

सी पी आर आई  
भारत

**CPRI  
INDIA**

परीक्षण रिपोर्ट  
TEST REPORT



## सी.पी आर आई संगठन

केन्द्रीय विदुत अनुसंधान संस्थान  
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2586944 (सप्लीमेंट्री लैब), 2586510 (ऑइल टेस्ट लैब)  
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Website : http://cpri.in



# 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)

एस टी एल के सदस्य  
Member of STL

स्विचगियर परीक्षण तथा विकास केन्द्र

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**CENTRAL POWER RESEARCH INSTITUTE  
(MEMBER OF STL)**



**CPRI**

**TEST REPORT**

|                                                       |                                                                                                                                           |                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Test Report Number</b>                             | CPRIBPLSTNBMISC19T0213                                                                                                                    | <b>Date :</b> 6 August 2019 |
| <b>Name &amp; address of the Customer</b>             | M/s Skyline Electricals<br>MDK-12/A-B, New Town, Vidyamandira,<br>Bhadravathi, Shivamogga (Shimoga)<br>Karnataka-577 301                  |                             |
| <b>Name &amp; address of the Manufacturer</b>         | M/s Skyline Electricals<br>MDK-12/A-B, New Town, Vidyamandira,<br>Bhadravathi, Shivamogga (Shimoga)<br>Karnataka-577 301                  |                             |
| <b>Particulars of sample tested</b>                   | 415V, 4000A, LT Panel (Non Extendable)                                                                                                    |                             |
| <b>Condition of sample on Receipt</b>                 | New                                                                                                                                       |                             |
| Type                                                  | Power Cum Motor Control Centre                                                                                                            |                             |
| Designation                                           | Main Distribution Panel                                                                                                                   |                             |
| Serial number                                         | SKYLINE/207                                                                                                                               |                             |
| Date(s) of Test(s)                                    | 25 <sup>th</sup> June, 2019                                                                                                               |                             |
| CPRI sample code no.                                  | STNBMISC19S0167                                                                                                                           |                             |
| <b>Particulars of tests conducted</b>                 | Verification of the short circuit withstand strength                                                                                      |                             |
| <b>Test in accordance with Standard/specification</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 |                             |
| Sampling plan                                         | Not applicable                                                                                                                            |                             |
| Customer's requirement                                | STC test to be conducted on main circuit busbar only.                                                                                     |                             |
| Deviations if any                                     | STC test conducted on main circuit busbar only.                                                                                           |                             |
| <b>Name of the Witnessing persons</b>                 |                                                                                                                                           |                             |
| Customer's representative                             | Shri Mohan. S.M.                                                                                                                          |                             |
| 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                                                                                                                                     |                             |

(VIPUL SHARMA)  
TEST ENGINEER



  
(SUMBUL MUNSHI)  
Joint Director  
Approved by

Sheet 1 of 5

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**CPRI**

**TEST REPORT**

**Test Report Number** CPRI BPLSTNBMISC19T0213

**Date :** 6 August 2019

**Summary of test**

**Test conducted**

Verification of the short circuit withstand strength

**Rating for which tested**

70 kArms for 1.0 second with initial peak of 154 kA for main busbar  
42 kArms for 1.0 second with initial peak of 88.2 kA for neutral

**Documents constituting this report**

Oscillogram number

CPRI BPLSTNBMISC19T0213, S02 & S04

Photograph numbers

P-1

Test circuit diagram number

OLTS/TCD-STC-01 & OLTS/TCD-STC-02

Drawing number

SKYLINE/19/207 Rev.No.01 Page No.1 of 3  
SKYLINE/19/207 Page No.2 of 3  
SKYLINE/19/207 Page No.3 of 3

(VIPUL SHARMA)  
TEST ENGINEER



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**CPRI**

**TEST REPORT**

**Test Report Number** CPRI BPLSTNBMISC19T0213

**Date :** 6 August 2019

**Ratings assigned by manufacturer**

|                           |                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Test sample               | 415V, 4000A , L.T Panel (Non Extendable)                                                                                                |
| Type                      | Power Cum Motor Control Centre                                                                                                          |
| Designation               | Main Distribution Panel                                                                                                                 |
| Serial number             | SKYLINE/207                                                                                                                             |
| Rated operational voltage | 415 V                                                                                                                                   |
| Rated current             | 4000 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 for main busbar<br>42 kArms for 1.0 second with initial peak of 88.2 kA for neutral |

(VIPUL SHARMA)  
TEST ENGINEER

**CENTRAL POWER RESEARCH INSTITUTE  
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**CPRI**

**TEST REPORT**

**Test Report Number** CPRIPLSTNBMISC19T0213

**Date** : 6 August 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    |                    |                                          |
| Three phase Short circuit withstand strength test conducted on main circuit busbars consisting of HBB+VBB +HBB (Peak in Y-Phase) Test circuit diagram: OLTS/TCD-STC-01 |         |           |       |       |                    |                                          |
| CPRIBPLSTNB<br>MISC19T0213.S02                                                                                                                                         | 154.65  | 70.51     | 70.29 | 70.43 | 1.0                | 70.51                                    |
| 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  |         |           |       |       |                    |                                          |
| CPRIBPLSTNB<br>MISC19T0213.S04                                                                                                                                         | 89.63   | 42.67     |       |       | 1.0                | 42.67                                    |

**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 as per standard.

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

(VIPUL SHARMA)  
TEST ENGINEER

Sheet 4 of 5

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**CPRI**

**TEST REPORT**

**Test Report Number** CPRI BPLSTNB MISC19T0213

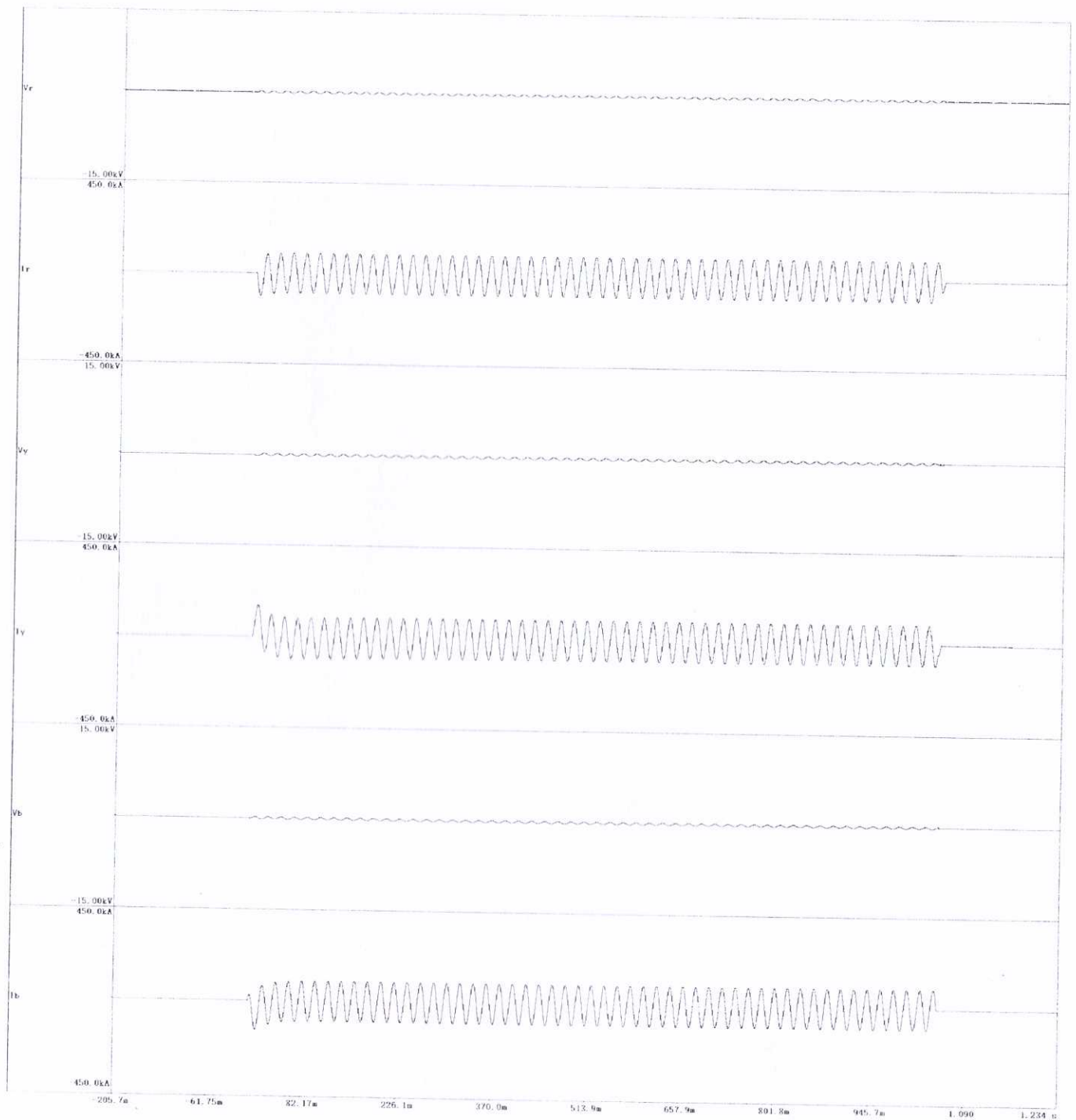
**Date :** 6 August 2019

**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.
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TEST ENGINEER

Central Power Research Institute  
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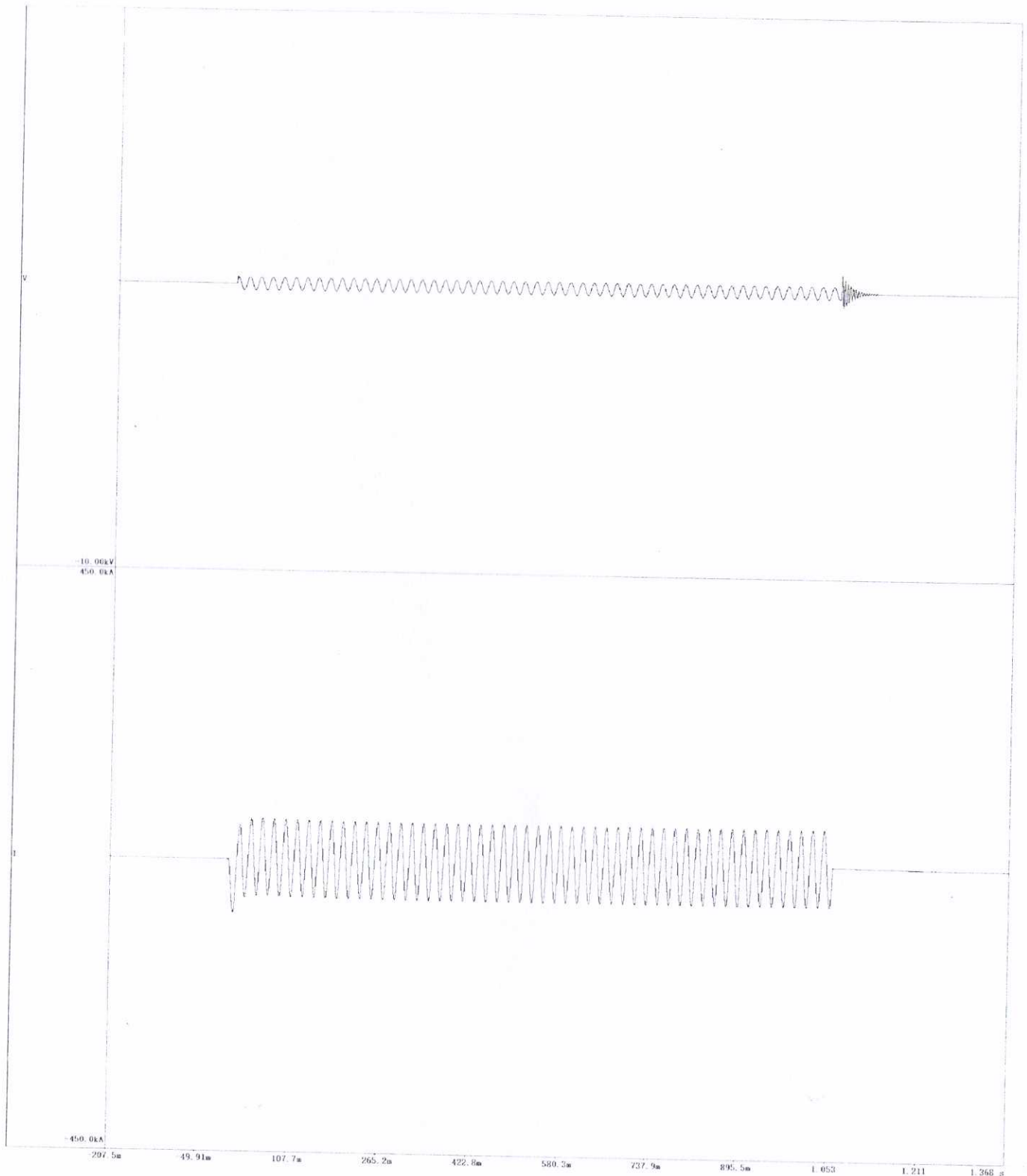


Test Osc. No. **CPRIBPLSTNBMISC19T0213.S02**

Test Engineer

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Test Osc. No. **CPRIBPLSTNBMISC19T0213.S04**

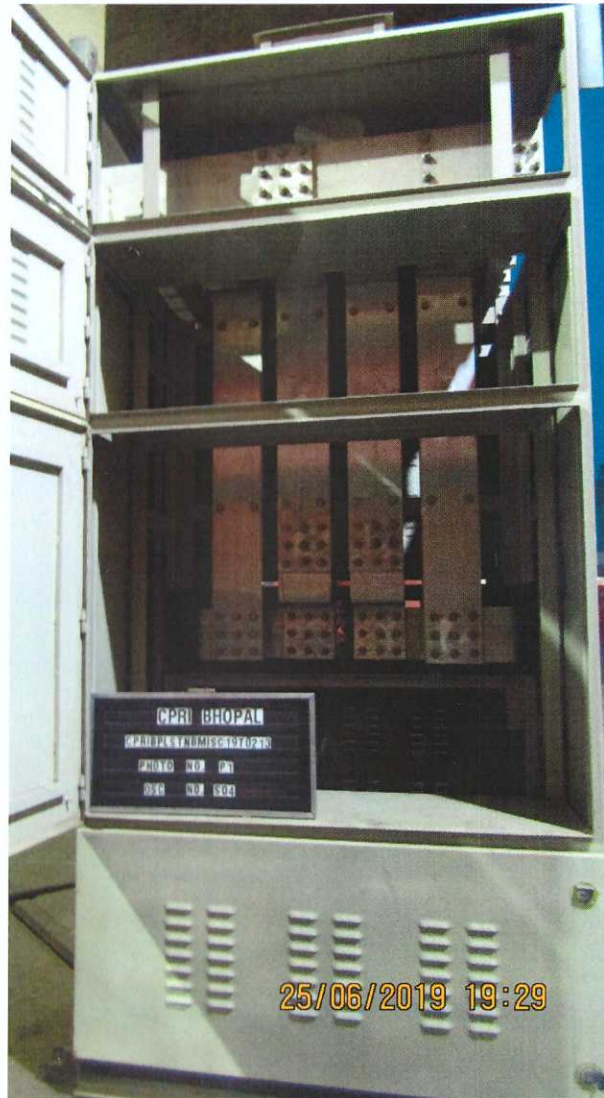
Test Engineer *V*

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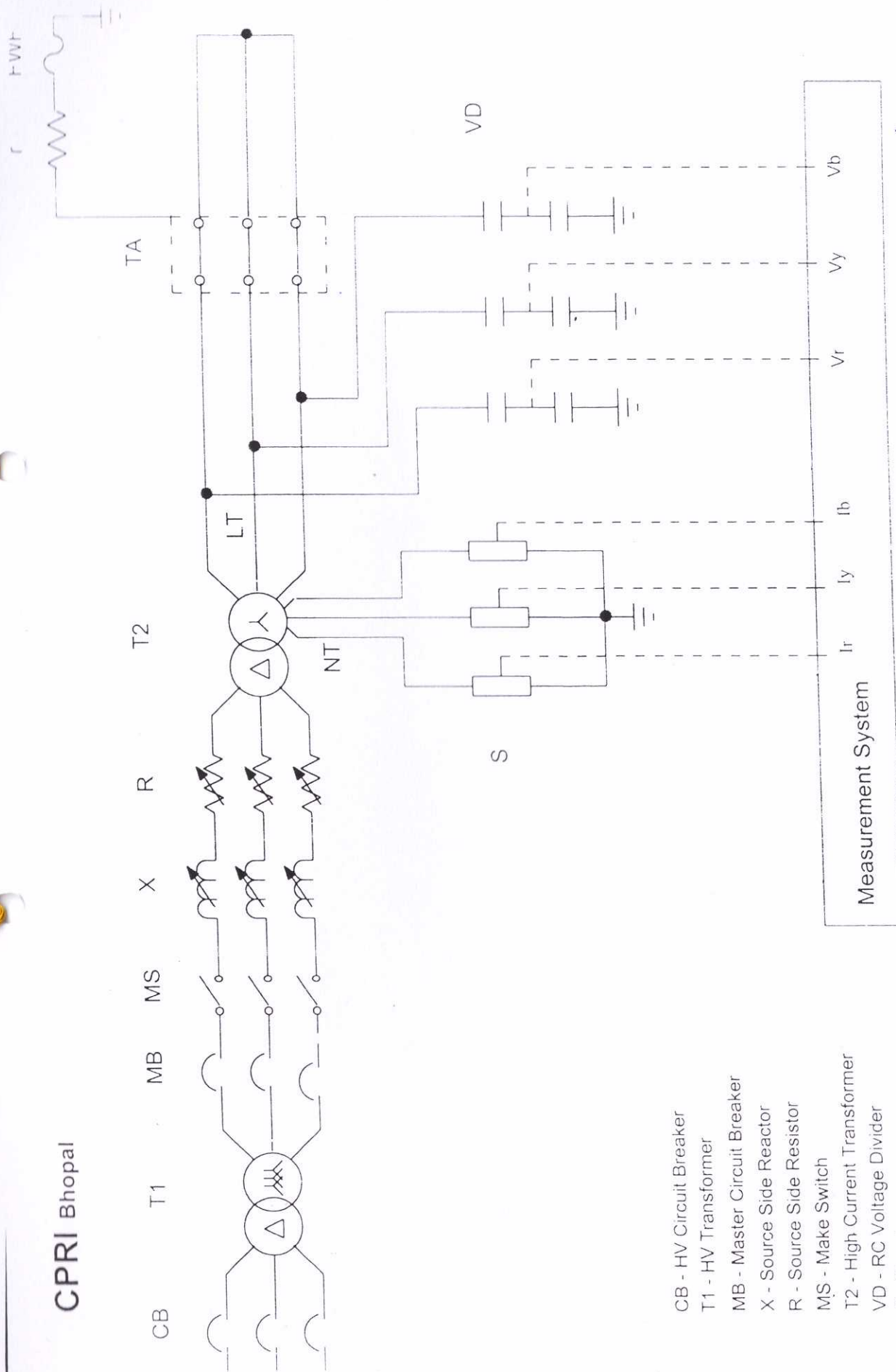


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TEST ENGINEER

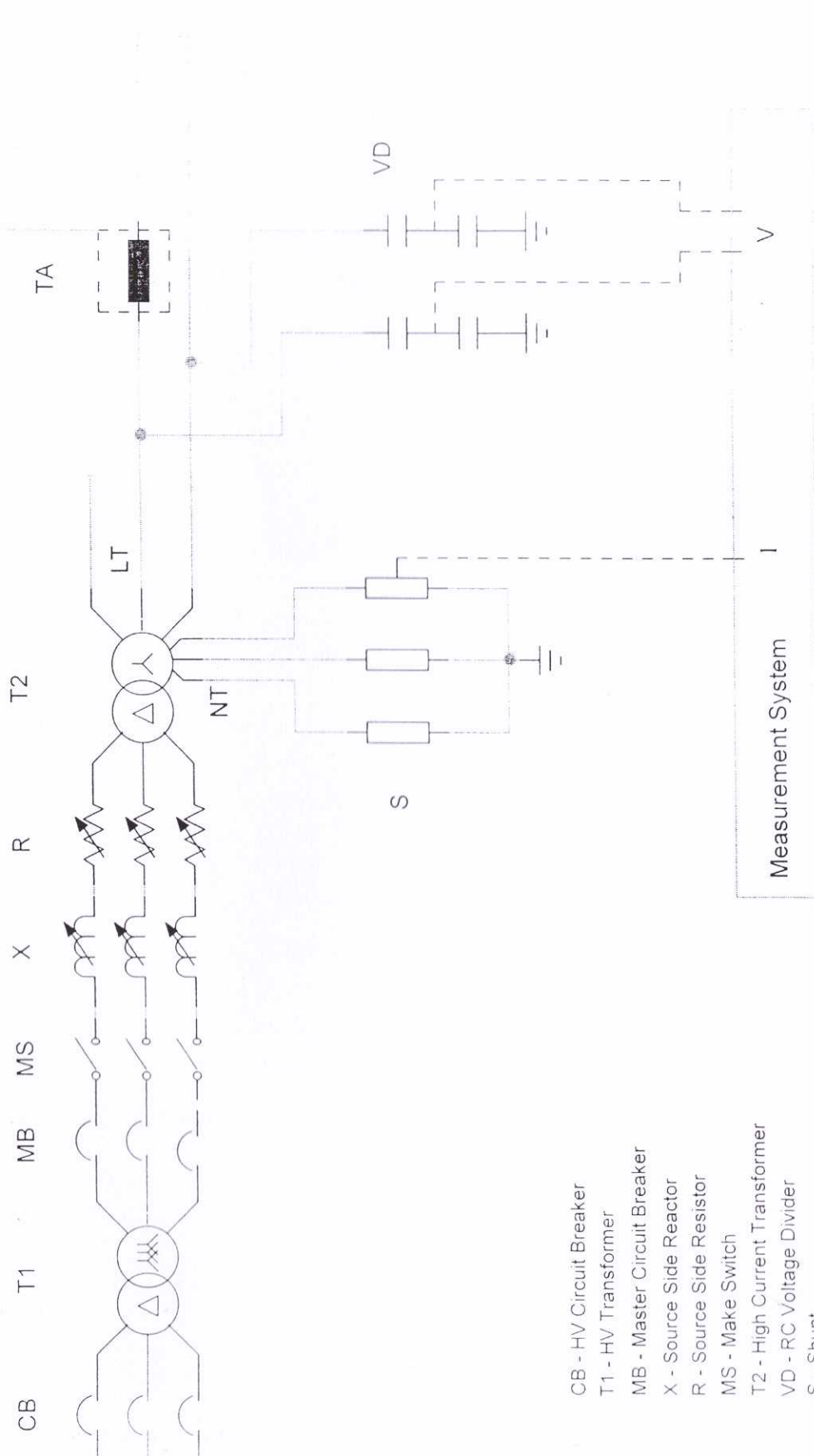


- CB - HV Circuit Breaker
- T1 - HV Transformer
- MB - Master Circuit Breaker
- X - Source Side Reactor
- R - Source Side Resistor
- MS - Make Switch
- T2 - High Current Transformer
- VD - RC Voltage Divider
- S - Shunt
- TA - Test Apparatus
- r - Current Limiting Resistor
- FWF - Fine Wire Fuse
- LT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

TEST ENGINEER

OLTS/TCD-STC-01

# CPRI Bhopal



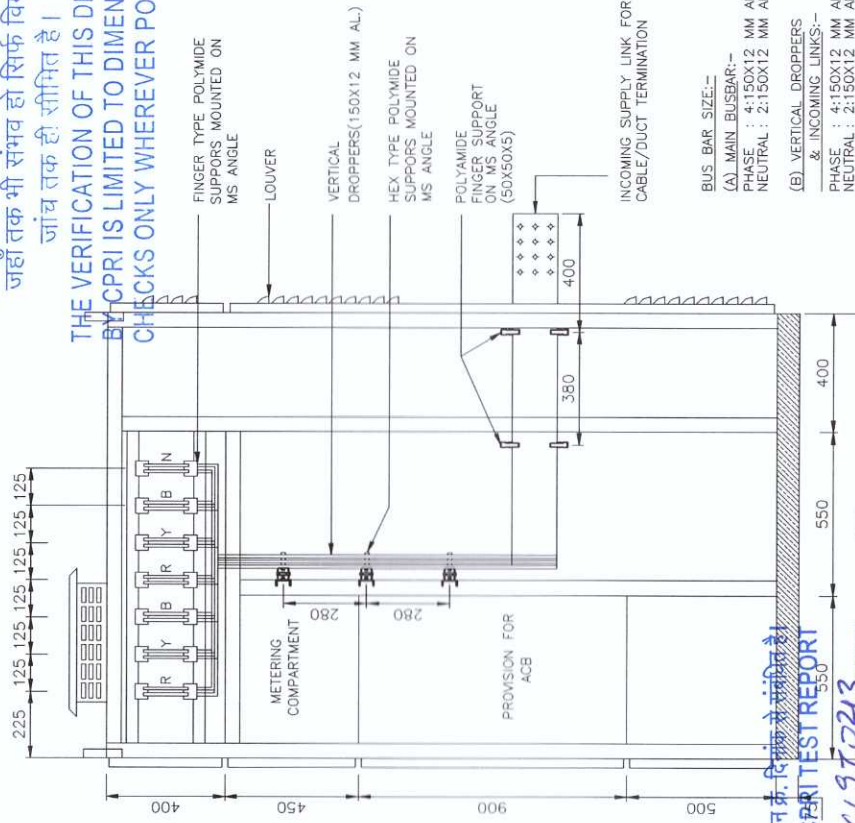
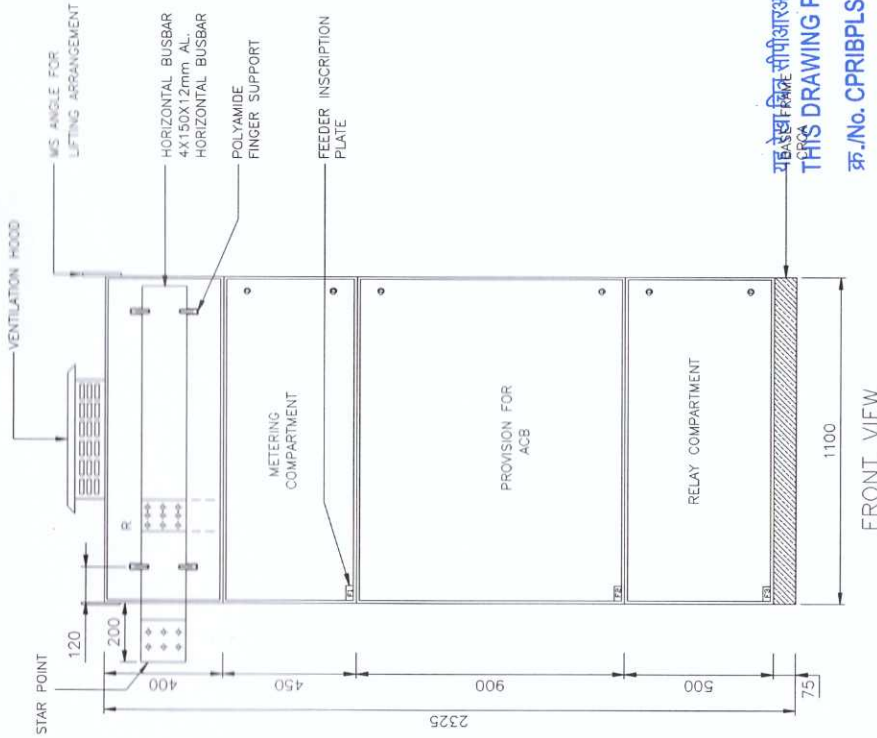
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- TA - Test Apparatus
- r - Current Limiting Resistor
- FWF - Fine Wire Fuse
- LT - Line terminals of the secondary windings of T2
- NT - Neutral terminals of the secondary windings of T2

TEST ENGINEER

OLTS/TCD-STC-02

के.वि.अ.सं. द्वारा रेखाचित्र का सत्यापन  
जहाँ तक भी संभव हो सिर्फ विनीय  
जांच तक ही सीमित है।

THE VERIFICATION OF THIS DRAWING  
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CHECKS ONLY WHEREVER POSSIBLE.



BUS BAR SIZE:-  
(A) MAIN BUSBAR:-  
PHASE : 4:150X12 MM AL  
NEUTRAL : 2:150X12 MM AL  
(B) VERTICAL DROPPERS  
& INCOMING LINKS:-  
PHASE : 4:150X12 MM AL  
NEUTRAL : 2:150X12 MM AL

INCOMING SUPPLY LINK FOR  
CABLE/DUCT TERMINATION

NOTES:-

1. PAINT SHADE ENCL:- SIEMENS GREY (RAL 7032.)
2. SHEET ENCL. :- 2MM THICK CRCA SHEET.
3. CABLE ENTRY :- TOP AND BOTTOM

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

SECTIONAL SIDE VIEW  
BUSBAR ARRANGEMENT OF ACB FEEDER

यह रेखाचित्र सिपीआरआई के परीक्षण प्रतिवेदन के दिनांक से संबंधित है।  
THIS DRAWING PERTAINS TO CPRI TEST REPORT  
क्र. No. CPRIPLSTNB.....M.561197.2213.....

दिनांक/Dated .....

RATING: 415V. 4000A

|                                |          |          |           |          |
|--------------------------------|----------|----------|-----------|----------|
| Title: 415V, 4000A LT PANEL    | Prep. By | NAVEEN   | Rev. By   | NAVEEN   |
| PROJECT: TYPE TESTING OF PANEL | Chkd. By | NAVEEN   | Rev. Dtd. | 26.06.19 |
| AT CPRI                        | Appd. By | NAVEEN   | Rev. No.  | 01       |
| Scale                          | Dm. Dc   | 20.06.19 |           |          |
|                                |          |          |           |          |

SKYLINE ELECTRICALS

MDK-12/A-B, NEW TOWN, VIDYAMANDIRA,  
BHADRAVATHI, SHIVAMOGGA(SHIMOGA), KARNATAKA.



Drawing No.: SKYLINE/19/207  
Serial No.: SKYLINE/207  
Page No. - 1 of 3





जांच तक ही सीमित हो।

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TOP VIEW

SIDE VIEW

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## DETAIL DRAWING

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

यह रेखा चित्र सीपीआरआई के परीक्षण प्रतिवेदन क्र. दिनांक से संबंधित है।  
THIS DRAWING PERTAINS TO CPRI TEST REPORT

क्र. No. CPRIPLSTNB.....MCC.1910213

दिनांक/Dated,

परी:

ineer

RATING: 415V. 4000A

## DETAIL DRAWING

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

**SKYLINE ELECTRICALS**

MDK-12/A-B, NEW TOWN, VIDYAMANDIRA,  
BHADRAVATHI, SHIVAMOGGA(SHIMOGA), KARNATAKA.

Drawing No.: SKYLINE/19/207

Serial No.: SKYLINE/207

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