



TEST REPORT

Chemical resistance of materials

ECOLAB Standard (method 40-1 / 09.2014 Rev.4)

Protocol

Protocol No.: 6048-17-GG-17-PP001

Tested by (+ signature).....: D. Leonhardt

Date of issue.....: 30.10.2017

Contents: 26 pages

.....:

Testing laboratory

Name: SLG Prüf- und Zertifizierungs GmbH

Address.....: Burgstädter Straße 20, 09232 Hartmannsdorf, Germany

Test location: as above

Client

Name: ELESTA GmbH

Address.....: Heuteilstrasse 18

.....: 7310 Bad Ragaz, Switzerland

Test specification

Standard: Client specified test program in accordance with ECOLAB Standard
(method 40-1 / 09.2014 Rev.4)

Test order from: 4300040740 / 07.08.2017

Protocol update: 11.2016

Test result.....: **P A S S / see next pages**

after visuell inspection in accordance with ECOLAB standard
(A complete evaluation is made by the client.)

Test item

Description.....: Stainless steel sensor PSEN ma1.3-21VA (526240)
Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)
Stainless steel actuator PSEN ma1.3-8VA (516140)

Trademark(s): **PILZ**

Model and/or typ reference.....: See page 3

Manufacturer.....: ELESTA GmbH
Heuteilstrasse 18
7310 Bad Ragaz, Switzerland

Test case verdicts

Test case does not apply to the test object : N(.A.)

Test item does meet the requirement..... : P(ass)

Test item does not meet the requirement..... : F(ail)

Testing

Date of receipt of test item : 30.08.2017 - G/001..007

Date(s) of performance of test..... : 09/2017 - 10/2017

General remarks

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Yellow marks are abnormalities that may negatively affect the test results.

Test results:

The inspection results of the visual check are represented as photos starting with table 3 from page 6. A complete evaluation is made by the client.

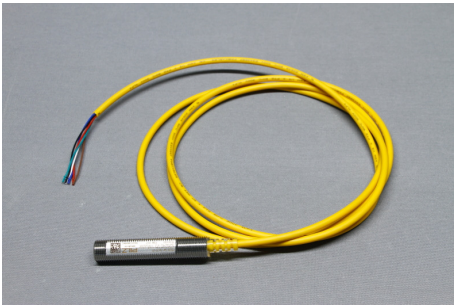
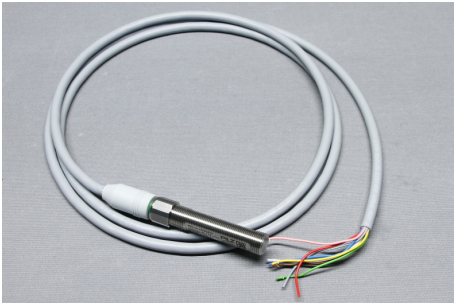
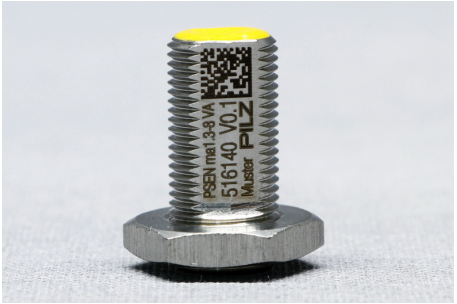
The outer enclosure and cable of tested samples (PSEN ma1.3-21VA; PSEN ma1.3-20 M12/8VA; PSEN ma1.3-8VA) are resistant against P3-topactive 500, P3-topax 990, P3-topax 66, P3-topactive OKTO, P3-topactive 200 and demin. water.

General type information

6 complete test samples were made available by the client.

An overview on the used test samples and non-tested samples is to be seen in table 1.

Table 1: test samples

SLG-sample no.	Type reference	Photo
6048-17-G/ 001..007.526240	Stainless steel sensor PSEN ma1.3-21VA (526240) Outer materials: stainless steel (not spezified) other materials not spezified	
6048-17-G/ 001..007.526249	Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249) Outer materials: stainless steel (not spezified) other materials not spezified	
6048-17-G/ 001..007. 516140	Stainless steel actuator PSEN ma1.3-8VA (516140) Outer materials: stainless steel (not spezified) other materials not spezified	

General test remarks

One sample tested each test medium. Demineralized water is used as reference. The other test media are:

P3-topactive 500, P3-topax 990, P3-topax 66, P3-topactive OKTO and P3-topactive 200.

The chemical solution has been provided by ECOLAB.

The seventh sample was used as a reference sample for documentation purposes.

Test conditions:

The test media were used as follows:

Table 2: Test conditions

Test media	Concentration [%]	Change schedule	Immersion time [days]	Test temperature [°C]
demineralized water (reference medium)	-	7 days	28	23±5
P3-topactive 500 (cleaner, acid solution with tenside)	5	7 days		
P3-topax 990 (neutral disinfectant; basis alkylaminacetat)	3	7 days		
P3-topax 66 (cleaner/disinfectant; alkaline with chlorine)	5	3 days		
P3-topactive OKTO (disinfectant; acid solution with peroxide)	1	3 days		
P3-topactive 200 (cleaner, alkaline with tenside)	5	7 days		

The test solution is a mixture of reagent and demineralized water in appropriate concentration.

Test performance:

One sample per test medium was tested. The samples are completely immersed in 1500 ml of test medium. After 28 days visual check of metal, plastic and elastomere parts are made.

Client specified test program in accordance with ECOLAB Standard (method 40-1 / 09.2014 Rev.4)			
Clause	Requirement + Test	Result - Remark	Verdict

	Chemical resistance of materials		
1.	TEST CONDITIONS	See page 4	P
	Test samples	6048-17-G/001..006	P
	Test.....	Client specified test program in accordance with ECOLAB Standard (method 40-1 / 09.2014 Rev.4)	P
	Temperature requirement.....	(23±5)°C	P
	Test temperature	(23±5)°C	P
	Immersion time	28 days	P
	State of the sample during the test.....	assembled condition	P

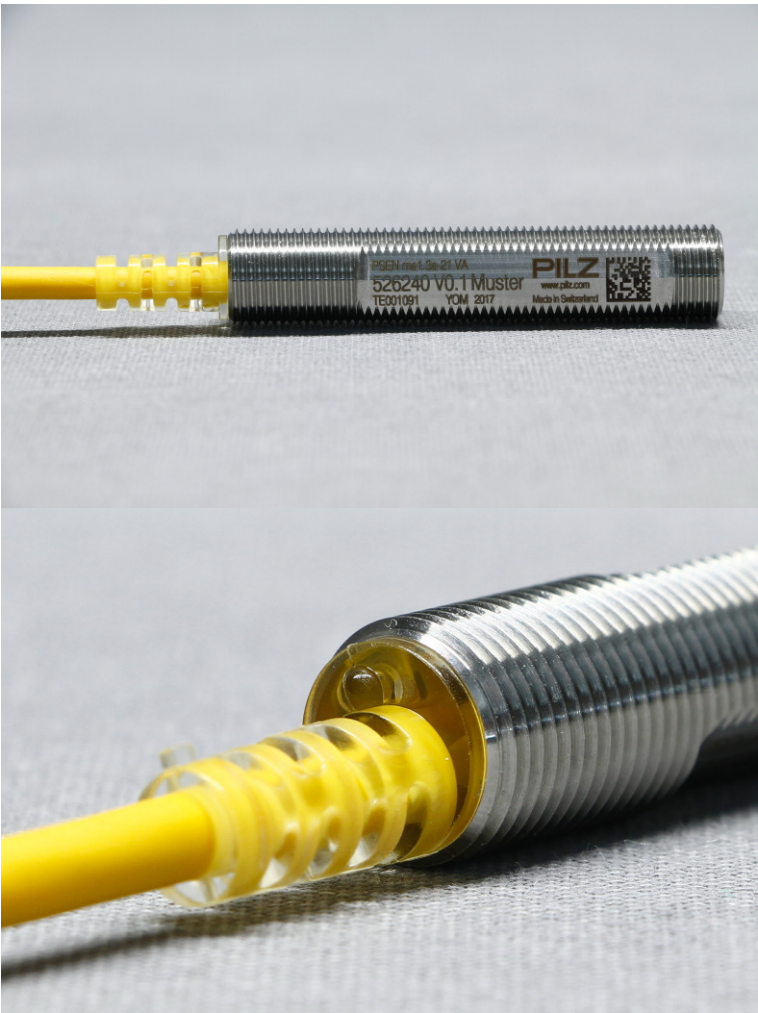
2.	TEST PERFORMANCE		
2.1	Check Before test		
2.1.1	Visual check	All test samples without visible damage and slow abnormalities (starting with table 3 from page 6)	P
2.1.2	Test performance vs. test conditions		P
2.1.3	Compliance with the conditions	was compliance	P
2.2	Check after test		
2.2.1	Visual check	Starting with table 3 from page 6	
2.2.2	Test result visual check	Visual check was performed: Test samples are resistant, P3-topactive 500 (5% conc.), P3-topax 990 (3% conc.), P3-topax 66 (5% conc.) P3-topactive OKTO (1% conc.), P3-topactive 200 (5% conc.) and demineralized water. The inspection results of the visual check are represented as photos in tables 4 - 9 on pages 7 - 12	P
2.2.3	Complete evaluation	Is made by the client	N

End of test report

Photo documentation

Test samples PSEN ma1.3-21VA (526240) before testing

Table 3: test samples before testing

Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-21VA (526240)		
G/001..006. 526240			
	Samples without abnormalities.		

Result of visual check after the test (PSEN ma1.3-21VA (526240))

Table 4: Demineralized water

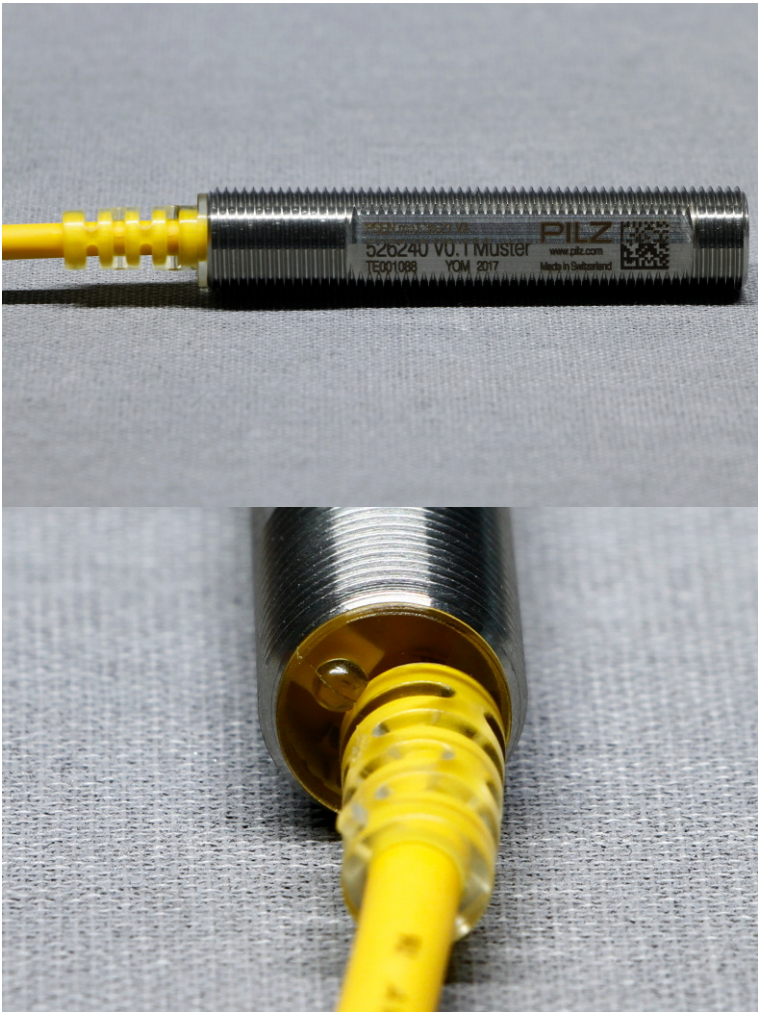
Test medium (test solution)	Demineralized water		Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-21VA (526240)		
G/006.526240			<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts and cable

Table 5: P3-topactive OKTO

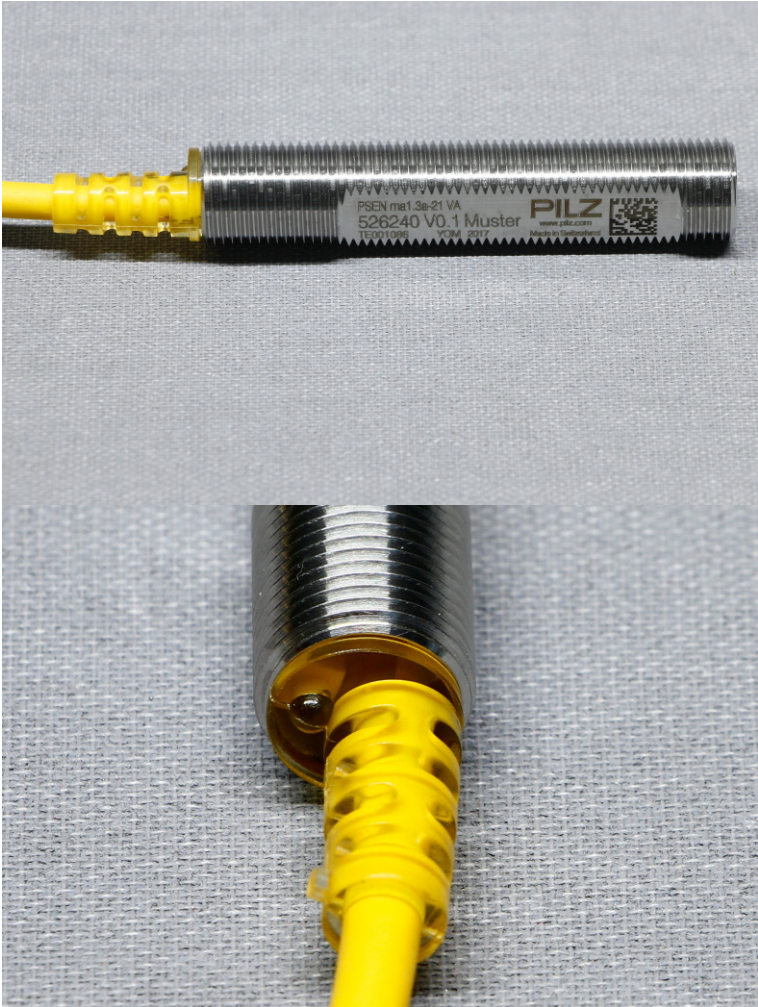
Test medium (test solution)	P3-topactive OKTO / 1%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-21VA (526240)	
G/001.526240		<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts and cable

Table 6: P3-topax 66

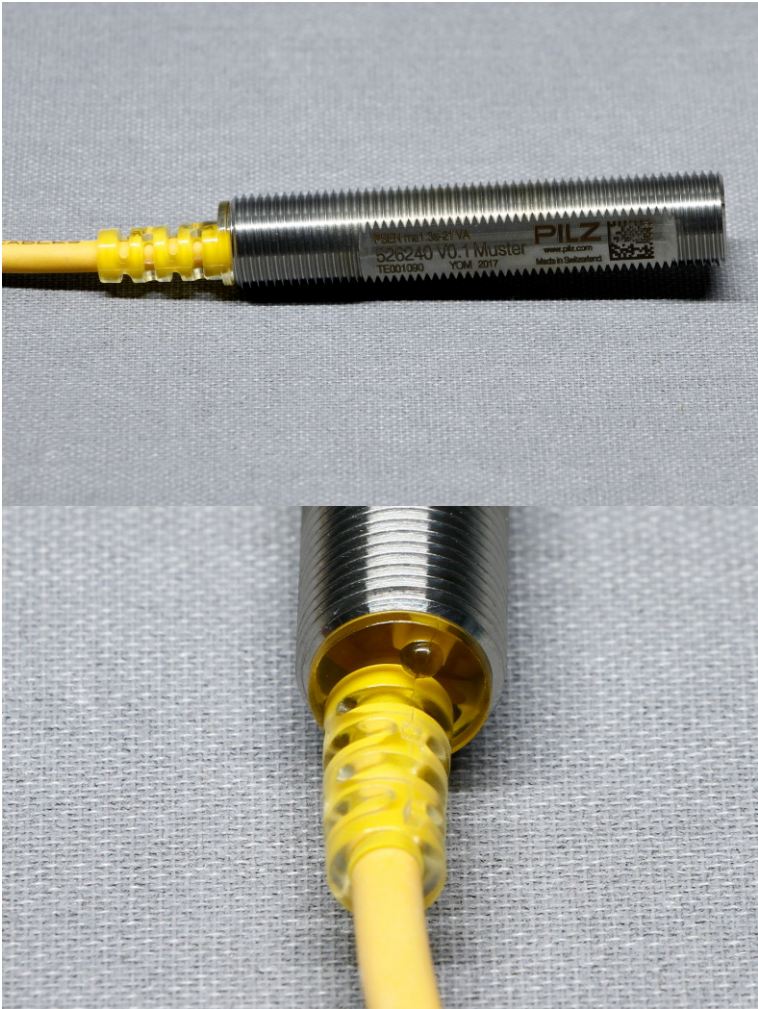
Test medium (test solution)	P3-topax 66 / 5%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-21VA (526240)	
G/002.526240		After 28 days: - No visible abnormalities at outer enclosure parts and cable

Table 7: P3-topactive 200

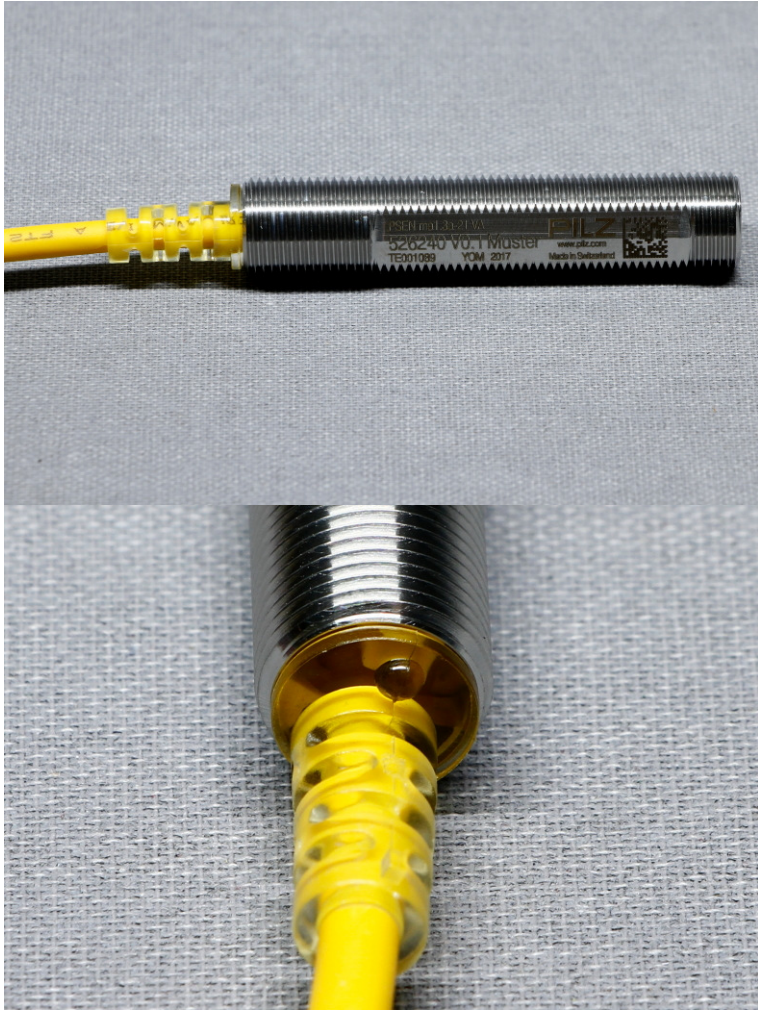
Test medium (test solution)	P3-topactive 200 / 5%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-21VA (526240)	
G/003.526240		After 28 days: - No visible abnormalities at outer enclosure parts and cable

Table 8: P3-topactive 500

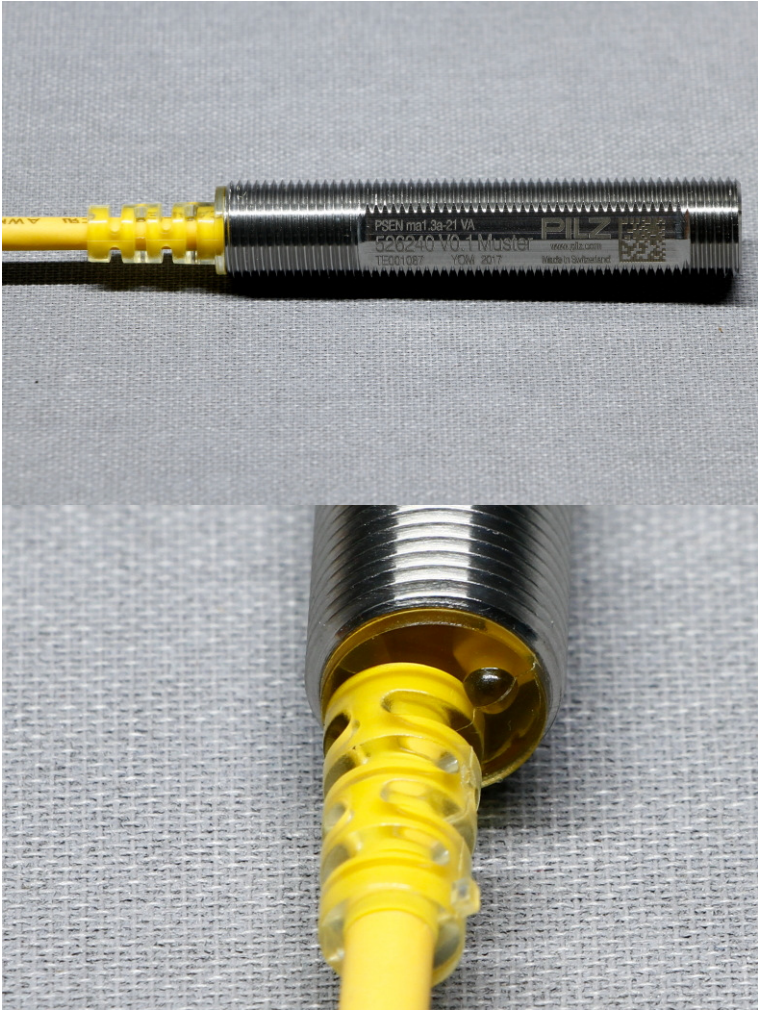
Test medium (test solution)	P3-topactive 500 / 5%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3a-21VA (526240)	
G/004.526240		After 28 days: - No visible abnormalities at outer enclosure parts and cable

Table 9: P3-topax 990

Test medium (test solution)	P3-topax 990 / 3%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-21VA (526240)	
G/005.526240		After 28 days: - No visible abnormalities at outer enclosure parts and cable

Test samples PSEN ma1.3-20 M12/8VA (526249) before testing

Table 10: test samples before testing

Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)	
G/001..006. 526249		
		Samples without abnormalities.

Result of visual check after the test (PSEN ma1.3-20 M12/8VA (526249))

Table 11: Demineralized water

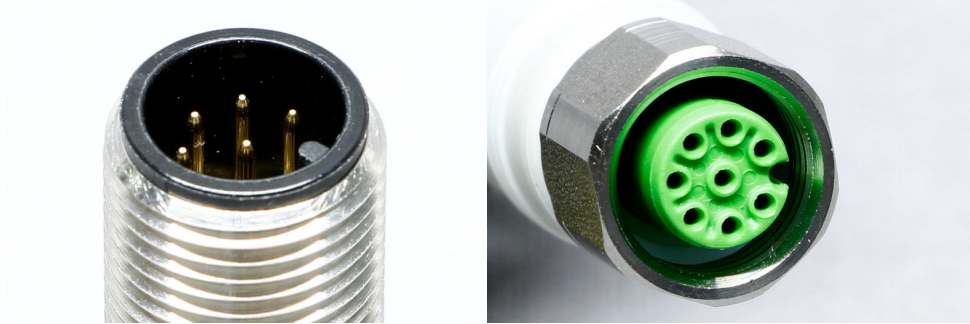
Test medium (test solution)	Demineralized water		Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)		
G/006.526249	 		After 28 days: - No visible abnormalities at outer enclosure parts and cable

Table 12: P3-topactive OKTO

Test medium (test solution)	P3-topactive OKTO / 1%		Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)		
G/001.526249			After 28 days: - No visible abnormalities at outer enclosure parts and cable

Table 13: P3-topax 66

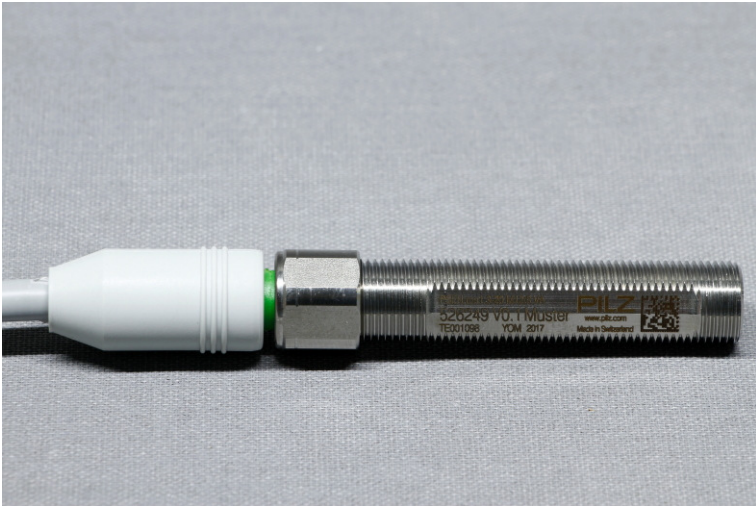
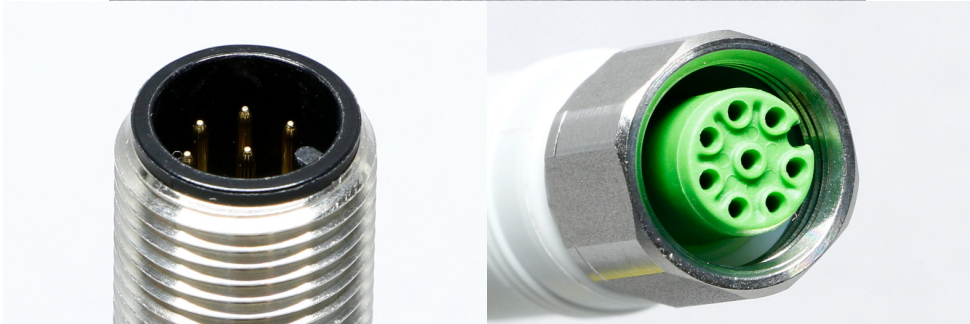
Test medium (test solution)	P3-topax 66 / 5%		Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)		
G/002.526249	 		<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts and cable

Table 14: P3-topactive 200

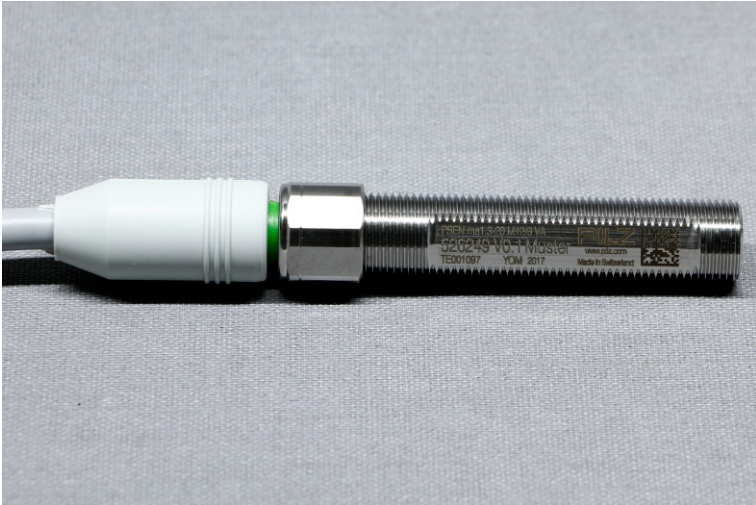
Test medium (test solution)	<i>P3-topactive 200 / 5%</i>	Result - Remark
Sample no.	<i>Type reference:</i> Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)	
G/003.526249	  	<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts and cable

Table 15: P3-topactive 500

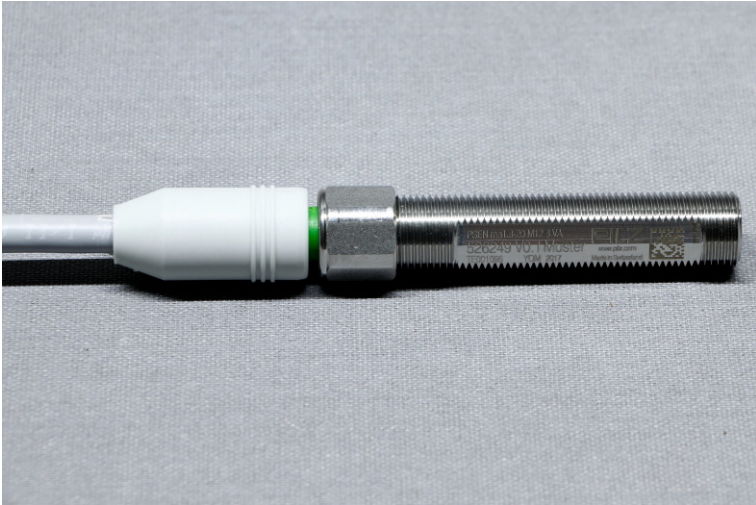
Test medium (test solution)	P3-topactive 500 / 5%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)	
G/004.526249	  	After 28 days: - No visible abnormalities at outer enclosure parts and cable

Table 16: P3-topax 990

Test medium (test solution)	P3-topax 990 / 3%	Result - Remark
Sample no.	Type reference: Stainless steel sensor PSEN ma1.3-20 M12/8VA (526249)	
G/005.526249	 	After 28 days: - No visible abnormalities at outer enclosure parts and cable

Test samples PSEN ma1.3-8VA (516140) before testing

Table 17: test samples before testing

Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)		
G/001..006. 516140			Samples without abnormalities.

Result of visual check after the test (PSEN ma1.3-8VA (516140))**Table 18: Demineralized water**

Test medium (test solution)	Demineralized water		Result - Remark
Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)		
G/006.516140			<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts

Table 19: P3-topactive OKTO

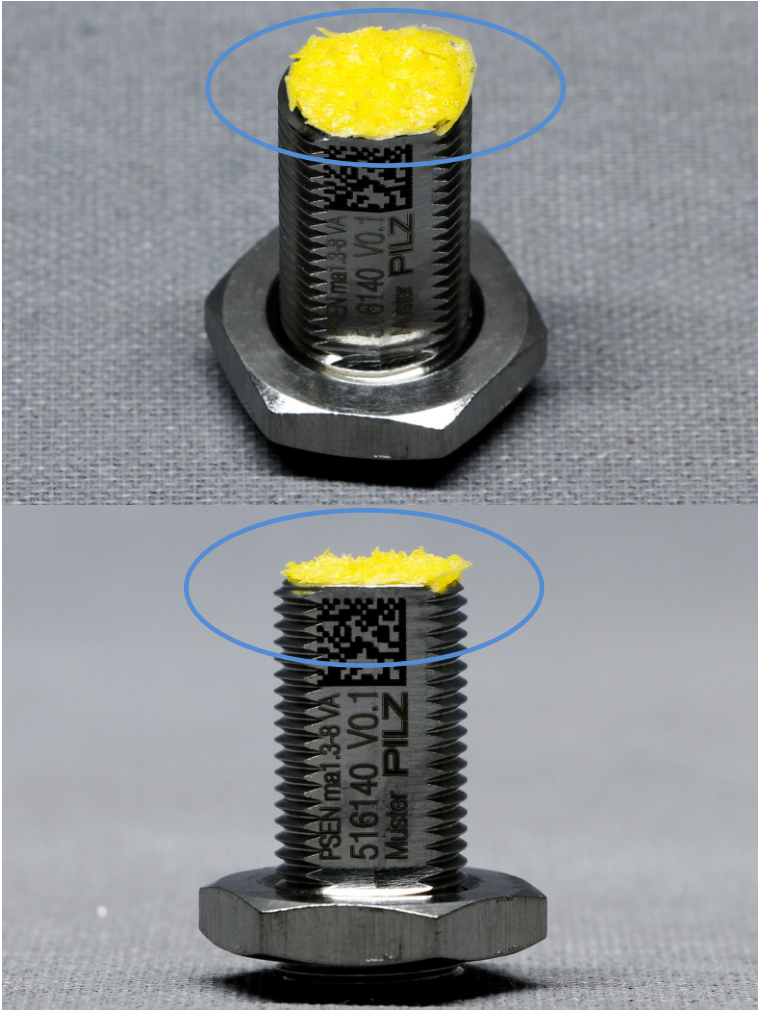
Test medium (test solution)	P3-topactive OKTO / 1%	Result - Remark
Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)	
G/001.516140		After 28 days: - A slight visible abnormality at outer enclosure parts (Blue mark: "blooming" of the potting compound, no visible abnormalities or particles in the test liquid. Not relevant for the test.)

Table 20: P3-topax 66

Test medium (test solution)	P3-topax 66 / 5%		Result - Remark
Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)		
G/002.516140			<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts

Table 21: P3-topactive 200

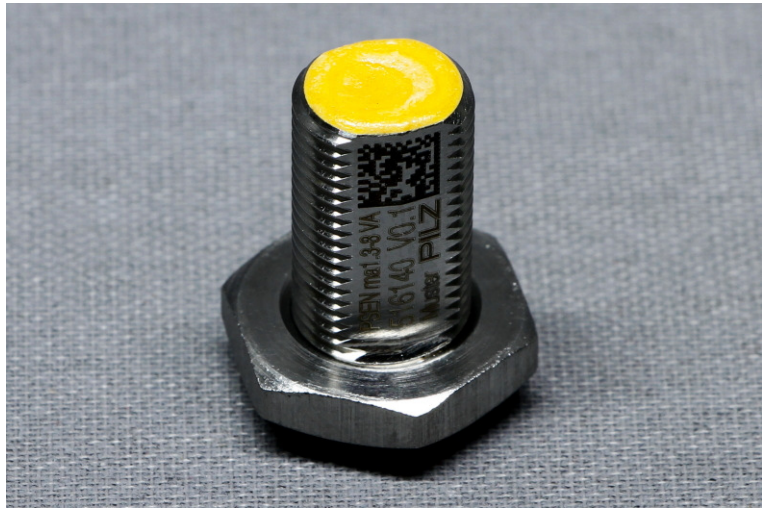
Test medium (test solution)	P3-topactive 200 / 5%		Result - Remark
Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)		
G/003.516140			<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts

Table 22: P3-topactive 500

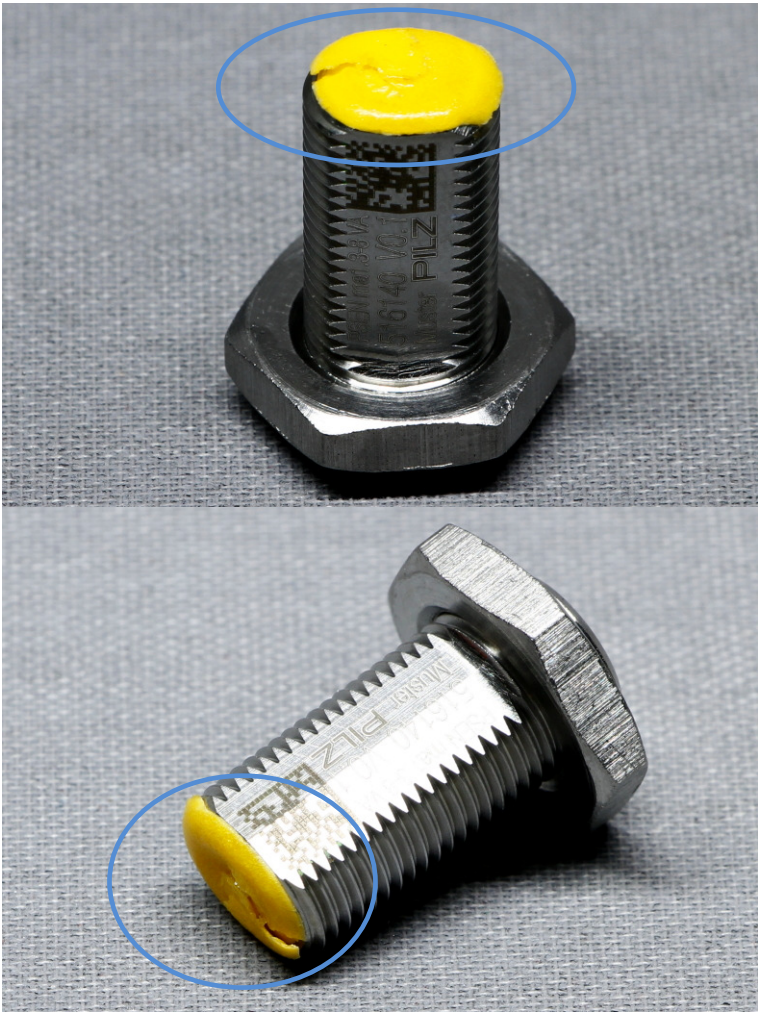
Test medium (test solution)	P3-topactive 500 / 5%	Result - Remark
Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)	
G/004.516140		After 28 days: - A slight visible abnormality at outer enclosure parts (Blue mark: Swelling and cracking in the potting compound, no visible abnormalities or particles in the test liquid. Not relevant for the test.)

Table 23: P3-topax 990

Test medium (test solution)	P3-topax 990 / 3%		Result - Remark
Sample no.	Type reference: Stainless steel actuator PSEN ma1.3-8VA (516140)		
G/005.516140			<u>After 28 days:</u> - No visible abnormalities at outer enclosure parts