



Tightness tests for IP66 / NEMA 4 - Local Control Panel LCP9HE



VTT Expert Services Ltd

Requested by: Metso Flow Control Oy

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Tightness tests for Local Control Panel LCP9HE

Summary Based on the test results the protection provided by the casing of Local Control Panel LCP9HE comply with the requirements stated for the protection class IP66 and Ingress of water (Hosedown and splashing water), Nema Enclosure Type 4.

Espoo, January 26, 2016



Olavi Nevalainen
Product Manager



Jari Heikkinen
Expert

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1 General

The test place was VTT Expert Services Ltd and the tests were carried out 22. - 26.1.2016. The specimen was Local Control Panel LCP9HE.

The tests were performed in accordance with the standard IEC 60529, "Degrees of protection provided by enclosures (IP Code)" (2013-08) and NEMA Standards Publication 250-2008, "Enclosures for Electrical Equipment (1000 Volts Maximum)".

2 Hose down and splashing water, NEMA Type 4

2.1 Test procedure

The severity of the test was according to the document UL50, Enclosures for Electrical Equipment, Hosedown Test, Type 4. The test was carried out by spraying the specimen with a water jet hose nozzle, Ø 25,0 mm from all practicable directions for a period of 3 minutes 19 seconds.

The flow rate of the water was 240 l/min - 244 l/min, temperature was +22 °C and the distance from the nozzle to the specimen was 3,0 m.

The test equipment:

- 25,0 mm nozzle
- flow meter Endress + Hauser Promag 53, IDN TL15944

2.2 Test results

In the visual examination after test no ingress of water was noticed inside the casing.

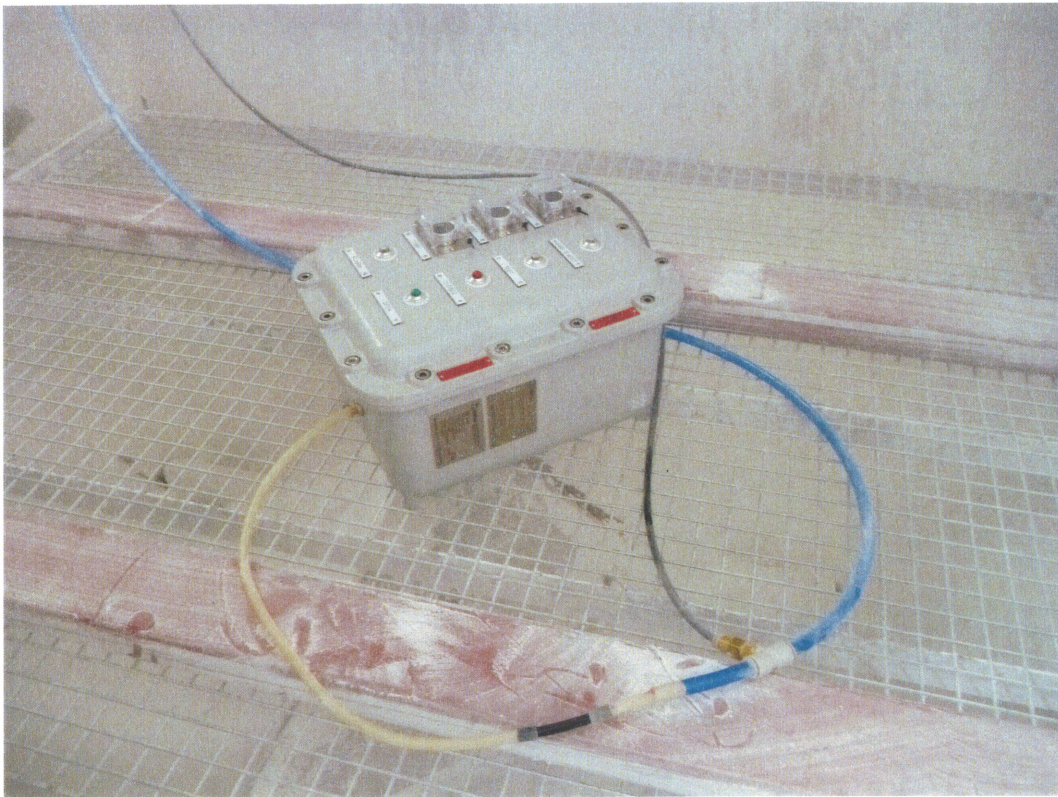
Based on the test results the protection against powerful water jets complies with the requirements stated for Ingress of water (Hosedown and splashing water), Nema Enclosure Type 4.

3 Dust test for IP6X

3.1 Test procedure

For the dust test the specimen was placed in the dust chamber provided with talcum powder circulation. The underpressure pipe was connected on the cable entry (see photo 1). The test parameters were following:

- underpressure 2 kPa
- flow rate of the air 0,1 l/min
- test duration 8 hours



Photograph 1. The test setup for dust test (P1070916.JPG).

The test equipment:

- dust test chamber, IDN TL04118
- pressure gauge DPP-4K, IDN TL04117
- flow meter NP-G21, IDN TL04116

3.2 Test results

In the visual examination after the test no deposit of dust was noticed inside the casing.

Based on the results of the dust test the casing of the specimen complies with the requirements stated for the protection class IP6X.

4 Water test for IPX6

4.1 Test procedure

The test was carried out by spraying the specimen with a water jet hose nozzle (Ø 12,5 mm, described in figure 6 in IEC 60529) from all practicable directions for a period of totally 3 minutes.

The flow rate of the water was 100 l/min, temperature +22 °C and the distance from the nozzle to the specimen was 2,8 m.

The test equipment:

- 12,5 mm nozzle, IDN TL04124
- flow meter Typ M6/6000, IDN TL04112

The test results relate only to the sample tested.

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4.2 Test results

In the visual examination after test no ingress of water was noticed inside the casing.

Based on the test results the protection against powerful water jets complies with the requirements stated for protection class IPX6.

The test results relate only to the sample tested.

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