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KARANDIKAR LABORATORIES PVT. LTD. BOISAR

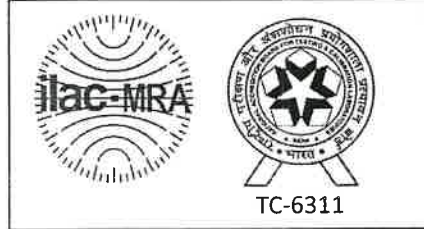
Format: F#07 b.1 Rev 10

TYPE TEST REPORT

IS/IEC 60529:2001

Degrees of Protection Provided by Enclosures (IP Code)

Report No. : KLPL/BTG/20/01-14
 ULR No. : TC631120000000007F
 Discipline : Electrical Discipline
 Group/Category : Environmental Test Facility
 Sub-category : Ingress protection test
 Date of issue : **13.01.2020**



No. of pages : 06 PAGES +Annexure
 Compiled by (+ signature)..... : Rohit Patil
 Designation: Test Engineer
 Approved by (+ signature)..... : Javed Shaikh
 Designation: Dy. Laboratory Manager

Item Received On : 01.01.2020 in Good Condition
 Test Completion Date : 08.01.2020

Client
 Name : **M/S. Pradeep Stainless India Pvt. Ltd.**
 : C-3, B-7 & D-1 Phase II, 3rd Main Road,
 Madras Export, Processing Zone.

Test Specification
 Standard : **IS/IEC 60529:2001**
 Specified IP-Code : **IP-66**

Equipment Under Test
 Type of Test Object : **S S Enclosure, 400(H)X300(W)X200(D)**
 Model : PE-WP-403020-H
 Serial No.. : 271219004-002
 Manufacturer : **M/S. Pradeep Stainless India Pvt. Ltd.**



Annexure :-
 Drawing No. : P 2 022 04 400X300X200 000, Rev.No.C, Dated: 10.01.2020 (01 Page)

NOTE : 1) This refers only to the particular item(s) submitted for testing.
2) If necessary, this report shall be reproduced ONLY in full.

Head Office: B-101, Ansa Industrial Estate, Saki Vihar Road, Saki Naka, Andheri (E) Mumbai-400072 INDIA Ph: (022) 28471395
 Laboratory: Gat#142, Betegaon, Boisar Chilhar Road, Opp. Union Park, Boisar (E) Tal-Palghar, Dist-Palghar. 401501 INDIA
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Possible test case verdicts:

Test case does not apply to the test object : N (Not Applicable)

Test object does meet the requirement..... : P (Pass)

Test item does not meet the requirement : F (Fail)

Test case has not been checked : _____

General remarks:

"(See remark #)" refers to a remark appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

The test results presented in this report relate only to the object tested.

This test report shall not be reproduced except in full without the written approval of the testing Laboratory.

Note: - MAJOR EQUIPMENTS USED

Tests	Required Instruments	Id. No.	Cal Due Date	Used Y/N
4X	Accessibility Probe 1mm Dia.	K&A 405 / 6B	18.03.2020	Y
5X / 6X	Manometer	K&A 047/04	27.04.2020	Y
	Rotameter	K&A 1199-19	16.07.2020	Y
	DTC with sensor	K&A 581/2-12	01.04.2020	Y
	Timer	K&A 581/1-12	06.04.2020	Y
X6	Nozzle 12.5 mm Dia	K&A 382	14.04.2020	Y
	Rotameter	K&A 1102-17	08.05.2020	Y
	Stop Watch	K&A 1171-18	11.09.2020	Y



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IS/IEC 60529:2001			
Clause	Requirement - Test	Result- Remark	Verdict
10	Marking.	-	N
11	General requirement for tests.		
11.1	Tests should be carried out under the standard atmospheric conditions described in IEC 60068-1	-	P
11.2	Test samples shall be in a clean and new condition.	-	P
	The relevant product standard shall specify details such as: The number of samples to be tested;	-	N
	-conditions for mounting, assembling and positioning of the samples;	-	P
	-the pre-conditioning, if any, which is to be used;	-	N
	-whether to be tested energized or not;	-	N
11.5	Empty enclosures		
	If the enclosure is tested without equipment inside, the manufacturer shall ensure that after the electrical equipment is enclosed the enclosure meets the declared degree of Protection of the final product.	-	N

12	Tests for protection against access to hazardous parts indicated by the first characteristic numeral.				
First, characteristic Numeral.	Test means (Access probes)	Test force	Test Conditions Refer IS/IEC 60529:2001		N
0	No test required	-	-	-	N
1	The access probe, sphere of 50 mm \varnothing shall not fully penetrate and adequate clearance shall be kept.	50N \pm 10%	Cls.12.2	-	N
2	The jointed test finger may penetrate up to 80 mm length but adequate clearance shall be kept.	30N \pm 10%	Cls.12.2	-	N
3	The access probe, sphere of 2.5 mm \varnothing shall not penetrate and adequate clearance shall be kept.	3N \pm 10%	Cls.12.2	-	N
4	The access probe of 1,0 mm \varnothing shall not penetrate and adequate clearance shall be kept.	1N \pm 10%	Cls.12.2	-	N
5	Test conditions for IP 5X: Same As Above	1N \pm 10%	Cls.12.2	-	N
6	Test conditions for IP 6X: Same As Above	1N \pm 10%	Cls.12.2	Test wire does not penetrate inside the UUT.	P



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IS/IEC 60529:2001					
Clause	Requirement – Test			Result-Remark	Verdict
13	Tests for protection against solid foreign objects indicated by the First characteristic numeral.				
First, characteristic Numeral.	Test means (object probes and dust chamber)	Test force	Test Conditions Refer IS/IEC 60529:2001	-	N
0	No test required	-	-	-	N
1	Rigid sphere without handle or guard 50 mm diameter.	50N ±10%	Cls.13.2	-	N
2	Rigid sphere without or guard 12, 5 mm diameter.	30N ±10%	Cls.13.2	-	N
3	Rigid steel rod 2,5mm diameter with edges free from burrs	3N± 10%	Cls.13.2	-	N
4	Rigid steel wire 1, mm diameter with edges free from burrs.	1N± 10%	Cls.13.2	-	N
5	Dust chamber, Enclosure with under pressure	NA	Cls.13.4+13.5	-	N
6	Dust chamber, The enclosure is maintained below the Surrounding atmospheric pressure by a vacuum pump.	NA	Cls.13.4+13.6	For 8 Hrs, As extraction rate is less than 40 volumes per hour and max depression of 20 mbar.	P
13.6.2	Acceptance conditions for the first characteristic numeral 6X. The protection is satisfactory if no hazardous deposit of dust is observable inside the UUT at the end of test.			No ingress of powder found inside the UUT.	P



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Date: 13.01.2020

IS/IEC 60529:2001				
Clause	Requirement – Test		Result-Remark	Verdict
14	Tests for protection against water indicated by the second characteristic numeral.			
Second, characteristic Numeral.	Test means	Test Conditions Refer IS/IEC 60529:2001	-	N
0	No test required	Cls.14.2.0	-	N
1	Drip box, Enclosure on turntable	Cls.14.2.1	-	N
2	Drip box, Enclosure in 4 fixed positions of 15 ° tilt	Cls.14.2.2	-	N
3	oscillating tube or spray nozzle, 60° from vertical	Cls.14.2.3	-	N
4	oscillating tube or spray nozzle, 180° from vertical	Cls.14.2.4	-	N
5	6.3-mm nozzle, tested with a spraying nozzle, distance 2.5 m to 3 m, water flow rate 12.5 l/min ±5%	Cls.14.2.5	-	N
6	12.5-mm nozzle, tested with a spraying nozzle, distance 2.5 m to 3 m, water flow rate 100 l/min	Cls.14.2.6	12.5 mm nozzle, Flow rate 100 lit/min, 2.5 – 3 m distance, 3 min duration.	P
7	Immersion tank, Temporary immersion	Cls.14.2.7	-	N
8	Immersion tank, Continuous immersion subject to agreement. Water temperature does not differ from that of equipment by more than 5K.	Cls.14.2.8	-	N
-	Acceptance conditions for IPX6: The protection is satisfactory if no water has accumulated near the insulation, cable end or entered cables or interferes with the correct operation of the equipment.	Cls.14.3	No ingress of water observed inside the UUT.	P

SUMMARY OF INGRESS PROTECTION TESTS ACCORDING TO IS/IEC 60529:2001

Conclusion of the IP66 test: PASS.

The results of the tests were in compliance with the requirements in the standard IS/IEC 60529:2001

UUT=Unit Under Test



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Picture1: S S Enclosure, 400(H)X300(W)X200(D)



Picture2: No ingress of powder & water observed

END OF REPORT

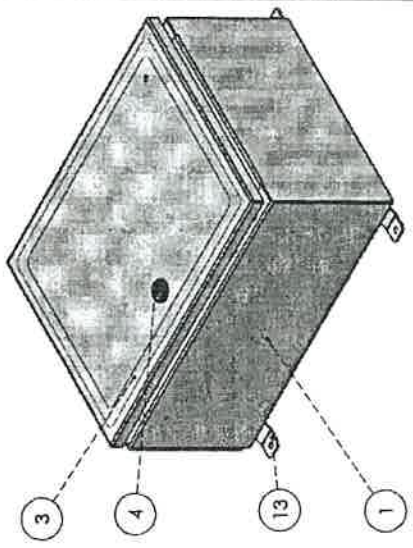


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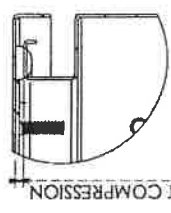
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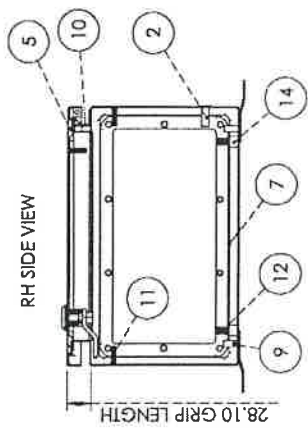
THE INFORMATION GIVEN IN THE TITLE COLUMN IS SUITABLE FOR ALL THE DRAWINGS IN THE SHEET, UNLESS SPECIFIED ALONG WITH PARTICULARS IN COLUMN 'AS'



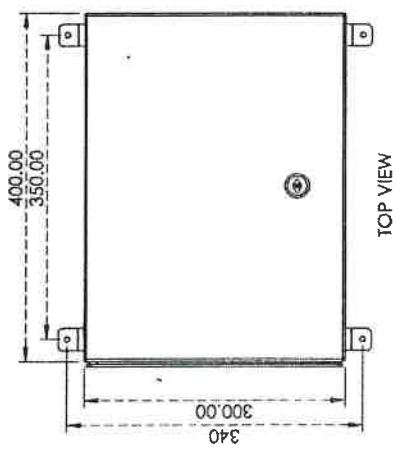
ITEM NO.	PART NAME	Material	THK.	QTY.
1	SHELL	SS 316L	1.2	1
2	M6 RIVET NUT	SS 304		1
3	COVER	SS 316L	1.2	1
4	QUATER TURN LOCK	SS 316L		1
5	GASKET-DOOR	POLYURETHANE	7	1
6	GLAND PLATE	SS 316L	3	1
7	MOUNTING PLATE	Galvanized Steel	2	1
8	GASKET-GLAND PLATE	POLYURETHANE	5	1
9	M5 RIVET NUT	SS 304		14
10	HINGE	SS 316L	2	2
11	M6X1.5 STUD	SS 304		3
12	M8X2.5 STUD	SS 304		4
13	MOUNTING CLAMP	SS 316L	2	4
14	BUSH	SS 304		4



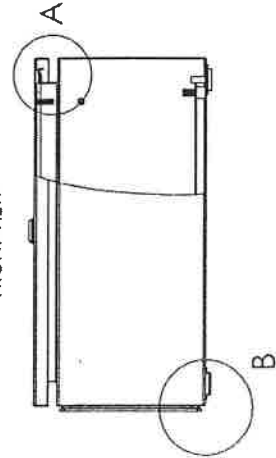
DETAIL A
SCALE 1 : 3



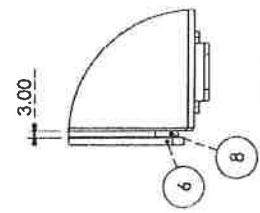
RH SIDE VIEW



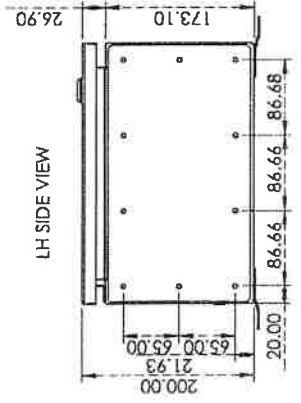
TOP VIEW



FRONT VIEW



DETAIL B
SCALE 1 : 3



LH SIDE VIEW

Report No - KLP/BT/20/01-14

PRADEEP Stainless India Pvt Ltd		DATE: 17/12/19
DO NOT SCALE	NAME: SURUJI	DATE: 17/12/19
	CHKD: KATHIRAVAN	DATE: 17/12/19
	APD: DASRAN	DATE: 17/12/19
REV	DESCRIPTION	DATE
C	FINAL RELEASE	10/01/20

CONTROLLED COPY

FINAL COPY



P 2022 04 400X300X200 000

ENCLOSURE

WEIGHT :- (Kgs)

PE-WP-40320H

PROJECT :- PSP1-400X300X200

CUSTOMER DRG NO :-

MATERIAL :- SS 316L

THICKNESS :- 1.2 mm

PART NAME :-

PART DRG NO :-

SCALE :- 1:5

SHEET :- A4

SHEET 1 OF 1