

Translation

EU-Type Examination Certificate Supplement 5

Change to Directive 2014/34/EU

2 **Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU**

3 EU-Type Examination Certificate Number: **BVS 07 ATEX E 029**

4 Product: **Level Limit Switch Solicap M series type FTI55*- and FTI56***

5 Manufacturer: **Endress+Hauser SE+Co. KG**

6 Address: **Hauptstr. 1, 79689 Maulburg, Germany**

7 This supplementary certificate extends EC-Type Examination Certificate No. BVS 07 ATEX E 029 to apply to products designed and constructed in accordance with the specification set out in the appendix of the said certificate but having any acceptable variations specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential Report No. BVS PP 07.2028 EU.

9 The Essential Health and Safety Requirements are assured in consideration of:




EN IEC 60079-0:2018
EN 60079-11:2012
EN 60079-31:2014

General requirements
Intrinsic Safety "i"
Protection by Enclosure "t"

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

	II 1D Ex ia IIIC T* Da II 1/2D Ex ia IIIC T* Da/Db II 1/3D Ex ia IIIC T* Da/Dc	Type FT15*- F***** * see manual
	II 1/2D Ex ia/tb IIIC T* Da/Db	Type FT15*- C***** * see manual
	II 1/3D Ex ia/tc IIIC T* Da/Dc	Type FT15*- B***** * see manual

DEKRA Testing and Certification GmbH
Bochum, 2022-02-24

Signed: Jörg-Timm Kilisch

Managing Director

13 **Appendix**

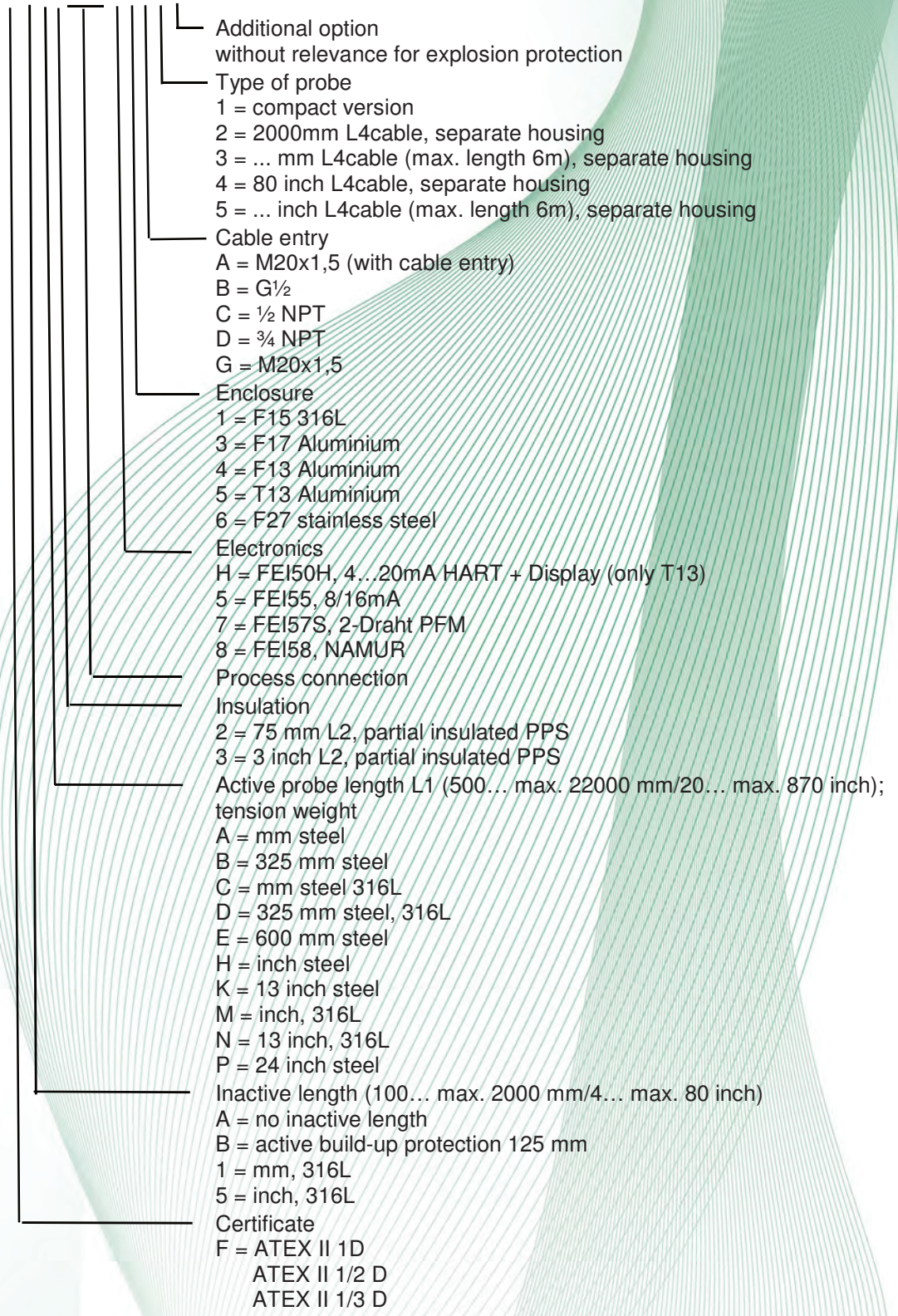
14 **EU-Type Examination Certificate**

**BVS 07 ATEX E 029
Supplement 5**

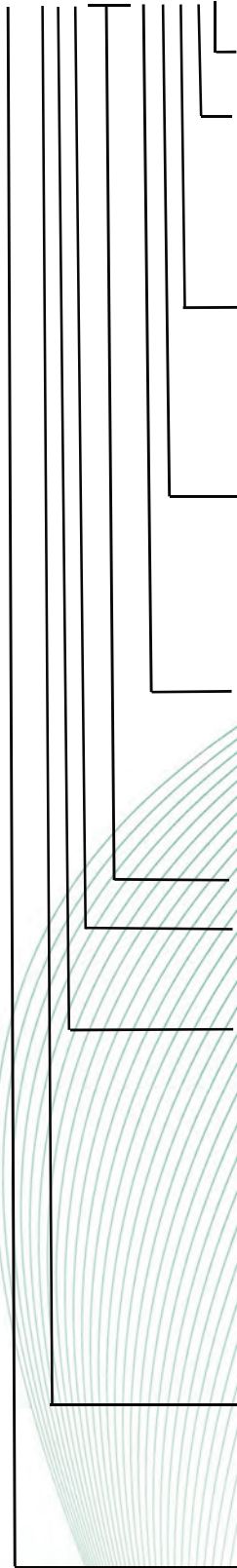
15 **Product description**

15.1 **Subject and type**

Level limit switch Solicap M
Series FTI55-F *****



Level limit switch Solicap M
Series FTI55-C/B *****



Additional option
without relevance for explosion protection

Type of probe

- 1 = compact version
- 2 = 2000mm L4cable, separate housing
- 3 = ... mm L4cable (max. length 6m), separate housing
- 4 = 80 inch L4cable, separate housing
- 5 = ... inch L4cable (max. length 6m), separate housing

Cable entry

- A = M20x1,5 (with cable entry)
- B = G $\frac{1}{2}$
- C = $\frac{1}{2}$ NPT
- D = $\frac{3}{4}$ NPT
- G = M20x1,5

Enclosure

- 1 = F15 316L
- 3 = F17 Aluminium
- 4 = F13 Aluminium
- 5 = T13 Aluminium
- 6 = F27 stainless steel

Electronics

- H = FEI50H, 4...20mA HART + Display (only T13)
- 1 = FEI51, 2-wire AC
- 2 = FEI52, 3-wire PNP
- 4 = FEI54; relay, AC 19...253 V, DC 19...55 V
- 5 = FEI55, 8/16mA (only T13)

Process connection

Insulation

- 2 = 75 mm L2, partial insulated PPS
- 3 = 3 inch L2, partial insulated PPS

Active probe length L1 (500... max. 22000 mm/20... max. 870 inch);
tension weight

- A = mm steel
- B = 325 mm steel
- C = mm steel, 316L
- D = 325 mm steel, 316L
- E = 600 mm steel
- H = inch steel
- K = 13 inch steel
- M = inch, 316L
- N = 13 inch, 316L
- P = 24 inch steel

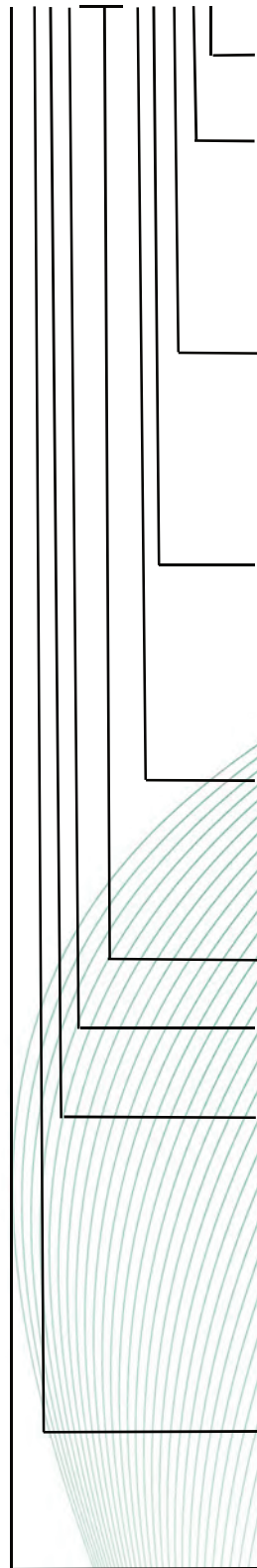
Inactive probe length (100... max. 2000 mm/4... max. 80 inch)

- A = no inactive probe length
- B = active build-up protection 125 mm
- 1 = mm, 316L
- 5 = inch, 316L

Certificate

- C = ATEX II 1/2 D
- B = ATEX II 1/3 D

Level limit switch Solicap M
Series FTI56-F *****



Additional option
without relevance for explosion protection

Type of probe

- 1 = compact version
- 2 = 2000 mm L4cable, separate housing
- 3 = ... mm L4cable (max. length 6m), separate housing
- 4 = 80 inch L4cable, separate housing
- 5 = ... inch L4cable (max. length 6m), separate housing

Cable entry

- A = M20x1,5 (with cable entry)
- B = G $\frac{1}{2}$
- C = $\frac{1}{2}$ NPT
- D = $\frac{3}{4}$ NPT
- G = M20x1,5

Enclosure

- 1 = F15 316L
- 3 = F17 Aluminium
- 4 = F13 Aluminium
- 5 = T13 Aluminium
- 6 = F27 stainless steel

Electronics

- H = FEI50H, 4...20mA HART + Display (only T13)
- 5 = FEI55, 8/16mA
- 7 = FEI57S, 2-wire PFM
- 8 = FEI58, NAMUR

Process connection

Insulation

- 2 = 500 mm L2, partial insulated PTFE, max. 150°C

Active probe length L1 (500... max. 22000 mm/20... max. 870 inch);
tension weight

- A = ... mm, 6 mm rope 316L;316L
- B = ... mm, 12 mm rope 316L;316L
- H = ... inch, 0,2" rope 316L;316L
- K = ... inch, 0,5" rope 316L;316L
- C = ... mm, 6 mm rope steel zinc coated
- D = ... mm, 12 mm rope steel zinc coated
- M = ... inch, 0,2" rope steel zinc coated
- N = ... inch, 0,5" rope steel zinc coated

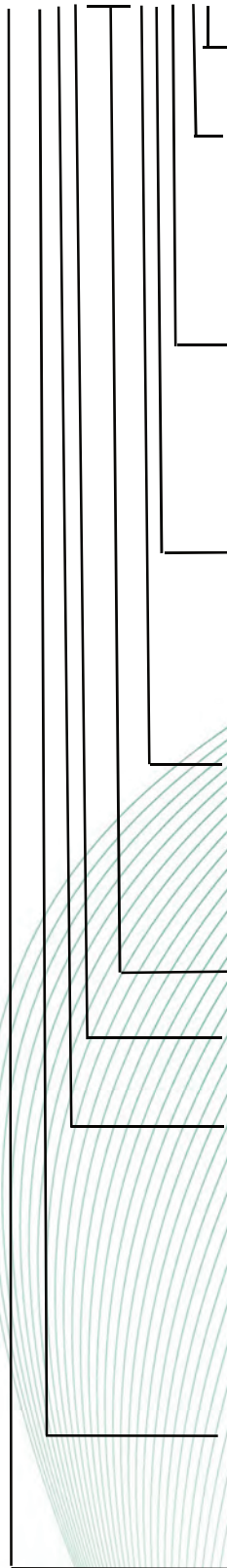
Inactive length (100... max. 2000 mm/4... max. 80 inch)

- A = no inactive length
- 1 = mm, 316L
- 5 = inch, 316L

Certificate

- F = ATEX II 1D
- ATEX II 1/2 D
- ATEX II 1/3 D

Level limit switch Solicap M
Series FTI56- C/B *****



Additional option
without relevance for explosion protection

Type of probe

- 1 = compact version
- 2 = 2000mm L4cable, separate housing
- 3 = ... mm L4cable (max. length 6m), separate housing
- 4 = 80 inch L4cable, separate housing
- 5 = ... inch L4cable (max. length 6m), separate housing

Cable entry

- A = M20x1,5 (with cable entry)
- B = G $\frac{1}{2}$
- C = $\frac{1}{2}$ NPT
- D = $\frac{3}{4}$ NPT
- G = M20x1,5

enclosure

- 1 = F15 316L
- 3 = F17 Aluminium
- 4 = F13 Aluminium
- 5 = T13 Aluminium
- 6 = F27 stainless steel

Electronics

- H = FEI50H, 4...20mA HART + Display
- 1 = FEI51, 2-wire AC
- 2 = FEI52, 3-wire PNP
- 4 = FEI54; relay, AC 19...253 V, DC 19...55 V
- 5 = FEI55, 8/16mA

Process connection

Insulation

- 2 = 500 mm L2, partial insulated PTFE, max. 150 °C

Active probe length L1 (500... max. 22000 mm/20... max. 870 inch);
tension weight

- A = ... mm, 6 mm rope 316L; 316L
- B = ... mm, 12 mm rope 316L; 316L
- H = ... inch, 0.2" rope 316L; 316L
- K = ... inch, 0.5" rope 316L; 316L
- C = ... mm, 6 mm rope steel zinc coated
- D = ... mm, 12 mm rope steel zinc coated
- M = ... inch, 0.2" rope steel zinc coated
- N = ... inch, 0.5" rope steel zinc coated

Inactive probe length (100... max. 2000 mm/4... max. 80 inch)

- A = no inactive probe length
- 1 = mm, 316L
- 5 = inch, 316L

Certificate

- C = ATEX II 1/2 D
- B = ATEX II 1/3 D

15.2 Description

The Level limit switch Solicap M series FTI55* and FTI56* consists of a sensor working on a capacitive basis (rope- or rod probe) and an electronics enclosure.

The sensor circuit is intrinsically safe.

The sensor meets EPL Da, the electronics enclosure EPL Da, Db or Dc.

The Level limit switch can either be carried out in a compact version or in a version with separate housing.

Reasons for the supplement:

- change to Directive 2014/34/EU
- updating to the current version of EN IEC 60079-0

15.3 Parameters

15.3.1 Electrical data

15.3.1.1 FTI5*- F * * * * * H * * * * *

with electronics insert type FEI50H with display type D62 according to BVS PP 05.2055 EG

15.3.1.1.1 Input-/signal circuit (terminals 1 – 2)

power supply intrinsically safe

voltage U_i	DC	30	V
current I_i		120	mA
power P_i		1	W
effective internal inductance	L_i		negligible
effective internal capacitance	C_i		2.4 nF

15.3.1.1.2 Probe circuit (connector D900), type of protection Ex ia IIC

voltage U_o		9.93	V
current I_o		21.1	mA
power P_o		60	mW

15.3.1.1.3 Display-circuits (connector X300), type of protection Ex ia IIC

voltage U_o	DC	11.77	V
current I_o		65	mA
power P_o		190	mW

15.3.1.2 FTI5*- F * * * * * 7 * * * * *

with electronics insert type FEI57S according to BVS PP 06.2063 EG

15.3.1.2.1 Input / signal circuit (terminals 1 – 2)

power supply intrinsically safe

voltage U_i	DC	16.1	V
current I_i		100	mA
power P_i		1	W
effective internal inductance	L_i		negligible
effective internal capacitance	C_i		2.4 nF

15.3.1.2.2 Probe circuit (connector X300), type of protection Ex ia IIC

voltage U_o		9.93	V
current I_o		34	mA
power P_o		100	mW

15.3.1.3 FTI5*- F * * * * * 5 * * * * *

with electronics insert type FEI55 according to BVS PP 06.2064 EG

15.3.1.3.1 Input / signal circuit (terminals 1 – 2)

power supply intrinsically safe

voltage U_i	DC	36	V
current I_i		100	mA
power P_i		1	W
effective internal inductance	L_i		negligible
effective internal capacitance	C_i		2.4 nF

15.3.1.3.2	Probe circuit (connector X300), type of protection Ex ia IIC			
	voltage U_o		9.93	V
	current I_o		34	mA
	power P_o		101	mW
15.3.1.4	FTI5*- C/B * * * * * 4 * * * *			
	with electronics insert type FEI54 according to BVS PP 06.2088 EG			
15.3.1.4.1	Input circuit (terminals 1 (L+) – 2 (L-))			
	voltage	DC	19...55	V
		AC	19...253	V
	max.voltage U_m	AC	253	V
15.3.1.4.2	Relay contact circuits (terminals 3 – 5 and 6 - 8)			
	voltage	AC	253	V
	current		6	A
	switch capacity ($\cos \varphi \geq 0,7$)		750	VA
	or			
	voltage	DC	30/125	V
	current		6/0.2	A
15.3.1.4.3	Probe circuit (connector X300), type of protection Ex ia IIC			
	voltage U_o		9.93	V
	current I_o		36	mA
	power P_o		99	mW
15.3.1.5	FTI5*- C/B * * * * * 2 * * * *			
	with electronics insert type FEI52 according to BVS PP 06.2089 EG			
15.3.1.5.1	Input circuit (terminals 1 (L+) – 2 (L-)) and signal circuit (terminals 3 – 2)			
	voltage	DC	10...55	V
	max. voltage U_m	AC	253	V
15.3.1.5.2	Probe circuit (connector X300), type of protection Ex ia IIC			
	voltage U_o		9.93	V
	current I_o		36	mA
	power P_o		99	mW
15.3.1.6	FTI5*- C/B * * * * * 1 * * * *			
	with electronics insert type FEI51 according to BVS PP 07.2109 EG			
15.3.1.6.1	Input circuit (terminals 1 (L+) – 2 (L-))			
	voltage	AC	19...253	V
	Max.voltage U_m	AC	253	V
15.3.1.6.2	Sensor circuit (connector X101), type of protection Ex ia IIC			
	voltage U_o		9.93	V
	current I_o		36	mA
	power P_o		99	mW
15.3.1.7	FTI56- F * * * * * 8 * * * *			
	with electronics insert type FEI58 according to BVS PP 09.2127 EG			
15.3.1.7.1	Input circuit (terminals 1 (L+) – 2 (L-))			
	Power supply intrinsically safe			
	voltage U_i	DC	18	V
	current I_i		52	mA
	power P_i		170	mW
	effective internal inductance	L_i		negligible
	effective internal capacitance	C_i		negligible
15.3.1.7.2	Sensor circuit (connector X201), type of protection Ex ia IIC			
	voltage U_o		9.93	V
	current I_o		27.4	mA
	power P_o		130	mW

15.3.2 Thermal data

15.3.2.1 Series FTI5*- F***** (intrinsic safe supply),
probe in category 1D, electronics enclosure in category 1D, 2D or 3D

ambient temperature range of the electronics enclosure
and probe -50 °C...+70 °C

Max. surface temperature T T80 °C T₂₀₀ 130 °C

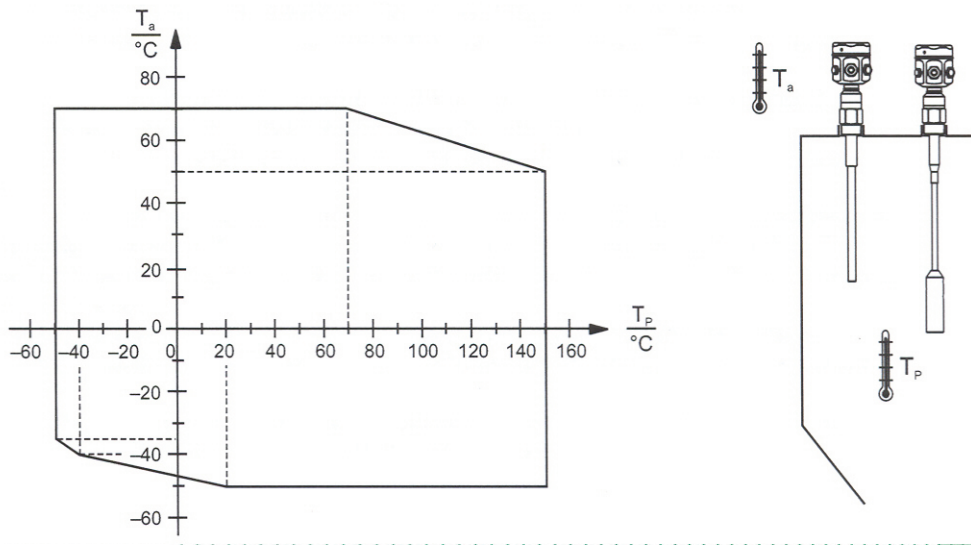
15.3.2.1 Series FTI5*- B/C***** (non-intrinsic safe supply),
probe in category 1D, electronics enclosure in category 2D or 3D

Max. surface temperature T 90 °C

15.3.2.1.1 Compact version

T_a = ambient temperature

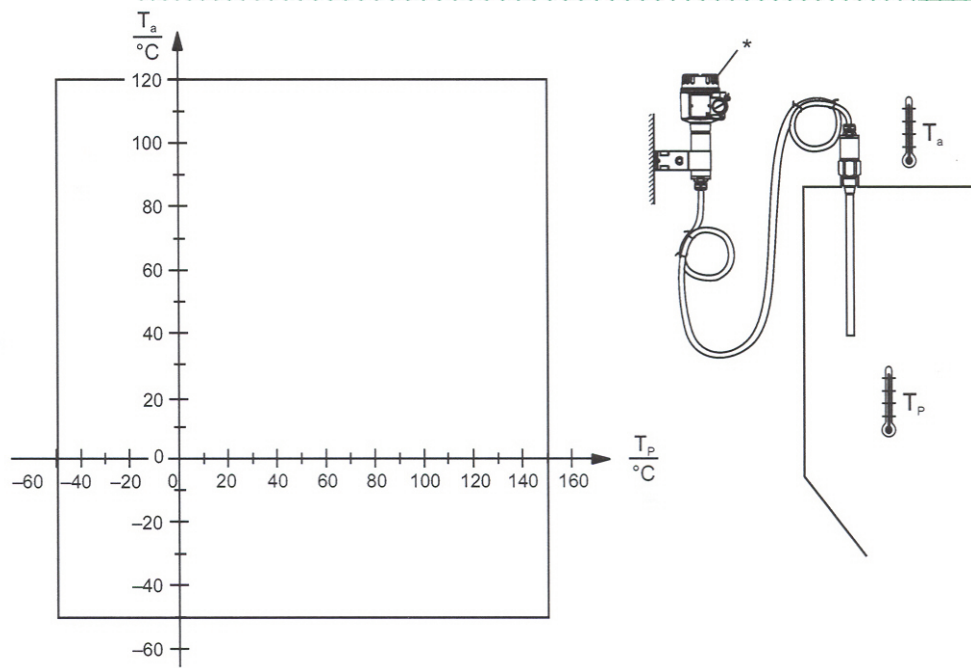
T_p = process temperature



15.3.2.1.2 Version with separate housing

T_a = ambient temperature

T_p = process temperature



* Permitted temperature range at the separate housing -40 °C ≤ T_a ≤ +70 °C

15.3.3 Degrees of protection of the electronics enclosure according to IP 65

16 **Report Number**

BVS PP 07.2028 EU, as of 2022-02-24

17 **Special Conditions for Use**

None

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2022-02-24
BVS-Hk/MGR A20210291



Managing Director