

List of instruments used:				
description	type	Last calibration	Next calibration	Equip. No.
Wireless K-Type Thermometer	Fluke CNX t3000	2017-07-06	2018-07-06	14.6611.02
Manometer	WIKA 213.53.100 0-6bar / KI.1.0	2018-06-14	2019-06-14	99.6621.29
Manometer	WIKA 232.50.100 0-40bar	2018-06-14	2019-06-14	99.6621.30
Control unit of the water test equipment	TZB IPX1 - 9 Master, Testzentrum Baden GmbH	Not calibrated	Not calibrated	18.6621.00.1
Rotary table	TZB DT50, Testzentrum Baden GmbH	Not calibrated	Not calibrated	18.6621.00.2
Temperature sensor	TZB TP3237, Temperaturfühler IPx1 - IP...	2017-11-30	2018-11-30	18.6621.00.3
Flow meter	TZB PROMAG 50 P DN15 Testzentrum Baden GmbH	2017-11-13	2018-11-13	18.6621.01.1
Flow meter	TZB PROMAG 50 P DN25 Testzentrum Baden GmbH	2017-11-13	2018-11-13	18.6621.02.1
Pressure meter transformer	TZB PT5501/0 bis 250 bar/4-20mA Testzentrum Baden GmbH	2017-11-22	2018-11-22	18.6621.03.1
Temperature sensor	TZB TA2417 Testzentrum Baden GmbH	2017-11-30	2018-11-30	18.6621.03.2
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	2018-01-05	2019-01-05	18.6621.03.3.1
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	2018-01-05	2019-01-05	18.6621.03.3.2
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	2018-01-05	2019-01-05	18.6621.03.3.3
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	2018-01-05	2019-01-05	18.6621.03.3.4
Turbine flow meter	TZB HM 009 R05.G.TC15 Testzentrum Baden GmbH	2017-11-28	2018-11-28	18.6621.03.4

Overview test results	
Test description	Verdict
Overall test results	Pass

Test case	Standard and clause	Verdict
Delivery check	---	Pass
- Resistance to water temporary immersion 0.5 bar during 30 min IPx8	IEC/EN 60529 clause 14.2.8	Pass
- Resistance to water temporary immersion 1.0 bar during 30 min IPx8	IEC/EN 60529 clause 14.2.8	Pass
- Resistance to water high pressure and temperature water jetting IPx9	IEC/EN 60529 clause 14.2.9	Pass

General product information

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

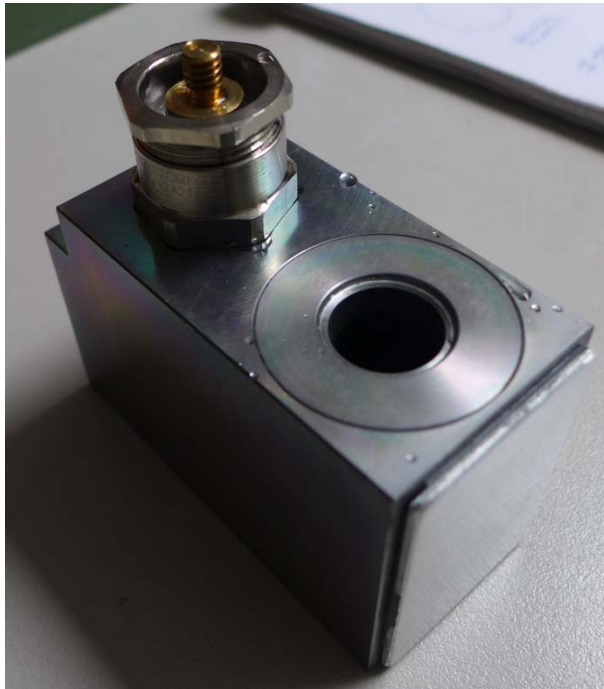
IECEx PTB 10.0020

IECEx BVS 11.0018

See also at 17-Ex-0116.20 REPORT of PARTIAL TESTING Wandfluh AG MKY45

See also at 17-Ex-0116.20 Messprotokoll 60529.

deliver			
Clause	Requirement – Test	Result – Remark	Verdict
---	Ready for tests	Two samples with non-metallic parts of enclosure was already conditioned in earlier ATEX assessment at PTB. Both of the UUT have an additional plate at the bottom because there were holes for the temperature test before. This holes were covered with sealing and a plate of steel.	Pass



Unit under test number named "Prüfmuster 2"



Unit under test number named "Prüfmuster 4"

IEC/EN 60529 clause 14.2.8 IPx8 0.5 bar
 Test for second characteristic numeral 8: continuous immersion

Clause	Requirement – Test	Result – Remark	Verdict
14.2.8	IPx8	No water was found	Pass

Thermal endurance to heat test.

Date: 2018-06-12 13:34 to 2018-06-12 14:04

Room Temperature: +20 °C

Water temperature: +18 °C

Over pressure: 0.5 bar

Duration: 30 minutes



Test set up: the picture shows the pressure tank in background and in the pump in front.



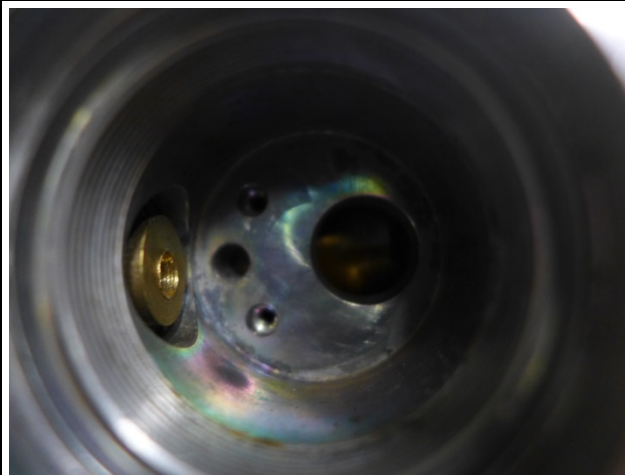
Picture shows the manometer with the 0.5 bar.



Unit under test number 4 after the 0.5 bar test.



Unit under test number 2 after the 0.5 bar test.



Result: No water was found in the unit under test number 4.



Result: No water was found in the unit under test number 2.

List of instruments used:		
description	type	Equip. No.
Manometer	Manometer WIKA	99.6621.29
Manometer	Manometer WIKA	99.6621.30
Wireless K-Type Thermometer	Fluke CNX t3000	14.6611.02

See page 2 for calibration information

**IEC/EN 60529 clause 14.2.8 IPx8 1.0 bar
Test for second characteristic numeral 8: continuous immersion**

Clause	Requirement – Test	Result – Remark	Verdict
14.2.8	IPx8	No water was found	Pass

Thermal endurance to heat test.

Date: 2018-06-12 13:34 to 2018-06-12 14:04
 Room Temperature: +20 °C
 Water temperature: +18 °C
 Over pressure: 1.0 bar
 Duration: 30 minutes



Test set up: the picture shows the pressure tank in background and in the pump in front.



Picture shows the manometer with the 1.0 bar.



Unit under test number 4 after the 1.0 bar test.



Unit under test number 2 after the 1.0 bar test.



Result: No water was found in the unit under test number 4



Result: No water was found in the unit under test number 2.

List of instruments used:		
description	type	Equip. No.
Manometer	Manometer WIKA	99.6621.29
Manometer	Manometer WIKA	99.6621.30
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See page 2 for calibration information

IEC/EN 60529 clause 14.2.9 IPx9
 Test for second characteristic numeral 9:
 high pressure and temperature water jetting

Clause	Requirement – Test	Result – Remark	Verdict
14.2.9	IPx9	No water was found	Pass

Thermal endurance to heat test.

Date: 2018-06-12 13:34 to 2018-06-12 14:04
 Room Temperature: +20 °C

 Water temperature: +80 °C +/- 5K
 Turnable speed: 5 r/min +/- 1 r/min
 Spray position: 0°, 30°, 60°, 90 °C
 water jet: 15 l/min +/- 1 l/min at 20 °C water temperature
 give 0.9 N to 1.2 N

 Duration: 30 seconds per position



Set up position of unit under test and jets



Picture shows the unit under test number 2 at the 0° angle test



Picture shows the unit under test number 2 at the 30° angle test



Picture shows the unit under test number 2 at the 60° angle test



Picture shows the unit under test number 2 at the 90° angle test



Result: No water was found in the unit under test number 4



Result: No water was found in the unit under test number 2.

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description	type	Equip. No.
Control unit of the water test equipment	TZB IPX1 - 9 Master, Testzentrum Baden GmbH	18.6621.00.1
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Temperature sensor	TZB TP3237, Temperaturfühler IPx1 - IP...	18.6621.00.3
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Flow meter	TZB PROMAG 50 P DN25 Testzentrum Baden GmbH	18.6621.02.1
Pressure meter transformer	TZB PT5501/0 bis 250 bar/4-20mA Testzentrum Baden GmbH	18.6621.03.1
Temperature sensor	TZB TA2417 Testzentrum Baden GmbH	18.6621.03.2
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	18.6621.03.3.1
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	18.6621.03.3.2
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	18.6621.03.3.3
High pressure water jet	TZB 2507 Testzentrum Baden GmbH	18.6621.03.3.4
Turbine flow meter	TZB HM 009 R05.G.TC15 Testzentrum Baden GmbH	18.6621.03.4
Wireless K-Type Thermometer	Fluke CNX t3000	14.6611.02

See page 2 for calibration information

APPENDIX**General remarks:**

See also at 17-Ex-0116.20 REPORT of PARTIAL TESTING Wandfluh AG MKY45

See also at 17-Ex-0116.20 Messprotokoll 60529.