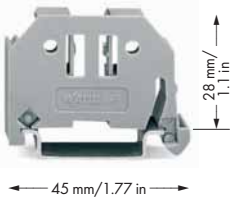
Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
Steel rail, I_N 76 A (referred to a length of 1 m) 35 x 7.5 mm, 1 mm/0.039 in thick, 2 m long, unslotted		Steel rail, I_N 125 A (referred to a length of 1 m) 35 x 15 mm, 1.5 mm/0.059 in thick, 2 m long, unslotted		Steel rail, I_N 125 A (referred to a length of 1 m) 35 x 15 mm, 2.3 mm/0.091 in thick, 2 m long, unslotted	
210-113 10		210-114 10		210-118 10	
Hole width 25 mm; hole spacing 36 mm, slotted		Steel rail, I_N 125 A (referred to a length of 1 m) 35 x 15 mm, 1.5 mm/0.059 in thick, 2 m long, slotted			
210-112 10		210-197 10			
Hole width 18 mm; hole spacing 25 mm, slotted					
210-115 1					

Steel carrier rail galvanized	Copper carrier rail	Aluminum carrier rail
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Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
Steel rail, 35 x 7.5 mm, 1 mm/0.039 in thick, 2 m long, unslotted		Aluminum carrier rail, I_N 76 A (referred to a length of 1 m) 35 x 8.2 mm, 1.5 mm/0.059 in thick, 2 m long, unslotted		Angled support bracket, without screw	
210-505 1		210-196 20		210-148 10	
35 x 7.5 mm, 1 mm/0.039 in thick, 2 m long, slotted				Screw M 5 x 8	
210-504 1				210-149 100	
35 x 15 mm, 1.5 mm/0.059 in thick, 2 m long, unslotted					
210-506 1					
35 x 15 mm, 1.5 mm/0.059 in thick, 2 m long, slotted					
210-508 1					

<p>End stop for DIN 35 rail End stop width 6 mm / 0.236 in</p>	<p>Angled support bracket</p>	<p>Rail end cap, for DIN 35 rail (7.5 mm/0.29 in high)</p>
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Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
End stop, for DIN 35 rail 6 mm/0.236 in wide		Angled support bracket, without screw		Rail end cap, for DIN 35 rail (7.5 mm/0.29 in high)	
249-116	100 (4 x 25)	210-148	10	209-109	50
End stop, for DIN 35 rail		Screw M 5 x 8			
249-117	50 (2 x 25)	210-149	100		

Snap on - That's it!

Assembling the WAGO screwless end stops is as simple and quick as snapping a WAGO railmounted terminal block onto the rail.

Without any tools!

This way rail-mounted terminal blocks are safely secured at low cost against any movement on all carrier rails DIN 35 acc. to DIN EN 50022 (35 x 7.5 mm; 35 x 15 mm).

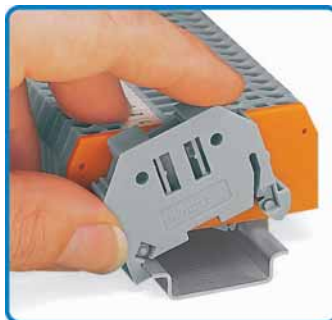
Entirely without screws!

The „secret“ of the excellent tight fit lies in the two small clamping plates which keep the end stop in position, even if the rails are mounted vertically.

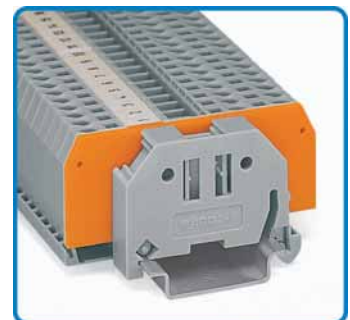
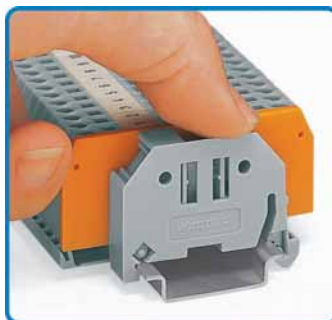
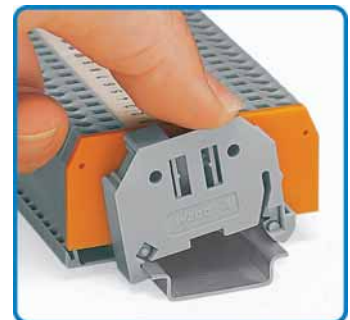
Simply snap on - and forget!

In addition, costs are considerably reduced when using large numbers of end stops.

A further advantage is that three marker receptacles for all WAGO marker systems for rail-mount terminal blocks and a snap-in hole for WAGO adjustable height group marker carriers offer individual marking possibilities.



Snap on ...



... that's it!

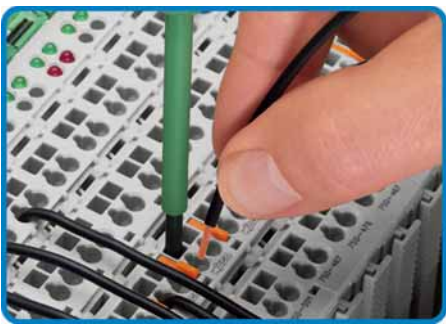
10 Operating tool

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Operating tool with partially insulated shaft for optimum handling of terminal blocks	Operating tool with partially insulated shaft - Set -	Operating tool with partially insulated shaft, short for optimum handling of terminal blocks
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Item No.	Pack. Unit	Item No.	Pack. Unit
Operating tool, with partially insulated shaft, type 1, blade (2.5 x 0.4) mm 210-719	1	Operating tool, with partially insulated shaft, - Set - 210-722	1
Operating tool, with partially insulated shaft, type 2, blade (3.5 x 0.5) mm 210-720	1		
Operating tool, with partially insulated shaft, type 3, blade (5.5 x 0.8) mm 210-721	1		
		Operating tool, type 1, short, straight blade (2.5 x 0.4) mm, with partially insulated shaft 210-647	1
		Operating tool, type 2, short, straight blade (3.5 x 0.5) mm, with partially insulated shaft 210-657	1
		Operating tool, type 1, short, angled blade (2.5 x 0.4) mm, with partially insulated shaft 210-648	1
		Operating tool, type 2, short, angled blade (3.5 x 0.5) mm, with partially insulated shaft 210-658	1



Wiring example showing WAGO-I/O-SYSTEM 750

The operating tool are particularly appropriate for the operation of front-entry terminal blocks and connectors. (The picture shows the WAGO-I/O-SYSTEM 750)

Cable Strippers

<p>Cable stripper for round cables with an outer diameter from 2.5 mm to 11 mm Ø</p>	<p>Cable stripper for round cables with an outer diameter from 4.5 mm to 40 mm Ø</p>	
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Item No.	Pack. Unit	Item No.	Pack. Unit
Cable stripper for round cables with an outer diameter from 2.5 mm to 11 mm Ø		Cable stripper for round cables with an outer diameter from 4.5 mm to 40 mm Ø	
206-171	1	206-174	1
Item No.	Pack. Unit	Item No.	Pack. Unit
Spare blade for 2.5 mm to 11 mm Ø		Spare blade for 4.5 mm to 40 mm Ø	
206-170	1	206-173	1

206-171 Cable Stripper:

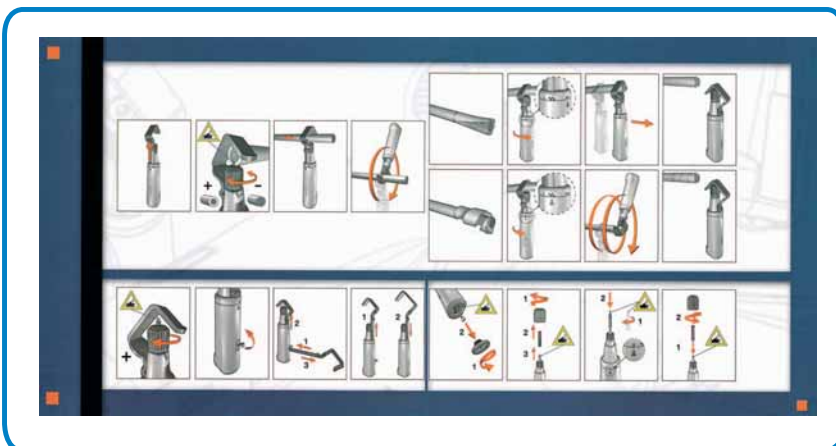
- 10-position adjustment wheel ensures repeatable stripping results
- Fine adjustability via 10-position blade cutting depth adjustment
- Strips the sheath from multi-core and fiber optic cables up to 11 mm/0.43 inch diameter
- Safe and easy to use through closed stripping cavity

206-174 Cable Stripper:

- Safe and easy to use: Three locking positions for circular, longitudinal and spiral cuts
- High cable stripping capacity of up to 40 mm/1.57 inch diameter
- Well balanced, ergonomic design features rests for thumb, index and pinky fingers to ease raising of the cable retention hook
- Replacement blades can be stored within the tool body



Handling instructions for 206-171 cable stripper



Handling instructions for 206-174 cable stripper



Wire Strippers

<p>Microstrip wire stripper 0.14 mm² ... 1.5 mm²/AWG 24 ... 16 "solid" and "stranded" Wire cutter up to 1.5 mm²/AWG 16 "solid" and "stranded"</p>	<p>Quickstrip 10 wire stripper 0.02 mm² ... 10 mm²/AWG 28 ... 8 "stranded" (6 mm²/AWG 10 "solid") Wire cutter up to 10 mm²/AWG 8 "stranded" (1.5 mm²/AWG 16 "solid")</p>	<p>Quickstrip 16 wire stripper 4 mm² ... 16 mm² Wire cutter up to 10 mm²/AWG 12 ... 6 "stranded" (1.5 mm²/AWG 16 "solid")</p>
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Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
Microstrip wire stripper 206-501	1	Quickstrip 10 wire stripper 206-124	1	Quickstrip 10 wire stripper 206-125	1
Spare stripping complete 206-502	1	Standard blade cassette 0.02 mm ² ... 10 mm ² /AWG 34 ... 8 206-126	1	Blade cassette 16 mm ² 4.0 mm ² ... 16 mm ² /AWG 12 ... 6 206-128	1
Spare blade for wire cutter 206-503	1	"V" blade cassette 0.02 mm ² ... 4 mm ² /AWG 34 ... 12 for PTFE 206-127	1		

- Automatic adjustment to wire size.
- No damage to wire strands.
- Gripping pressure of jaws adjusts automatically to wire insulation diameter.
- Full cycle strip - jaws open after stripping, ensures no nicked strands.
- Exact strip length may be set by sliding of red setting stop.
- Replaceable stripping jaw assembly.
- Self-sharpening, fully protected wire cutter, also replaceable.*
- Glass fiber reinforced polyamide tool body.

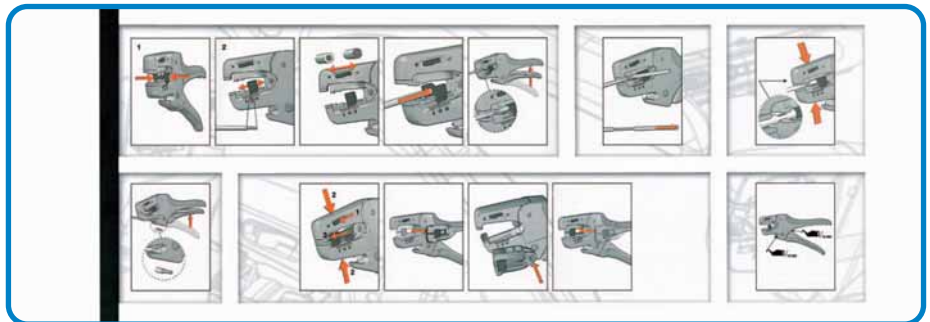
* for Microstrip



Cutting of wire.



Stripping of wire.



Operating instructions are enclosed in the packaging.

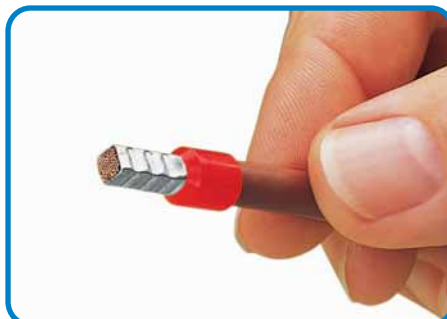
<p>Cable cutter acc. to VDE for copper and aluminum wires up to 35 mm²/AWG 2</p> <p>Weight 200 g</p>	<p>“Variocrimp 4” Crimping Tool 0,25 mm² - 4 mm² / AWG 22 - 12</p> <p>Weight 400,5 g</p>	<p>“Variocrimp 16” Crimping Tool 6 mm² - 16 mm² / AWG 10 - 6</p> <p>Weight 579,5 g</p>
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Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
Cable cutter		“Variocrimp 4” crimping tool, for insulated and uninsulated ferrules, crimping range of 0.25 - 4 mm ²		“Variocrimp 16” crimping tool, for insulated and uninsulated ferrules, crimping range of 6 - 16 mm ²	
206-118	1	206-204	1	206-216	1



Cutting



A perfect gastight crimp, both electrically and mechanically reliable.

Application notes

- With “Variocrimp 4,” the built-in crimping pressure control automatically adjusts force to the conductor cross section used.
- With “Variocrimp 16,” it is necessary to select the wire gauge on the tool before crimping.
- Only one crimping station is needed to handle the specified conductor size range.
- Uniform, compact crimping on all four sides for high conductor retention.
- No need to center the conductor into the ferrule.
- Conductor and ferrule insertion possible from both sides (for left- and right-handers).
- Built-in ratchet mechanism ensures gas-tight crimp connection.
- Crimping tools open automatically after crimping operation is complete.
- Ergonomical handles.

What is a “gas-tight” connection?

In a gas-tight connection, the conductor and the ferrule are compressed together, eliminating all spaces. Under normal atmospheric conditions, neither a liquid nor a gaseous medium can penetrate into the crimped connection. Oxidation between crimped single conductors is prevented, ruling out nearly any increase in the crimped connection resistance. In some exceptional cases, minute, isolated spaces may be present. These can be considered to be closed off on account of the twisted wires, however.

Inadequate crimping can allow the conductor to be pulled out of the connection. Hollow spaces also remain in which oxidation can form. Oxidation leads to an increase in contact resistance.

Elevated resistance is detrimental for signal transmission, as the signal flow is damped (weakened), and for power transmission, as power loss and, hence a temperature increase due to contact (risk of fire) can result.



Crimping tools with built-in ratchets are recommended, such as the WAGO Variocrimp tools. These tools only open after the crimping process has been fully completed. Space-saving crimping from all four sides is ideal for spring clamp termination.

Cross section data for ferruled conductors indicated for WAGO products is based on this crimping method.

Test and Measurement Tools

WAGO Profi LCD+ 2-pole voltage tester with LCD display 6 - 1000 V AC/DC	WAGO Profi LED+ 2-pole voltage tester with LED display 6 - 1000 V AC/DC	
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Item No.	Pack. Unit	Item No.	Pack. Unit
WAGO Profi LCD+ 2-pole voltage tester with LCD display Measuring range: 6 V ... 1000 V AC/DC Degree of protection: IP65 Resistance measurement: up to 2000 Ω , removable test probes, 4 mm Ø		WAGO Profi LED+ 2-pole voltage tester with LED display Measuring range: 6 V ... 1000 V AC/DC, Degree of protection: IP65 Resistance measurement: up to 2000 Ω , removable test probes, 4 mm Ø	
206-807	1	206-806	1
Item No.	Pack. Unit	Item No.	Pack. Unit
Replacement test probes, 4 mm (2 pcs)		Replacement test probes, 4 mm (2 pcs)	
	206-808 25		206-808 25

Additional product features for WAGO Profi LCD+:

- Automatic measurement range selection
- Single-pole phase testing AC >100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- FI/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO and CEE sockets
- LED torch lamp function
- Automatic backlight
- Auto power-off function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)

Additional product features for WAGO Profi LED+:

- Automatic measurement range selection
- Single-pole phase testing AC >100 V
- Two-pole sequence testing (R and L)
- Continuity testing
- FI/RCD testing (30 mA) via buttons
- One-hand operation for SCHUKO and CEE sockets
- LED torch lamp function
- CAT IV 1000 V
- TÜV/GS tested and approved
- IEC/EN 61243-3 (DIN VDE 0682-401)


WAGO Profi LCD+ and WAGO Profi LED+

- Improved socket contact via 4 mm test probes
- Removable test probes for small test ports (suitable for all WAGO terminal blocks)



WAGO Multi Tester Digital multimeter 600 V AC/DC 10 A AC/DC	WAGO Amp Tester Digital clamp meter 0.01 - 200 A AC/DC	Testboy
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Item No.	Pack. Unit	Item No.	Pack. Unit	Item No.	Pack. Unit
WAGO Multi Tester		WAGO Amp Tester		Testboy,	
Digital multimeter with contact-less voltage tester		Digital clamp meter		with integrated flashlight	
Measuring range: 600 V AC/DC		Measuring range: 0.01 A ... 200 A AC/DC		Voltage range 120 V to 1000 V AC	
10 A AC/DC		Degree of protection: IP44			
Resistance measurement: up to 20 MΩ		True RMS measuring method			
Includes: carrying case		Includes: carrying case			
206-810	1	206-815	1	206-804	1
Item No.	Pack. Unit				
Replacement test leads, red/black					
	206-811	1			

Additional product features for WAGO Multi Tester:

- Contact-less voltage test AC >100 V (optical and acoustical)
- Resistance measurement up to 20 MΩ
- Acoustical continuity test
- Diode test
- Data hold function
- Auto power-off function
- LED torch lamp function
- CAT IV 600 V
- TÜV/GS tested and approved
- IEC/EN 61010-1 (DIN VDE 0411)

Additional product features for WAGO Amp Tester:

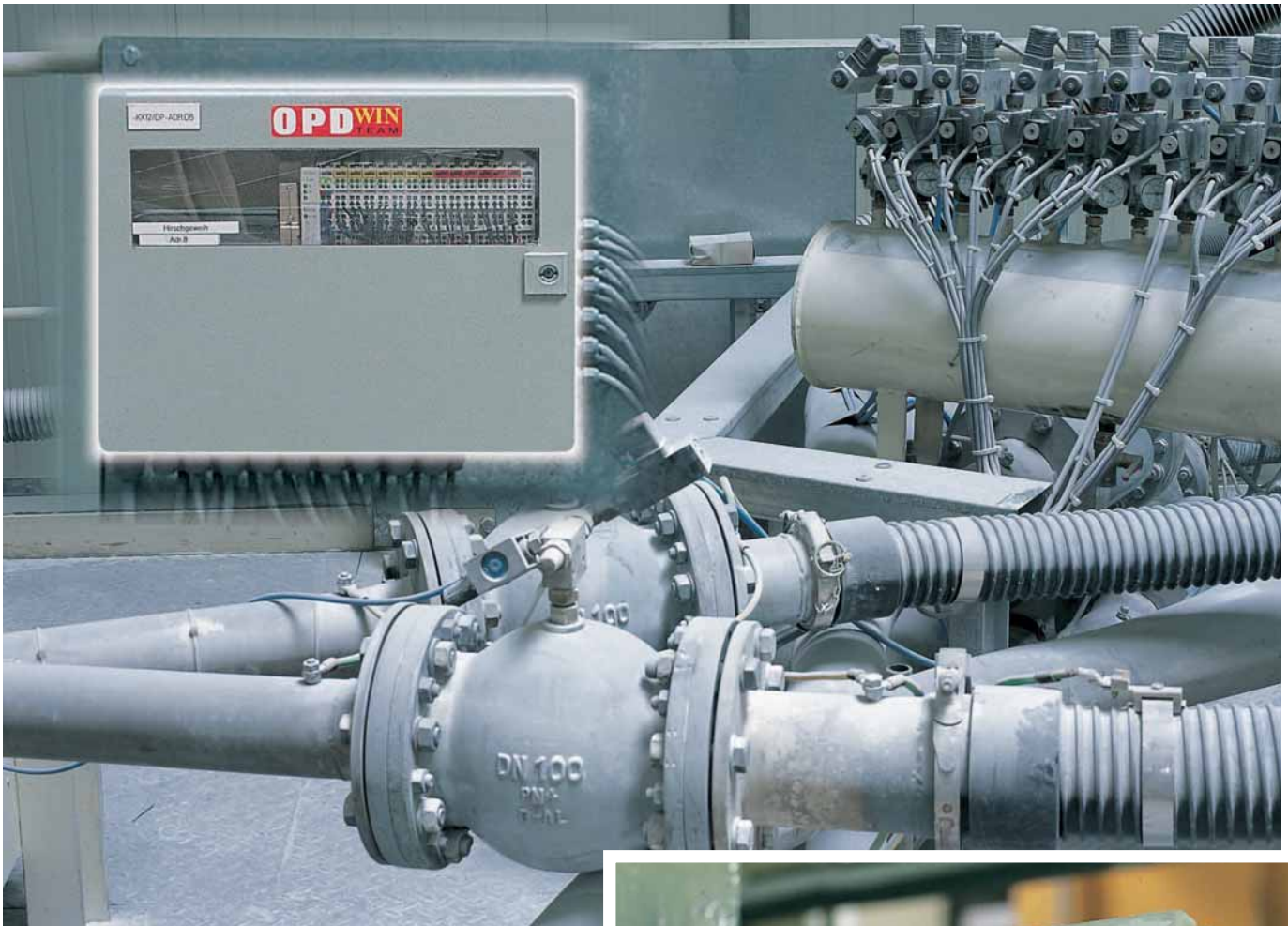
- AC and DC current measurement
- True RMS measurement
- Data hold function
- Maximum jaw opening: 21 mm Ø
- Compact design for measuring in tight spaces
- Resolution: 0.01 A at 40 A
- Resolution: 0.1 A at 200 A
- Sampling rate: 3 times per second
- Auto power-off function
- CAT III 300 V
- TÜV/GS tested and approved
- IEC/EN 61010-1 (DIN VDE 0411)

A device that will reliably detect AC voltage in cables, sockets, fuses, switches, outlets, etc.

The voltage tester detects:

- Live conductors
- Cable breaks
- Blown fuses
- Defective switches
- Defective lamps





**WAGO Application: Opdenhoff Technologie GmbH
in Hennef, Germany**

Control Systems for Weighing, Mixing and
Conveyance of Bulk Material and Liquids

WAGO Products:
WAGO-I/O-SYSTEM with PROFIBUS Couplers,
Rail-Mounted Terminal Blocks

11



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Product Support From

Consulting Services

- Selection of the fieldbus
- Use of components
- Combination of components
- Cooperation with other suppliers



- Contact:
Your national WAGO company
or distributor.

Experienced

- Trained staff
- PLC & PC control
- Multiple fieldbuses
- Programming languages
- Projects:
 - Automotive industry
 - Machine building
 - Chemical industry
 - Food processing
 - Building automation
 - Process engineering
 - Process control
 - and many more

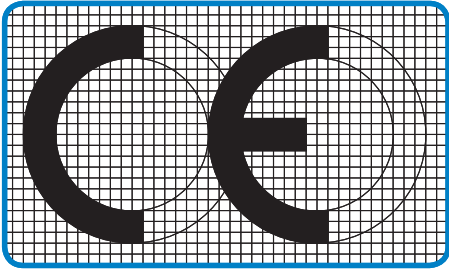


We will help you

- Product documentation
- Manuals
- Application notes
- By telephone
- On-site

CE conformity marking:

The CE conformity marking consists of the characters "CE", with the following script:



Communauté Européenne (European Community)

The CE marking shall be affixed to the electrical equipment, or if that is not possible, to the smallest packing unit. With the CE marking, manufacturers attest conformity of their products to the relevant directives.

In addition to the CE marking, the manufacturer provides an EC "Declaration of Conformity" for the product. This EC "Declaration of Conformity" must be retained and submitted to a national surveillance authority upon request. EC directives are binding legal regulations of the European Community. Their goal is the harmonization of legal and administrative regulations in the various EC member states, in order to prevent trade obstructions due to different national regulations.

In order to "market" a product, it must comply with the relevant directives. The product may be subject to several directives, e.g. the EMC and the low voltage directives.

The **EC directives** are legally binding specifications of the European Union. Their aim is the alignment of legal and administrative specifications in the various EC member states, in order to prevent trading hindrances arising from different national specifications.

In order to launch a product on the market it has to comply with the relevant directives. Several directives may apply to a product, for example the EMC and the low voltage directives.

2006/95/EC**– Low Voltage Directive**

The safety of electrical equipment is guaranteed by the Low Voltage Directive. This directive covers 'complete' electrical equipment designed for use with a voltage rating of between 50 and 1000V for alternating current and between 75 and 1500V for direct current. Products falling within the scope of the Low Voltage Directive that are designed in such a way that they can be used in other electrical devices and whose safety, for the most part, is dependant on how these components were built into the end product and what features the end product has are defined as basic components in accordance with the Low Voltage Directive.* The Low Voltage Directive doesn't apply to basic components.

2004/108/EC**– EMC Directive**

The EMC Directive implies that a product must meet the limits of the radiated electromagnetic disturbance and also requires that a product must be immune to electromagnetic interference. Electromagnetic passive components or components with no direct function, like resistors, diodes, capacitors, switching relays or cables (in the form of passive printed circuit boards) are not considered as apparatus within the meaning of the EMC Directive.

Machinery Directive

The Machinery Directive does not apply to WAGO products.

94/9/EC Ex Protection Directive, ATEX 100a

General technical information for electrical equipment in hazardous environments.

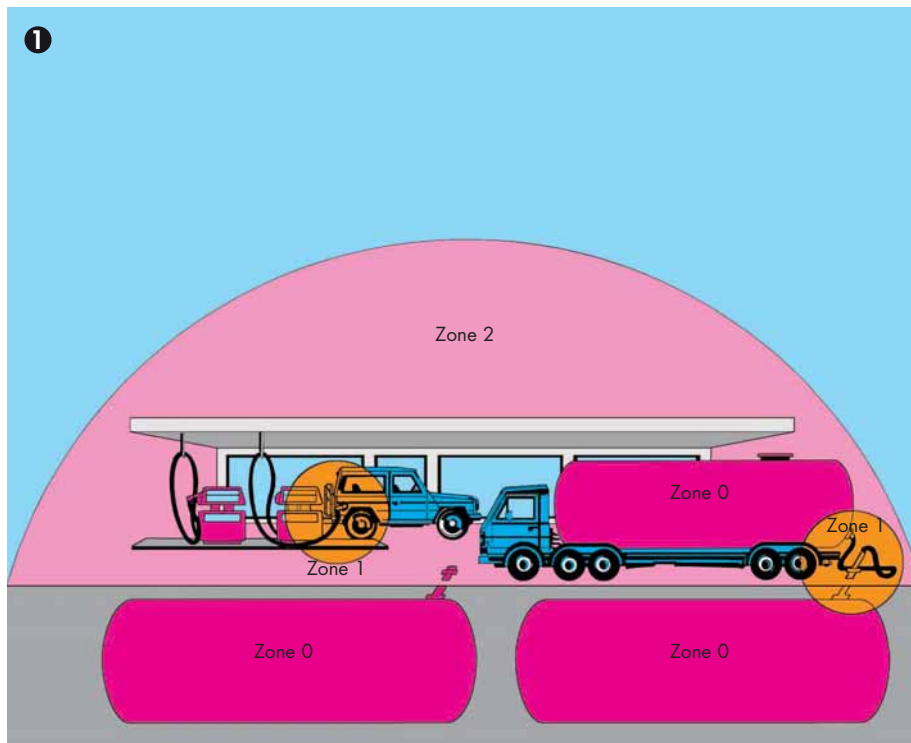
General Technical Information for Electrical Equipment in Hazardous Environments

Hazardous Environments

Hazardous environments are areas in which the atmosphere may become explosive. Explosive atmosphere is defined as a mixture of ignitable substances in the form of gases,

vapors or mixtures with air under atmospheric conditions in critically mixed ratios such that excessive high temperature, arcs or sparks may cause an explosion.

DIN EN 1127-1 and all other related standards that are commonly known divide up hazardous areas according to the likelihood of the occurrence of an explosive atmosphere into the following zones:



1 Hazardous environments as a result of combustible gases, vapors or mist.

Zone 0:

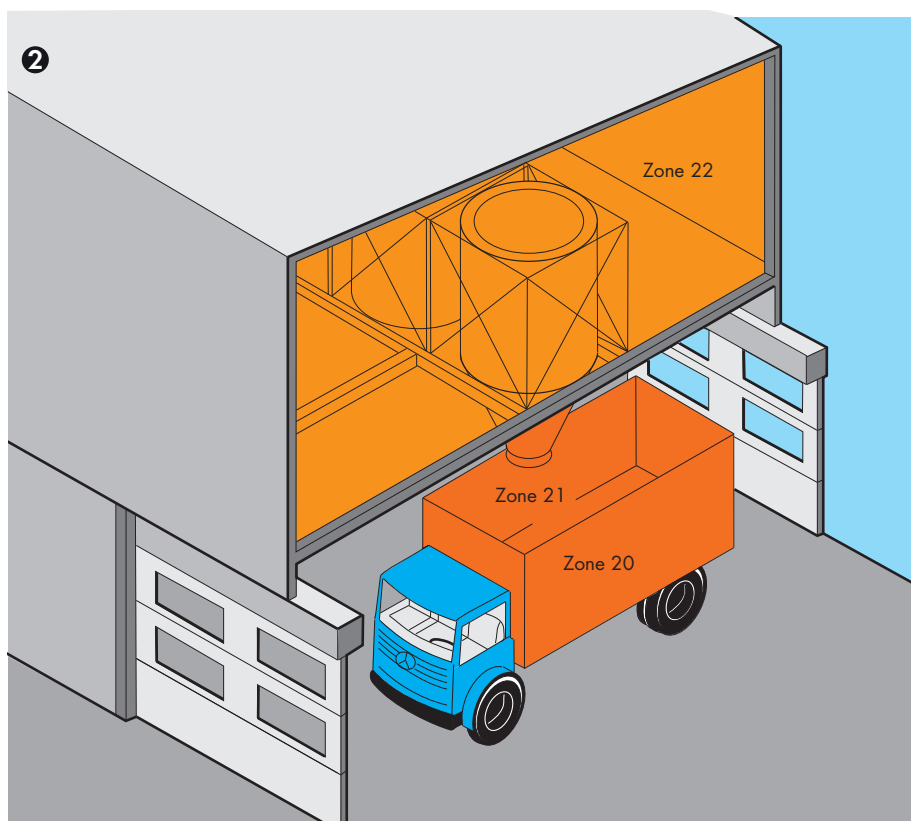
Area in which an explosive gas/air mixture is continuously present or present for long periods.

Zone 1:

Area in which an explosive atmosphere can occur during normal operation.

Zone 2:

Area in which an explosive atmosphere is unlikely to occur under normal operation and if it does it will be for a short period.



2 Hazardous areas caused by combustible dust

Zone 20:

Area in which an explosive dusty atmosphere is present "permanently", for "long periods" or "frequently" and in which deposits of combustible dust of unknown or excessive thickness may be formed. Dust deposits alone are not grounds for classification as Zone 20.

Zone 21:

Area in which an explosive dusty atmosphere is present "occasionally" under normal operating conditions and in which deposits or layers of combustible dust can generally be present.

Zone 22:

Area in which an explosive dusty atmosphere is not likely to occur during normal operation and, if it occurs, will only exist for a "short period", or in which accumulations or layers of combustible dust are present.

Please refer to the manuals for more information on explosion protection.

Electromagnetic Compatibility and Mechanical Strength (Industrial and Residential Areas)

Immunity to interference for industrial areas acc. to EN 61000-6-2 (2005)

Test Specification		Test Values	Evaluation Criteria *)
EN 61000-4-2	ESD	4 kV/8 kV (contact/air)	B
EN 61000-4-3	electromagnetic fields	10 V/m: 80 MHz ... 1 GHz	A
		3V/m: 1.4 GHz ... 2.0 GHz	A
		1V/m: 2.0 GHz ... 2.7 GHz	A
EN 61000-4-4	burst	1 kV/2 kV (data/supply)	B
EN 61000-4-5	surge	Data: - / 1 kV (line : line / line : earth)	B
		DC supply: 0.5 kV / 0.5 kV (line : line / line : earth)	B
		AC supply: 1 kV / 2 kV (line : line / line : earth)	B
EN 61000-4-6	RF disturbances	10 V/m 80 % AM (0.15 MHz ... 80 MHz)	A
EN 61000-4-8	Magnetic field	30 A/m 50/60Hz	A
*) Criteria A: The device must work in accordance with the regulations during and after the test. Criteria B: The device must work in accordance with the regulations after the test.			

Emission of interference for residential areas acc. to EN 61000-6-3 (2007)

Test Specification		Limit Values/ Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	66 ... 56 dB(µV)	150 kHz ... 500 kHz	
EN 55016-1-2		56 dB(µV)	500 kHz ... 5 MHz	
		60 dB(µV)	5 MHz ... 30 MHz	
EN 55016-2-1	DC supply/ data, conducted	79 dB(µV)	150 kHz ... 500 kHz	
EN 55016-1-2		73 dB(µV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	30 dB(µV/m)	30 MHz ... 230 MHz	10 m
		37 dB(µV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/ Mains connection	84 ... 74 dB(µV)	150 kHz ... 500 kHz	
		74 dB(µV)	500 kHz ... 30 MHz	

Emission of interference for industrial areas acc. to EN 61000-6-4 (2007)

Test Specification		Limit Values/ Quasi Peak	Frequency Range	Distance
EN 55016-2-1	AC supply, conducted	79 dB(µV)	150 kHz ... 500 kHz	
EN 55016-1-2		73 dB(µV)	500 kHz ... 30 MHz	
EN 55016-2-3	radiated	40 dB(µV/m)	30 MHz ... 230 MHz	10 m
		47 dB(µV/m)	230 MHz ... 1 GHz	10 m
EN 55022	Telecommunications/ Mains connection	97 ... 87 dB(µV)	150 kHz ... 500 kHz	
		87 dB(µV)	500 kHz ... 30 MHz	

Mechanical strength acc. to IEC 61131-2 (2007)

Test Specification		Frequency Range	Limit Values
IEC 60068-2-6	vibration	5 Hz ≤ f < 9 Hz	1.75 mm amplitude (permanent)
			3.5 mm amplitude (short term)
		9 Hz ≤ f < 150 Hz	0.5 g (permanent)
			1 g (short term)
		Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-27	shock		15 g
		Note on shock test: a) Type of shock: half sine b) Shock duration: 11 ms	
		c) Shock direction: 3x in positive and 3x in negative direction for each of the three mutually perpendicular axes of the test specimen	

Electromagnetic Compatibility and Mechanical Strength (Ship Building Area)

Immunity to interference acc. to Germanischer Lloyd (2003)

Test Specification		Test Values	Evaluation Criteria *)
IEC 61000-4-2	ESD	6 kV/8 kV (contact/air)	B
IEC 61000-4-3	electromagnetic fields	10 V/m 80 MHz ... 2 GHz	A
IEC 61000-4-4	burst	1 kV /2 kV (data/supply)	A
IEC 61000-4-5	surge, DC supply	0,5 kV /1 kV (line : line / line : earth)	A
	surge, AC supply	0,5 kV /1 kV (line : line / line : earth)	A
IEC 61000-4-6	RF disturbances	10 V 80 % AM (0.15 ... 80 MHz)	A
Type Test	AF disturbances (harmonic waves)	3 V, 2 W	A
Type Test	high voltage	755 V DC	-
		1500 V AC	-
*) Criteria A: The device must work in accordance with the regulations during and after the test.			
Criteria B: The device must work in accordance with the regulations after the test.			

Emission of interference acc. to Germanischer Lloyd (2003)

Test Specification	Limit Values/ Quasi Peak	Frequency Range	Distance
Type Test EMC 1, conducted (allows for ship bridge control applications)	96 ... 50 dB(µV)	10 kHz ... 150 kHz	
	60 ... 50 dB(µV)	150 kHz ... 350 kHz	
	50 dB(µV)	350 kHz ... 30 MHz	
Type Test EMC 1, radiated (allows for ship bridge control applications) except for:	80 ... 52 dB(µV/m)	150 kHz ... 300 kHz	3 m
	52 ... 34 dB(µV/m)	300 kHz ... 30 MHz	3 m
	54 dB(µV/m)	30 MHz ... 2 GHz	3 m
	24 dB(µV/m)	156 MHz ... 165 MHz	3 m
Type Test EMC 2, conducted (allows for machine room applications)	120 ... 69 dB(µV)	10 kHz ... 150 kHz	
	79 dB(µV)	150 kHz ... 350 kHz	
	73 dB(µV)	350 kHz ... 30 MHz	
Type Test EMC 2, radiated (allows for machine room applications) except for:	80 ... 50 dB(µV/m)	150 kHz ... 30 MHz	3 m
	60 ... 54 dB(µV/m)	30 MHz ... 100 MHz	3 m
	54 dB(µV/m)	100 MHz ... 2 GHz	3 m
	24 dB(µV/m)	156 MHz ... 165 MHz	3 m

Mechanical strength acc. to Germanischer Lloyd (2003)

Test Specification	Frequency Range	Limit Values
IEC 60068-2-6 vibration (category A, C)	$2 \text{ Hz} \leq f < 13,2 \text{ Hz}$	±1.0 mm Amplitude (permanent)
	$13.2 \text{ Hz} \leq f < 100 \text{ Hz}$	0.7 g (permanent)
	Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	
IEC 60068-2-6 vibration (category A-D)	$2 \text{ Hz} \leq f < 25 \text{ Hz}$	±1.6 mm Amplitude (permanent)
	$25 \text{ Hz} \leq f < 100 \text{ Hz}$	4 g (permanent)
	Note on vibration test: a) Frequency change: max. 1 octave/minute b) Vibration direction: 3 axes	

In particular the following standards apply to the design and the application of the terminal blocks and connectors contained in this catalog:

DIN VDE 0100:1982-11 Construction of high current installations with nominal voltages up to 1000V	IEC 60529:1989 + A1:1999 EN 60529:1991 + A1:2000 VDE 0470-1:2000-09 Degrees of protection provided by enclosures (IP code)	IEC 60998-2-2:2002, modified EN 60998-2-2:2004 VDE 0613-2-2:2005-03 Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units
EN 50110-1:2004 VDE 0105-1:2005-06 Operation of electrical installations	IEC 60603-1:1991 + A1:1992 EN 60603-1:1998 Connectors for frequencies below 3 MHz for use with printed boards - Part 1: Generic specification: General requirements and guide for the preparation of detail specifications, with assessed quality	IEC 60947-1:2007 EN 60947-1:2007 VDE 0660-100:2008-04 Low-voltage switchgear and controlgear - Part 1: General rules
IEC 61140:2001/A1:2004 (modified) EN 61140:2002/A1:2006 VDE 0140-1:2007-03 Protection against electric shock - Common aspects for installation and equipment	IEC 61984:2001 EN 61984:2001 VDE 0627:2002-09 Connectors - Safety requirements and tests	IEC 60947-5-6:1999 EN 60947-5-6:2000 VDE 0660-212:2000-12 Low-voltage switchgear and controlgear - Part 5-6: Control circuit devices and switching elements, DC interface for proximity sensors and switching amplifiers (NAMUR)
IEC 60664-1:2007 EN 60664-1:2007 VDE 0110-1:2008-01 Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	IEC 60999-1:1999 EN 60999-1:2000 VDE 0609-1:2000-12 Connecting devices - Electrical copper conductors; Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors 0.2 mm ² up to 35 mm ²	IEC 60439-1:1999 + A1:2004 EN 60439-1:1999 + A1:2004 VDE 0660-500:2005-01 Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies
IEC 60204-1:2005 (modified) EN 60204-1:2006 VDE 0113-1:2007-06 Safety of machinery - Electrical equipment of machines - Part 1: General requirements	IEC 60617-2:1996 EN 60617-2:1996 Graphical symbols for diagrams - Part 2: Symbol elements, qualifying symbols and other symbols having general application	IEC 60555-1:1982 - 1st edition EN 60555 part 1, edition 1987 VDE 0838-1:1987-06 Disturbances in supply systems caused by household appliances and similar electrical equipment; part 1: definitions
EN 50178:1997 VDE 0160:1998-04 Electronic equipment for use in power installations	IEC 61558-1:2005 EN 61558-1:2005 VDE 0570-1:2006-07 Safety of power transformers, power supplies, reactors and similar products - Part 1: General requirements and tests	IEC 60715:1981 + A1:1995 EN 60715:2001 Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations
IEC 62305-1:2006 EN 62305-1:2006 VDE 0185-305-1:2006-10 Protection against lightning - Part 1: General principles	IEC 60669-2-1:2002 EN 60669-2-1:2004 VDE 0632-2-1:2005-08 Switches for household and similar fixed electrical installations - Part 2-1: Particular requirements - Electronic switches	IEC 60950-1:2005, modified EN 60950-1:2006 VDE 0805-1:2006-11 Information technology equipment - Safety - Part 1: General requirements
IEC 60060-1:1989 + corrigendum March 1990 HD 588.1 S1:1991 VDE 0432-1:1994-06 High voltage test techniques; part 1: general specifications and test requirements	IEC 60947-7-1:2002 + Corrigendum 1:2003 EN 60947-7-1:2002 VDE 0611-1:2003-07 Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	IEC 60127-6:1994 + A1:1996 + A2:2002 EN 60127-6:1994 + A1:1996 + A2:2003 VDE 0820-6:2003-10 Miniature fuses - Part 6: Fuse-holders for miniature fuse-links
IEC 60085:2007 EN 60085:2008 VDE 0301-1:2008-08 Electrical insulation - Thermal evaluation and designation		

EN 50155:2007
VDE 0115-200:2008-03
Railway applications - Electronic equipment used on rolling stock

EN 50090-2-2:1996 + Corrigendum:1997 + A1:2002 + A2:2007
VDE 0829-2-2:2007-11
Home and Building Electronic Systems (HBES) - Part 2-2: System overview - General technical requirements; German version

IEC 60099-1:1991 + A1:1999
EN 60099-1:1994 + A1:1999
VDE 0675-1:2000-08
Surge arresters - Part 1: Non-linear resistor type gapped surge arresters for a.c. systems

IEC 61643-1:1998 + Corrigendum 1998, modified
EN 61643-11:2002 + A11:2007
VDE 0675-6-11:2007-08
Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and tests

IEC 61643-21:2000 + Corrigendum: 2001
EN 61643-21:2001
VDE 0845-3-1:2002-03
Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signalling networks; Performance requirements and testing methods

IEC 61508-1:1998 + Corrigendum 1999
EN 61508-1:2001
VDE 0803-1:2002-11
Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements

IEC 62061:2005
EN 62061:2005
VDE 0113-50:2005-10
Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems

Interfaces - Fieldbuses

DIN 66259-1:1981-05
Electrical characteristics for unbalanced double-current interchange circuits

EN 50325-1:2002
Industrial communications subsystem based on ISO 11898 (CAN) for controller-device interfaces - Part 1: General requirements

IEC 61784-1:2007
EN 61784-1:2008
Industrial communication networks - Profiles - Part 1: Fieldbus profiles

IEC 61158-2:2007
EN 61158-2:2008
Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition

IEC 61158-6-x
EN 61158-6-x
DIN EN 61158-6-x
Industrial communication networks - Fieldbus specifications - Part 6-x

Explosion Protection

IEC 60079-0:2004, modified
EN 60079-0:2006
VDE 0170-1:2007-05
Electrical apparatus for explosive gas atmospheres - Part 0: General requirements

IEC 60079-7:2006
EN 60079-7:2007
VDE 0170-6:2007-08
Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

IEC 60079-11:2006
EN 60079-11:2007
VDE 0170-7:2007-08
Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

IEC 60079-14:2007
EN 60079-14:2008
VDE 0165-1:2009-05
Explosive atmospheres - Part 14: Electrical installations design, selection and erection

IEC 60079-15:2005
EN 60079-15:2005
VDE 0170-16:2006-05
Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus

IEC 61241-0:2004, modified + Corrigendum Nov. 2005
EN 61241-0:2006
VDE 0170-15-0:2007-07
Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements

IEC 61241-1:2004
EN 61241-1:2004
VDE 0170-15-1:2005-06
Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

IEC 61241-11:2005 + Corrigendum February 2006
EN 61241-11:2006
VDE 0170-15-11:2007-07
Electrical apparatus for use in the presence of combustible dust - Part 11: Protection by intrinsic safety "iD"

Environmental Testing

IEC 60068-2-6:2007
 EN 60068-2-6:2008
 VDE 0468-2-6:2008-10
 Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)

IEC 60068-2-27:1987
 EN 60068-2-27:1993
 Basic environmental testing procedures - Part 2: Tests; test Ea and guidance: Shock

IEC 60068-2-42:2003
 EN 60068-2-42:2003
 Environmental testing - Part 2-42: Tests - Test Kc: Sulphur dioxide test for contacts and connections

IEC 60068-2-43:2003
 EN 60068-2-43:2003
 Environmental testing - Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections

EMC Requirements

IEC 61000-6-1:2005
 EN 61000-6-1:2007
 VDE 0839-6-1:2007-10
 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments

IEC 61000-6-2:2005
 EN 61000-6-2:2005
 VDE 0839-6-2:2006-03
 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

IEC 61000-6-3:2006
 EN 61000-6-3:2007
 VDE 0839-6-3:2007-09
 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments

IEC 61000-6-4:2006
 EN 61000-6-4:2007
 VDE 0839-6-4:2007-09
 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

IEC 61000-3-2:2005
 EN 61000-3-2:2006
 VDE 0838-2:2006-10
 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

IEC/CISPR 11:2003 + A1:2004, modified + A2:2006
 EN 55011:2007 + A2:2007
 VDE 0875-11:2007-11
 Industrial scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement

IEC/CISPR 22:2005, modified + A1:2005
 EN 55022:2006 + A1:2007
 VDE 0878-22:2008-05
 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement

IEC/CISPR 24:1997, modified + A1:2001 + A2:2002
 EN 55024:1998 + A1:2001 + A2:2003
 VDE 0878-24:2003-10
 Information technology equipment - Immunity characteristics - Limits and methods of measurement

IEC 61326-3-1:2008
 EN 61326-3-1:2008
 VDE 0843-20-3-1:2008-11
 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) - General industrial applications

PLC

IEC 61131-1:2003
EN 61131-1:2003
Programmable controllers -
Part 1: General information

IEC 61131-2:2007
EN 61131-2:2007
VDE 0411-500:2008-04
Programmable controllers -
Part 2: Equipment requirements and tests

IEC 61131-3:2003
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Programmable controllers -
Part 3: Programming languages

Relays

IEC 61810-1:2008
EN 61810-1:2008
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Electromechanical elementary relays -
Part 1: General requirements

IEC 61810-2:2005
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Electromechanical elementary relays -
Part 2: Reliability

IEC 61810-5:1998
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Electromechanical non-specified time
all-or-nothing relays - Part 5: Insulation
coordination

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coordination for measuring relays and
protection equipment - Requirements and
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UL Directives

UL 1059; ANSI 1059:2001-12
Terminal blocks

UL 486E:2009-05
Equipment wiring terminals for use with
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Industrial control equipment

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Nonincendive electrical equipment for use
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III, Divisions 1 and 2 hazardous (classified)
locations

Ship Classifications

ABS (American Bureau of Shipping)
Steel Vessels 2008
Part 4: Vessel Systems and Machinery

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DNV (Det Norsk Veritas)
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2007

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Test
2 Test Requirements for Electrical/Electronic
Devices and Systems

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R 695 and DIN EN 60945 Section 11.2

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Approval of Materials and Equipment for
Marine Use

PRS (Polski Rejestr Statkow) 2002
Publication No. 11/P
Environmental Tests on Marine Equipment

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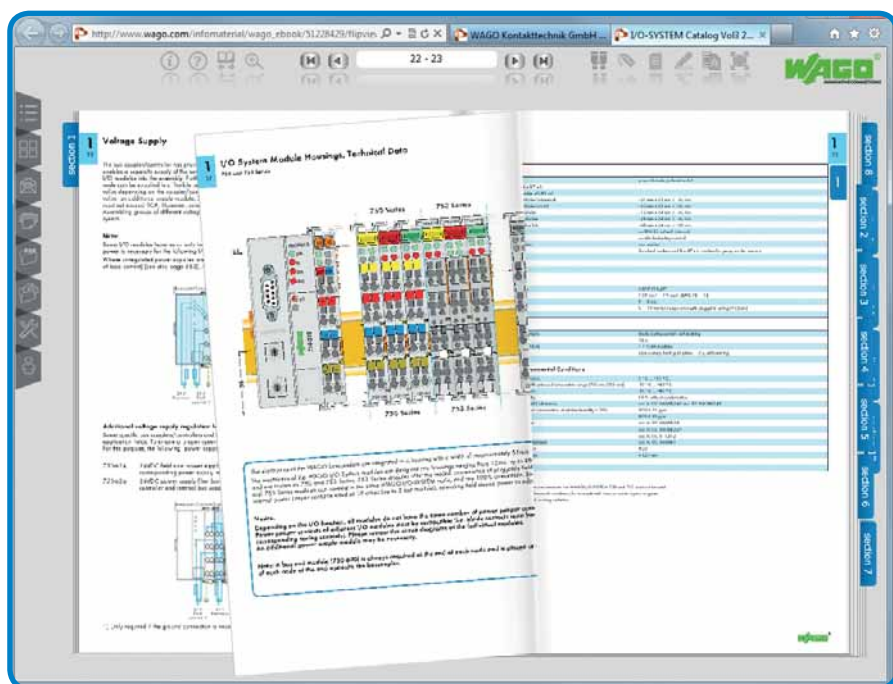


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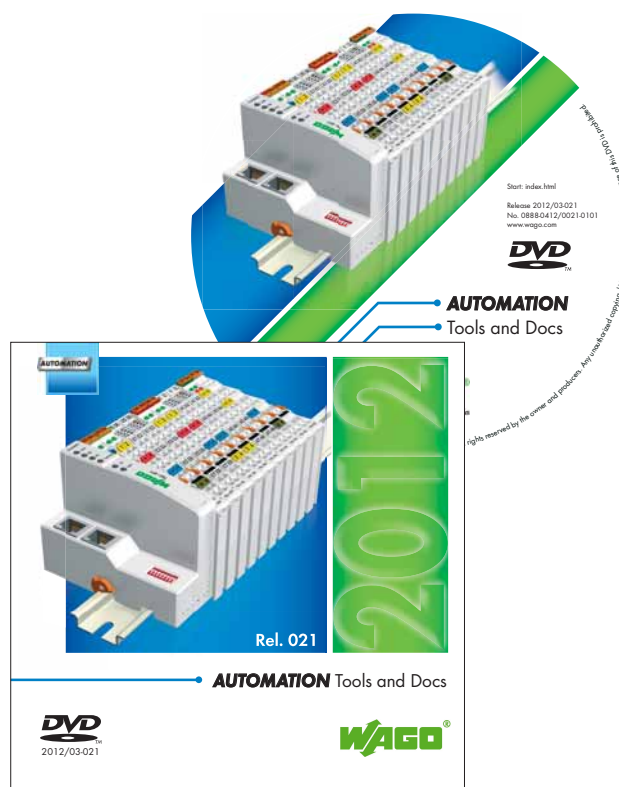
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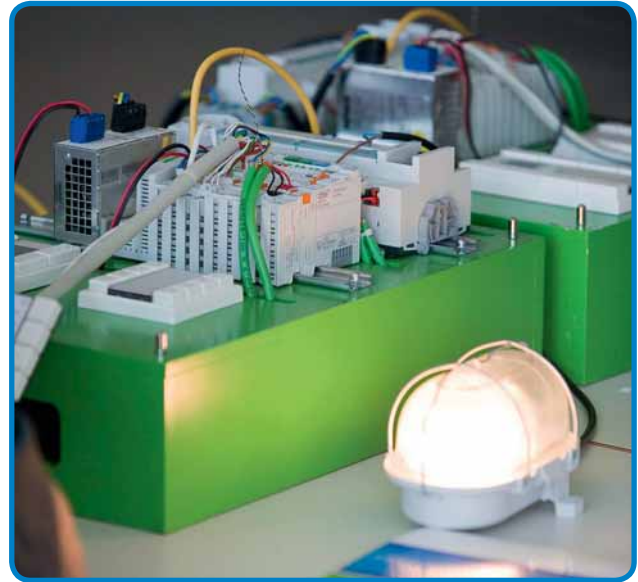
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