

सी पी आर आई
भारत

**CPRI
INDIA**

परीक्षण रिपोर्ट
TEST REPORT





परीक्षण रिपोर्ट TEST REPORT



केन्द्रीय विद्युत अनुसंधान संस्थान
(विद्युत मंत्रालय, भारत सरकार के अधीन एक स्वायत्त सोसायटी)
CENTRAL POWER RESEARCH INSTITUTE

An Autonomous Society under the Ministry of Power, Govt. of India.

एन टी एन के सदस्य
Member of STL

स्विचगियर परीक्षण तथा विकास केन्द्र
SWITCHGEAR TESTING & DEVELOPMENT STATION

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TEST REPORT

Test Report Number : 2013/STL/1625 Dated : **07 JAN 2014**

Name and Address of the Customer : M/s Technocrats,
91, Industrial Area, Extension RAU,
Near Indira Exports (Dist.Indore).M.P

Name and Address of the Manufacturer : M/s Technocrats,
91, Industrial Area, Extension RAU,
Near Indira Exports (Dist.Indore).M.P

Particulars of Sample(s) Tested : 415 V, 2000 A, LT Panel

Condition of sample(s) on receipt : New
Type : MCC PCC
Designation : NIL
Serial Number(s) : NIL
Number of Sample(s) Tested : One
CPRI sample code number(s) : STDSSTL13S1168


Particulars of test(s) conducted : Verification of temperature rise limits
Date(s) of Test(s) : 23/10/2013
Test(s) in accordance with : IS : 8623 (Part-1), 1993 and as per customer's requirement.
Standard/specification
Sampling Plan : NIL
Customer's Requirement : Maximum temperature rise limit on busbar and joints shall be
70 K declared by the customer as specified in the standard.
Deviations, if any : NIL
Test subcontracted with name and address of
the laboratory : NONE

Name of the witnessing persons
Customer's Representatives : Mr. P.L. Dhakad, Sr. Engineer
Mr. Shiv Kumar, Technical Engineer
Other than Customer's Representatives : NIL

Documents constituting this report (in words)
No. of Sheet(s) : SIX
No. of Oscillogram(s) : NIL
No. of Graph(s) : NIL
No. of Photo (s) : NIL
No. of Test Circuit Diagram(s) : NIL
No. of drawing(s) : TWO


(PRADEEP JAIN)
TEST ENGINEER




(S. BHATTACHARYYA)
JOINT DIRECTOR

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TEST REPORT

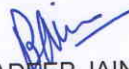
Test Report Number: 2013/STL/1625

Date:

07 JAN 2014

SUMMARY OF TEST

1. Test conducted : Verification of temperature rise limits
2. Rating for which tested : 2000A, 3 Phase, 50 Hz
3. DOCUMENTS CONSTITUTING THIS REPORT :
 - 3.1 Supplementary test report : NIL
 - 3.2 Oscillogram No(s) : NIL
 - 3.3 Drawing of the equipment tested : TI/TR/01Rev 01 & TI/TR/02 Rev 00
 - 3.4 Test circuit drawing No(s). : NIL
 - 3.5 Photograph No(s). : NIL


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DESCRIPTION OF THE SAMPLE TESTED
(As assigned by the manufacturer)

Sample	:	LT Panel
Rated voltage (Volts)	:	415
Rated current (Amps)	:	2000
Frequency (Hz)	:	50
Insulation level (V)	:	660
No. of phases	:	3 Ph+N
No. of poles	:	3
Dimensions of the sample	:	As per drawing
Rated short time current (kArms/kAp)	:	-
Contacts terminals material	:	-
Isolating distance (mm)	:	-
Phase to earth distance (mm)	:	-
Creepage distance (mm)	:	-


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Sheet 3 of 6

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TEST REPORT

Test Report Number: 2013/STL/1625


Date:

SCHEDULE OF TESTS

07 JAN 2014

Test Conducted : Verification of temperature rise test.
Condition of the Sample : New
Date of Test : 23/10/2013
Starting Time(Hrs.) : 10.55
Shut down time(Hrs.) : 16.55
Test current (A) : 2000A
Size of conductor used : Aluminium Busbar, Size 2 x 150 x 12mm /phase, 1.0 meter long
Frequency (Hz) : 50
Phase : 3
Avg. ambient : 30.1°C
Temperature at shut down :
Arrangement of thermocouple locations : As per drawing no. TI/TR/01Rev 01

Thermocouple		Maximum Temperature Recorded (deg C)	Temperature Rise (K)
Locations	Numbers		
As per drawing	T1	57.8	27.7
As per drawing	T2	61.2	31.1
As per drawing	T3	61.3	31.2
As per drawing	T4	76.6	46.5
As per drawing	T5	81.9	51.8
As per drawing	T6	76.4	46.3
As per drawing	T7	71.8	41.7
As per drawing	T8	76.8	46.7
As per drawing	T9	73.6	43.5


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07 JAN 2014

SCHEDULE OF TESTS

Thermocouple		Maximum Temperature	
Locations	Numbers	Recorded (deg C)	Rise (K)
As per drawing	T10	62.2	32.1
As per drawing	T11	67.7	37.6
As per drawing	T12	65.3	35.2
As per drawing	T13	51.5	21.4
As per drawing	T14	56.1	26
As per drawing	T15	53.8	23.7
As per drawing	T16	52.6	22.5
As per drawing	T17	44.5	14.4

Observation : 1) The temperature rise obtained was within the limits as specified in the standard & specified by the customer.
2) High voltage test was conducted at 2.5kVrms for 1 minute to check the effect of temperature rise on adjacent parts of the equipment. Sample withstood the test.

CONCLUSION : The test results indicate that the sample tested complies with the requirement of IS : 8623 (Part-1), 1993 and as per customer's requirement.


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Sheet 5 of 6

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TEST REPORT

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07 JAN 2014

NOTE

- a) The Test results relate only to the item(s) tested.
- b) Publication or reproduction of the test report /Certificate in any form other than by complete set of the whole test report /Certificate and in the language written is not permitted without the written consent of CPRI.
- c) Any Corrections/erasure invalidates the test Report/Certificate.
- d) NABL has Accredited this laboratory as per ISO 17025-2005 standard, vide certificate no. T-0011 for the tests carried out.
- e) Any anomaly/discrepancy in the test report /Certificate should be brought to the notice of CPRI within 45 days from the date of issue.
- f) The verification of the sample drawings by CPRI is limited to dimensional checks only wherever possible.
- g) CPRI Issues two kinds of documents:


Test Report:

The test report is issued when the sample is tested for specific test required by the customer either in accordance with National/International standards or as per customer's requirements but no certification on the performance of the sample tested. The test report will contain the record of the values of test parameters as obtained during testing, the physical condition of the apparatus during testing, the physical condition of the apparatus during/after the test(s), copy(ies) of Oscillogram(s), record of supplementary test(s) if any conducted but no certification on the performance of the apparatus tested.

Test Certificate:

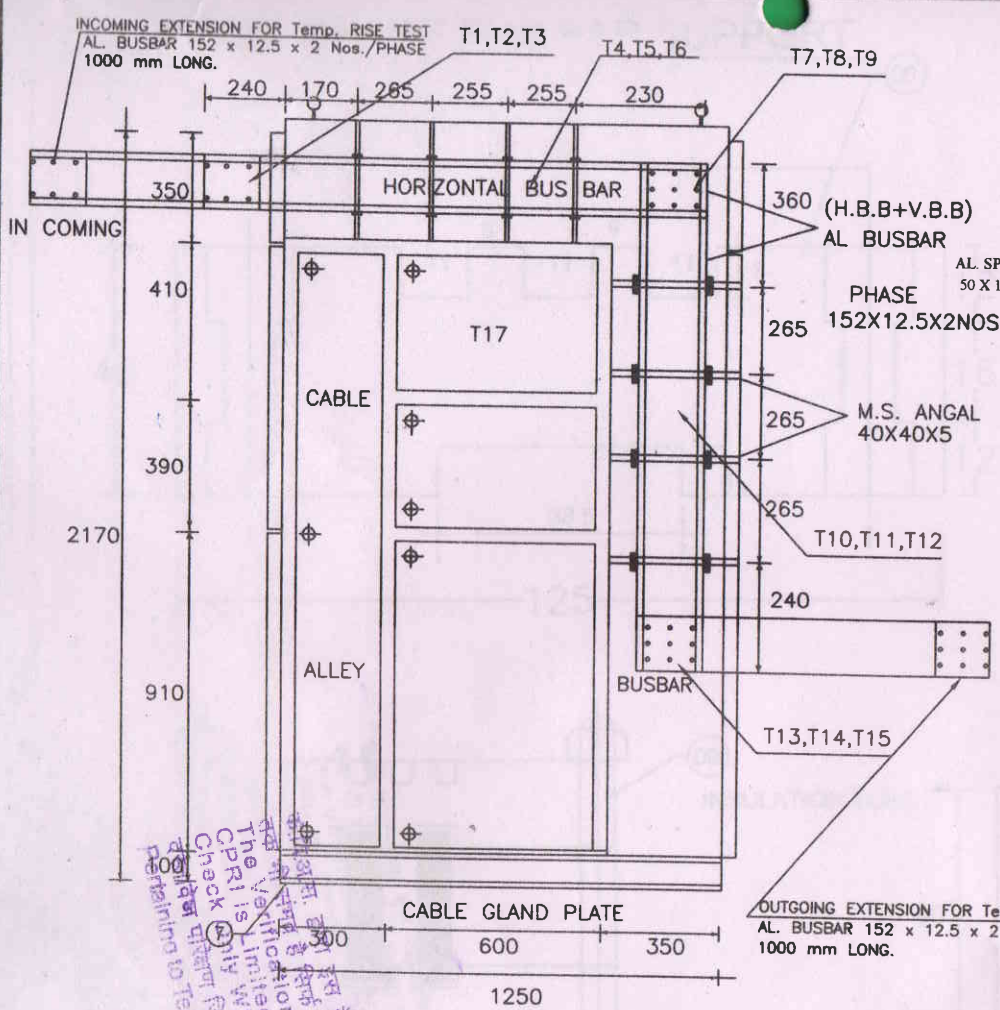
The test certificate is issued on request and payment of the prescribed charges only when the apparatus of particular type and rating has satisfactorily passed all the specified tests in compliance with condition stipulated in a published National/International Standards.

- h) All Documents constituting this test report/certificate are stitched together with a Continuous silk thread/silk ribbon, the two ends of which have been brought over the front sheet of this test report/certificate and sealed with a CPRI logo printed paper sticker/embossed.

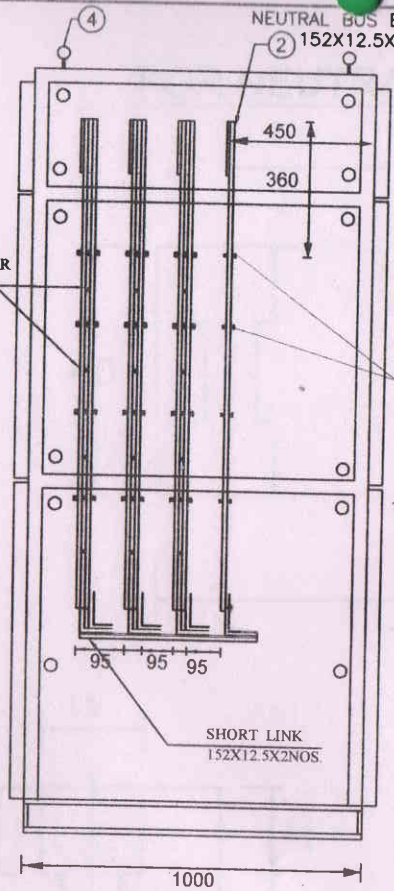

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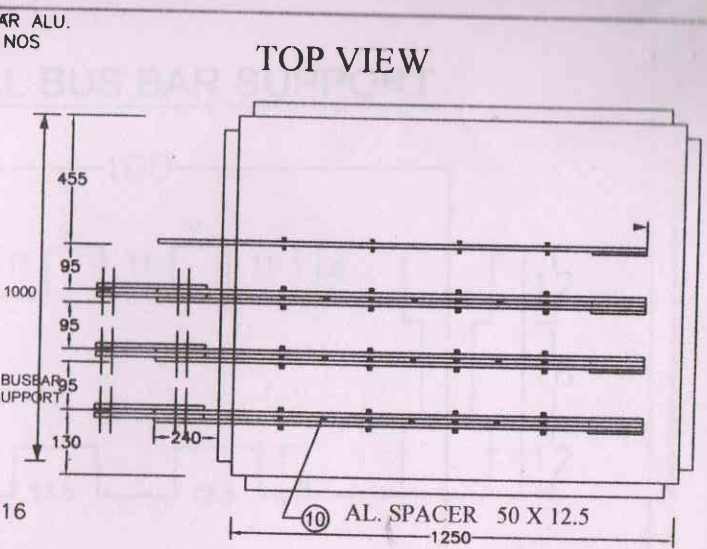
Sheet 6 of 6



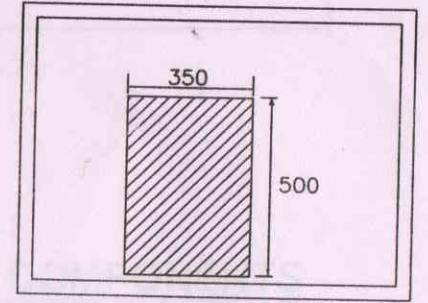
FRONT VIEW



SIDE VIEW



TOP VIEW



FOUNDATION PLAN

ALL DIMENSIONS ARE IN MM AND APPROXIMATE
GENERAL TOLERANCE ± 5%

H.B.B+V.B.B
AL. BUSBAR PHASE 152X12.5X2NOS
AL. BUSBAR NEUTRAL 152X12.5X1NOS

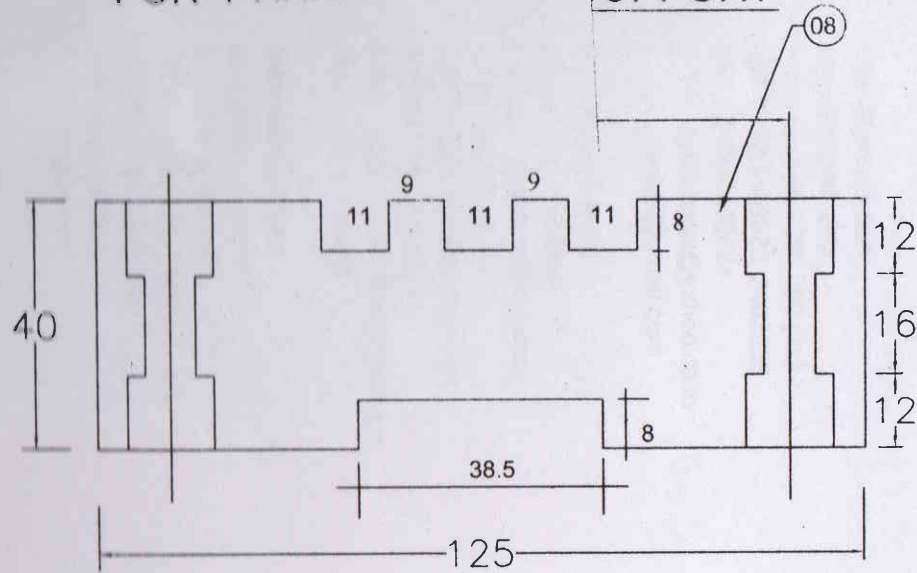
LOCATION OF THERMOCOUPLE

I/C TERMINALS...	T1 T2 T3
HBB MIDDLE POINT...	T4 T5 T6
HBB & VBB JOINT...	T7 T8 T9
VBB MIDDLE POINT...	T10 T11 T12
OUTGOING TERMINALS...	T13 T14 T15
BODY OF INCLOSER....	T16 T17

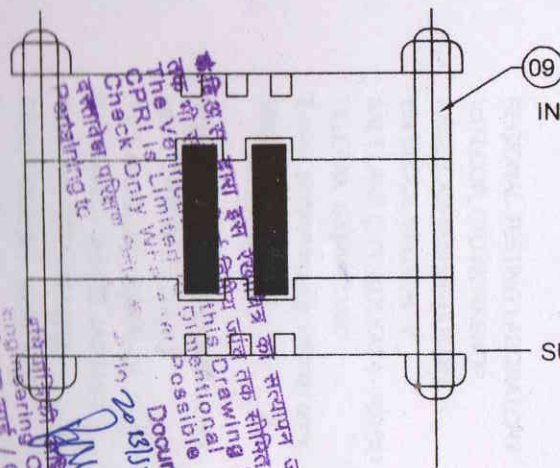
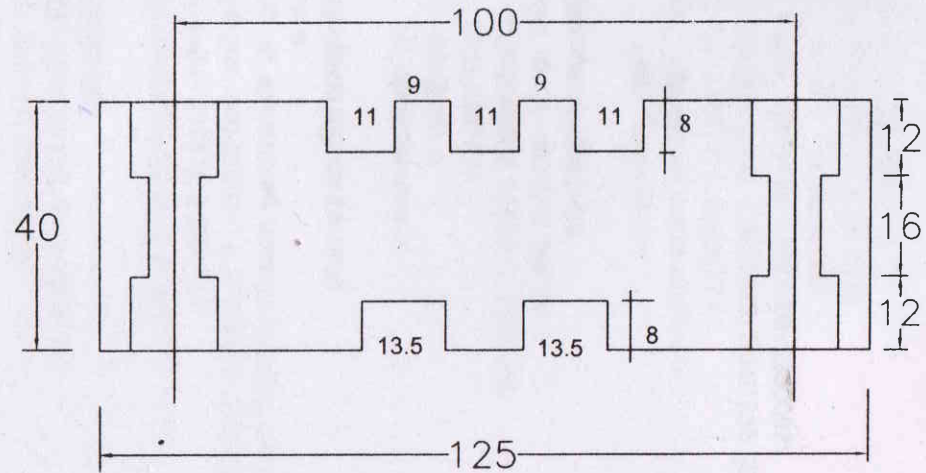
TITLE L.T CONTROL PANEL 2000 AMPS 415 V	NAME	SCALE-	N.T.S	DATE	12.10.13	TECHNOCRATS 91, INDUSTRIAL AREA EXTN, RAU-453331 (NEAR INDIRA EXPORTS) DIST. INDORE
	DRG BY- KAPIL	REV - 01		DRG NO		
	CHD BY- P.K.G					
	APP BY- N.J.N					

The Verification of this Drawing is limited to Dimensions wherever possible. Check Only wherever possible. Determining to Test Report No. 11/11/25
 Engineering Officer
 CPRI

FOR PHASE BUS BAR SUPPORT

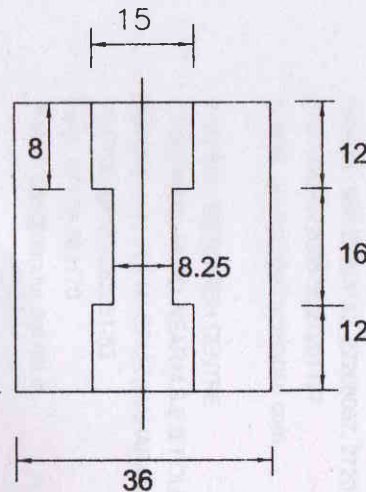


FOR NEUTRAL BUS BAR SUPPORT



INSULATION TUBE

SUPPORT SMC



MAKE OF COMPONENTS

FABRICATION- 14/16 SWG CRCA SHEET
 BUSBAR -AL ELECTROLYTIC GRADE
 CABE ENTRY -BOTTOM
 BASE CHANNEL -100X50X6MM
 PAINT -LIGHT GRREN
 BUSBAR SUPPORT-POWER MAT
 MATERIAL -S. M.C
 GENERAL TOLERANCE $\pm 2\%$

ALL DIMENSIONS ARE IN MM AND APPROXIMATE

TITLE-
 L.T PANEL 2000 AMPS
 415 V

NAME	SCALE-	N.T.S
DRG BY- KAPIL	REV -00	
CHD BY- P.K.G		
APP BY N.J.N		

DATE 12.10.13
 DRG NO
 TI/TR/02

TECHNOCRATS

91, INDUSTRIAL AREA EXTN, RAU-453331
 (NEAR INDIRA EXPORTS) DIST. INDORE

सी पी आर आई संगठन

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वेब साइट : <http://powersearch.cpri.res.in>
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Central Power Research Institute

(An Autonomous Society under the Ministry of Power, Govt. of India)

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