



Ex TEST REPORT of PARTIAL TESTING



ExTR Reference Number : ---
ExTR Free Reference Number..... : 17-EX-0116.20
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Product Qualification
Reviewed by + signature (ExTL) : Christian Ettlin
Product Qualification
Date of issue..... : 2017-12-04

Handwritten signatures of Stefan Hartmann and Christian Ettlin

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Ex Certification Body (ExCB) Eurofins Electrosuisse Product Testing AG
Address : Luppenstrasse 3, 8320 Fehraltorf, SWITZERLAND

Applicant's name : Wandfluh AG
Address : Helkenstrasse 13; CH-3714 Frutigen, Switzerland

Standards : EN 60079-0:2012+A11:2013; EN 60529:1989+A1:2000+A2:2013
Test procedure : ATEX System
Test Report Form Number : ExTR Partial Testing (released 2011-07)

Instructions for Intended Use of ExTR of Partial Testing:

An ExTR of Partial Testing provides a clause-by-clause documentation of the initial evaluation and testing that verified compliance of an item or product with only select requirements from an IEC Ex standard. This ExTR of Partial Testing is part of an ExTR package that may include other Ex Test Report, Addendum and National Differences documents, along with a single ExTR Cover. An ExTR of Partial Testing is to be compiled and reviewed by the ExTL. The Issuing ExCB indicates final approval of the ExTR of Partial Testing as part of the overall ExTR package on the associated ExTR Cover.

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Test item description : Solenoid type
Trademark : Wandfluh AG
Model/type reference..... : MKY45/18x60-*/L*-*-#*
Manufacturer : Wandfluh AG
Address : Helkenstrasse 13; CH-3714 Frutigen, Switzerland

Possible test case verdicts:

- test case does not apply to the test item:.....N / A
- test item does meet the requirement:Pass

General remarks:

The test results presented in this ExTR of Partial Testing relate only to the item or product tested, and do not represent a complete evaluation and testing of the item or product.
"(see Attachment #)" refers to additional information appended to this document.
"(see appended table)" refers to a table appended to this document.
Throughout this document, a point is used as the decimal separator.
The technical content of this ExTR of Partial Testing shall not be reproduced except in full without the written approval of the Issuing ExCB and ExTL.
Particulars for the partial test see measurement section respectively additional narrative remarks.
The common European group differences to this standard are reported and appended at the end of this report.

Picture of test object and test setup:



Particulars: test item vs. test requirements

Classification of installation and use	:	stationary
Ingress protection	:	IP66/IP67
Rated ambient temperature range (°C).....	:	N/A

Special conditions for safe use:

N/A

General product information:

The solenoid, type MKY45/18x60-*/L*-*-* #*, designed to Flameproof Enclosure “d” type of protection is used for valve operation. It consists of a steel enclosure and the coil. The coil body is made from plastics and forms part of the flameproof wall.

Connection is by means of a – separately certified – direct cable entry or a – separately certified – conduit system.

Test was carried out with cable gland 20 R A2F M20 with face seal from CMP.

Technical Data, Nomenclature and Notes for manufacturing and operation: see original IECEx / ATEX Certificates:

- PTB 07 ATEX 1023
- BVS 11 ATEX E 037
- IECEx PTB 10.0020
- IECEx BVS 11.0018

IEC 60079-0			
Clause	Requirement – Test	Result – Remark	Verdict
26.4	Tests of enclosures		
26.4.1	Order of tests		
26.4.1.1	Metallic enclosures, metallic parts of enclosures and glass parts of enclosures	Not part of this test procedure! Two samples with metallic enclosure was already conditioned in earlier ATEX Assessment at PTB	N/A
26.4.1.2	Non-metallic enclosures or non-metallic parts of enclosures	Not part of this test procedure! Two samples with non-metallic parts of enclosure was already conditioned in earlier ATEX Assessment at PTB	N/A
26.4.2	Resistance to impact	Not part of this test procedure!	N/A
26.4.3	Drop test	Not part of this test procedure!	N/A
26.4.4	Acceptance criteria	Not part of this test procedure!	N/A
26.4.5	Degree of protection (IP) by enclosures		Pass
26.4.5.1	Test procedure	IPX6 and IPX7, according to IEC/EN 60529, "category 1", not energized See separate clauses of this test report	Pass
26.4.5.2	Acceptance criteria	No traces of water visible; Fulfilled according to IEC/EN 60529, so that the type of protection becomes not invalidate	Pass

EN/IEC 60529			
Clause	Requirement – Test	Result – Remark	Verdict
1	Scope and object		
2	Normative references		
3	Definitions		
4	Designations		
5	Degrees of protection against access to hazardous parts and against solid foreign objects indicated by the first characteristic numeral		
6	Degrees of protection against ingress of water indicated by the second characteristic numeral		
7	Degrees of protection against access to hazardous parts indicated by the additional letter		
8	Supplementary letters		
9	Examples of designations with the IP Code		
10	Marking	According to EN 60079-0	Pass
11	General requirements for tests		
11.1	Atmospheric conditions for water or dust tests	Test Temperature: 20.4 °C Relative humidity: 24 % Air pressure: 949 kPa Resp. (Measurements in 2013) Test Temperature: 20.1 °C Relative humidity: 41 % Air pressure: 961 kPa	Pass
11.2	Test samples	According to EN 60079-0 and EN 60079-1	Pass
11.3	Application of test requirements and interpretation of test results	According to EN 60079-0 and EN 60079-1	Pass
11.4	Combination of test conditions for the first characteristic numeral	Not part of this test procedure!	N/A
11.5	Empty enclosures	Fully assembled test samples	N/A

EN/IEC 60529			
Clause	Requirement – Test	Result – Remark	Verdict
12	Tests for protection against access to hazardous parts indicated by the first characteristic numeral		
12.1	Access probes	Not part of this test procedure!	N/A
12.2	Test conditions	Not part of this test procedure!	N/A
12.3	Acceptance conditions	Not part of this test procedure!	N/A
13	Tests for protection against solid foreign objects indicated by the first characteristic numeral		
13.1	Test means	Not part of this test procedure!	N/A
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4	Not part of this test procedure!	N/A
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4	Not part of this test procedure!	N/A
13.4	Dust test for first characteristic numerals 5 and 6	Not part of this test procedure!	N/A
13.5	Special conditions for first characteristic numeral 5		
13.5.1	Test conditions for first characteristic numeral 5	Not part of this test procedure!	N/A
13.5.2	Acceptance conditions for first characteristic numeral 5	Not part of this test procedure!	N/A
13.6	Special conditions for first characteristic numeral 6		
13.6.1	Test conditions for first characteristic numeral 6	Not part of this test procedure!	N/A
13.6.2	Acceptance conditions for first characteristic numeral 6	Not part of this test procedure!	N/A
14	Tests for protection against water indicated by the second characteristic numeral		
14.1	Test means	Assessed with test for second numeral 6 and 7 (Means water jet of 100 l/min for 3 minutes from a distance of 2.5 m and Immersion tank, Water-level on enclosure: 0,15 m above top, 1 m above bottom)	Pass
14.2	Test conditions	Non-energized device was assessed according to clause 14.2.6 and 14.2.7	Pass
14.2.1	Test for second characteristic numeral 1 with the drip box	Not part of this test procedure! But testing for numeral 6 includes also compliance with numeral 1	Pass

EN/IEC 60529			
Clause	Requirement – Test	Result – Remark	Verdict
14.2.2	Test for second characteristic numeral 2 with the drip box	Not part of this test procedure! But testing for numeral 6 includes also compliance with numeral 2	Pass
14.2.3	Test for second characteristic numeral 3 with oscillating tube or spray nozzle	Not part of this test procedure! But testing for numeral 6 includes also compliance with numeral 3	Pass
14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle	Not part of this test procedure! But testing for numeral 6 includes also compliance with numeral 4	Pass
14.2.5	Test for second characteristic numeral 5 with the 6,3 mm nozzle	Not part of this test procedure! But testing for numeral 6 includes also compliance with numeral 5	Pass
14.2.6	Test for second characteristic numeral 6 with the 12,5 mm nozzle	Each device was assessed for 3 minutes with the water jet of 100 l/min from a distance of 2.5 m See Eurofins Electrosuisse Measurement Report 17-Ex-0116.20 dated 2017-12-04	Pass
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0,15 m and 1 m	Each device was assessed for a); c) and d) 1000 mm to lowest point of enclosure at 21.5 °C for 30 min. Electrosuisse Measurement Report 13-Ex-0063.20 dated 2013-11-12	Pass
14.2.8	Test for second characteristic numeral 8: continuous immersion subject to agreement	Not part of this test procedure! The device was not assessed for numeral 8	N/A
14.3	Acceptance conditions	No visible traces of water	Pass
15	Tests for protection against access to hazardous parts indicated by the additional letter		
15.1	Access probes	Not part of this test procedure! No such type of protection	N/A
15.2	Test conditions	Not part of this test procedure!	N/A
15.3	Acceptance conditions	Not part of this test procedure!	N/A
Annex A	(informative) Examples of IP coding for the verification of protection of low-voltage equipment against access to hazardous parts		
Annex B	(informative) Summary of responsibilities of relevant technical committees		
<p>Measurement Section, including Additional Narrative Remarks (as deemed applicable)</p> <p>The test was carried out with the same test samples as was used for the assessment for degree of protection IP65 and IP67.</p> <p>For IP67 testing see Electrosuisse Measurement Report 13-Ex-0063.20 dated 2013-11-12</p> <p>For IP66 testing see in Eurofins Electrosuisse Measurement Report 17-Ex-0116.20 dated 2017-12-04</p>			



EUROPEAN GROUP DIFFERENCES ATEX

Used Standards

EN 60079-0:2012+A11:2013, EN 60529:1989+A1:2000+A2:2013

Additional Narrative Remarks to ATEX (as deemed applicable)

None