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Ingress Protection Test Report

AS 60529: 2025 (IP56 Requirements)
Report Number: CE4675B
AUGUST 2025

Pro-Tech Switchboards
PTPR1000H
Model: Pro-Tech premier range

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Compliance Certificate

Client Contact: Company Pro-Tech Switchboards
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Device: PTPR1000H

Model: Pro-Tech premier range

Reference standard: **AS 60529: 2025**
Degrees of protection provided by enclosures (IP Code)

Summary Result: IP56 requirements

1 mm probe ingress test (Table 1 & section 12.2)	**Complied**
Dust ingress test (Table 2 & sections 13.5)	**Complied**
Water jet 100 l/m Test (Table 3 & Section 14.2.6)	**Complied**

Test Dates: 5th & 6th August 2025

Tests Performed by: Ben Fitzgibbon
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The **PTPR1000H [Pro-Tech premier range]** complied with the IP56 requirements detailed above in AS 60529-2004: Degrees of protection provide by enclosures (IP Code).

B. Fitzgibbon	M. Grimwood	8th August 2025
Prepared By: *Ben Fitzgibbon* *Test Engineer* *Compliance Engineering*	***Approved By:*** *Matthew Grimwood* *Laboratory Manager* *Compliance Engineering*	***Date***

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IP Rating Compliance Test Report

1. INTRODUCTION

Foreign object and water ingress protection measurements were performed on the PTPR1000H [Pro-Tech premier range] in accordance with the IP56 requirements detailed in AS 60529:2025.

2. RESULTS SUMMARY

IP56 requirements:

Test	Table & Section	Result
1 mm probe ingress	Table 1 Section 12.2	**Complied**
Dust Ingress	Table 2 & Section 13.5	**Complied**
Water Ingress	Table 3 & Section 14.2.6	**Complied**

3. TEST SAMPLE

Device: PTPR1000H
Model: Pro-Tech premier range

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4. MODIFICATIONS

No modifications were performed on the above sample.

5. CONFIGURATION

Unless otherwise specified in a relevant product standard, the test samples for each test shall be in a clean and new condition, with all parts in place and mounted in the manner stated by the manufacturer.

6. DEGREES OF PROTECTION

First Numeral Requirements
The first characteristic numeral indicates that the enclosure provides protection of persons against access to hazardous parts by preventing or limiting the ingress of a part of the human body or an object held by a person; and simultaneously the enclosure provides protection of equipment against the ingress of solid foreign objects.

AS 60529 - Table 1 - Protection against access to hazardous parts			
First Character	**Description**	**Ingress Test**	**Section**
1	Prevent access to back of hand	No entry by 50 mm sphere probe	12.2
2	Prevent access to a finger	No entry by 12 mm test finger	12.2
3	Prevent access to a tool	No entry by 2.5 mm probe	12.2
4	Prevent access to a wire	No entry by 1 mm probe	12.2
5	**Prevent access to a wire**	**No entry by 1 mm probe**	**12.2**
6	Prevent access to a wire	No entry by 1 mm probe	12.2

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AS 60529 - Table 2 - Protection against solid foreign objects			
First Character	**Description**	**Ingress Test**	**Section**
1	Prevent access to 50 mm sphere	No entry by 50 mm sphere probe	13.2
2	No access to 12.5 mm sphere	No entry by 12.5 mm sphere probe	13.2
3	No access to 2.5 mm rod	No entry by 2.5 mm probe	13.2
4	No access to 1 mm rod	No entry by 1 mm probe	13.2
5	**Dust protected**	**Minor dust ingress only**	**13.4 & 13.5**
6	Dust tight	No ingress of dust	13.4 & 13.6

Second Numeral Requirements
The second characteristic numeral indicates the degree of protection provided by enclosures with respect to harmful effects on the equipment due to the ingress of water.

AS 60529 - Table 3 - Protection against water			
Second Character	**Description**	**Ingress Test**	**Section**
1	Vertical water drops	No harmful effect	14.2.1
2	Water drops, 15º EUT angle	No harmful effect at 15º to drops	14.2.2
3	Spraying water	No harmful effect to 60º spray	14.2.3
4	Splashing water	No harmful effect by splashed water	14.2.4
5	Water jet	No harmful effect to water jet	14.2.5
6	**Powerful water jet**	**No harmful effect to powerful water jet**	**14.2.6**
7	Temporary immersion	No harmful effect to water immersion	14.2.7
8	Continuous immersion	No harmful effect to water immersion	14.2.8

7. ATMOSPHERIC CONDITIONS FOR WATER OR DUST TESTS

Unless otherwise specified in the relevant product standards, the tests should be carried out under the standard atmospheric conditions described in IEC 60068-1.

The recommended atmospheric conditions during the tests are as follows;

- Temperature range: 15 °C to 35 °C
- Relative humidity: 25 % to 75 %
- Air pressure: 86 kPa to 106 kPa (860 mbar to 1060 mbar)

8. PROTECTION AGAINST HAZARDOUS PARTS (IP 5X)

8.1 REQUIREMENTS & PROCEDURE – 1 mm PROBE INGRESS

The protection is satisfactory if the full diameter of the (1.0 mm diameter) probe specified in Table 5 & 7 does not pass through any opening.

The following specifications are required.
- A rigid steel rod 1.0 mm diameter with edges free from burrs.
- Test force of 1 N ±10%.

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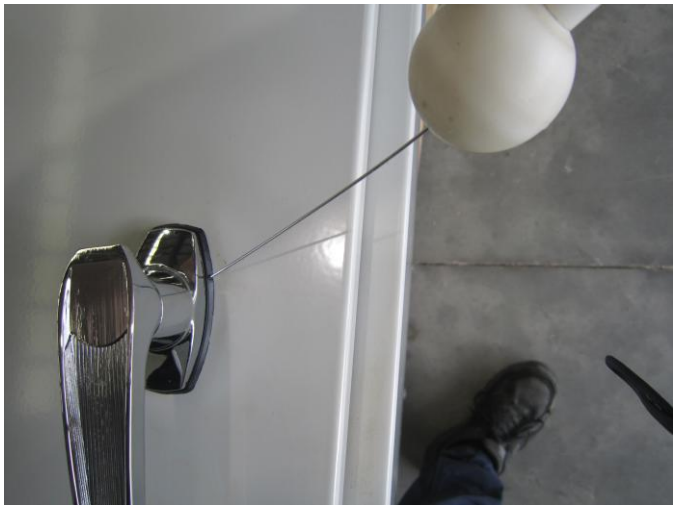
8.2 TEST EQUIPMENT

Inv	Equipment	Model No	Serial No	Cal Due
418	IEC 60529 Test Probe Set	AUTO A/B/C/D	AUTO1305280	N/A

N/A - Not Applicable

8.3 RESULTS

There were no openings large enough for the 1 mm probe to penetrate the Enclosure.



8.4 ASSESSMENT

The PTPR1000H [Pro-Tech premier range] complies with the protection against solid foreign objects IP5X as per item 5, table 7 of AS 60529:2025.

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9. PROTECTION AGAINST SOLID FOREIGN OBJECTS (IP 5X)

9.1 REQUIREMENTS & PROCEDURE – DUST INGRESS

The test is made using a dust chamber incorporating the basic principles whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber.

The talcum powder used shall be able to pass through a square meshed sieve the nominal wire diameter of which is 50 µm and the nominal width of a gap between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.

Enclosure categories.

Category 1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, for example, due to thermal cycling effects.

Category 2: Enclosures where no pressure difference relative to the surrounding air is present.

Category 1 - Enclosures:

The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump. The suction connection shall be made to a hole specially provided for this test. If not otherwise specified in the relevant product standard, this hole shall be in the vicinity of the vulnerable parts.

If it is impracticable to make a special hole, the suction connection shall be made to the cable inlet hole. If there are other holes (e.g. more cable inlet holes or drain holes) these shall be treated as intended for normal use on site.

The object of the test is to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour. In no event shall the depression exceed 2 kPa (20 mbar) on the manometer.

If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 hours.

If, with a maximum depression of 2 kPa (20 mbar) the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through or a period of 8 hours has elapsed.

Category 2 - Enclosures:

The enclosure under test is supported in its normal operating position inside the test chamber but is not connected to a vacuum pump. Any drain hole normally open shall be left open for the duration of the test. The test shall be continued for a period of 8 hours.

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9.2 TEST EQUIPMENT

Inv	Equipment	Model No	Serial No	Cal Due
419	Dust Chamber	BE-XR-1000 A/B/C/D	-	N/A

N/A - Not Applicable

9.3 RESULTS

The EUT was deemed a Category 1 enclosure.

The protection is satisfied if on inspection, dust has not penetrated the enclosures and is dust tight. Upon completion the sample was examined and no penetration of dust into EUT was observed.

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9.4 ASSESSMENT

The PTPR1000H [Pro-Tech premier range] complies with the protection against solid foreign objects - dust (IP5X) as per item 5, table 7 of AS 60529:2025

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10. PROTECTION AGAINST WATER (IPX6)

10.1 REQUIREMENTS & PROCEDURE – WATER JET

The EUT was sprayed from all six sides of the enclosure with a stream of water from a 12.5 mm nozzle with a delivery rate of 100 l/min.

The test duration per square meter of enclosure surface area sprayed shall be 1.5 minutes. In addition, the core of the substantial stream shall have a circle of approximately 120 mm diameter at 2.5 metres distance from the nozzle.

The minimum duration of the test shall be 3 minutes and the distance from the nozzle to the enclosure surface shall be between 2.5 and 3 metres.




10.2 TEST EQUIPMENT

Equipment	Model No	Serial No	Cal Due
12.5 mm Spray nozzle	-	-	-
Flow Meter	EFM	-	On Use

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10.3 RESULTS

The EUT was dried off and the enclosure opened to perform a close and thorough inspection to evaluate if water ingress had occurred.
There was no evidence visible of any water penetration into the Enclosure.




10.4 ASSESSMENT

The PTPR1000H [Pro-Tech premier range] complies with the protection against water (IPX6) as per item 6, table 8 of AS 60529:2025.

11. CONCLUSION

The **PTPR1000H [Pro-Tech premier range]** complied with the IP56 requirements of AS 60529:2025: degrees of protection provided by enclosures (IP Code).