

**केंद्रीय विद्युत अनुसंधान संस्थान**  
**CENTRAL POWER RESEARCH INSTITUTE**  
**वैद्युत उपस्कर प्रौद्योगिकी प्रभाग**  
**ELECTRICAL APPLIANCES TECHNOLOGY DIVISION**

सं. ईएटीडीआईपी/2023

दिनांक: 2023

मेसर्स /  
M/s. Enpro Industrial Automation Pvt. Ltd  
F-18, Ambattur Industrial Estate  
Ambattur, Chennai 600 058

कृपया ध्यान दें : श्रीमान / सुश्री / श्रीमती / डॉ. KIND ATTENTION: Mr. B.Chandrasekar
विषय / Sub: IP Test Reports
संदर्भ / Ref:

प्रिय महोदय / महोदया  
Dear Sir / Madam,


सीपीआरआई में संपन्न किए गए परीक्षणों के निम्नलिखित परीक्षण रिपोर्ट कृपया इसके साथ संलग्न पाएँ :  
Please find herewith attached following test report for the tests conducted at CPRI.

क्रम सं. Sl. No.	परीक्षण रिपोर्ट सं एवं दिनांक TEST REPORT No. and Date	नमूना विवरण SAMPLE DESCRIPTION
1.	<b>CPRIBLREATD23T0378</b> <b>Date: 23 October 2023</b>	<b>Control and Relay Panel</b>

रिपोर्ट में कोई भी असंगतियाँ/विसंगतियाँ हो तो, कृपया पैंतालीस दिनों के भीतर हमारे संज्ञान में लाया जाए।  
Any Anomalies / Discrepancies in the report may please be brought to our notice within forty - five days.

कृपया परीक्षण रिपोर्ट की प्राप्ति की सूचना दें।  
Kindly acknowledge the receipt of the test report.

धन्यवाद,

भवदीय,  
  
(डी .वेंकटेश)  
परीक्षण इंजीनियर

अनुलग्नक : उपरोक्तानुसार / Encl.: As above

CPRI

## TEST REPORT



## Central Power Research Institute

(A Govt. of India Society)

P.B.No. 8066, Sadashivanagar Post Office,  
Sir C.V. Raman Road,  
Bangalore - 560 080 (INDIA)

# CENTRAL POWER RESEARCH INSTITUTE



## TEST REPORT

**Test Report Number** : CPRIBLREATD23T0378 **Date:** 23 October 2023

**Name and Address of the Customer** : M/s. Enpro Industrial Automation Pvt. Ltd  
F-18, Ambattur Industrial Estate  
Ambattur, Chennai 600 058

**Name and Address of the Manufacturer** : M/s. Enpro Industrial Automation Pvt. Ltd  
F-18, Ambattur Industrial Estate  
Ambattur, Chennai 600 058

**Particulars of sample tested** : Control and Relay Panel

**Type** : Indoor  
**Description of test sample** : Refer Sheet 2 of 5  
**Serial Number** : EIA-CRP-02  
**Number of samples tested** : One

**Date(s) of Test(s)** : 09 October 2023 and 10 October 2023

**CPRI Sample code Number(s).** : EATDIP23S0193

**Particulars of tests conducted** : IP 54 Category 2 Test  
**Test in accordance with Standard/Specification** : IS/IEC 60529 2001, RA 2019


**Sampling Plan** : Not Applicable  
**Customer's Requirement** : Nil  
**Deviations if any** : Nil

**Name of the witnessing persons**  
**Customers representative** : B. Chandrasekar. Testing Engineer  
**Other than customer's representatives** : Shyam Kishor Mukhiya, Quality Incharge, M/s. Adobe Metal Products, Bangalore  
**Test subcontracted with address of the laboratory** : None

**Documents constituting this report (in words)**  
**Number of Sheets** : Five  
**Number of Oscillogram(s)** : Nil  
**Number of Graph(s)** : Nil  
**Number of Photograph(s)** : Six  
**Number of Test Circuit Diagram(s)** : Nil  
**Number of Drawing(s)** : Three

  
(D. Venkatesh)  
Test Engineer



  
(Dr. P. Chandra Sekhar)  
Head of Division  
Reviewed and Authorized by

ULR-TC5452230EADT0378F  
Discipline: Electrical Testing  
Group: Environmental Test

ELECTRICAL APPLIANCES TECHNOLOGY DIVISION  
P.B.NO.8066, SADASHIVANAGAR P.O  
PROF.SIR.C.V.RAMAN ROAD, BANGALORE - 560 080, INDIA  
Tele: +91 (0) 80-22072340, +91 (0) 80-22072344

Sheet 1 of 5

# CENTRAL POWER RESEARCH INSTITUTE

## TEST REPORT



Test Report Number

: CPRIBLREATD23T0378

Date: 23 October 2013

**CPRI**

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

Sample : Control and Relay Panel  
Rated Voltage : 110 V DC/ 220 V AC  
Rated Frequency : 50 Hz

  
(D. Venkatesh)  
Test Engineer

# CENTRAL POWER RESEARCH INSTITUTE

## TEST REPORT

Test Report Number : CPRIBLREATD23T0378

Date: 23 October 2023



**CPRI**

### SUMMARY OF TESTS CONDUCTED

1. Tests conducted : IP 54 Category 2 Test
2. Rating for which tested : 110 V DC/ 220 V AC
3. Schedule of tests

Tests Conducted	Clause Numbers	Sheet
IP 5X Category 2	13.4	4 of 5
IP X4	, 14.2.4(b), 14.3	4 of 5
Insulation Resistance Test	-	4 of 5
Power Frequency Voltage Withstand Test	-	4 of 5

4. Oscillogram Numbers : Nil
5. Graph Numbers : Nil
6. Photograph Numbers : CPRIBLREATD23T0378P01, CPRIBLREATD23T0378P02, CPRIBLREATD23T0378P03, CPRIBLREATD23T0378P04, CPRIBLREATD23T0378P05, CPRIBLREATD23T0378P06.
7. Test Circuit Diagram Numbers. : Nil
8. Drawing Numbers

The manufacturer has guaranteed that the sample submitted for the test(s) has been manufactured in accordance with the following drawing

Sl. No.	Drawing Number	Sheet Number	Revision Number
1	EIA-CPRI-CRP	1	0
2	EIA-CPRI-CRP	2	0
3	EIA-CPRI-CRP	3	0

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.

  
(D. Venkatesh)  
Test Engineer

**ULR-TC5452230EADT0378F**  
Discipline: Electrical Testing  
Group: Environmental Test

ELECTRICAL APPLIANCES TECHNOLOGY DIVISION  
P.B.NO.8066, SADASHIVANAGAR P.O  
PROF.SIR.C.V.RAMAN ROAD, BANGALORE - 560 080, INDIA  
Tele: +91 (0) 80-22072340, +91 (0) 80-22072344

Sheet 3 of 5

# CENTRAL POWER RESEARCH INSTITUTE



## TEST REPORT

Test Report Number : CPRIBLREATD23T0378

Date: 23 October 2023

**CPRI**

### TEST RESULTS

Condition of Sample on the Receipt : Good  
 Serial Number of sample tested : EIA-CRP-02

Sl. No.	PARTICULARS		OBSERVATIONS	
	TESTS CONDUCTED	REFERENCE CLAUSE		
1.0	IP 5X Category 2 Test, as per IS/IEC 60529 2001, RA 2019 Standard.	Clause No. 13.4 Protection against Ingress of solid foreign objects – Dust Protection Test.	No entry of dust observed inside “Control and Relay Panel” enclosure.	
2.0	IP X4 Test as IS/IEC 60529 2001, RA 2019 Standard.	Clause No. 14.2.4(b), 14.3 Protection against harmful ingress of water - Hand held spray nozzle, water flow rate 10 l/min ±5% and at a distance of 0.5m.	No entry of water observed inside “Control and Relay Panel” enclosure.	
3.0	Electrical Tests Conducted		After IP 5X Test	After IP X4 Test
3.1	Insulation Resistance test at 500V DC is applied for one minute between the connected terminals and body of the “Control and Relay Panel” enclosure.		285.4 MΩ	374.1 MΩ
3.2	Power Frequency Voltage withstand test at 2.5kV AC is applied for one minute between the connected terminals and body of the “Control and Relay Panel” enclosure.		Withstood	Withstood

Conclusion: The sample tested complies with the requirement of Clause (s) 13.4, 14.2.4(b) and 14.3 of IS/IEC 60529 2001, RA 2019 Standard for the test (s) conducted.

  
 (D. Venkatesh)  
 Test Engineer

# CENTRAL POWER RESEARCH INSTITUTE



## TEST REPORT

Test Report Number

: CPRIBLREATD23T0378

Date: 23 October 2023

### NOTE

- The Test results relate only to the sample(s) tested.
- Publication or reproduction of this Test Report 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.
- Any Corrections/erasure invalidates the Test Report
- NABL has Accredited this laboratory as per ISO/IEC17025:2017, vide certificate no.TC-5452 for the tests carried out.
- Any anomaly/discrepancy in the Test Report should be brought to the notice of CPRI within 45 days from the date of issue embossed.



TC-5452

  
(D. Venkatesh)  
Test Engineer

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

**ULR-TC5452230EADT0378F**  
**Discipline: Electrical Testing**  
**Group: Environmental Test**

ELECTRICAL APPLIANCES TECHNOLOGY DIVISION  
P.B.NO.8066, SADASHIVANAGAR P.O  
PROF.SIR.C.V.RAMAN ROAD, BANGALORE - 560 080, INDIA  
Tele: +91 (0) 80-22072340, +91 (0) 80-22072344

Sheet 5 of 5

# CENTRAL POWER RESEARCH INSTITUTE

## TEST REPORT

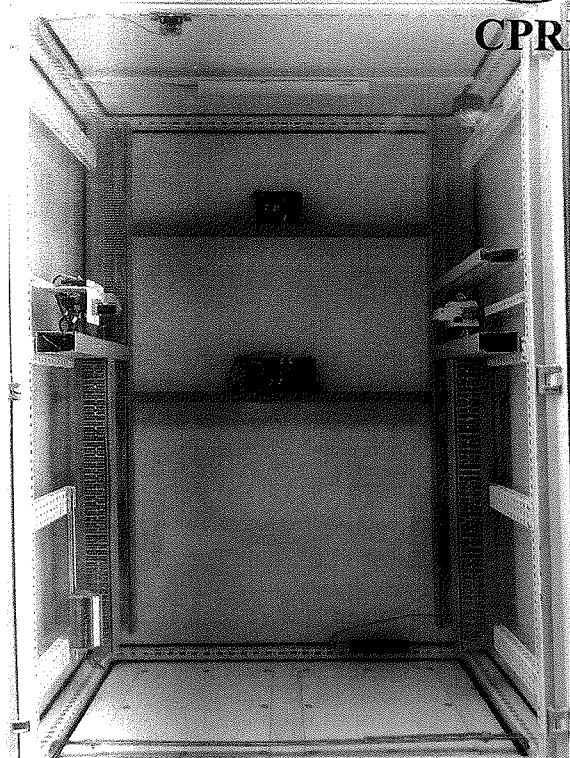
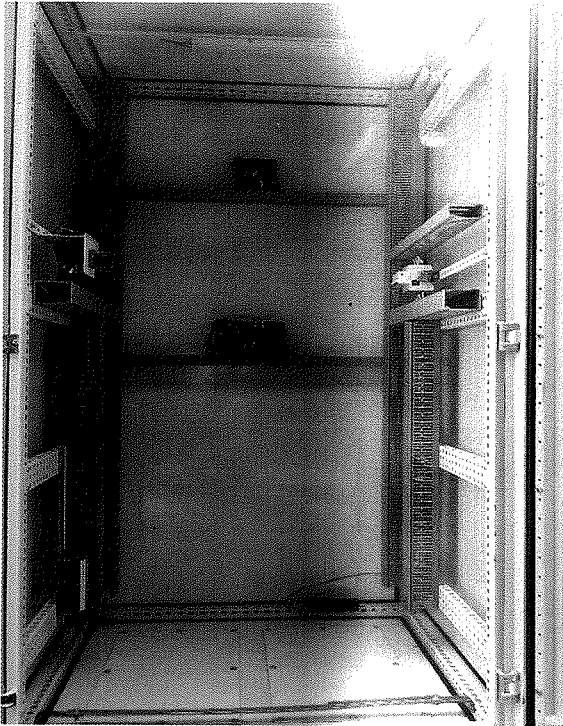
Test Report Number

: CPRIBLREATD23T0378

Date: 23 October 2023

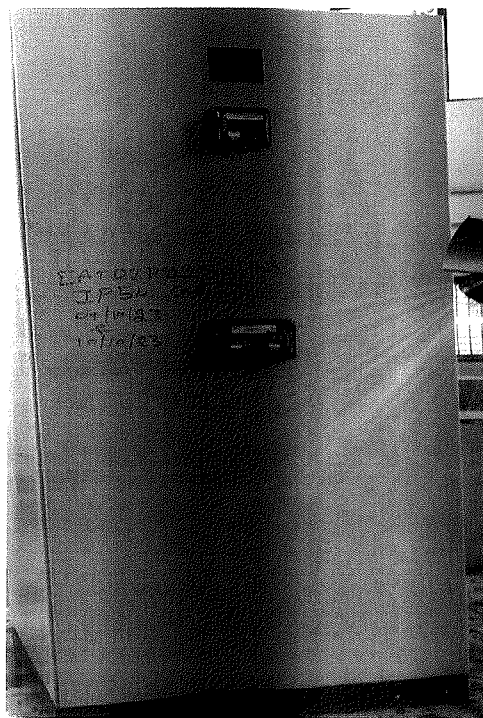


CPRI



Photograph Number: CPRIBLREATD23T0378P01  
During inspection after IP 5X – Dust Test

Photograph Number: CPRIBLREATD23T0378P02  
During inspection after IP 5X – Dust Test



Photograph Number: CPRIBLREATD23T0378P03  
During IP X4 – Water Test

  
(D. Venkatesh)  
Test Engineer



CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT

Test Report Number

: CPRIBLREATD23T0378

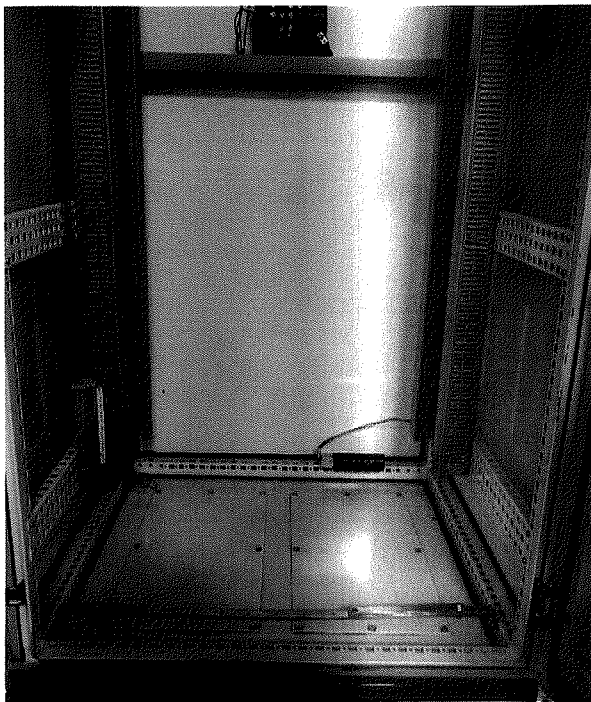
Date: 23 October 2023



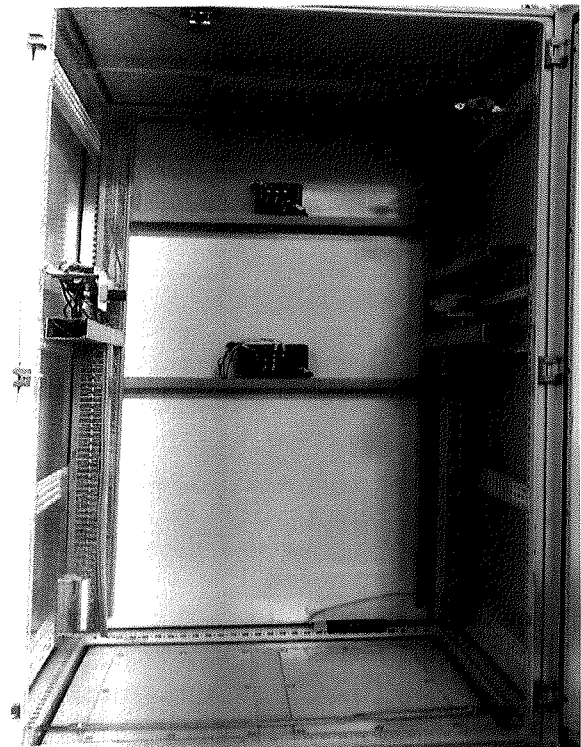
CPRI



Photograph Number: CPRIBLREATD23T0378P04  
During IP X4 – Water Test



Photograph Number: CPRIBLREATD23T0378P05  
During inspection after IP X4 – Water Test

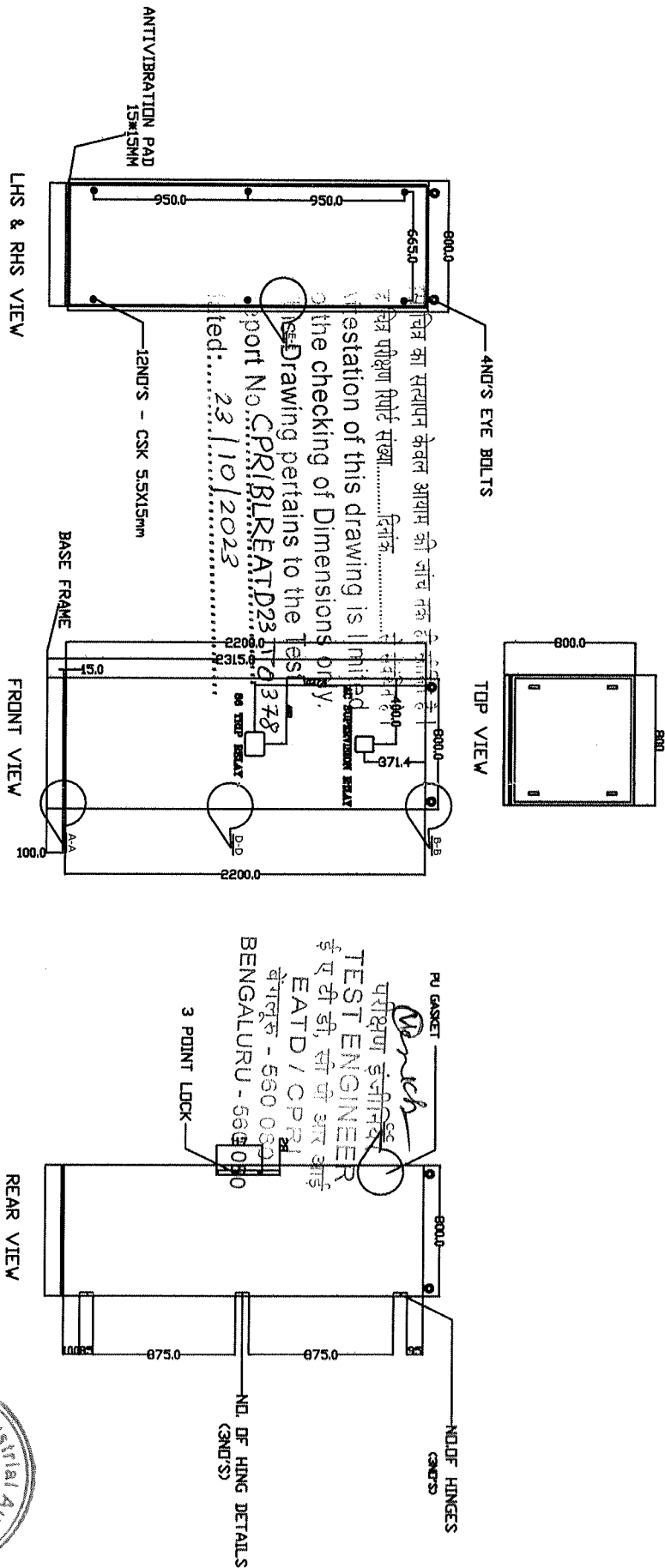


Photograph Number: CPRIBLREATD23T0378P06  
During inspection after IP X4 – Water Test

  
(D. Venkatesh)  
Test Engineer

ALL INFORMATION CONTAINED IN THIS DOCUMENT IS CONFIDENTIAL AND COPYRIGHT THEREOF IS RESERVED BY ENPRO INDUSTRIAL AUTOMATION PVT. LTD., THEY SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN FOR WHICH THEY ARE SUPPLIED AND SHALL NOT BE COPIED OR REPRODUCED WITHOUT WRITTEN PERMISSION.

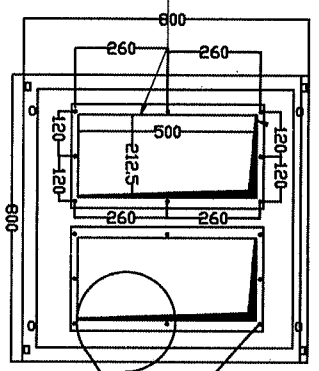
GA DRAWING OF ILS ENCLOSURE WITH 9 FOLD STRUCTURE



NOTES:-

- \* GLAND PLATES ARE CLOSED DURING THE IP TESTING
- \* INTERNAL ELECTRICAL COMPONENTS SHOWN IN THE DRAWING & MOUNTED IN THE PANEL IS COMPLETE & FINAL.

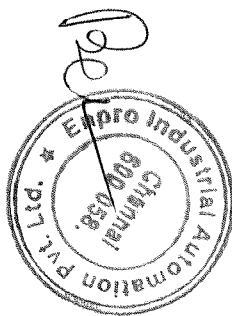
BOTTOM VIEW WITH GLAND PLATE 540 X 265MM



Outout For Cable Entry  
500X212.5

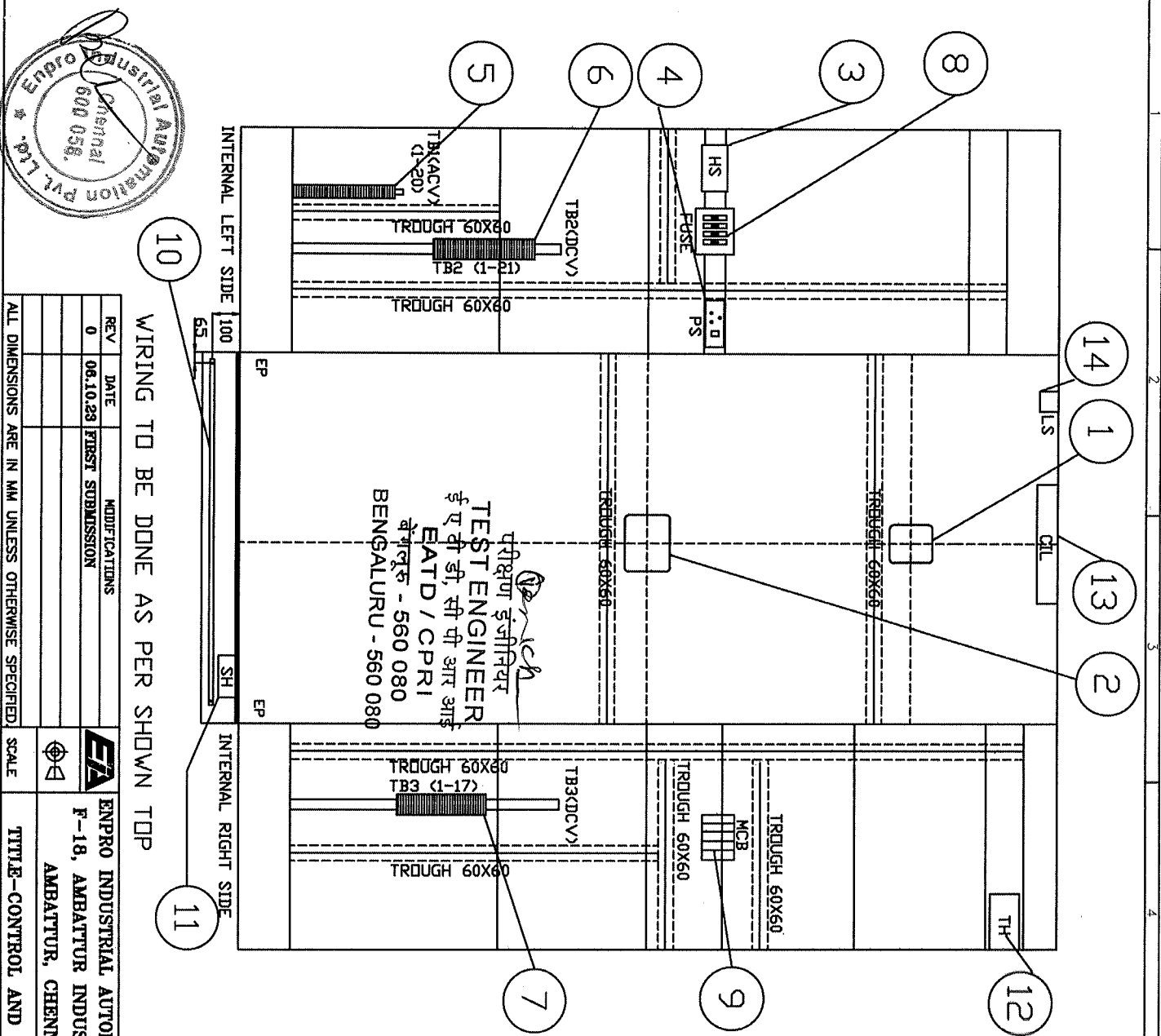
REV	DATE	MODIFICATIONS	SCALE	TITLE-CONTROL AND RELAY PANEL	DRAWN BY	CHECKED BY	APPROVED BY	DATE	DELAYS
0	06.10.23	PROJECT SUBMISSION			C. ARAVINDH RAO	B. CHANDRASEKAR	V. JOURNALAWANTY		1
									2

DIP TEST: IP54 CATEGORY-2 AS PER IS/IEC 60529:2001



ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED

ALL INFORMATIONS CONTAINED IN THIS DOCUMENT IS CONFIDENTIAL AND COPYRIGHT THEREOF IS RESERVED BY ENPRO INDUSTRIAL AUTOMATION PVT. LTD., THEY SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN FOR WHICH THEY ARE SUPPLIED AND SHALL NOT BE COPIED OR REPRODUCED WITHOUT WRITTEN PERMISSION.



REV	DATE	MODIFICATIONS
0	06.10.23	FIRST SUBMISSION



ENPRO INDUSTRIAL AUTOMATION (P) LTD.  
F-18, AMBATTUR INDUSTRIAL ESTATE,  
AMBATTUR, CHENNAI-600058

SCALE	TITLE-CONTROL AND RELAY PANEL	DRAWING No.	EIA-CPRI-CRP	REV.
				0

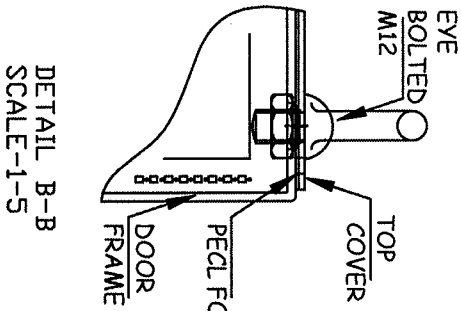
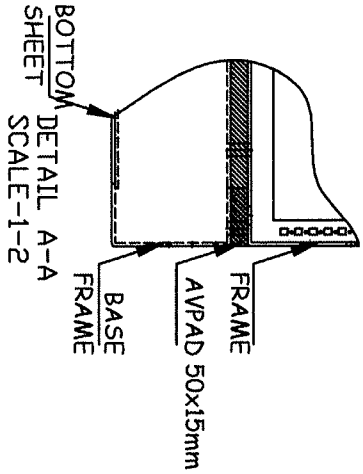
PANEL NAME : CONTROL AND RELAY PANEL  
SERIAL NUMBER : EA-CRP-02  
TYPE TEST : IP54 CATEGORY-2 AS PER IS/IEC 60529:2001  
YEAR OF MFG : 2023

MANUFACTURED BY  
ENPRO INDUSTRIAL AUTOMATION PVT. LTD.  
F-18, AMBATTUR INDUSTRIAL ESTATE,  
AMBATTUR, CHENNAI-600058.  
PHONE-044-26244865,26244860

SL.NO.	DESCRIPTION	MAKE
1	AUXILIARY RELAY-VAC VA11YF7752CA	GE
2	TRIPPING RELAY-VAJ VAJHN23ZG1002BBA	GE
3	HEATER SWITCH	SMITRON
4	15/5A SOCKET 3 PIN 240V AC	ANCHOR
5	TERMINAL BLOCK-1 CSTU6 (ACV)	CONNECTWELL
6	TERMINAL BLOCK-2 CSB4/NAU(DCV)	CONNECTWELL
7	TERMINAL BLOCK-3 CSB4/NAU(DCV)	CONNECTWELL
8	FUSE-3MW20 NNSF 20A 550V	SIEMENS
9	MCB 16AMPS AC 6AMPS DC	SIEMENS
10	COPPER BUS BAR AND LINK 60X25X6	-
11	SPACER HEATER (AC) 230V AC 60W	GIRISH EGO
12	THERMOSTAT	GIRISH EGO
13	CFL	PHILIPS
14	LIMIT SWITCH	VAISHNO

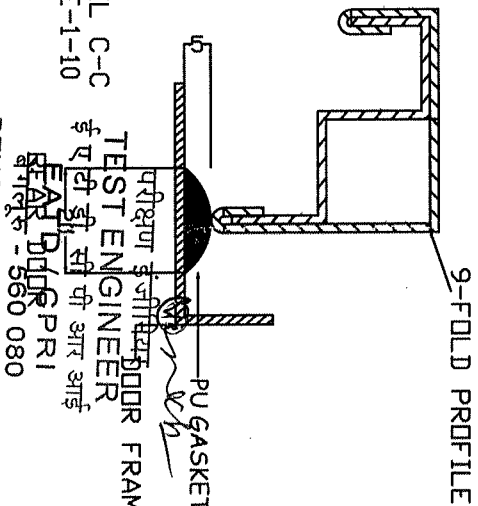
ALL INFORMATIONS CONTAINED IN THIS DOCUMENT IS CONFIDENTIAL AND COPYRIGHT THEREOF IS RESERVED BY ENPRO INDUSTRIAL AUTOMATION PVT. LTD., THEY SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN FOR WHICH THEY ARE SUPPLIED AND SHALL NOT BE COPIED OR REPRODUCED WITHOUT WRITTEN PERMISSION.

GASKET ARRANGEMENT

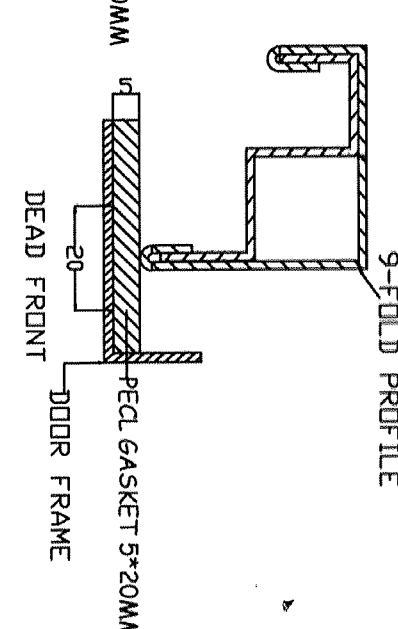


DETAIL C-C SCALE-1-10

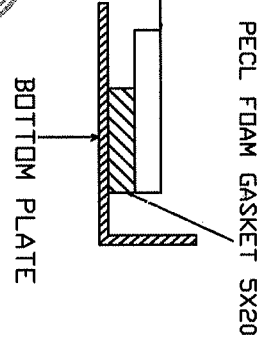
TEST ENGINEER  
BEAR DUTTA CPRI  
BENGALURU - 560 080



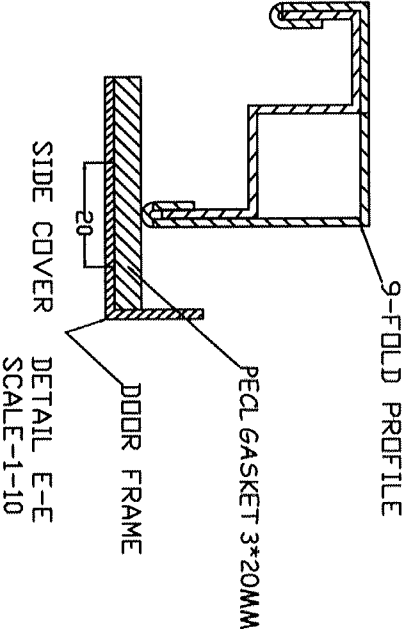
DETAIL D-D SCALE-1-10



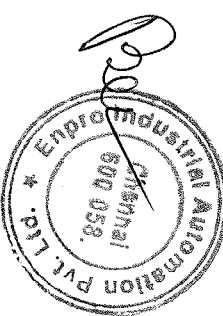
GLAND PLATE  
PECL FOAM GASKET 5X20



DETAIL F-F SCALE-1-10



DETAIL E-E SCALE-1-10



REV	DATE	MODIFICATIONS		<b>ENPRO INDUSTRIAL AUTOMATION (P) LTD.</b> F-18, AMBATTUR INDUSTRIAL ESTATE, AMBATTUR, CHENNAI-600068	DRAWING No. <b>EIA-CPRI-CRP</b>	DRAWN BY <b>GARAVINDH RAJ</b> CHECKED BY <b>B.CHANDRASEKAR</b> APPROVED BY <b>V.DORASWAMY</b>	DATE
0	06.10.23	FIRST SUBMISSION					THIS SHEET
				SCALE			DATE
							THIS SHEET
							REV.
							0

ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED

TITLE-CONTROL AND RELAY PANEL