

FEDERAL SIGNAL CORP

IP 66 TEST REPORT

SCOPE OF WORK

Test Report for IP 66 Test Results - Push Button Call Station - CP-PB, CP-BG

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TEST REPORT

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SUBJECT: Test Report for IP 66 Test Results
Push Button Call Station
CP-PB, CP-BG

Dear Sean Moloney

This test report for Test Report for IP 66 Test Results represents the results of our evaluation of the above referenced product(s) to the requirements contained in the following standards:

Degrees of protection provided by enclosures (IP Code) [IEC 60529:2013 Ed. 2.2]
Section 1

Test Summary	
Product	Push Button Call Station
Sample condition:	Production
Sample ID:	AH12062019020239
Test Location:	545 E. Algonquin Road, Suite H Arlington Heights, IL 60005
The first character numeral:	6
The second character numeral:	6
Notes: (if applicable)	NA
Date of test:	12/11/2019

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TEST REPORT**Section 2****Test Report****TEST – FIRST CHARACTER NUMERAL 6****METHOD**

The atmospheric conditions during the test were:

Temperature range: 15 °C to 35 °C

Relative humidity: 25 % to 75 %

Air pressure: 86 kPa to 106 kPa (860 mbar to 1 060 mbar).

The test was made using a dust chamber incorporating the basic principles shown below 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 was 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 used was 2 kg per cubic metre of the test chamber volume and was used for more than 20 tests.

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 was present.

Note: The enclosure was deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2. Category 1 enclosures:

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

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The object of the test was 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 shown in figure below. If an extraction rate of 40 to 60 volumes per hour was obtained the duration of the test is 2 h. If, with a maximum depression of 2 kPa (20 mbar), the extraction rate was less than 40 volumes per hour, the test was continued until 80 volumes have been drawn through, or a period of 8 h has elapsed. category 2 enclosures:

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

RESULTS OF TEST

Pass for both models.

Dust did not enter the enclosure

TEST REPORT

Section 2

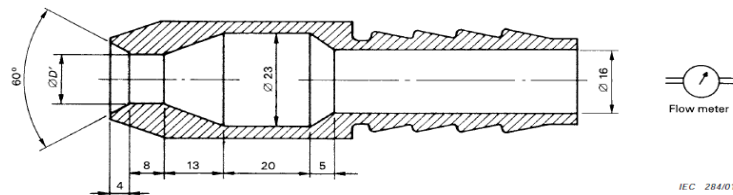
Test Report

TEST – SECOND CHARACTER NUMERAL 6

Method

The test was conducted with fresh water. During the test the water temperature cannot differ by more than 5 K from the temperature of the specimen under test. If the water temperature was more than 5 K below the temperature of the specimen a pressure balance was provided for the enclosure. During the test, the moisture contained inside the enclosure may partly condense. The dew which may thus deposit must not be mistaken for an ingress of water. For the purpose of the tests, the surface area of the enclosure was calculated with a tolerance of 10 %. Adequate safety precautions were taken when testing the equipment in the energized condition.

The test was made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown below.



Dimensions in millimetres

$D' = 6.3$ for the test of 14.2.5 (second characteristic numeral 5)
 $D' = 12.5$ for the test of 14.2.6 (second characteristic numeral 6)

The conditions of the test are as follows:

- internal diameter of the nozzle: 12,5 mm;
- delivery rate: 100 l/min \pm 5 %;
- water pressure: to be adjusted to achieve the specified delivery rate;
- core of the substantial stream: circle of approximately 120 mm diameter at 2,5 m distance from nozzle;
- test duration per square metre of enclosure surface area likely to be sprayed: 1 min;
- minimum test duration: 3 min (1 min/m² at least 3 min);
- distance from nozzle to enclosure surface: between 2,5 m and 3 m.

If the enclosure was provided with drain-holes, it was proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment. For enclosures without drain-holes, the relevant product standard will specify the acceptance conditions if water can accumulate to reach live parts.

Results of test:

Pass for both models.

Water did not enter the enclosure

TEST REPORT

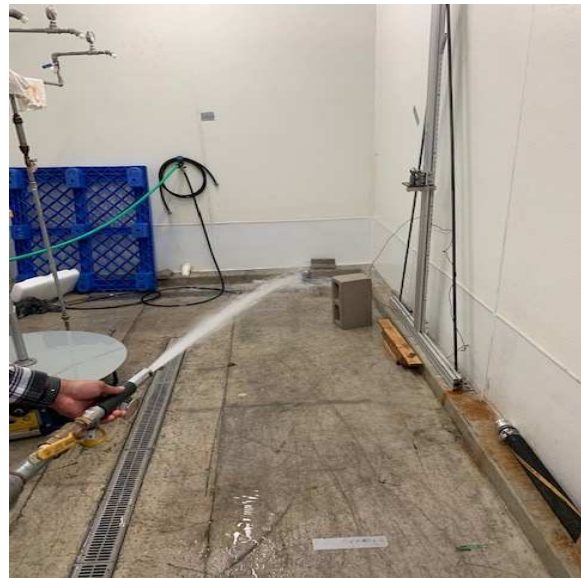
Section 3

DESCRIPTION/PHOTOGRAPHS

Prior to IP X6 Test



During IP X6 Test

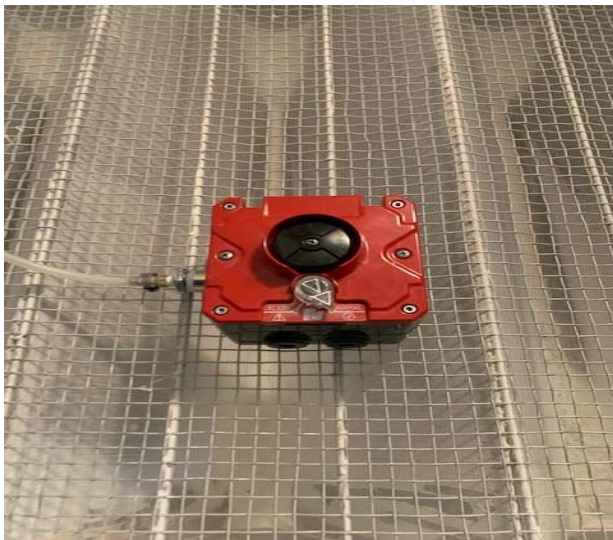


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After IP X6 Test



Prior to IP 6X Test



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Immediately after IP X6 Test



After to IP X6 Test




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Conclusion

The results of the test indicate that the Push Button Call Station model(s) CP-PB, CP-BG did meet the requirements for Degrees of protection provided by enclosures (IP Code) [IEC 60529:2013 Ed. 2.2]

This letter report completes our evaluation for these models, covered by Intertek Project No. G104175487. If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact the undersigned.

Please note; this Letter Report does not represent authorization for the use of any Intertek certification marks.

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