

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 Ministry of Power, Govt. of India)

एस टी एल के सदस्य

Member of STL

स्विचगियर परीक्षण तथा विकास केन्द्र

SWITCHGEAR TESTING & DEVELOPMENT STATION

गोविन्दपुरा, भोपाल - 462023

GOVINDPURA BHOPAL - 462023

दूरभाष/Telephone +91 (0) 755 - 2586682 फ़ैक्स/Fax +91 (0) 755-2587774

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report Number : CPRIBPLSTNBMISC21T0075 Date: 09 July 2021

Name and Address of the Customer : Avatar Electricals
Plat No. 205, A Wing, Shanikrupa Complex,
Ambarnath Pipe Line Road, Dombivali (East) – 421 204

Name and Address of the Manufacturer : Avatar Electricals
Plat No. 205, A Wing, Shanikrupa Complex,
Ambarnath Pipe Line Road, Dombivali (East) – 421 204

Particulars of sample tested : L.T. PCC Panel (Non-Extendable) 415 V, 4000A
Type : Indoor & Outdoor
Description of test sample : Refer sheet 2 of 6
Serial Number : AE/TYPE TEST/01
Number of samples tested : One
Date(s) of Test(s) : 21 June 2021
CPRI Sample code Number(s) : STNBMISC21S0161

Particulars of tests conducted : Verification of the short circuit withstand strength
As per customer's requirement and procedure generally
Test in accordance with Standard/Specification : 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 : Not applicable
Customer's Requirement : STC test to be conducted only on main circuit busbar.
Deviations if any : STC test was conducted only on main circuit busbar.

Name of the witnessing persons
Customers representative : Mr. Raghu Patel (Elec. Engineer)
Other than customer's representatives : None
Test subcontracted with address of the laboratory : None

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) : Two

(Saumitra Pathak)
Test Engineer



(Sumbul Munshi)
Head of Division
Reviewed and Authorized by

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



Test Report Number

: CPRIBPLSTNBMISC21T0075

Date: 09 July 2021

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DESCRIPTION OF SAMPLE TESTED

(As assigned by the manufacturer)

Test Sample : L.T. PCC Panel (Non-Extendable)
Type : Indoor & Outdoor
Designation : LT PCC Panel
Serial number : AE/TYPE TEST/01

Voltages


Rated Voltage (U_n) in VAC : 415
Rated Insulation Voltage (U_i) in VAV : 660
Rated impulse withstand voltage (U_{imp}) in kV : NA

Currents

Rated Current (I_{nA}) in A : 4000
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 : 50 kArms for 1.0 second with initial peak of 105 kApeak

Rated frequency (f_n) in hz : 50
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 : 50 kArms for 1.0 second with initial peak of 105 kApeak
3. Schedule of tests

Tests Conducted	Clause no.	Reference
Verification of Short-circuit withstand strength test (Incoming circuit and main busbars & Neutral conductor)	10.11.5.3.3 & 10.11.5.3.5	Sheet 5 of 6

1. Oscillogram number(s) : CPRIBPLSTNBMISC21T0075S002
: CPRIBPLSTNBMISC21T0075S004
2. Graph Number(s) : Nil
3. Photograph Number(s) : CPRIBPLSTNBMISC21T0075P01
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	AE/SCT/01	01 OF 2	01
2	AE/SCT/01	02 OF 2	-

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 Pathak)
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		
CPRIBPLSTNBMISC21T0075S002	106.8 (R-phase)	50.89	50.81	50.87	1.0	50.89
(Three phase Short circuit withstand strength test conducted on main circuit busbars consisting of HBB + VBB)						
CPRIBPLSTNBMISC21T0075S004	63.65	30.36			1.0	30.36
(Single phase short circuit withstand strength test conducted on neutral & nearest phase of 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 1.0 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.
- c) Any correction/erasure invalidates this Test Report/Test Certificate.
- d) Any anomaly/discrepancy in the Test Report/Test Certificate should be brought to the notice of CPRI within 45 days from the date of issue.
- e) All documents constituting the Test Report/Test Certificate are stitched together with a continuous silk thread/silk ribbon, the two ends of which have been brought over the front sheet of the Test Report/Test Certificate and sealed with a CPRI logo printer paper sticker/embossed.

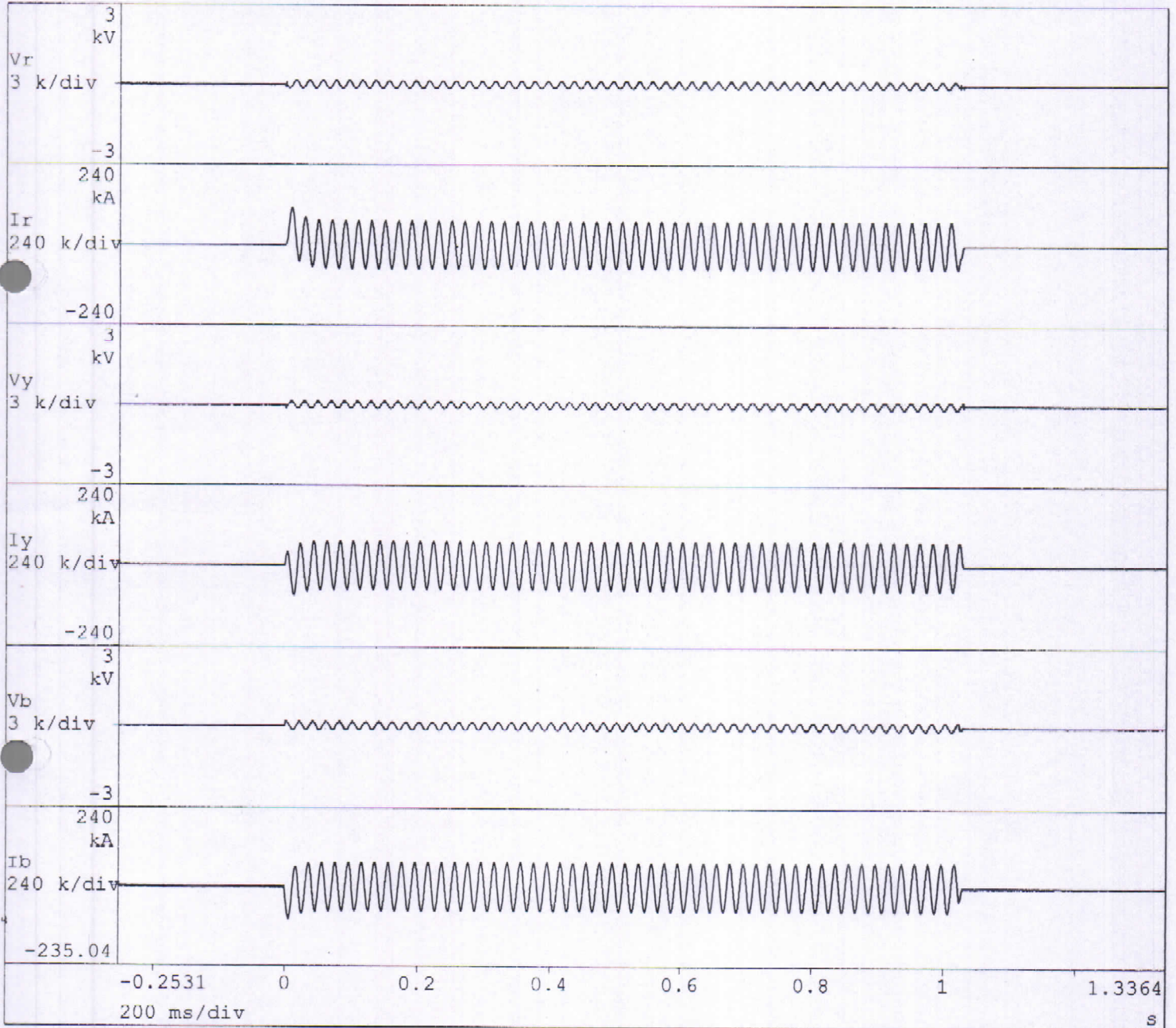
(Saumitra Pathak)
Test Engineer

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



Test Report Number : CPRIBPLSTNBMISC21T0075

TEST RESULTS



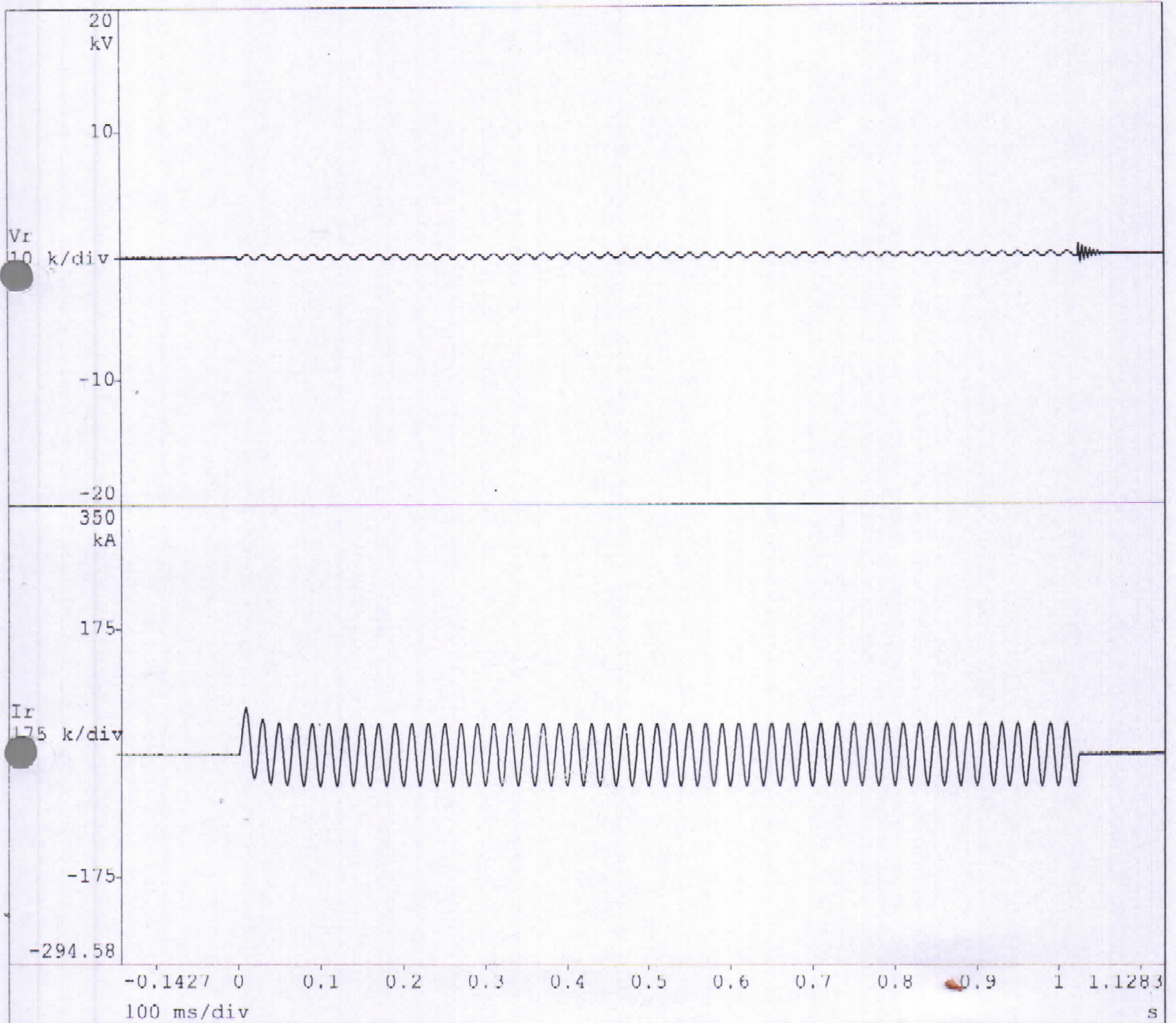
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Test Engineer



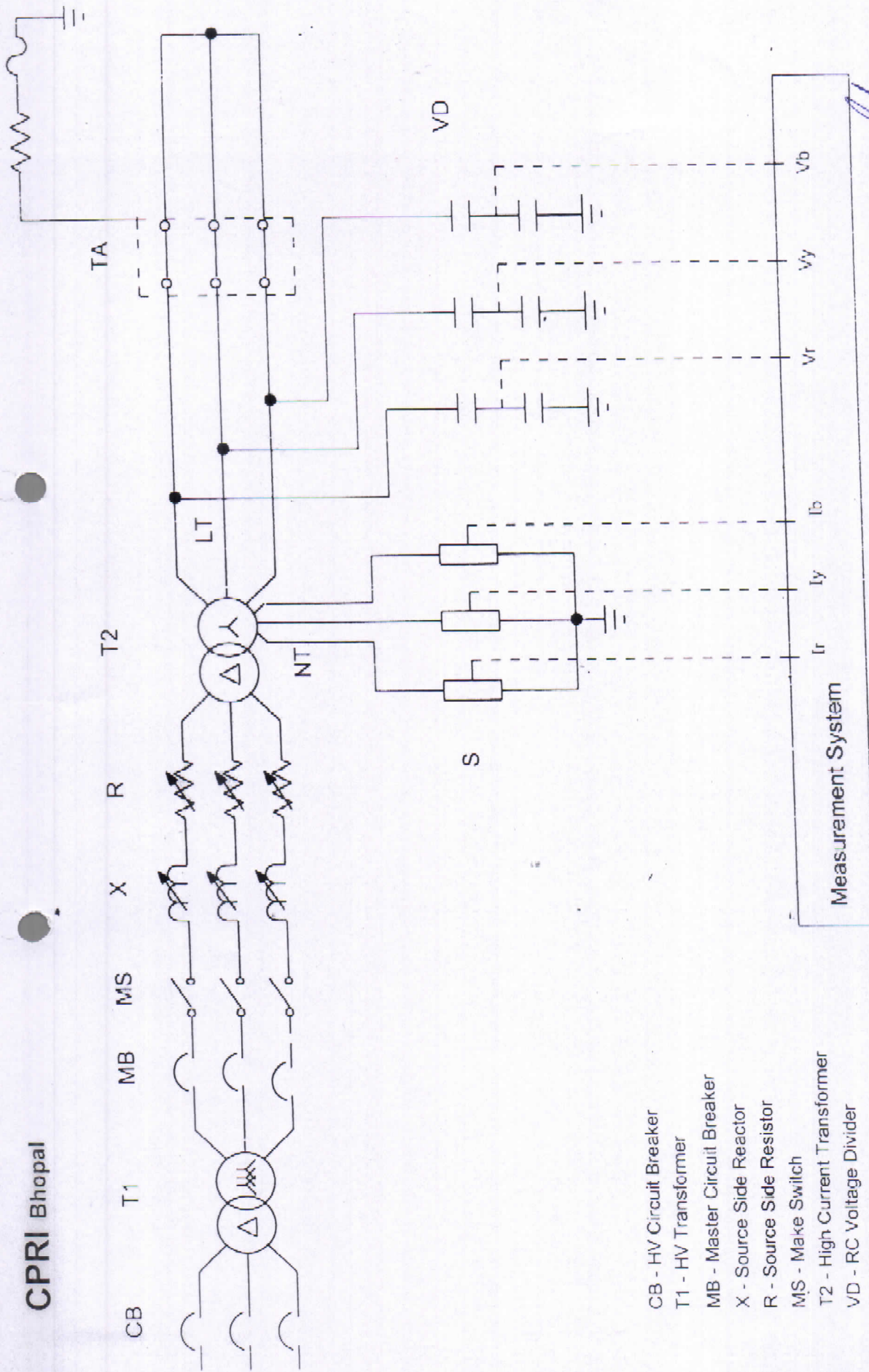
Test Report Number : CPRIBPLSTNBMISC21T0075

TEST RESULTS



Oscillogram Number : CPRIBPLSTNBMISC21T0075S004

~~Signature~~
Test Engineer

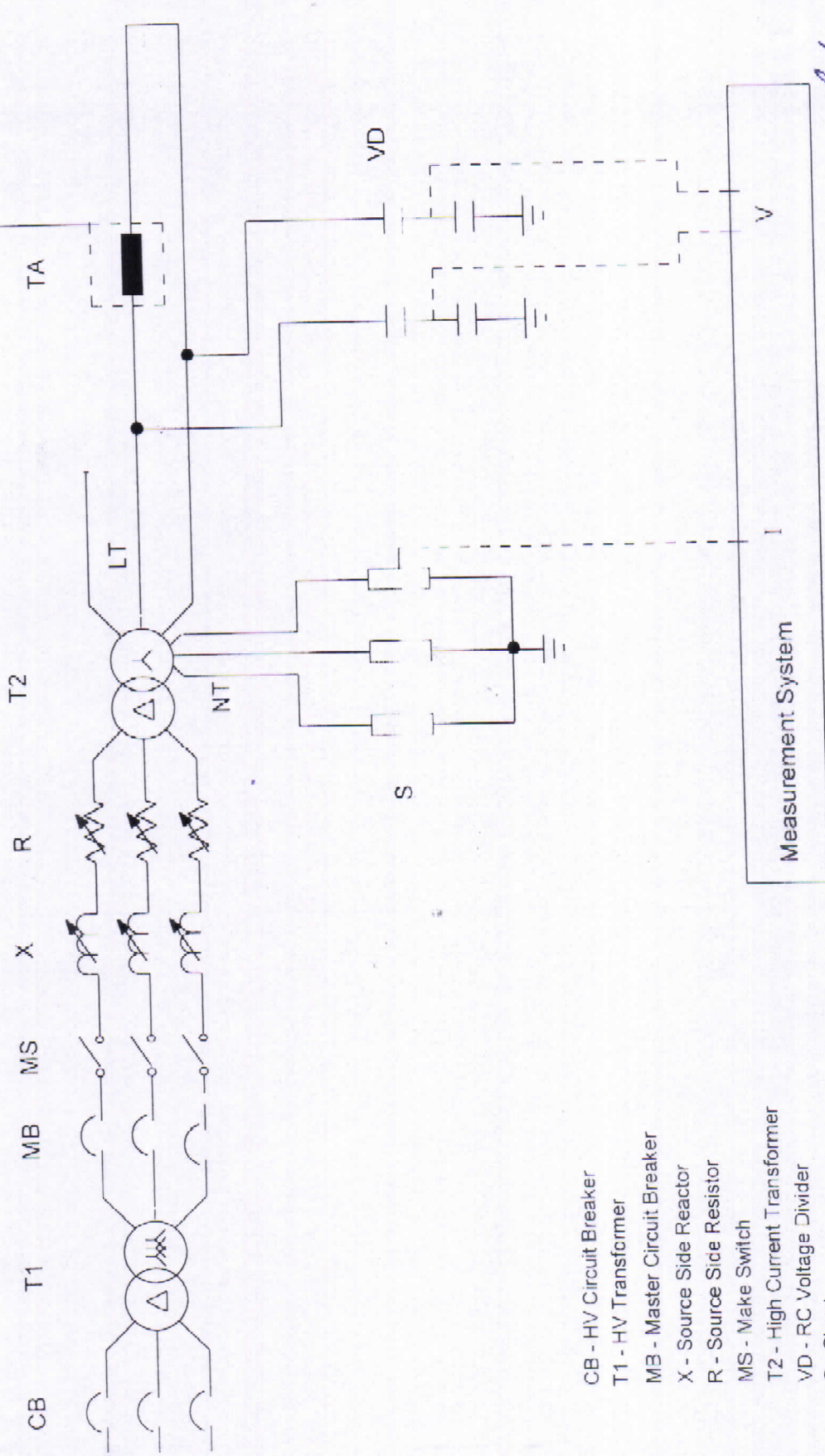


TEST ENGINEER

OLTS/ITCD-STC-01

- CB - HV Circuit Breaker
- T1 - HV Transformer
- MB - Master Circuit Breaker
- X - Source Side Reactor
- R - Source Side Resistor
- MS - Make Switch
- T2 - High Current Transformer
- VD - RC Voltage Divider
- S - Shunt
- TA - Test Apparatus
- r - Current Limiting Resistor
- FWF - Fine Wire Fuse
- LT - Line terminals of the secondary windings of T2
- NT - Neutral terminals of the secondary windings of T2

CPRI Bhopal

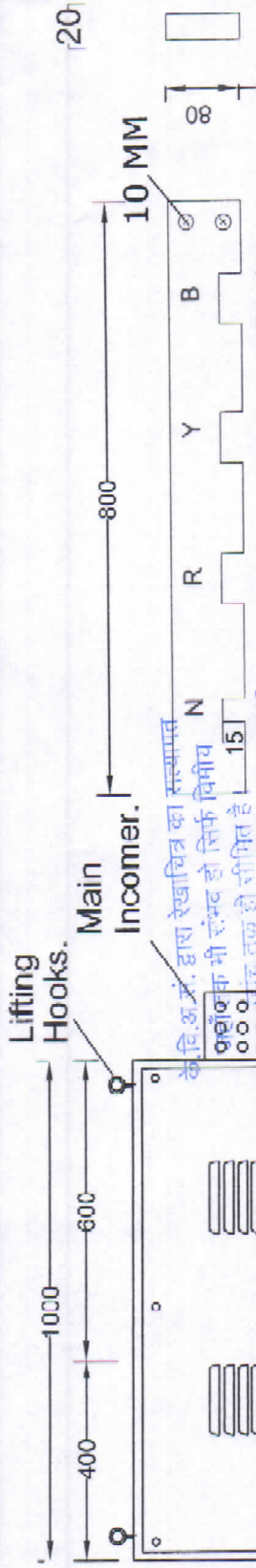


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- TA - Test Apparatus
- r - Current Limiting Resistor
- FWF - Fine Wire Fuse
- LT - Line terminals of the secondary windings of T2
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Measurement System

TEST ENGINEER

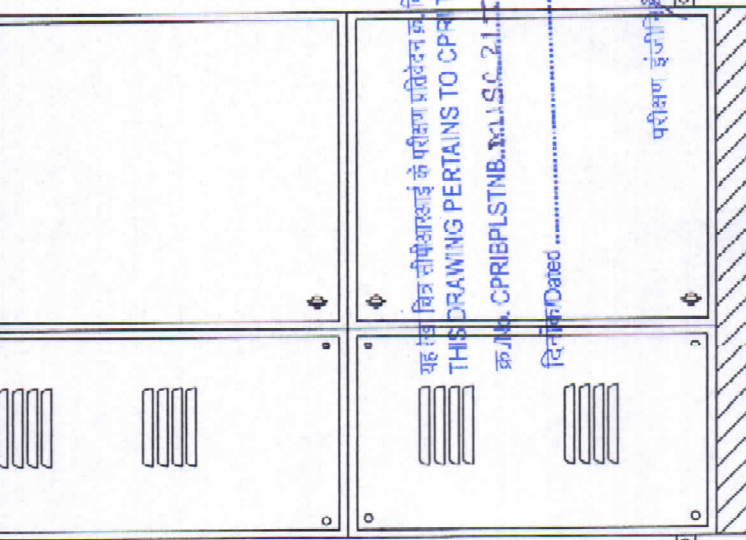
OLTS/TCDD-STC-02



के वि. अ. सं. द्वारा रेखाचित्र का स्विकारण
 किया गया है।
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THE VERIFICATION OF THIS DRAWING
 BY CPRI IS LIMITED TO DIMENSIONAL
 CHECKS ONLY WHERE FRP SUPPORTS

QUANTITY-12 NOS.



PANEL FABRICATION : 2 MM CRCA.
BUS BAR SIZE:-

(A) HORIZONTAL BUSBAR:-

PHASE : 3:150x12x 1200 mm length AL.
NEUTRAL : 2:150x12x 1200 mm length AL.

(B) VERTICAL BUS BARS

PHASE : 3:150x12x1330 mm length AL.
NEUTRAL : 2:150x12x1330 mm length AL.

FRP SUPPORTS

Horizontal - 3 Sets
Vertical - 3 Sets

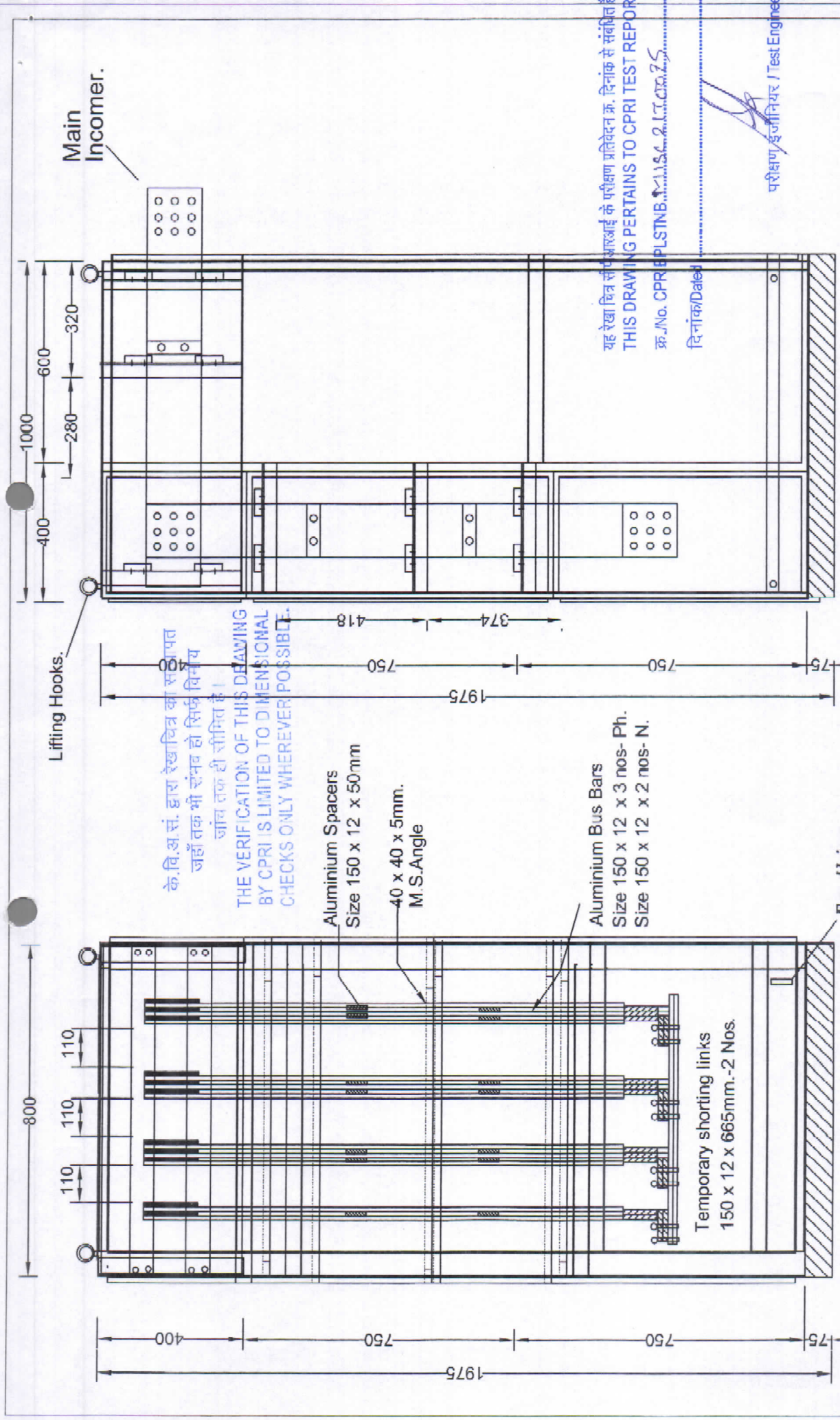
Tolerance : +/- 5 %.
All Dimensions in mm

यह ड्राइंग बिजली की परीक्षण प्रतिवेदन के दिनांक से संबंधित है।
 THIS DRAWING PERTAINS TO CPRI TEST REPORT
 क्र. No. CPRI/PLSTNB. XL/SC. 2.1.1.0075

दिनांक Dated
 परीक्षण इंजीनियर Test Engineer

FRONT VIEW.

MANUFACTURED BY: M/s. AVATAR ELECTRICALS, FLAT NO-205, A WING, SHANIKRUPA COMPLEX, AMBERNATH PIPE LINE ROAD, DOMBIVALI (EAST)-421204	TEST DETAILS		RATED VOLTAGE : 415 VAC.	SCALE	SHEET	DATE	DRAWN	Mr. OMKAR
	Short Circuit withstand testing for LT PCC PANEL. for 4000 A, 50 ka for 1 sec. As Per IS/IEC 61439, PART-1 & 1.2011		CURRENT : 4000 A	NTS	1 OF 2	24-05-2021	APPROVED	Mr. V.JAYKUMAR.
			TYPE : INDOOR & OUTDOOR.			REV	SR. NO	AE/TYPETEST/01
			DESIGNATION : LT PCC PANEL			01.	DRG.NO	AE/SC/01



के.वि.अ.सं. द्वारा रेखाचित्र का स्वीकृत
जहाँ तक भी संभव हो सिर्फ विनियम
जानें तक ही सीमित है।
THE VERIFICATION OF THIS DRAWING
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THIS DRAWING PERTAINS TO CPRI TEST REPORT
क्र./No. CPRI/PLSTNB./11.5.2021/25.
दिनांक/Dated

परीक्षण इंजीनियर / Test Engineer

Tolerance : +/- 5 %.
All Dimensions in mm

MANUFACTURED BY: M/s. AVATAR ELECTRICALS, FLAT NO-205, A WING, SHANIKRUPA COMPLEX, AMBERNATH PIPE LINE ROAD, DOMBIVALI (EAST)-421204	TEST DETAILS		RATED VOLTAGE : 415 VAC.		SCALE	SHEET	DATE	DRAWN	MR. OMKAR
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			TYPE : INDOOR & OUTDOOR.		REV		REV	SR. NO	AE/TYPETEST/01.
			DESIGNATION : LT PCC PANEL		00		00	DRG.NO	AE/SC/01

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(MEMBER OF STL)**



TEST REPORT

Test Report Number : CPRIBPLSTNBMISC21T0075

TEST RESULTS



Photograph Number : CPRIBPLSTNBMISC21T0075P01

Test Engineer