

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 केंद्र**

**SWITCHGEAR TESTING & DEVELOPMENT STATION**

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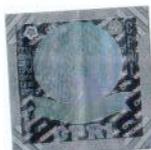


**TEST REPORT**

**CPRI**

<b>Test Report Number</b>	CPRIBPLSTNBMISC19T0217	<b>Date : 4 October 2019</b>
<b>Name &amp; address of the Customer</b>	M/s Electro System Devices 86/9, Road No.6, Mundka, New Delhi-110 041	
<b>Name &amp; address of the Manufacturer</b>	M/s Electro System Devices 86/9, Road No.6, Mundka, New Delhi-110 041	
<b>Particulars of sample tested</b>	415V, 5000A, LT Switchboard (Non Extendable)	
<b>Condition of sample on Receipt</b>	New	
Type	Power Cum Motor Control Centre	
Designation	Main Distribution Panel	
Serial number	ESD/70K	
Date(s) of Test(s)	1 <sup>st</sup> July 2019	
CPRI sample code no.	STNBMISC19S0170	
<b>Particulars of tests conducted</b>	Verification of the short circuit withstand strength	
<b>Test in accordance with</b>	As per customer's requirement and procedure followed as per clause 10.11.5.3.3 & 10.11.5.3.5 of IS/IEC:61439-1 : 2011 & IS/IEC : 61439-2:2011	
<b>Standard/specification</b>	Not applicable	
Sampling plan	STC test to be conducted only on main circuit busbar.	
Customer's requirement	STC Test was conducted only on main circuit busbars.	
Deviations if any		
<b>Name of the Witnessing persons</b>		
Customer's representative	Shri Arvind Tripathi	
Other than Customer's representatives	Nil	
Test subcontracted with address of the laboratory	None	
<b>Documents constituting this report (in words)</b>		
Number of sheets	Five	
Number of oscillograms	Two	
Number of graphs	Nil	
Number of photos	One	
Number of Test circuit diagrams	Two	
Number of drawings	Three	

(SAUMITRA PATHAK)  
TEST ENGINEER



(SUMBUL MUNSHI)  
JOINT DIRECTOR  
Approved by

Sheet 1 of 5

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**CPRI**

**TEST REPORT**

Test Report Number CPRI BPLSTNBMISC19T0217

Date : 4 October 2019

**Summary of test**

<b>Test conducted</b>	Verification of the short circuit withstand strength
<b>Rating for which tested</b>	70 kArms for 1.0 second with initial peak of 154 kA
<b>Documents constituting this report</b>	
Oscillogram number	CPRI BPLSTNBMISC19T0217. S02 & S04
Photograph numbers	P-1
Test circuit diagram number	OLTS/TCD-STC-01 & OLTS/TCD-STC-02
Drawing number	ESD/19/70K SHEET 1 of 3 REV.01 ESD/19/70K SHEET 2 of 3 REV.01 ESD/19/70K SHEET 3 of 3 REV.01

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TEST ENGINEER

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**CPRI**

**TEST REPORT**

Test Report Number CPRI BPLSTNBMISC19T0217

Date : 4 October 2019

**Ratings assigned by manufacturer**

Test sample	415V, 5000A , L.T Switchboard (Non Extendable)
Type	Power Cum Motor Control Centre
Designation	Main Distribution Panel
Serial number	ESD/70K
Rated operational voltage	415 V
Rated current	5000 A
Rated insulation voltage	660 V
Rated frequency	50 Hz
Number of phases	Three phase+Neutral
Rated short-time current	70 kArms for 1.0 second with initial peak of 154 kA

  
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**TEST REPORT**

**CPRI**

Test Report Number CPRIPLSTNB MISC19T0217

Date : 4 October 2019

**Verification of the short circuit withstand strength (cl. 10.11.5.3.3 & 10.11.5.3.5)**

**Test conditions:**

Condition of the sample : New  
No. of phases : Three & Neutral  
Source frequency : 50Hz.  
Transformer neutral & short circuit point : See test circuit diagram no. OLTS/TCD-STC-01 for three phase test and OLTS/TCD-STC-02 for single phase test  
Safety parameter : The sample was insulated from earth and connected to neutral of the supply via a fuse of 0.8 mm diameter copper wire 50 mm long in series with a resistor limiting the fault current to 1500A

**Test results:**

Oscillogram Number	Peak kA	RMS in kA			Duration (seconds)	Equivalent current in kArms for 1 second
		Ir	Iy	Ib		
Single phase Short circuit withstand strength test conducted on neutral & nearest phase main busbars consisting of HBB+VBB +HBB Test circuit diagram: OLTS/TCD-STC-02						
CPRIPLSTNB MISC19T0217.S02	89.06		42.39		1.0	42.39
Three phase Short circuit withstand strength test conducted on main circuit busbars consisting of HBB+VBB +HBB (Peak in B-Phase) Test circuit diagram: OLTS/TCD-STC-01						
CPRIPLSTNB MISC19T0217.S04	155.54	70.74	70.93	70.69	1.0	70.93

**Observations:**

During test : No abnormality.  
After test : No abnormality. Fine wire fuse intact. All busbars & supports found intact.  
Remarks : After short circuit test, the sample withstood HV test at 1.0 kVrms for 5 seconds.

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

  
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**TEST REPORT**

**Test Report Number** CPRI BPLSTNBMISC19T0217

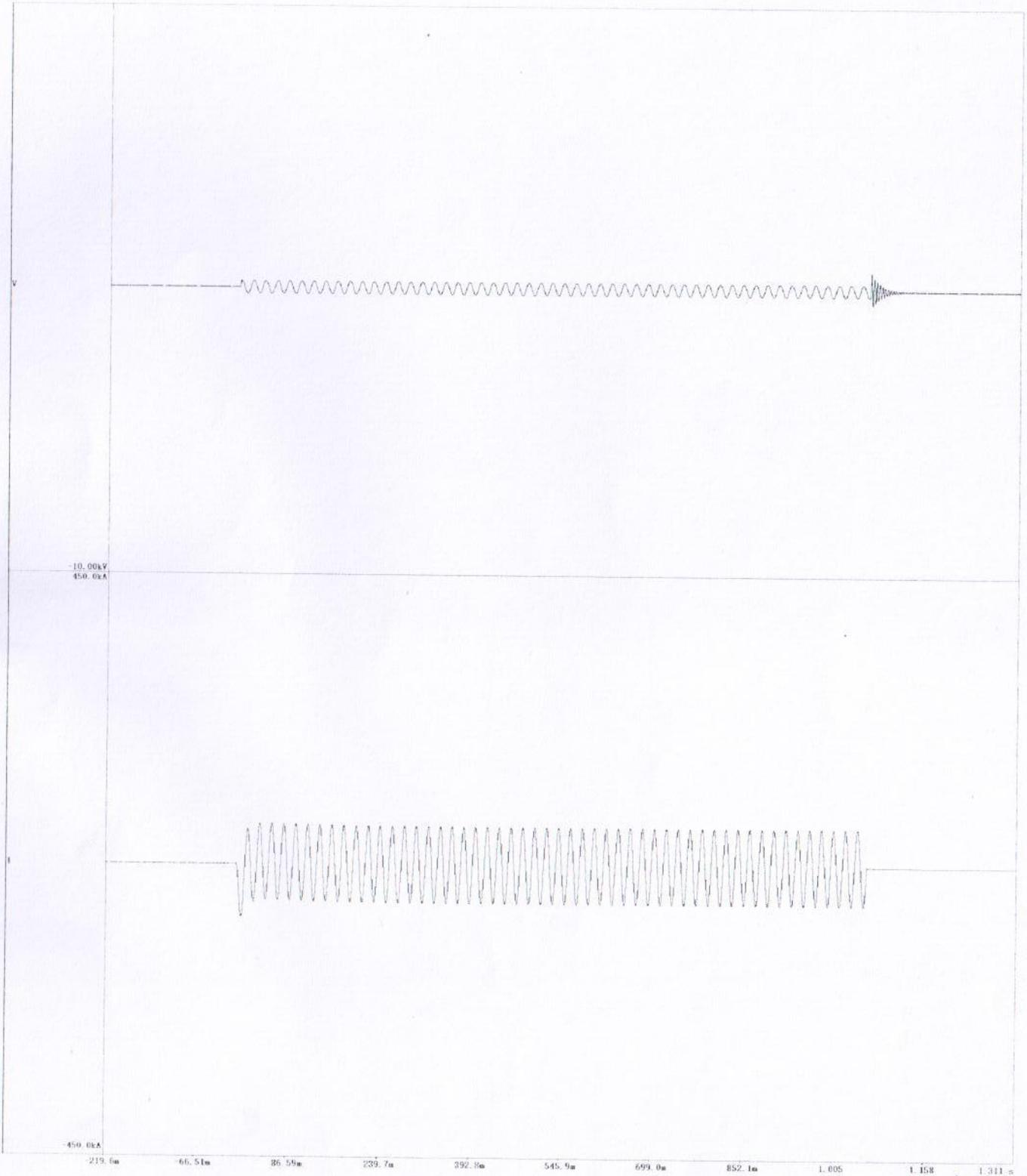
**Date :** 4 October 2019

**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) Any anomaly/discrepancy in the test report /Certificate should be brought to the notice of CPRI within 45 days from the date of issue.

  
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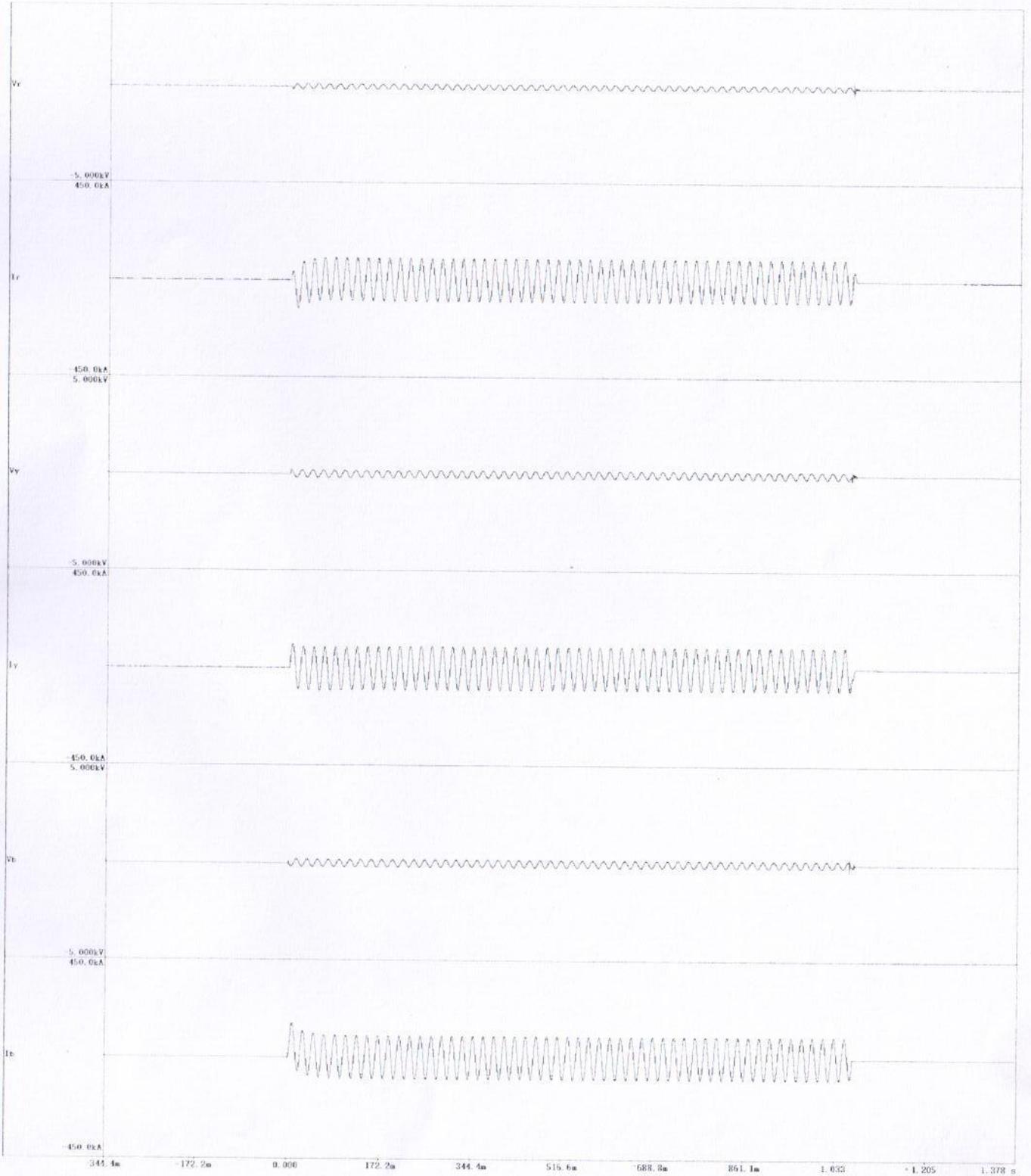


Test Osc. No. **CPRIBPLSTNBMISC19T0217.S02**

Test Engineer 

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Test Osc. No. **CPRIBPLSTNBMISC19T0217.S04**

Test Engineer 

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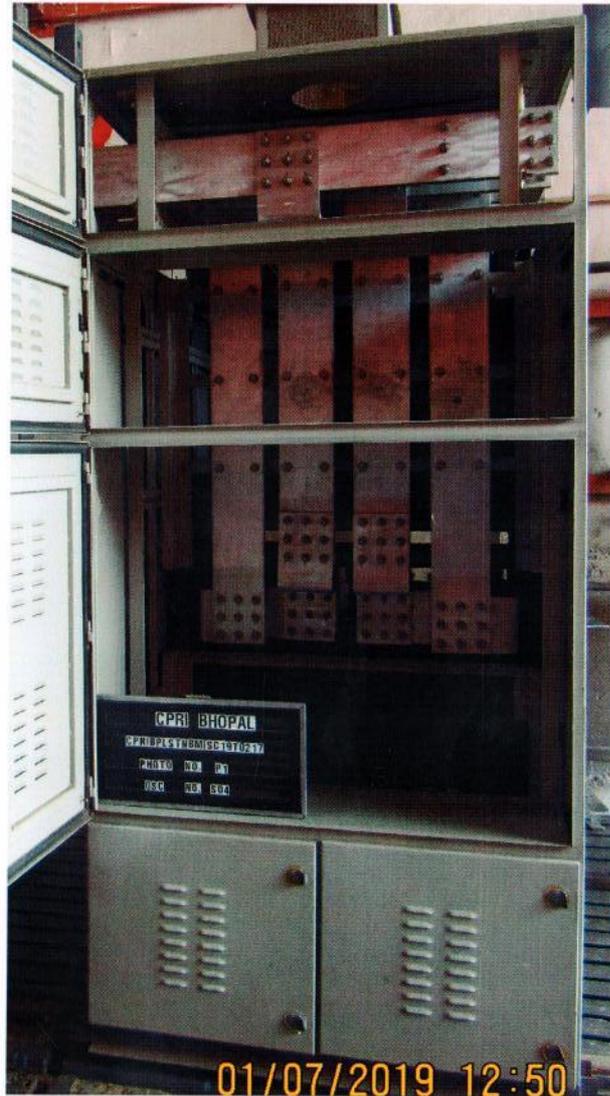
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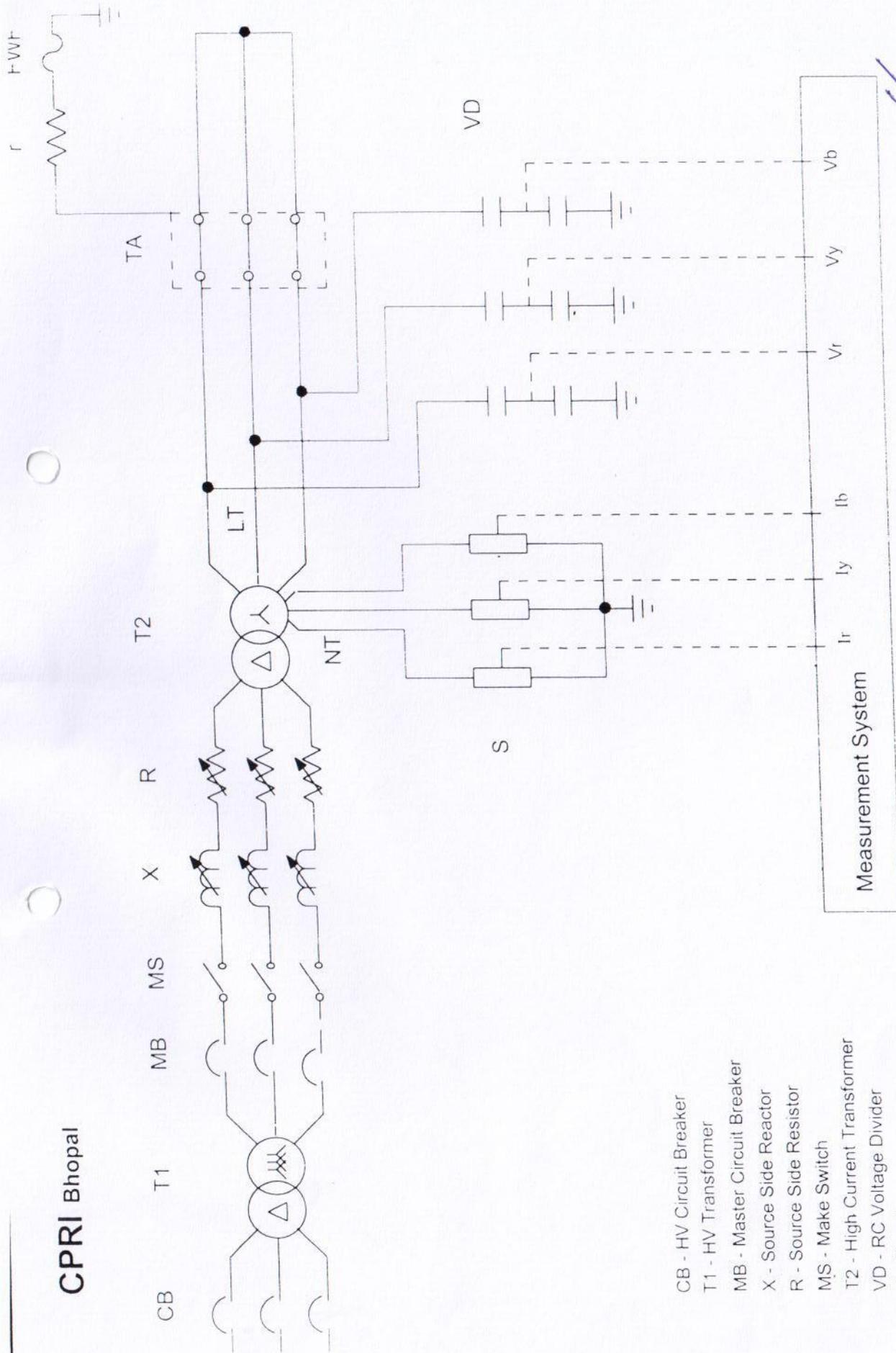
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TEST ENGINEER

**CPRI Bhopal**



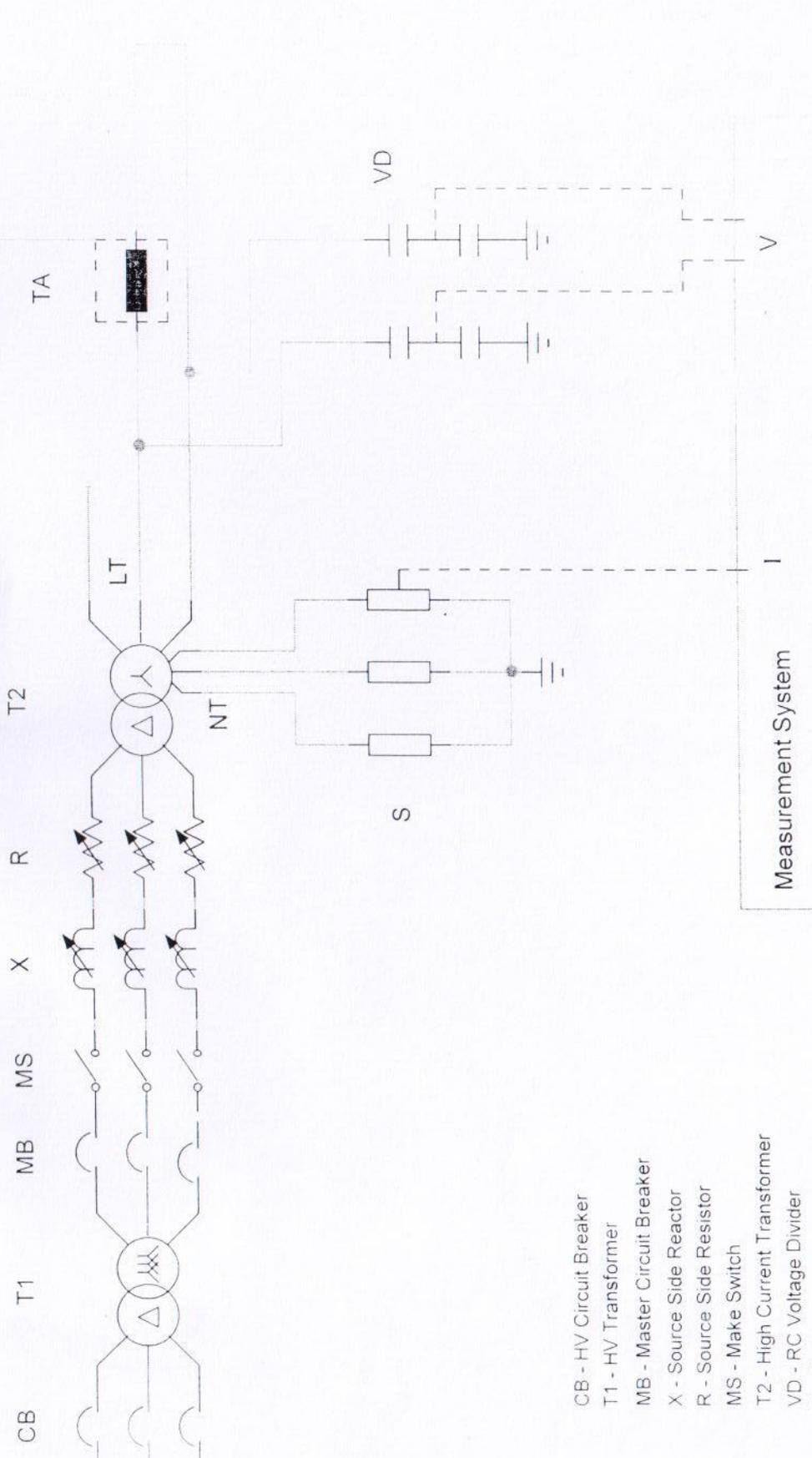
- CB - HV Circuit Breaker
- T1 - HV Transformer
- MB - Master Circuit Breaker
- X - Source Side Reactor
- R - Source Side Resistor
- MS - Make Switch
- T2 - High Current Transformer
- VD - RC Voltage Divider
- S - Shunt
- TA - Test Apparatus
- r - Current Limiting Resistor
- FWF - Fine Wire Fuse
- LT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

Measurement System

TEST ENGINEER

OLTS/TCD-STC-01

# CPRI Bhopal



- 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
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- 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

Measurement System

TEST ENGINEER

OLTS/TCD-STC-02

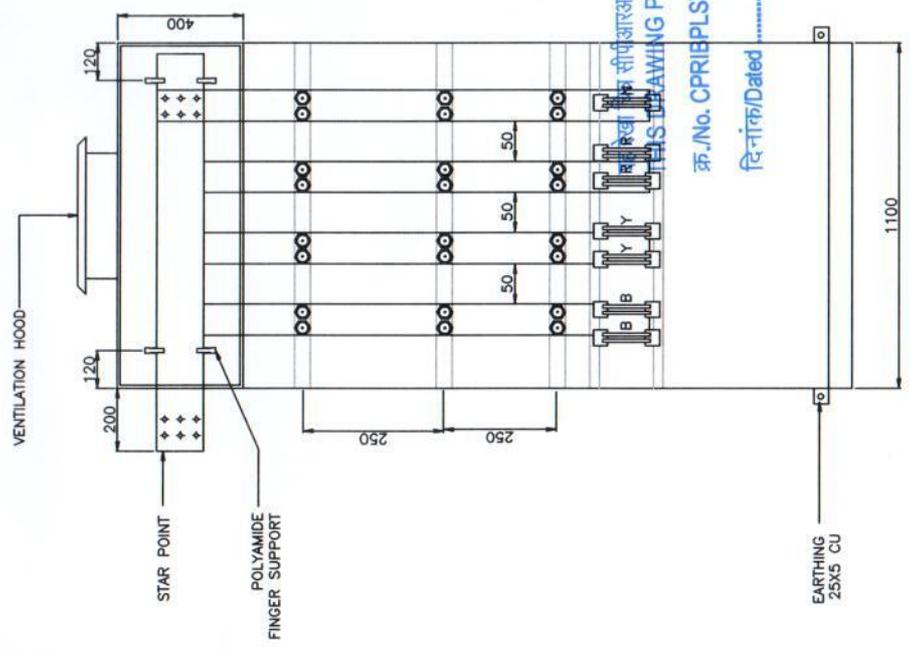


1 2 3 4 5 6 7 8 9 10

A B C D E F

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जहाँ तक भी संभव हो सिर्फ विमीय  
जांच तक ही सीमित है।

THE VERIFICATION OF THIS DRAWING  
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THIS DRAWING PERTAINS TO CPRI TEST REPORT  
क्र. No. CPRI/PLSTNB/MISC. 15.TC.R.17  
दिनांक/Dated

*[Signature]*  
परीक्षण इंजीनियर / Test Engineer

ALL DIMENSIONS ARE IN MM  
TOLERANCE  $\pm$  2%

REAR VIEW

DRN. TRIPATHI	27.06.19	CLIENT	ORDER NO.
CHD. M.K.GUPTA	27.06.19	CONSULTANT. - -	SR.NO.: ESD/70K
APPD. M.K.GUPTA	27.06.19	NTS	DRG. NO. ESD/19/70K
SCALE		TITLE GA FOR 5000A LT SWITCHBOARD FOR TYPE TEST	
JOB NO		PROJECT. - -	SHEET 2 OF 3
ALL DIMENSION ARE IN MM			

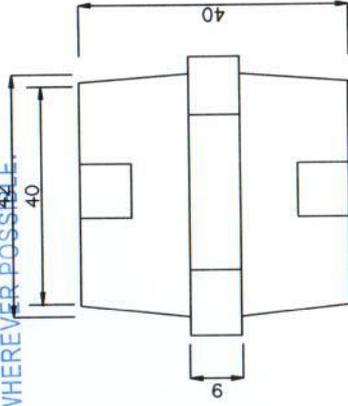
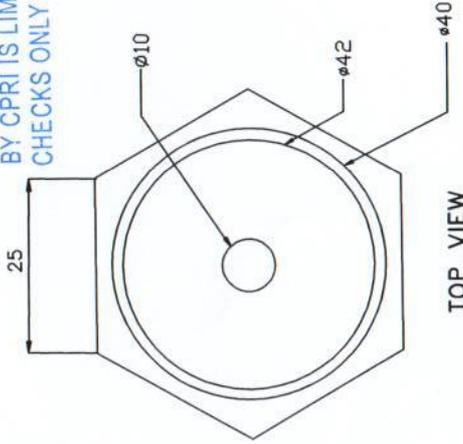
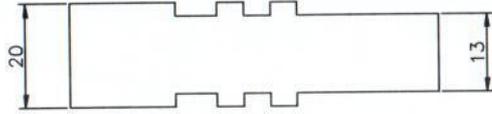
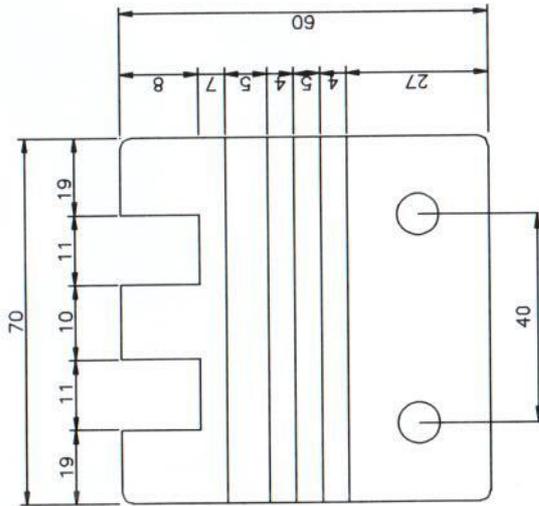
**ELECTRO SYSTEM DEVICES**

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NEW DELHI-110041

REV.	DATE	DRN	REVISION
01	02.07.19	MKG	REVISED FOR CPRI COMMENTS

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जांच तक ही सीमित है।

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THIS DRAWING PERTAINS TO CPRI TEST REPORT

क्र. No. CPRI/PLSTNB./MISC./S.702/1.7

दिनांक/Dated .....

**DETAIL DRAWING**

FINGER TYPE SUPPORT

FOR PH & N  
MATERIAL : POLYIMIDE  
TOLERANCE = ±1MM  
MAKE : POWERMAT

**DETAIL DRAWING**

HEX TYPE SUPPORT

FOR PH & N  
MATERIAL : POLYIMIDE  
TOLERANCE = ±1MM  
MAKE : POWERMAT

परीक्षण इंजीनियर / Test Engineer

**ELECTRO SYSTEM DEVICES**  
86/9, ROAD NO-6, MUNDKA,  
NEW DELHI-110041

DRN. TRIPATHI	27.06.19	CURRENT
CHD. M.K.GUPTA	27.06.19	
APPD. M.K.GUPTA	27.06.19	CONSULTANT
SCALE	NTS	
JOB NO		TITLE GA FOR 5000A LT SWITCHBOARD FOR TYPE TEST
ALL DIMENSION ARE IN MM		PROJECT

ORDER NO	
SR.NO. ESD/70K	
DRG. NO. ESD/19/70K	
SHEET 3 OF 3	

REV	DATE	DRN	REVISION

# सी. पी. आर. आई. इकाइयाँ

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E-mail : [uhvrl@cpri.in](mailto:uhvrl@cpri.in)

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