

CPRI

TEST REPORT



CENTRAL POWER RESEARCH INSTITUTE
(A Govt. of India Society)
Regional Testing Laboratory
3A, Institutional Area, Sector - 62
Noida - 201 309

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



CPRI

Test Report Number : **CPRINOAHVMISC23T0458** **Date: 05 September 2023**

Name and Address of the Customer : M/s Everrise Engineering
7/19-B, Keeranatham, Saravanampatti Post,
Coimbatore, Tamilnadu-641035.

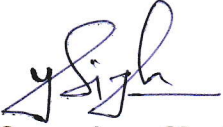
Name and Address of the Manufacturer : M/s Everrise Engineering
7/19-B, Keeranatham, Saravanampatti Post,
Coimbatore, Tamilnadu-641035.

Particulars of sample tested : 415 V, 4000 A, L.T. Panel
Type : Main Electrical Panel
Description of test sample : Refer Sheet 2 of 6
Serial Number : ERE/71
Number of samples tested : One
Date(s) of Test(s) : 01 September 2023
CPRI Sample code Number(s) : NOAHVMISC23S0428
Particulars of tests conducted : Refer sheet 3 of 6
Test in accordance with Standard/Specification : As per customer requirement & procedure followed as per IS/IEC 61439-1: 2011 & IS/IEC 61439-2: 2011
Sampling Plan : Nil
Customer's Requirement : Nil
Deviations if any : Nil

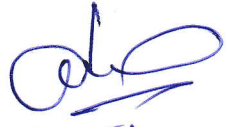
Name of the witnessing persons
Customers representative : Mr. C. Venkataraman
Other than customer's representatives : Nil

Test subcontracted with address of the laboratory : Nil

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


(Gangeshwar Singh)
Test Engineer




(M.K. Jaiswal)
Head of Division
Reviewed and Authorized by

CENTRAL POWER RESEARCH INSTITUTE

TEST REPORT



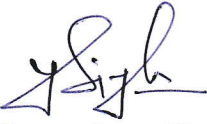
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Date: 05 September 2023

DESCRIPTION OF SAMPLE TESTED

(As assigned by the manufacturer)

Sample	:	L.T. Panel
Rated voltage (Volts)	:	415
Rated current (Amps)	:	4000
Frequency (Hz)	:	50
Insulation level	:	690 V
No. of Phase	:	3Ph + N
Rated Short Time Current	:	70 kA _{rms} for one seconds with initial peak of 154 kA _{peak}
Pollution Degree	:	3
Material Group	:	IIIa


(Gangeswar Singh)
Test Engineer

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SUMMARY OF TESTS CONDUCTED

1. Tests conducted : 1. Verification of Temperature Rise
2. Verification Di-electric Property
3. Verification of Clearance & Creepage Distance
2. Rating for which tested : 1. 4000 Amps, 50Hz, 2. 1.89kV_{rms}
3. As per customer requirement
3. Schedule of tests

Tests Conducted	Clause Numbers	Sheet
Verification of Temperature Rise	As per customer requirement	4 & 5 of 6
Verification of Di-electric Property	As per customer requirement	5 of 6
Verification of Clearance & Creepage Distances	As per customer requirement	5 of 6

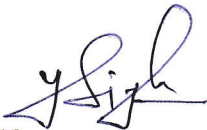
4. Oscillogram Numbers : Nil
5. Graph Numbers : Nil
6. Photograph Numbers : CPRINOAHVMIISC23T0458P01
7. Test Circuit Diagram Numbers. : Nil
8. Drawing Numbers : As given bellow

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	ERE/71	1 of 3	00
2	ERE/71	2 of 3	00
4	ERE/71	2 of 3	00

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.


(Gangeshwar Singh)
Test Engineer

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Test Report Number: CPRINOAHVMISC23T0458

Date: 05 September 2023


TEST RESULTS

1). Test conducted: Verification of Temperature Rise

Date of test : 01.09.2023
 Starting time (Hrs) : 09:15
 Shut down time (Hrs) : 14:15
 Test current (A) : 4000
 Size of the conductor used for temporary connection : Cu busbar size 150 x 10 sqmm x 4 nos./phase connection
 Frequency (Hz) : 50
 Phase : 3
 Avg. ambient temperature at shut down : 36.0 °C
 Arrangement of thermocouple locations: As per drawing no: ERE/71 Sheet 2 of 3

Thermocouples		Maximum Temperature (°C)	Temperature Rise (K)
Locations	Numbers		
Incoming Terminal- R1	T01	71.3	35.3
Incoming Terminal- Y1	T02	75.7	39.7
Incoming Terminal- B1	T03	69.6	33.6
Incoming Terminal- R2	T04	71.5	35.5
Incoming Terminal- Y2	T05	70.1	34.1
Incoming Terminal- B2	T06	63.1	27.1
HBB+VBB Joint- R	T07	59.0	23.0
HBB+VBB Joint- Y	T08	62.0	26.0
HBB+VBB Joint- B	T09	63.0	27.0
VBB+HBB Joint- R1	T10	55.0	19.0
VBB+HBB Joint- Y1	T11	58.3	22.3
VBB+HBB Joint- B1	T12	61.0	25.0
VBB+ HBB Joint- R2	T13	63.5	27.5
VBB+ HBB Joint- Y2	T14	61.6	25.6
VBB+ HBB Joint- B2	T15	57.0	21.0
O/G Terminal- R1	T16	60.1	24.1
O/G Terminal- Y1	T17	64.4	28.4
O/G Terminal- B1	T18	69.3	33.3
O/G Terminal- R2	T19	65.4	29.4
O/G Terminal- Y2	T20	66.7	30.7
O/G Terminal- B2	T21	64.4	28.4
Enclosure Top	T22	45.7	9.7
Enclosure Side	T23	47.2	11.2

Observation: The maximum temperature rise obtained was within the limits as per the requirements of the customer. After temperature rise test, sample subjected to the HV test to check the effect of temperature rise on adjacent parts of sample. The sample withstood 1.89 kV_{rms} for 1 Min.


(Gangeshwar Singh)
 Test Engineer

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TEST RESULTS

2. Test conducted: Verification of Dielectric Properties

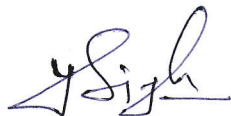
Test Details:

Sl. No.	Voltage applied to	Connected to earth	Voltage applied kV_{rms}	Remarks
1	R	Y,B,N & Frame	1.89	Withstood for 60 sec
2	Y	R,B,N & Frame	1.89	Withstood for 60 sec
3	B	R,Y,N & Frame	1.89	Withstood for 60 sec
4	N	R,Y,B & Frame	1.89	Withstood for 60 sec
5	R,Y,B & N	Frame	1.89	Withstood for 60 sec

3. Test conducted: Verification of Clearance & Creepage Distance:

Clearance & Creepage Distances were measured as per standard and the value found for clearance was 17.0 mm and for creepage distance was 20 mm which are within the limits as specified in standard for pollution degree -3 and material group-IIIa.

Conclusion: The sample tested complies with the requirements of the customer for the tests conducted.


(Gangeshwar Singh)
Test Engineer

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Date: 05 September 2023

NOTE

- a) CPRI is responsible for the test results relate only to the sample(s) tested.
- b) Publication or reproduction of this 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 Corrections/erasure invalidates the 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.

(Gangeswar Singh)
Test Engineer

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

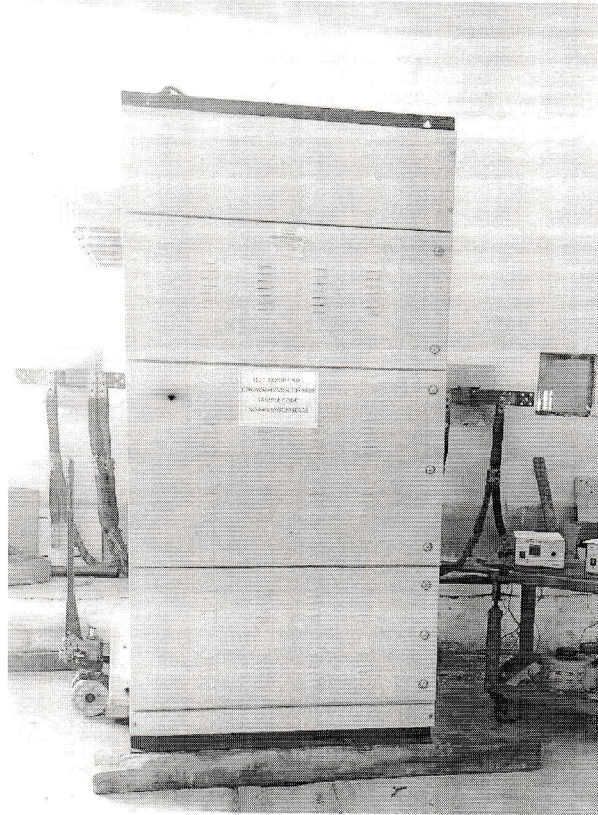
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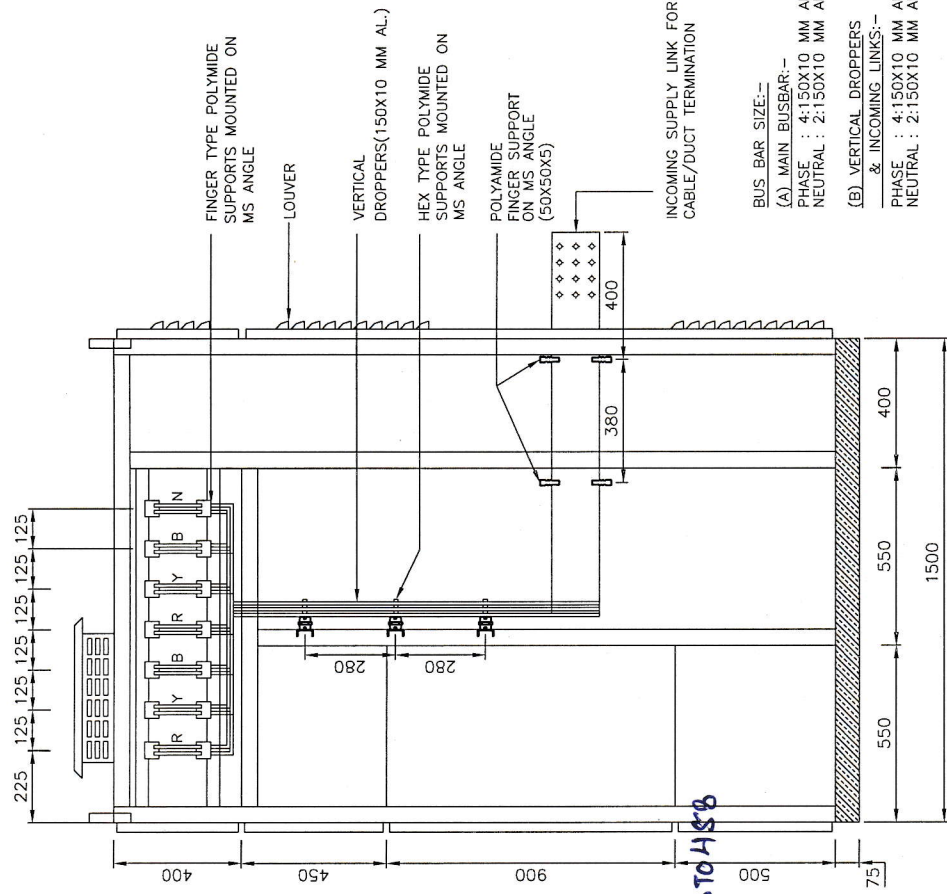
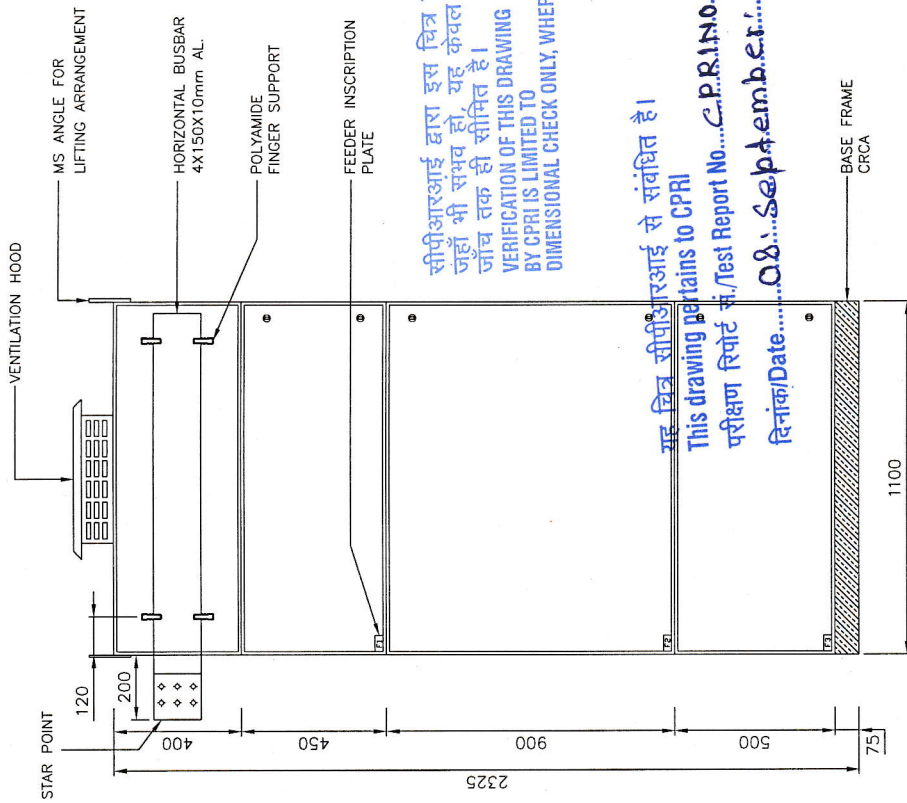
Test Report Number: CPRINOAHVMISC23T0458

Date: 05 September 2023



Photograph Number: CPRINOAHVMISC23T0458P01


(Gangeswar Singh)
Test Engineer



SECTIONAL SIDE VIEW
BUSBAR ARRANGEMENT

NOTES:-

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

TOLERANCE ± 2%

सीपीआरआई द्वारा इस चित्र का सत्यापन
जहाँ भी संभव हो, यह केवल आयामी
जांच तक ही सीमित है।

VERIFICATION OF THIS DRAWING
BY CPRI IS LIMITED TO
DIMENSIONAL CHECK ONLY, WHEREVER POSSIBLE

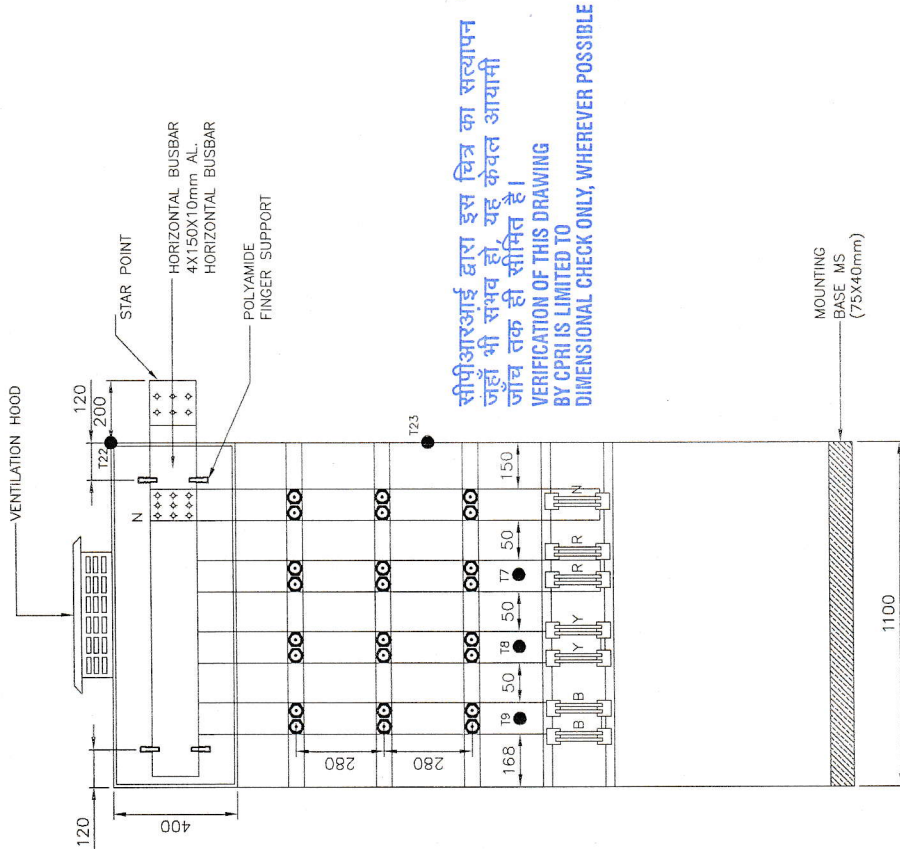
यह चित्र सीपीआरआई से संबंधित है।

This drawing pertains to CPRI

परीक्षण रिपोर्ट नं./Test Report No....C.P.R.I.N.O.A.H.V.M.S.C.23.T.O.H.S.B

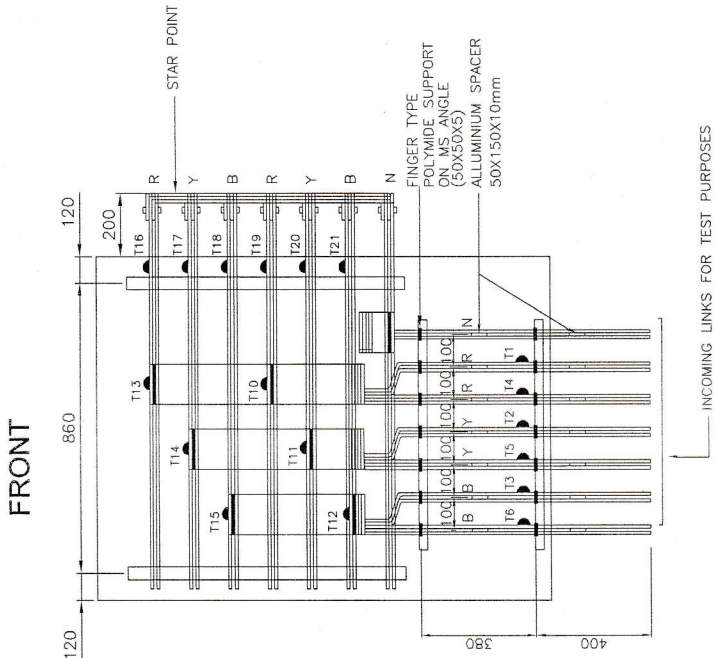
दिनांक/Date.....08/September/2023

PROJECT :		TEMPERATURE RISE TEST, 4000 A		CONSULTANT:	
TITLE :		GENERAL ARRANGEMENT DRAWING FOR		SR.NO.	
SCALE		DRAWING NO.		SHEET NO.	
REV		REV		REV	
ISSUED FOR TESTING		V C		V C	
23.06.23		V C		V C	
MFD. BY:		EVERRISE ENGINEERING		LT PANEL 4000 A, 415 V	
		7/19-B, KEERANATHAM,			
		SARAVANAMPATTI POST, COIMBATORE,			



सीपीआरआई द्वारा इस चित्र का सत्यापन जहाँ भी संभव हो, यह केवल आयामी जाँच तक ही सीमित है।
 VERIFICATION OF THIS DRAWING BY CPRI IS LIMITED TO DIMENSIONAL CHECK ONLY, WHEREVER POSSIBLE

यह चित्र सीपीआरआई से संबंधित है।
 This drawing pertains to CPRI
 परीक्षण रिपोर्ट सं./Test Report No....CPRI/NO.HV misc23 to HSB
 दिनांक/Date....08. September...2023



REAR
 TOP VIEW
 INCOMING LINKS FOR TEST PURPOSES

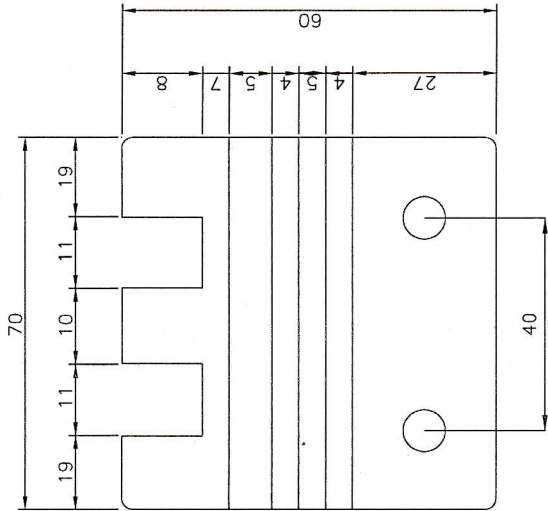
THERMOCOUPLE	
LOCATIONS	NUMBERS
R1 PHASE INCOMING TERMINAL	T1
T1 PHASE INCOMING TERMINAL	T2
B1 PHASE INCOMING TERMINAL	T3
R2 PHASE INCOMING TERMINAL	T4
Y2 PHASE INCOMING TERMINAL	T5
B2 PHASE INCOMING TERMINAL	T6
R PHASE HBB+VBB JOINT	T7
Y PHASE HBB+VBB JOINT	T8
B PHASE HBB+VBB JOINT	T9
R1 PHASE VBB+HBB JOINT	T10
Y1 PHASE VBB+HBB JOINT	T11
B1 PHASE VBB+HBB JOINT	T12
R2 PHASE VBB+HBB JOINT	T13
Y2 PHASE VBB+HBB JOINT	T14
B2 PHASE VBB+HBB JOINT	T15
R1 PHASE OUTGOING TERMINAL	T16
T1 PHASE OUTGOING TERMINAL	T17
B1 PHASE OUTGOING TERMINAL	T18
R2 PHASE OUTGOING TERMINAL	T19
Y2 PHASE OUTGOING TERMINAL	T20
B2 PHASE OUTGOING TERMINAL	T21
R AT ENCLOSURE TOP	T22
B AT ENCLOSURE SIDE	T23

परिक्षण अभियंता
 आरटीएल, सीपीआरआई नोएडा
TEST ENGINEER
 RTL, CPRI, NOIDA

TOLERANCE ± 2%

PROJECT :		TEMPERATURE RISE TEST, 4000 A	
TITLE :		GENERAL ARRANGEMENT DRAWING FOR 415V, 4000A, LT PANEL	
MFD. BY :		EVERRISH ENGINEERING 7/19-B, KEERANATHAM, SARAVANAMPATTI POST, COIMBATORE, TAMIL NADU-641035	
CONSULTANT :		SCALE : NTS	
DRAWING NO. : ERE/71		SHEET NO. : REV. 02 OF 03	
DATE :		BY :	
DESCRIPTION :		CHKD. APPD.	
ISSUED FOR TESTING :		V C	
REV. DATE :		V C	
DESCRIPTION :		V C	
BY :		CHKD. APPD.	
DATE :		BY :	
DESCRIPTION :		CHKD. APPD.	
ISSUED FOR TESTING :		V C	
REV. DATE :		V C	
DESCRIPTION :		V C	
BY :		CHKD. APPD.	
DATE :		BY :	
DESCRIPTION :		CHKD. APPD.	

LT PANEL 4000 A, 415 V



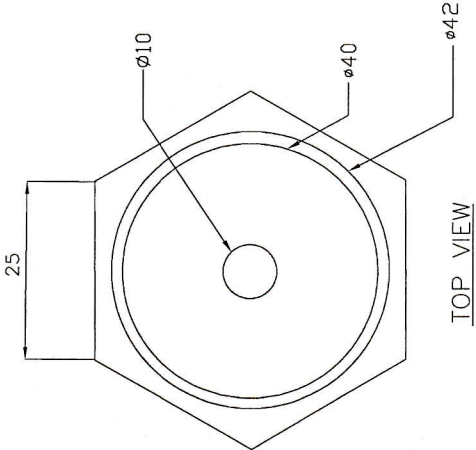
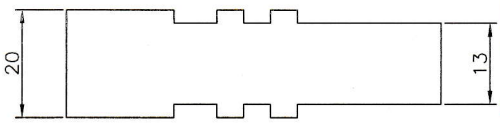
DETAIL DRAWING
FINGER TYPE SUPPORT

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

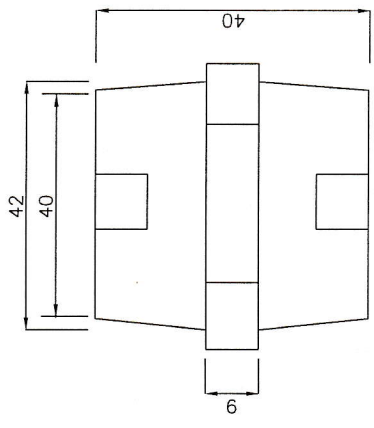
सीपीआरआई द्वारा इस चित्र का सत्यापन
जहाँ भी संभव हो, यह केवल आयामी
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दिनांक/Date.....**08. September 2023**



TOP VIEW



SIDE VIEW

DETAIL DRAWING
HEX TYPE SUPPORT

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

(Signature)

परिक्षण अभियंता
आरटीएल, सीपीआरआई नोएडा
TEST ENGINEER
RTL, CPRI, NOIDA

REV. DATE		DESCRIPTION	BY	CHKD. APPD.
0	23.08.23	ISSUED FOR TESTING	V C	V C
PROJECT : TEMPERATURE RISE TEST, 4000 A				
TITLE GENERAL ARRANGEMENT DRAWING FOR 415V, 4000A, LT PANEL				
MFD. BY: EVERRISE ENGINEERING		CONSULTANT:		
7/19-B, KEERANA THAM,		SCALE	SR.NO.	DRAWING NO.
SARA VANAMPATTI POST, COIMBATORE,		NTS	ERE/71	ERE/71
TAMIL NADU-641035		SHEET NO. REV.		
		03 OF 03 00		