

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report Number : CPRIBPLSTNBMISC24T0084 Date: 19 April 2024

Name and Address of the Customer : Powercon Switchgears LLP
Plot No W 379, TTC Industrial Area, Rabale MIDC , Rabale
Navi Mumbai, Thane , Maharashtra 400705

Name and Address of the Manufacturer : Powercon Switchgears LLP
Plot No W 379, TTC Industrial Area, Rabale MIDC , Rabale
Navi Mumbai, Thane , Maharashtra 400705

Particulars of Sample Tested : 415 Vac, 6000A, LT PCC Cum MCC Panel (Non Extendable)

Condition of sample(s) on receipt : New

Type : PCC/MCC/ACDB/DCDB

Description of test sample : Refer sheet 2 of 6

Serial Number : PS/TYPETEST/01

Number of Samples Tested : One

Date(s) of Test(s) : 04 March 2024

CPRI Sample code Number(s) : STNBMISC24S0159

Particulars of test(s) conducted : Verification of the short circuit withstand strength test.

Test(s) 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 IEC:61439-1, 2020 & IEC:61439-2, 2020

Sampling Plan : Nil

Customer's Requirement : SCWS test to be conducted on main busbar only.

Deviations, if any : SCWS test was conducted on main busbar only.

Name of the witnessing persons

Customer's representative : Mr. Ashutosh Singh

Other than Customer's representatives : Nil

Test subcontracted with and 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

(Prabakaran T)
Test Engineer



(Himangshu Roy)
Head of Division
Reviewed and Authorized by

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DESCRIPTION OF SAMPLE TESTED

(As assigned by the manufacturer)

Test Sample	:	415 Vac, 6000A, LT PCC Cum MCC Panel
	:	(Non Extendable)
Type	:	PCC/MCC/ACDB/DCDB
Designation	:	Main Switchboard Panel
Serial number	:	PS/TYPETEST/01
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_{nA}) in A	:	6000
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 kApk
Rated frequency (f_n) in hz	:	50
Degree of protection	:	IP52
Material group	:	Nil
Form of separation	:	Nil
Number of Phases	:	Three Phase + Neutral
Extendable	:	No

NA : Not Applicable


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SUMMARY OF TESTS CONDUCTED

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

Test conducted	Clause Numbers	Sheet
Verification of short circuit withstand strength test (Incoming circuit and main busbars & Neutral conductor)	As per customer's requirement	5 of 6

4. Oscillogram Numbers : CPRIBPLSTNBMISC24T0084S002
CPRIBPLSTNBMISC24T0084S004
5. Graph Numbers : Nil
6. Photograph Numbers : CPRIBPLSTNBMISC24T0084P01
7. Test Circuit Diagram Numbers : OLTS/TCD-STC-01
OLTS/TCD-STC-02
8. Drawing Numbers : Refer sheet 4 of 6


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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

SI. No.	Drawing Number	Sheet Number	Revision Number
1.	PS/24/CPRI/STC/01	1 of 3	01
2.	PS/24/CPRI/STC/01	2 of 3	01
3.	PS/24/CPRI/STC/01	3 of 3	-

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.


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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		
CPRIBPLSTNBMISC24T0084S002	92.01	42.56			1.0	42.56
(Single phase short circuit withstand strength test conducted on neutral & nearest phase of main circuit busbars consisting of HBB+VBB)						
CPRIBPLSTNBMISC24T0084S004	160.4 (R-phase)	71.26	72.80	70.64	1.0	72.80
(Three phase Short circuit withstand strength test conducted on main circuit 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 1.0kVrms for sixty second.

Conclusion : The sample tested complies with the requirement of the customer for the test conducted.

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NOTE

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(Prabakaran T)
Test Engineer

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