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AN ISO/IEC 17025 ACCREDITED MATERIAL TESTING LAB

UNIT - II, W 361, TTC INDUSTRIAL AREA, MIDC,
RABALE, NAVI MUMBAI - 400 701, INDIA.

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TC/5743

TEST REPORT

For Ingress Protection (IP65) Test carried out on

CONTROL PANEL

Customer:

AVIN ENGI – TECH LLP

6/ Sai Prasad, Y.T. Road,

Dahisar (W), Mumbai – 400068.

Test Report No: E-1695

Description of the Product: Control Panel

Dimensions: 300mm(W) x 250mm(D) x 700mm(H) (Prototype Panel)

Date: 07th September 2018

For ELCA LABORATORIES

Authorised Signatory

Shriram Raichur/Harshala Mawale
Dy. Technical Manager/Senior Engineer



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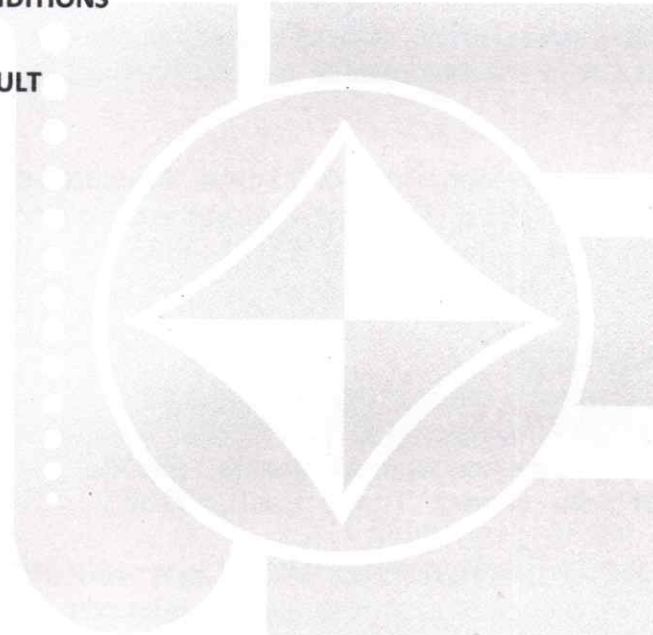


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Continuation Sheet of Test Report No: E-1695

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1.0 GENERAL TEST DESCRIPTION

This Report presents the result of the Ingress Protection Test performed on Control Panel sample submitted by M/s. Shubham Engineering Works. Sample is identified as **E-1695**.

Customer Challan No.: 431 dated 19.08.2018

Description of the Product: Control Panel

Dimensions: 300mm(W) x 250mm(D) x 700mm(H) (Prototype Panel)

Drawing no. COLD 001 dated 21.05.2018

Note: The representative sample of dimension 300mm(W) x 250mm(D) x 700mm(H) was tested to meet the dust test requirements, as per clause no. 13.4 of IEC 60529:2013. The representative sample was a small-scale design of each of the control panels as specified in the master drawing COLD 001 dated 21.05.2018 and the individual drawings as below:

1. COLD 002 dated 21.05.2018 Dimensions as 600mm(W) x 500mm(D) x 2100mm(H)
2. COLD 003 dated 21.05.2018 Dimensions as 800mm(W) x 500mm(D) x 2100mm(H)
3. COLD 004 dated 21.05.2018 Dimensions as 1050mm(W) x 500mm(D) x 2100mm(H)
4. COLD 005 dated 21.05.2018 Dimensions as 1275mm(W) x 250mm(D) x 2100mm(H)



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All tests were carried out as per customer's requirements derived from the following standards.

APPLIED STANDARD: -

1. IEC 60529:2013

Degrees of Protection provided by enclosures (IP Code)

- a) Tests for protection of person against access to hazardous parts (First Numeral: 6) as per Table No. 6 and Clause No. 12.2
- b) Tests for protection against solid foreign object (First Numeral: 6) as per Table No. 7 and Clause No. 13.4
- c) Tests for protection against Water (Second Numeral: 5) as per Table No. 8 and clause No. 14.2.5

Acceptance conditions:

- a) Tests for protection of person against access to hazardous parts as per Clause No. 12.3
- b) Tests for protection against solid foreign object as per Clause No. 13.6.2
- c) Tests for protection against Water as per Clause No. 14.3

2.0 TEST DATA

Test Laboratory	ELCA LABORATORIES, UNIT II, W 361, MIDC, Rabale, Navi Mumbai -400 701, Maharashtra, India.
Test Date	a) Test for protection of person against access to hazardous parts on 22 nd August 2018 b) Test for protection against solid foreign object on 22 nd August 2018 c) Test for protection against Water on 23 rd August 2018
Tested By	Mr. Hemant Ghare
ELCA ID No.	E-1695



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3.0 ENVIRONMENT CONDITIONS

Tests have been performed in a controlled laboratory environment, where the environmental conditions are maintained within the applicable ranges as follows.

Ambient Temperature	15°C - 35°C
Relative Humidity air	25% - 75%
Air pressure	86 kPa to 106 kPa (860 mbar to 1 060 mbar)

4.0 TEST CONDITIONS

Degrees of protection of person against Access to hazardous part as per Table 6

The sample was tested for protection against Access

Equipment Used	Rigid Steel Rod of 1.0 mm dia. Object Probe
Equipment ID	IPD/04
IP code	First Characteristic numeral: 6



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Degree of protection against solid foreign objects as per Table 7

The sample was placed in the Dust Chamber at room temperature. The test conditions are as follows: -

Temperature within exposure zone	25°C
Exposure Period	8 hours at 20 mbar
Start time	09.30 AM on 22.08.2018
End time	05.30 PM on 22.08.2018
Equipment used	ENV-006
IP code	First Characteristic numeral: 6 Category: 1

Type of dust used	Talcum powder
Size of dust	Passed through square meshed sieve of wire diameter 50µm and nominal width of a gap between wires 75 µm
Weight of dust used	3 kg. (2kg.per cubic meter of test chamber)
Chamber volume	1.5 cubic meter

Degrees of protection against water as per Table 8

The sample was tested for water test as per following conditions:

Equipment used	6.3 mm. Ø water jet with 12.5 lpm flow rate of water
Location of the enclosure	2.5 mtr. from water jet
Duration of test	3 min.
IP code	Second Characteristic numeral: 5



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The sample after protection against solid foreign object (dust test) inside the chamber was seen as follows:





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The sample after dust and water test was seen as follows:



The IP test procedure is based on IEC 60529 (Degrees of Protection provided by enclosures) (IP Code). After the completion of each test sample was visually inspected.

5.0 TEST RESULT

Name of test	Observations
Tests for protection of person against access to hazardous parts (Probe Test)	Full diameter of probe did not pass through any opening.
Tests for protection against solid foreign object (Dust Test)	No dust was observed inside the sample
Tests for protection against Water	No water was observed inside the sample

-----END-----OF-----REPORT-----

Checked by:

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For ELCA LABORATORIES

Handwritten signature

Authorised Signatory

Shriram Raichur/Harshala Mawale
Dy. Technical Manager/Senior Engineer