

# CENTRAL POWER RESEARCH INSTITUTE

## TEST REPORT



**CPRI**

**Test Report Number** : CPRI BPLSTNBMISC21T0297 **Date:** 10 February 2022

**Name and Address of the Customer** : Drive and Control System  
1324 Near Railway Fatak, Opp. Raj Kamal Petrol Pump,  
Gondal Road, Rajkot, Gujrat- 360004

**Name and Address of the Manufacturer** : Drive and Control System  
1324 Near Railway Fatak, Opp. Raj Kamal Petrol Pump,  
Gondal Road, Rajkot, Gujrat- 360004

**Particulars of sample tested** : Main LT Panel (Non-Extendable) 415 VAC, 6300A  
**Type** : PCC/MCC/ACDB/DCDB/AMF

**Description of test sample** : Refer sheet 2 of 6

**Serial Number** : DCS/70/21-22

**Number of samples tested** : One

**Date(s) of Test(s)** : 29 December 2021

**CPRI Sample code Number(s)** : STNBMISC21S0802

**Particulars of tests conducted** : Verification of the short circuit withstand strength

**Test in accordance with Standard/Specification** : As per customer's requirement and procedure generally  
followed as per cl.10.11.5.3.3 & 10.11.5.3.5 of IS/IEC:61439-1,2011  
& IS/IEC:61439-2, 2011

**Sampling Plan** : Nil

**Customer's Requirement** : SCWS test to be conducted only on busbars.

**Deviations if any** : SCWS test was conducted only on busbars.

**Name of the witnessing persons**

**Customers representative** : Mr. Subham Sharma & Mr. Karan

**Other than customer's representatives** : None

**Test subcontracted with address of the laboratory** : Nil

**Documents constituting this report (in words)**

**Number of Sheets** : Six

**Number of Oscillogram(s)** : Two

**Number of Graph(s)** : Nil


**Number of Photograph(s)** : One

**Number of Test Circuit Diagram(s)** : Two

**Number of Drawing(s)** : Three

  
(Saumitra Pathak)  
Test Engineer



  
(Sumbul Munshi)  
Head of Division  
Reviewed and Authorized by

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### DESCRIPTION OF SAMPLE TESTED

(As assigned by the manufacturer)

Test Sample	:	Main LT Panel (Non-Extendable) 415 VAC, 6300A
Type	:	PCC/MCC/ACDB/DCDB/AMF
Designation	:	LT Panel 6300A
Serial number	:	DCS/70/21-22
Voltages	:	
Rated Voltage ( $U_n$ ) in V	:	415
Rated Insulation Voltage ( $U_i$ ) in V	:	660
Rated impulse withstand voltage ( $U_{imp}$ ) in kV	:	NA
Currents	:	
Rated Current ( $I_n$ ) in A	:	6300
Rated current of a main outgoing circuit ( $I_{nc}$ ) in A	:	NA
Rated conditional short-circuit current ( $I_{cc}$ ) in kA	:	NA
Rated short-time withstand current ( $I_{cw}$ ) in kA	:	70 kArms for 1.0 second with initial peak of 154 kApeak
Rated frequency ( $f_n$ ) in hz	:	50
Degree of protection	:	Nil
Material group	:	Nil
Form of separation	:	Nil
Number of Phases	:	Three Phase + Neutral
Extendable	:	No

NA : Not Applicable

  
(Saumitra Pathak)  
Test Engineer

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### SUMMARY OF TESTS CONDUCTED

1. Tests conducted : Verification of Short-circuit withstand strength test
2. Rating for which tested : 70 kArms for 1.0 second with initial peak of 154 kApeak
3. Schedule of tests

Tests Conducted	Clause no.	Reference
Verification of Short-circuit withstand strength test (Incoming circuit and main busbars & Neutral conductor)	As per customer's requirement	Sheet 5 of 6

1. Oscillogram number(s) : CPRIBPLSTNBMISC21T0297S002  
: CPRIBPLSTNBMISC21T0297S004
2. Graph Number(s) : Nil
3. Photograph Number(s) : CPRIBPLSTNBMISC21T0297P01
4. Test Circuit diagram number(s) : OLTS/TCD-STC-01 & OLTS/TCD-STC-02
5. Drawing Number(s) : Refer sheet 4 of 6

(Saumitra Pathak)  
Test Engineer

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### LIST OF DRAWINGS

#### Drawing Numbers

The manufacturer has guaranteed that the sample submitted for the test(s) has been manufactured in accordance with the following drawings

Sl. No.	Drawing Number	Sheet Number	Revision Number
1	DCS/LT/STC/70	1 of 3	R1
2	DCS/LT/STC/70	2 of 3	R1
3	DCS/LT/STC/70	3 of 3	R1

It is verified that these drawings adequately represent the sample tested. Verification of this drawing by CPRI is limited to dimensional check only wherever possible.

(Saumitra Pattnak)  
Test Engineer

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### Verification of the short circuit withstand strength

Test conducted : Verification of the short circuit withstand strength  
Test Source : Station Transformers  
Number of phases : Three & Neutral  
Frequency : 50 Hz  
Condition Test Sample before test : New  
Test connections : Connected to source  
Safety parameter : Test sample was insulated from earth and connected to the neutral of the supply via a fusible element consisting of a copper wire 0.8 mm in diameter and at least 50 mm long for detection of fault.  
Transformer neutral & short circuit point : Refer Test Circuit Diagram No.  
OLTS/TCD-STC-01 for three phase test and  
OLTS/TCD-STC-02 for single phase test.

Test results:

Oscillogram Number	Peak kApk	RMS in kA			Duration (second)	Equivalent current in kArms for said duration
		Ir	Iy	Ib		
CPRIBPLSTNBMISC21T0297S002	159.70 (R-phase)	71.36	71.83	71.08	1.0	71.83
(Three phase Short circuit withstand strength test conducted on busbars consisting of HBB+VBB)						
CPRIBPLSTNBMISC21T0297S004	91.80	42.97			1.0	42.97
(Single phase short circuit withstand strength test conducted on neutral & nearest phase of busbars consisting of HBB+VBB)						

Observations

During test : No abnormality observed.  
After test : No abnormality observed in visual inspection.  
: Fine wire fuse was found intact.  
All busbars & supports were found intact.

Remarks : After test, the sample withstood HV test at 1.0 kVrms for five second.

Conclusion : The test results indicate that the sample tested complies with the requirement of customer.

(Saumitra Pathak)  
Test Engineer

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### Note

- a) The test results relate only to the sample(s) tested.
- b) Publication or reproduction of the Test Report/ Test Certificate in any form other than by complete set of the whole Test Report/ Test Certificate and in the language written is not permitted without the written consent of CPRI.
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(Saumitra Pathak)  
Test Engineer

----- End of Test Report -----