

# HIGH POWER LABORATORY

## TEST REPORT



## Central Power Research Institute

(A Govt. Of India Society,)  
P.B.No. 8066, Sadashivanagar S.P.O,  
Prof. Sir. C.V. Raman Road,  
Bangalore 560 080



टेलीफोन: 23600574  
Telephone

फैक्स / Fax : 080-23600574  
ईमेल: hpl1@cpri.in

यक्तिगत रूप से/पंजीकृत डाक से/ तिर्र डाक द्वारापावती पत्र  
In person / By Regd. Post / By Courier/By speed post with Ack. Due  
केन्द्रीय विद्युत अनुसंधान संस्थान , बेंगलूर - 560 080  
CENTRAL POWER RESEARCH INSTITUTE, BANGALORE-560 080  
उच्च शक्ति प्रयोगशाला/HIGH POWER LABORATORY

सं/No.HPL/J/1/2012

Date: 20/04/2012

स्वाम्युद्देश्य /To

M/s. Prolific systems & Technologies Pvt Ltd.,  
Plot No. A267, MIDC, New ESIC Hospital,  
Road No. 16A, Wagle Industries Estate,  
Maharashtra State.

Kind Attn: Mr. H.S. Shiva Shankar, Branch Manager,  
M/s. Prolific systems & Technologies Pvt Ltd.,  
वषय/ Sub :- परीक्षण दस्तावेज / Test Document(s) HPL12054

संदर्भ/Ref: -----

महोदय/ Dear Sir ,

हमारी प्रयोगशाला में ..... को आपके .....

पर संचालित परीक्षण के संबंध में निम्नांकित दस्तावेज संलग्न हैं।

Please find enclosed Preliminary / Final Test Reports with the details Mentioned below.

TEST REPORT NO & DATE	SAMPLE DETAILS	TEST CONDUCTED	DATE OF TEST	FINAL (No)	ADDITIONAL COPY (No)
HPL12054 Date: 19/04/2012	415 V, 4000 A, PDB LT Panel	Verification of the short-circuit withstand strength	27 <sup>th</sup> March, 2012	One	Nil

रपोर्ट में असंगतियाँ यदि हो तो इस रिपोर्ट के जारी होने की तारीख से 45 दिनों के अंदर लिखित रूप में हमारे ध्यान में लायी जाएँ ताकि आवश्यक संशुद्धि की जा सके और इसके लिए रिपोर्ट की सभी प्रतियाँ लौटाई जाएँ। कृपया नोट करें कि इस तारीख के बाद प्राप्त अनुरोधों पर कोई कार्रवाई नहीं की जाएगी।

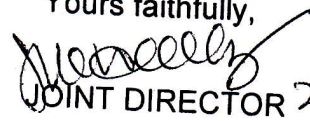
Any discrepancies in the report be brought to our notice in writing within 45 days of the date of issue of this report for effecting necessary corrections for which all the copies of reports must be returned. Please note that request received beyond this date will not be entertained.

दस्तावेजों की पावती भेजें।

Please acknowledge receipt of the document(s).

P.S :Customer to remove the tested sample with in 30 days from the date of completion of testing, failing which the sample will be disposed off by CPRI as per its policy

Yours faithfully,

  
JOINT DIRECTOR 20/4/12

# CENTRAL POWER RESEARCH INSTITUTE



## TEST REPORT

**CPRI**

Sheet No.1 of 5

Date: 19<sup>th</sup> April, 2012

**Test Report Number** : HPL12054

**Name & Address of the Customer** : M/s. Prolific Systems & Technologies Pvt. Ltd.,  
Plot No. A267, MIDC, New ESIC Hospital,  
Road No. 16A, Wagle Industrial Estate,  
Thane (W) – 400 604,  
Maharashtra State.

**Name & Address of the Manufacturer:** M/s. Electrosoft Automation,  
S7/1, Jai Mata Di Compound,  
Thane, Bhiwandi Road,  
Kalher – 421 302, Dist. Thane,  
Maharashtra State.

**Particulars of sample tested** : 415 V, 4000 A, PDB LT Panel

Type : LT Panel

Designation : Power Distribution Panel

Serial number : EA/298/11-12

Number of samples tested : One

Date(s) of Test(s) : 27<sup>th</sup> March, 2012

CPRI Sample Code No. : HPL12S0054

Condition of sample on receipt : New

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

**Test in accordance with Standard/Specification** : Sub-clause 8.2.3 of IS 8623 (Part 1): 1993 /  
IEC Pub 439-1 (1985) (Reaffirmed 2004)

Sampling Plan : Nil

Customer's requirement : Nil

Deviation if any : Nil

Remarks if any : Nil

**Name of the witnessing persons**

Customer's representative : Mr. H.S. Shiva Shankar, Branch Manager, M/s. Prolific  
Systems & Technologies Pvt. Ltd.

Other than Customer's representative : Mr. Shaikh Muzaffar, General Manager, M/s. Electrosoft  
Automation.

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

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

Number of sheets : Five

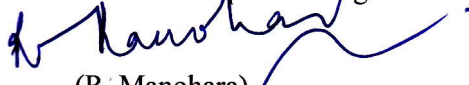
Number of oscillograms : One

Number of graphs : Nil

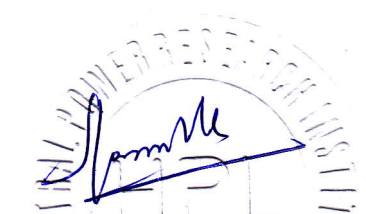
Number of photos : Two

Number of test circuit diagrams : One

Number of sample drawings : Four

  
(R. Manohara)  
**TEST ENGINEER**



  
(V. K. Ramu)  
**ADDITIONAL DIRECTOR**



# CENTRAL POWER RESEARCH INSTITUTE



Test Report No. HPL12054

**CPRI**

Sheet No. 2 of 5

## DESCRIPTION OF SAMPLE TESTED

(As assigned by the manufacturer)

<b>Sample</b>	: 415 V, 4000 A, PDB LT Panel
<b>Type</b>	: LT Panel
<b>Designation</b>	: Power Distribution Panel
<b>Serial number</b>	: EA/298/11-12
<b>Class</b>	: Indoor
<b>Rated voltage</b>	: 415 V
<b>Rated normal current</b>	: 4000 A
<b>Frequency</b>	: 50 Hz
<b>Number of phases</b>	: Three
<b>Rated Insulation level</b>	: 690 V
<b>Rated short-time withstand current</b>	: 65 kA rms
<b>Rated peak withstand current</b>	: 143 kA peak
<b>Duration of short-circuit</b>	: 1.0 second
<b>Type of termination</b>	: Rigid

(R. Manohara)  
**TEST ENGINEER**



# CENTRAL POWER RESEARCH INSTITUTE



**CPRI**

Test Report No. HPL12054

Sheet No. 3 of 5

## LIST OF DRAWINGS OF SAMPLE AND PHOTOGRAPHS

### Drawings of the sample tested:

The manufacturer has guaranteed that the sample submitted for the test has been manufactured in accordance with the following drawings. It is verified that these drawings adequately represent the sample tested.

### Sample drawing numbers:

1. EA/298/11-12, REV. 1, PAGE 1 OF 4
2. EA/298/11-12, REV. 1, PAGE 2 OF 4
3. EA/298/11-12, REV. 1, PAGE 3 OF 4
4. EA/298/11-12, REV. 1, PAGE 4 OF 4

Total drawings (Duly attested): Four

### Photographs of the sample tested

Mounting arrangement before test	: 105
Condition of the sample after test	: 107
Total photographs	: Two

(R. Manohara)  
**TEST ENGINEER**



# CENTRAL POWER RESEARCH INSTITUTE



Test Report No. HPL12054

**CPRI**

Sheet No. 4 of 5

## SCHEDULE OF TESTS

### VERIFICATION OF THE SHORT-CIRCUIT WITHSTAND STRENGTH (sub-clause 8.2.3)

#### Test conditions

**Source** Short-circuit generator  
Number of phases Three  
Frequency 50 Hz

#### Test sample

Condition before test New  
Mounting arrangement Refer Photograph No. 105  
Body/Enclosure Isolated & grounded through fine wire fuse (FWF) in series with the resistor.

#### Test details

Test circuit drawing number CRTL/HPL/3SC25  
Short-circuit point Grounded

### Test results

#### Test on : Main bus-bars

Oscillogram Number	Peak Current (kA)	RMS Current (kA)				Duration (secs.)	Observations
		I1	I2	I3	Iav		
HPL12054.S003	144.6	58.5	57.5	57.3	57.76*	1.27	During test : No abnormalities. After test: Fine wire fuse Intact. No visible external damage.

\*Equivalent to 65.1 kA rms for 1.0 second

### VERIFICATION OF THE DIELECTRIC PROPERTIES

Test procedure	Observation
After test, a high voltage power frequency of 3 kV rms for one minute was applied between each phase & all other phases with enclosure connected to earth.	Withstood

#### Physical Inspection

Bus-bars & joints : No visible damage or deformation.  
Bus-bars support insulators : Intact.

Remarks: The performance of sample tested complies with the requirements of the sub-clause 8.2.3 of IS 8623 (Part 1): 1993 / IEC Pub 439-1 (1985) (Reaffirmed 2004)

(R. Manohara)  
**TEST ENGINEER**



# CENTRAL POWER RESEARCH INSTITUTE



Test Report No. HPL12054

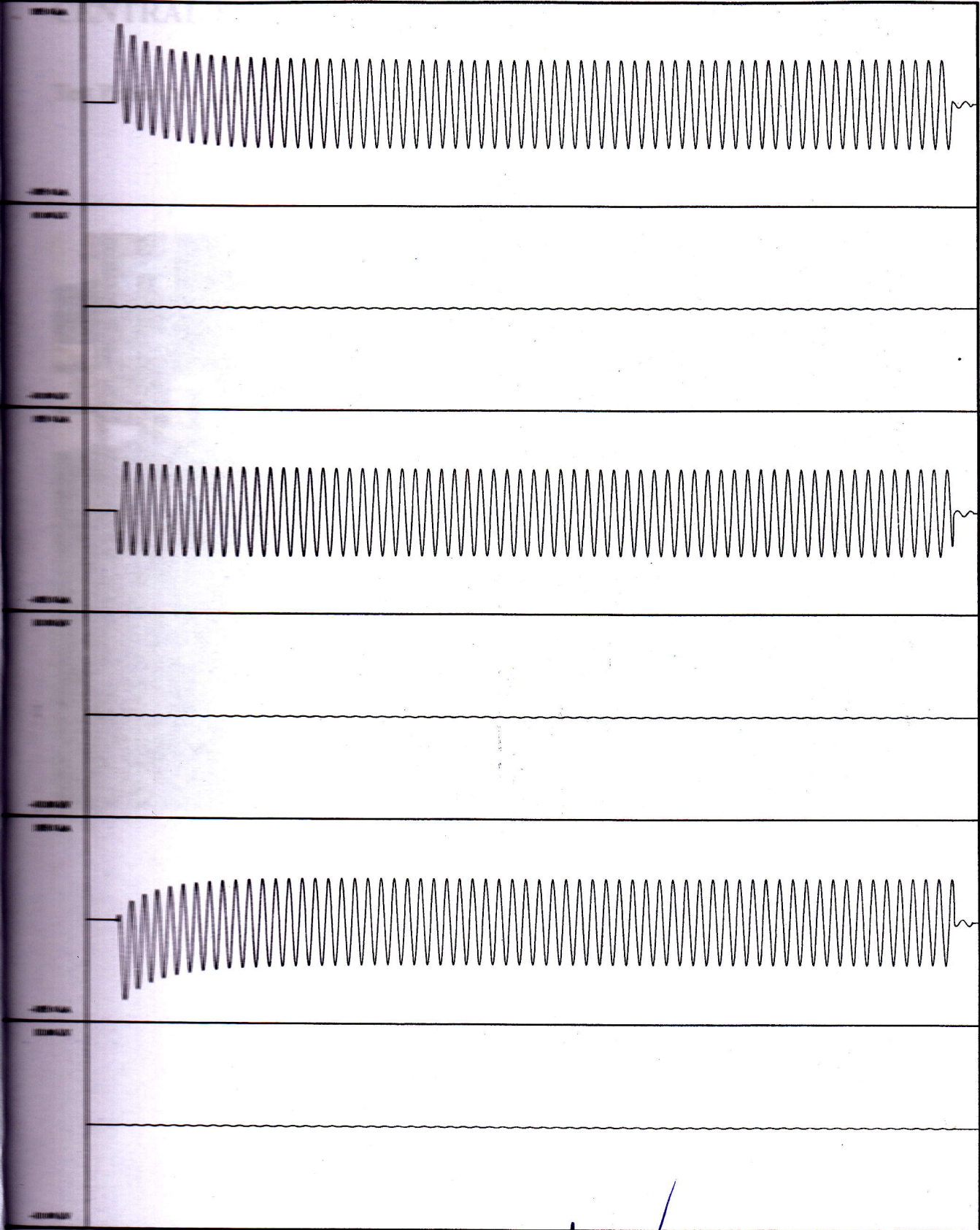
**CPRI**

Sheet No. 5 of 5

## 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 IS 17025-2005 standard 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.

(R. Manohara)  
**TEST ENGINEER**



*[Handwritten signature]*

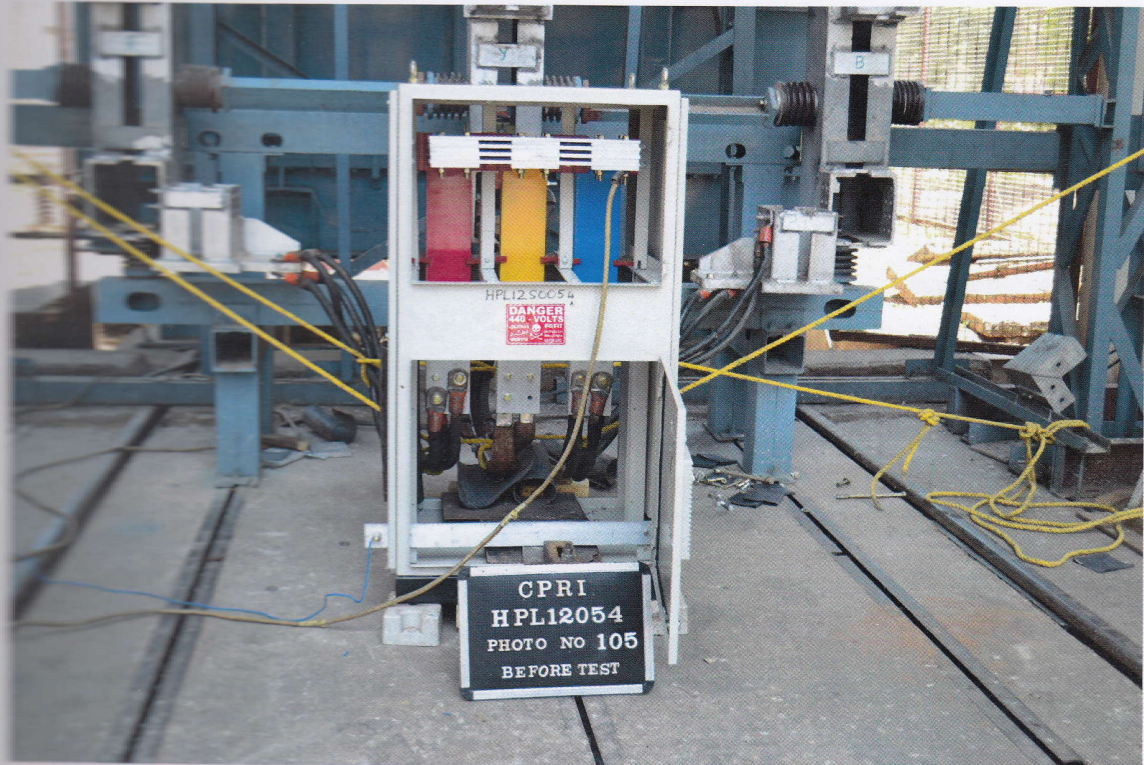


# CENTRAL POWER RESEARCH INSTITUTE

Test Report No. HPL12054



**CPRI**



Photograph No. 105: Mounting arrangement before test

A handwritten signature in blue ink, appearing to read 'R. Manohara'.

(R. Manohara)  
TEST ENGINEER



# CENTRAL POWER RESEARCH INSTITUTE

Test Report No. HPL12054



**CPRI**

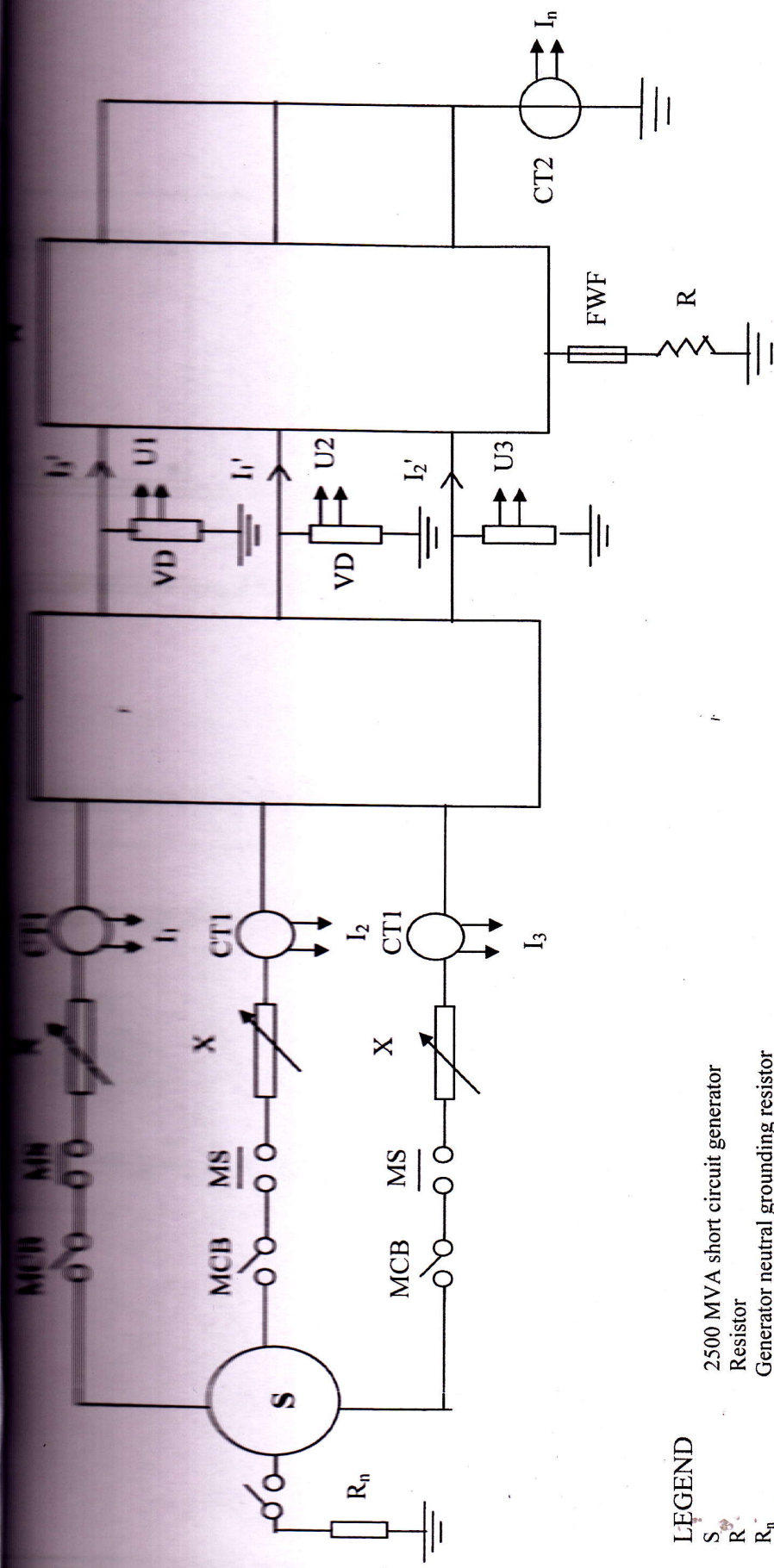


Photograph No. 107: Condition of the sample after test

A handwritten signature in blue ink, appearing to read 'R. Manohara'.

(R. Manohara)  
**TEST ENGINEER**





**LEGEND**

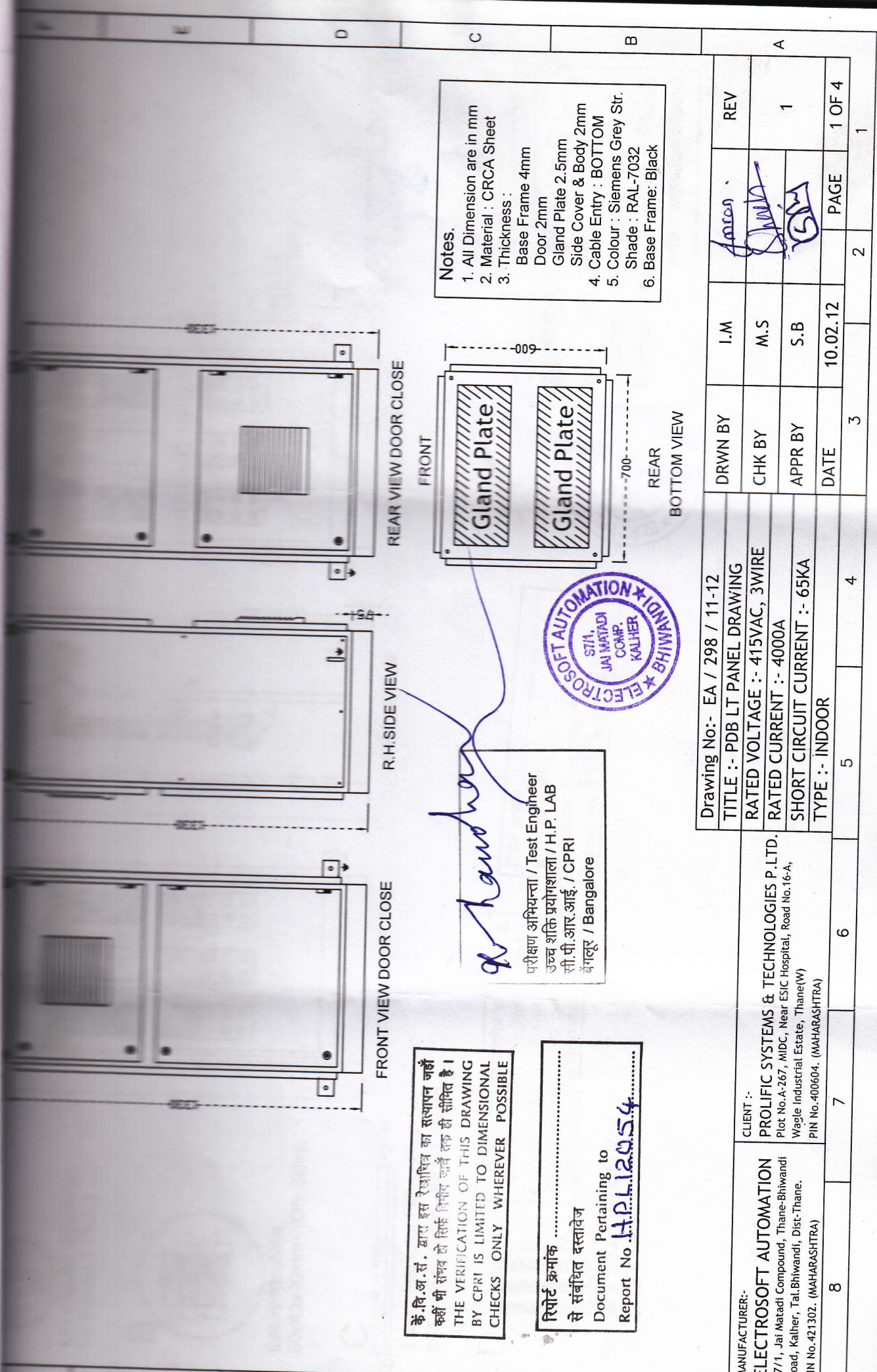
- S 2500 MVA short circuit generator
- R Resistor
- R<sub>n</sub> Generator neutral grounding resistor
- MCB Master circuit breaker
- MS Make switch
- X Variable current limiting reactor
- T 300kA testing transformer
- VD Voltage divider
- CT1 Measuring current transformer
- CT2 Protection current transformer
- A Apparatus under test
- I<sub>1</sub>, I<sub>2</sub>, I<sub>3</sub> Currents recorded on primary side of 300kA transformer
- I<sub>1</sub>' I<sub>1</sub>' I<sub>2</sub>' Corresponding secondary currents of 300kA transformer

*Handwritten signature*

Test Engineer

<b>CPRI</b>	<b>HIGH POWER LABORATORY</b>
	<b>BANGALORE</b>
Schematic diagram of test circuit	
Drg.No.CRTL/HPL/3SC25	





**Notes.**  
 1. All Dimension are in mm  
 2. Material : CRCA Sheet  
 3. Thickness :  
 Base Frame 4mm  
 Door 2mm  
 Gland Plate 2.5mm  
 Side Cover & Body 2mm  
 4. Cable Entry : BOTTOM  
 5. Colour : Siemens Grey Str.  
 Shade : RAL-7032  
 6. Base Frame: Black

*Handwritten signature*  
 परीक्षण अभियन्ता / Test Engineer  
 उच्च शक्ति प्रयोगशाला / H.P. LAB  
 सी.पी.आर.आई. / CPRI  
 बंगलूरु / Bangalore



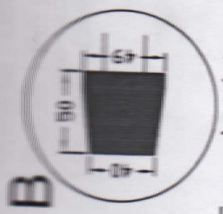
कें.वि.अ.सं. द्वारा इस रेखाचित्र का सत्यापन नहीं  
 कहीं भी संभव हो सिर्फ़ तब ही संभव है।  
 THE VERIFICATION OF THIS DRAWING  
 BY CPRI IS LIMITED TO DIMENSIONAL  
 CHECKS ONLY WHEREVER POSSIBLE

रिपोर्ट क्रमांक .....  
 से संबंधित दस्तावेज  
 Document Pertaining to  
 Report No. **H.P.L.12054**

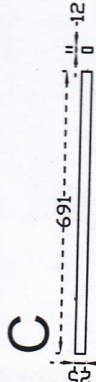
A	MANUFACTURER:- <b>ELECTROSOFT AUTOMATION</b> S71/1, Jai Matadi Compound, Thane-Bhiwandi Road, Kalher, Tal.Bhiwandi, Dist:Thane. PIN No.421302. (MAHARASHTRA)	CLIENT :- <b>PROLIFIC SYSTEMS &amp; TECHNOLOGIES P.LTD.</b> Plot No.A-267, MIDC, Near ESIC Hospital, Road No.16-A, Wagle Industrial Estate, Thane(W) PIN No.400604. (MAHARASHTRA)	Drawing No:- EA / 298 / 11-12		DRAWN BY		REV	
	TITLE :- PDB LT PANEL DRAWING		I.M		M.S		1	
RATED VOLTAGE :- 415VAC, 3WIRE			RATED CURRENT :- 4000A		APPR BY		S.B	
SHORT CIRCUIT CURRENT :- 65KA			TYPE :- INDOOR		DATE		10.02.12	
8			5		3		PAGE	
7			4		2		1 OF 4	
6			1		1		1	



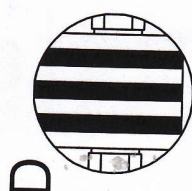
M/S Channel 40x40mm for Insulator Fitting



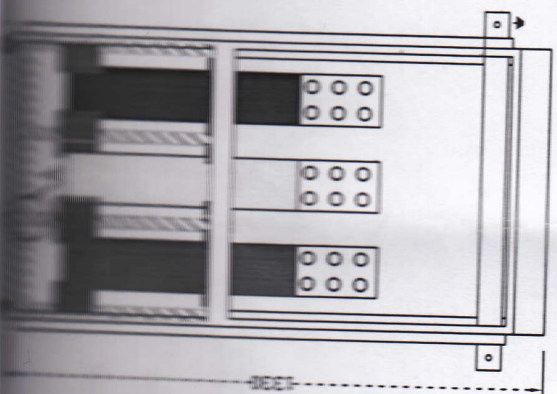
Epoxy Insulator 50x49x40mm Qty. 3Nos.



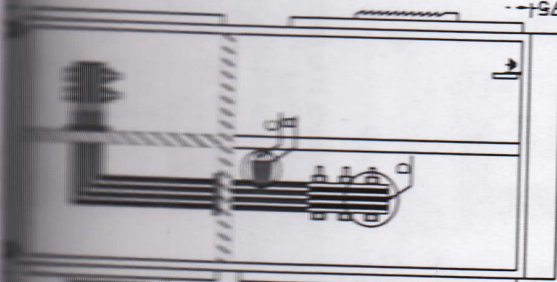
Epoxy Insulator Fitting Strip 691 x 25 x 12mm with Insulation



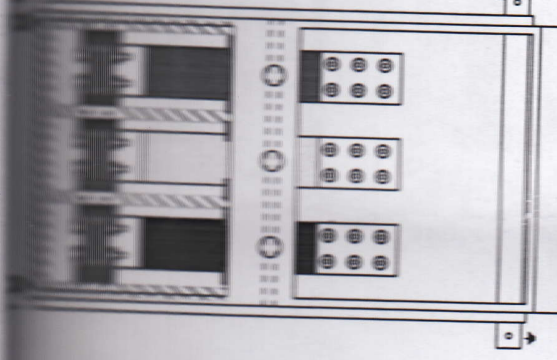
Spacer in Between Main Busbar 195 x 125 x 10mm



FRONT VIEW DOOR OPEN



R.H. SIDE VIEW



REAR VIEW DOOR OPEN

60 x 10mm Earthing Busbar

*Handwritten signature*

परीक्षण अभियन्ता / Test Engineer  
उच्च शक्ति प्रयोगशाला / H.P. LAB  
सी.पी.आर.आई. / CPRI  
बंगलूरु / Bangalore

कै.वि.अ.सं. द्वारा इस रेखाचित्र का स्थापन जाहें कहीं भी संभव हो सके कृपया जांचें तथा भी सहीरित है।  
THE VERIFICATION OF THIS DRAWING BY CPRI IS LIMITED TO DIMENSIONAL CHECKS ONLY WHEREVER POSSIBLE

रिपोर्ट क्रमांक .....  
से संबंधित दस्तावेज  
Document Pertaining to  
Report No. A.P.L.12054

**BUSBAR DETAILS :**  
SIZE: 125x10mm  
Material : Aluminum  
Number of Run : 4Nos Each Phase.  
with Insulation Sleeve



MANUFACTURER:-  
**ELECTROSOFT AUTOMATION**  
57/1, Jai Matadi Compound, Thane-Bhiwandi Road, Kalher, Tal. Bhiwandi, Dist-Thane. PIN No. 421302. (MAHARASHTRA)

CLIENT :-  
**PROLIFIC SYSTEMS & TECHNOLOGIES P.LTD.**  
Plot No.A-267, MIDC, Near ESIC Hospital, Road No.16-A, Wagale Industrial Estate, Thane(W) PIN No. 400604. (MAHARASHTRA)

Drawing No:- EA / 298 / 11-12  
TITLE :- PDB LT PANEL DRAWING  
RATED VOLTAGE :- 415VAC, 3WIRE  
RATED CURRENT :- 4000A  
SHORT CIRCUIT CURRENT :- 65KA  
TYPE :- INDOOR

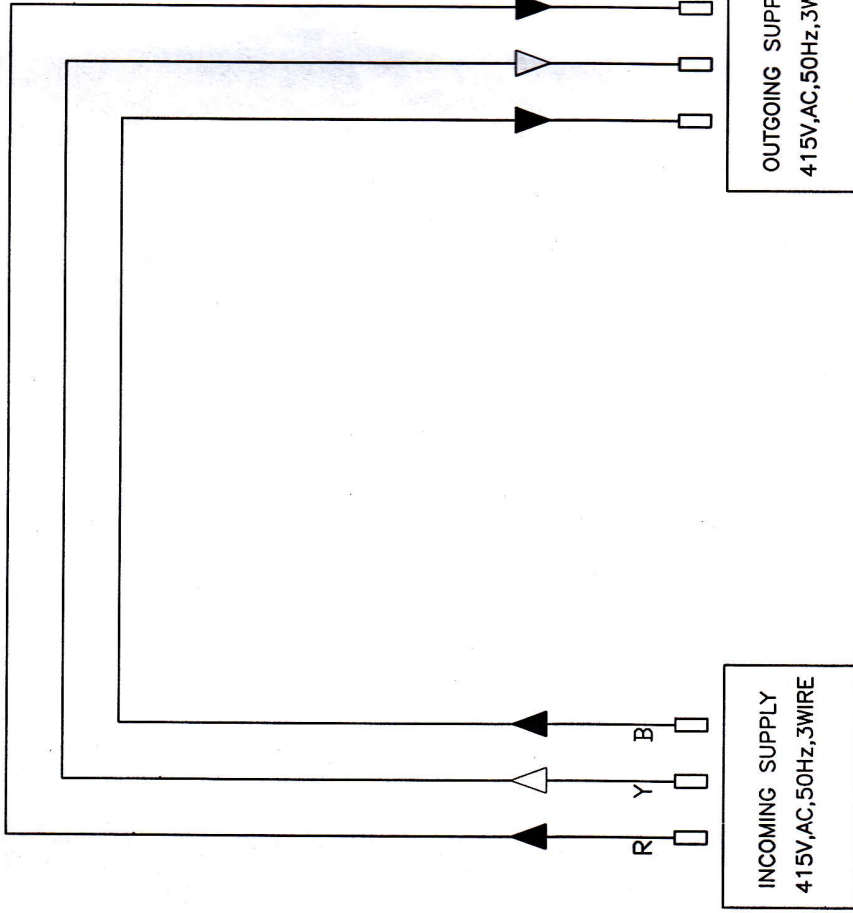
DRWN BY	I.M	REV	
CHK BY	M.S		1
APPR BY	S.B		
DATE	10.02.12	PAGE	2 OF 4







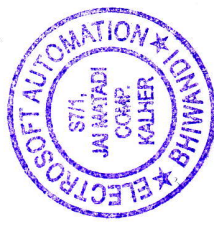
# ALUMINUM BUSBAR 125X10MM 4RUN



कें.वि.अ.सं. द्वारा इस रेखाचित्र का सत्यापन जहाँ कहीं भी संभव हो सके संभव जहाँ तक की संभव है।  
 THE VERIFICATION OF THIS DRAWING BY CPRI IS LIMITED TO DIMENSIONAL CHECKS ONLY WHEREVER POSSIBLE

रिपोर्ट क्रमांक .....  
 से संबंधित दस्तावेज  
 Document Pertaining to  
 Report No. **H.P.L.129.54**

*H. P. L.*  
 परीक्षण अभियन्ता / Test Engineer  
 उच्च शक्ति प्रयोगशाला / H.P. LAB  
 सी.पी.आर.आई. / CPRI  
 बंगलूरु / Bangalore



MANUFACTURER:- <b>ELECTROSOFT AUTOMATION</b> S7/1, Jai Matadi Compound, Thane-Bhiwandi Road, Kalher, Tal.Bhiwandi, Dist-Thane. PIN No.421302. (MAHARASHTRA)		CLIENT :- <b>PROLIFIC SYSTEMS &amp; TECHNOLOGIES P.LTD.</b> Plot No.A-267, MIDC, Near ESIC Hospital, Road No.16-A, Wagle Industrial Estate, Thane(W) PIN No.400604. (MAHARASHTRA)		Drawing No:- EA / 298 / 11-12 TITLE :- PDB LT PANEL DRAWING RATED VOLTAGE :- 415VAC, 3WIRE RATED CURRENT :- 4000A SHORT CIRCUIT CURRENT :- 65KA TYPE :- INDOOR		DRWN BY CHK BY APPR BY DATE		I.M M.S S.B 10.02.12		REV 1 PAGE 4 OF 4	
8		7		6		5		3		1	