

Safety Instructions

Levelflex

FMP50/51/52/53/54/55

4-20 mA HART, 4-wire

Ex d [ia] IIC T6-T1 Ga/Gb



Document: XA01329F-B

Safety instructions for electrical apparatus for explosion-hazardous areas

Levelflex FMP50/51/52/53/54/55

4-20 mA HART

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Associated documentation	<p>This document is an integral part of the following Operating Instructions: BA01000F/00 (FMP50), BA01001F/00 (FMP51/52/54), BA01002F/00 (FMP53), BA01003F/00 (FMP55)</p> <p>The Operating Instructions pertaining to the device apply.</p>									
Supplementary documentation	<p>Explosion-protection brochure: CP00021Z/11</p> <p>The Explosion-protection brochure is available:</p> <ul style="list-style-type: none"> ■ In the download area of the Endress+Hauser website: www.endress.com → Download → Advanced → Documentation Code: CP00021Z ■ On the CD for devices with CD-based documentation 									
Manufacturer's certificates	<p>NEPSI Declaration of Conformity</p> <p>Certificate number: GYJ11.1553X</p> <p>Affixing the certificate number certifies conformity with the standards:</p> <ul style="list-style-type: none"> ■ GB3836.1-2010 ■ GB3836.2-2010 ■ GB3836.4-2010 ■ GB3836.20-2010 									
Extended order code	<p>The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions.</p> <p>Structure of the extended order code</p> <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">FMP5x</td> <td style="text-align: center;">- *****</td> <td style="text-align: center;">+ A*B*C*D*E*F*G*..</td> </tr> <tr> <td style="text-align: center;">-----</td> <td style="text-align: center;">-----</td> <td style="text-align: center;">-----</td> </tr> <tr> <td style="text-align: center;">Device type</td> <td style="text-align: center;">Basic specifications</td> <td style="text-align: center;">Optional specifications</td> </tr> </table> <p>* = Placeholder At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.</p> <ul style="list-style-type: none"> ■ Basic specifications The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available. The selected option of a feature can consist of several positions. ■ Optional specifications The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = test, certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate). <p>More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.</p>	FMP5x	- *****	+ A*B*C*D*E*F*G*..	-----	-----	-----	Device type	Basic specifications	Optional specifications
FMP5x	- *****	+ A*B*C*D*E*F*G*..								
-----	-----	-----								
Device type	Basic specifications	Optional specifications								

Device type: FMP50, FMP51, FMP52, FMP53, FMP54, FMP55

Basic specifications

Position		Selected option		Description
1, 2	Approval	FMP5x	NC	Ex d [ia] IIC T6-T1 Ga/Gb
3	Power Supply; Output	FMP5x	K L	4-wire 90...253 VAC, 4-20 mA HART 4-wire 10.4...48 VDC, 4-20 mA HART
4	Display; Operation	FMP5x	A C E L M	Without, via communication SD02, 4-line, push buttons + data backup function SD03, 4-line, illum., touch control + data backup function Prepared for display FHX50 + M12 connection Prepared for display FHX50 + custom connection
5	Housing	FMP51/52/54/55	B	GT18 dual compartment, 316L
		FMP5x	C	GT20 dual compartment, Alu coated
9, 10	Seal	FMP50	A1	Viton, -20...80 °C
		FMP51	A4	Viton, -30...150 °C
			B3	EPDM, -40...120 °C
			C3	Kalrez, -20...200 °C
			E1	FVMQ, -40...150 °C
FMP53	AD	FKM, FDA, USP Cl. VI, -10..150 °C		
	B5	EPDM, FDA, USP Cl. VI, -20..130 °C		
	C4	Kalrez, FDA, USP Cl. VI, -20...150 °C		
FMP54	D1	Graphite, -196...280 °C (XT)		
	D2	Graphite, -196...450 °C (HT)		

Optional specifications

ID		Selected option		Description
Mx	Probe Design	FMP5x	MB	Sensor remote, 3 m/9 ft cable, detachable + mounting bracket
		FMP53	MA	Sensor compact, detachable
		FMP50-54	MC	Sensor remote, 6 m/18 ft cable, detachable + mounting bracket
MD	Sensor remote, 9 m/27 ft cable, detachable + mounting bracket			
Nx	Accessory Mounted	FMP51/52/55	NC	Gas-tight feed through

Safety instructions:
General

- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
 - Be suitably qualified for their role and the tasks they perform
 - Be trained in explosion protection
 - Be familiar with national regulations
- For installation, use and maintenance of the device, users must also observe the requirements stated in the Operating Instructions and the standards:
 - GB50257-1996: "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".
 - GB3836.13-1997: "Electrical apparatus for explosive gas atmospheres, Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres".
 - GB3836.15-2000: "Electrical apparatus for explosive gas atmospheres, Part 15: Electrical installations in hazardous area (other than mines)".
 - GB3836.16-2006: "Electrical apparatus for explosive gas atmospheres, Part 16: Inspection and maintenance of electrical installation (other than mines)".
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Only use the device in media to which the wetted materials have sufficient durability.
- Avoid electrostatic charging:
 - Of plastic surfaces (e.g. housing, sensor element, special varnishing, attached additional plates, ..)
 - Of isolated capacities (e.g. isolated metallic plates)
- Modifications to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.
- Refer to the temperature tables for the relationship between the permitted ambient temperature for the sensor and/or transmitter, depending on the range of application, and the temperature class.
- When replacing the probe electronics or opening the connection between the remote cable and the probe, a jumper plug must be used or a short-circuit must be established between the probe contact and the potential equalization conductor to avoid electrostatically charging the probe.

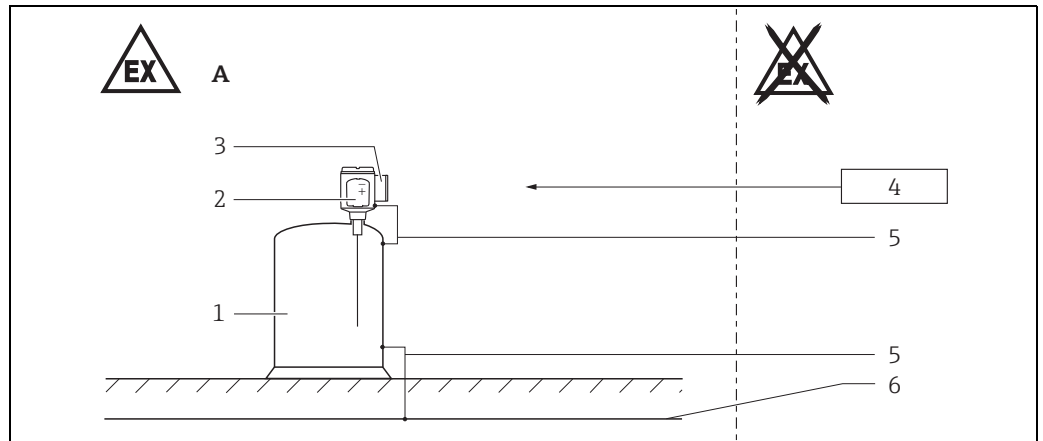
Safety instructions:
Special conditions

Permitted ambient temperature range at the electronics housing: $-40\text{ °C} \leq T_a \leq +80\text{ °C}$.
Observe the information in the temperature tables.

Device type FMP52, FMP55

- A probe coated with non-conductive material can be used if avoiding electrostatic charging (e.g. through friction, cleaning, maintenance, strong medium flow).
- In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
- In the event of additional or alternative special varnishing on the housing or other metal parts:
 - Observe the danger of electrostatic charging and discharge.
 - Do not rub surfaces with a dry cloth.

Safety instructions: Installation



FMP5x_02



A Zone 1

- 1 Tank; Zone 0, Zone 1
- 2 Electronics compartment Ex ia; Electronic insert
- 3 Connection compartment Ex d
- 4 Power supply
- 5 Potential equalization line
- 6 Potential equalization

- After aligning (rotating) the housing, retighten the fixing screw (→ Operating Instructions).
- When mounting the device:
 - Exclude any mechanical damage or friction during the application.
 - Pay particular attention to flow conditions and tank fittings.
- Continuous service temperature of the connecting cable: -40 to $\geq +85$ °C; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{a,min}$), ($T_{a,max} + 20$ K).
- In potentially explosive atmospheres:
 - Do not open the electrical connection of the power supply circuit when energized.
 - Do not open the connection compartment cover.
- Only use certified cable entries suitable for the application.
Observe national regulations or standards. Accordingly, the connection terminal does not include any ignition sources.
- When operating the transmitter housing at an ambient temperature under -20 °C, use appropriate cables and cable entries permitted for this application.
- When connecting through a conduit entry approved for this purpose, mount the associated sealing unit directly at the housing.
- Seal unused entry glands with approved sealing plugs that correspond to the type of protection.
The plastic transport sealing plug does not meet this requirement and must therefore be replaced during installation.
- Before operation:
 - Screw in the cover all the way.
 - Tighten the securing clamp on the cover.

Basic specification, Position 3 (Power Supply; Output) = K

- Connect the protective ground to the device.

Intrinsic safety

- The device can be connected to the Endress+Hauser FXA291 service tool: refer to the Operating Instructions.

Potential equalization

- Integrate the device into the local potential equalization.

**Safety instructions:
Zone 0**

- In the event of potentially explosive vapor/air mixtures, only operate the device under atmospheric conditions.
 - Temperature: -20 to +60 °C
 - Pressure: 80 to 110 kPa (0.8 to 1.1 bar)
 - Air with normal oxygen content, usually 21 % (V/V)
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, the device may also be operated under non-atmospheric conditions in accordance with the manufacturer's specifications.

Temperature tables→  9**Connection data**

Basic specification, Position 1, 2 (Approval) = NC

Connection compartment Ex d

Basic specification, Position 3 (Power Supply; Output) = K (TRC [09])

Terminal 1 (L), 2 (N)	Terminal 3 (+), 4 (-)
Power supply: $U_N = 253 \text{ V AC}; 50/60 \text{ Hz}$ $U_m = 250 \text{ V}$ $I_N = 25 \text{ mA}$ $I_{max} = 160 \text{ mA}$	Output 4...20 mA: $U_N = 22 \text{ V DC}$ $U_m = 250 \text{ V}$ $I_{max} = 22 \text{ mA}$

Basic specification, Position 3 (Power Supply; Output) = L (TRC [08])

Terminal 1 (L+), 2 (L-)	Terminal 3 (+), 4 (-)
Power supply: $U_N = 48 \text{ V DC}$ $U_m = 250 \text{ V}$ $I_N = 112 \text{ mA}$ $I_{max} = 300 \text{ mA}$	Output 4...20 mA: $U_N = 22 \text{ V DC}$ $U_m = 250 \text{ V}$ $I_{max} = 22 \text{ mA}$

Electronics compartment Ex ia**Service interface (CDI)**

Taking the following values into consideration, the device can be connected to the certified Endress+Hauser FXA291 service tool or a similar interface:

Service interface													
$U_i = 7.3 \text{ V}$													
effective inner inductance $L_i = \text{negligible}$													
effective inner capacitance $C_i = \text{negligible}$													
$U_o = 7.3 \text{ V}$													
$I_o = 100 \text{ mA}$													
$P_o = 160 \text{ mW}$													
$L_o \text{ (mH)} =$	5.00	2.00	1.00	0.50	0.20	0.10	0.05	0.02	0.01	0.005	0.002	0.001	
$C_o \text{ (}\mu\text{F)} =$	0.73	1.20	1.60	2.00	2.60	3.20	4.00	5.50	7.30	10.00	12.70	12.70	

Temperature tables

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General notes



Unless otherwise indicated, the positions always refer to the basic specification.

Note!
Observe the permitted temperature range at the probe.

*1 = Functional
Max. permissible process temperature

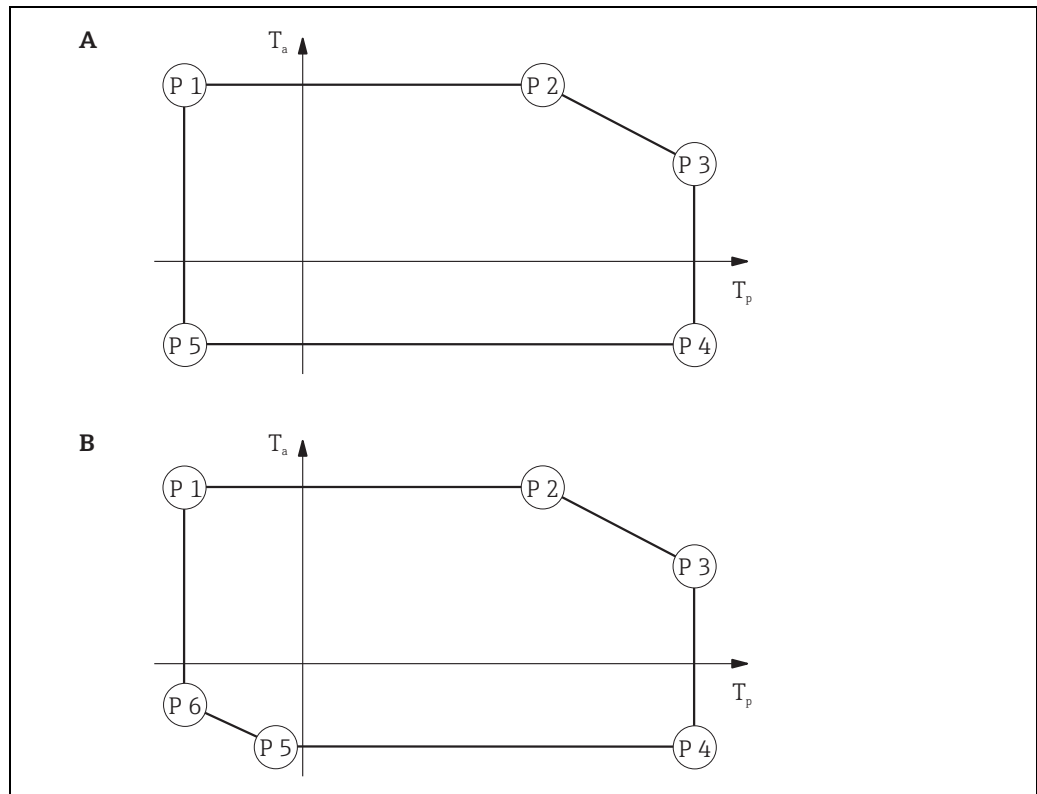
Selection table

Position 1, 2 (Approval)		Position 5 (Housing)	
NC	Ex d [ia] IIC T6-T1 Ga/Gb	B	GT18 dual compartment, 316L
		C	GT20 dual compartment, Alu coated

Position 3 (Power Supply; Output)		Transmission code of the terminal module	
K	4-wire 90...253 VAC, 4-20 mA HART	TRC [09]	
L	4-wire 10,4...48 VDC, 4-20 mA HART	TRC [08]	

Diagram

Example diagrams to the temperature tables



A Version 1
B Version 2
 T_a Ambient temperature
 T_p Process temperature

Probe design: compact

Probe and electronics housing: Zone 1

FMP50

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-20 °C	60 °C	60 °C	60 °C	80 °C	55 °C	80 °C	-20 °C	-20 °C	-20 °C	-	-

FMP51

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = B												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-40 °C	60 °C	60 °C	60 °C	85 °C	51 °C	85 °C	-40 °C	-40 °C	-40 °C	-	-
T5 (100 °C)	-40 °C	75 °C	75 °C	75 °C	100 °C	66 °C	100 °C	-40 °C	-40 °C	-40 °C	-	-
T4 (135 °C)	-40 °C	76 °C	76 °C	76 °C	135 °C	62 °C	135 °C	-40 °C	-40 °C	-40 °C	-	-
T3 (200 °C)	-40 °C	76 °C	76 °C	76 °C	200 °C	46 °C	200 °C	-40 °C	-40 °C	-40 °C	-	-

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-40 °C	60 °C	60 °C	60 °C	85 °C	53 °C	85 °C	-40 °C	-40 °C	-40 °C	-	-
T5 (100 °C)	-40 °C	75 °C	75 °C	75 °C	100 °C	68 °C	100 °C	-40 °C	-40 °C	-40 °C	-	-
T4 (135 °C)	-40 °C	76 °C	76 °C	76 °C	135 °C	64 °C	135 °C	-40 °C	-40 °C	-40 °C	-	-
T3 (200 °C)	-40 °C	76 °C	76 °C	76 °C	200 °C	51 °C	200 °C	-40 °C	-40 °C	-40 °C	-	-

Probe and electronics housing: Zone 1

FMP52

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = B												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-50 °C	60 °C	60 °C	60 °C	85 °C	52 °C	85 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T5 (100 °C)	-50 °C	75 °C	75 °C	75 °C	100 °C	67 °C	100 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T4 (135 °C)	-50 °C	76 °C	76 °C	76 °C	135 °C	63 °C	135 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T3 (200 °C)	-50 °C	76 °C	76 °C	76 °C	200 °C	48 °C	200 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-50 °C	60 °C	60 °C	60 °C	85 °C	54 °C	85 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T5 (100 °C)	-50 °C	75 °C	75 °C	75 °C	100 °C	69 °C	100 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T4 (135 °C)	-50 °C	76 °C	76 °C	76 °C	135 °C	65 °C	135 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T3 (200 °C)	-50 °C	76 °C	76 °C	76 °C	200 °C	53 °C	200 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C

FMP53

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-20 °C	60 °C	60 °C	60 °C	85 °C	54 °C	85 °C	-20 °C	-20 °C	-20 °C	-	-
T5 (100 °C)	-20 °C	75 °C	75 °C	75 °C	100 °C	69 °C	100 °C	-20 °C	-20 °C	-20 °C	-	-
T4 (135 °C)	-20 °C	76 °C	76 °C	76 °C	135 °C	64 °C	135 °C	-20 °C	-20 °C	-20 °C	-	-
T3 (200 °C)	-20 °C	76 °C	76 °C	76 °C	150 °C	61 °C	150 °C	-20 °C	-20 °C	-20 °C	-	-

Probe and electronics housing: Zone 1

FMP54, Position 9, 10 (Seal) = D1

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = B												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-196 °C	60 °C	60 °C	60 °C	85 °C	56 °C	85 °C	-40 °C	-40 °C	-40 °C	-196 °C	-16 °C
T5 (100 °C)	-196 °C	75 °C	75 °C	75 °C	100 °C	71 °C	100 °C	-40 °C	-40 °C	-40 °C	-196 °C	-16 °C
T4 (135 °C)	-196 °C	76 °C	76 °C	76 °C	135 °C	68 °C	135 °C	-40 °C	-40 °C	-40 °C	-196 °C	-16 °C
T3 (200 °C)	-196 °C	76 °C	76 °C	76 °C	200 °C	60 °C	200 °C	-40 °C	-40 °C	-40 °C	-196 °C	-16 °C
T2 (300 °C)	-196 °C	76 °C	76 °C	76 °C	280 °C	49 °C	280 °C	-40 °C	-40 °C	-40 °C	-196 °C	-16 °C

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-196 °C	60 °C	60 °C	60 °C	85 °C	57 °C	85 °C	-40 °C	-40 °C	-40 °C	-196 °C	-23 °C
T5 (100 °C)	-196 °C	75 °C	75 °C	75 °C	100 °C	72 °C	100 °C	-40 °C	-40 °C	-40 °C	-196 °C	-23 °C
T4 (135 °C)	-196 °C	76 °C	76 °C	76 °C	135 °C	70 °C	135 °C	-40 °C	-40 °C	-40 °C	-196 °C	-23 °C
T3 (200 °C)	-196 °C	76 °C	76 °C	76 °C	200 °C	64 °C	200 °C	-40 °C	-40 °C	-40 °C	-196 °C	-23 °C
T2 (300 °C)	-196 °C	76 °C	76 °C	76 °C	280 °C	56 °C	280 °C	-40 °C	-40 °C	-40 °C	-196 °C	-23 °C

FMP54, Position 9, 10 (Seal) = D2

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = B												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-196 °C	60 °C	60 °C	60 °C	85 °C	57 °C	85 °C	-40 °C	-40 °C	-40 °C	-196 °C	-26 °C
T5 (100 °C)	-196 °C	75 °C	75 °C	75 °C	100 °C	72 °C	100 °C	-40 °C	-40 °C	-40 °C	-196 °C	-26 °C
T4 (135 °C)	-196 °C	76 °C	76 °C	76 °C	135 °C	72 °C	135 °C	-40 °C	-40 °C	-40 °C	-196 °C	-26 °C
T3 (200 °C)	-196 °C	76 °C	76 °C	76 °C	200 °C	67 °C	200 °C	-40 °C	-40 °C	-40 °C	-196 °C	-26 °C
T2 (300 °C)	-196 °C	76 °C	76 °C	76 °C	300 °C	59 °C	300 °C	-40 °C	-40 °C	-40 °C	-196 °C	-26 °C
T1 (450 °C) *1	-196 °C	76 °C	76 °C	76 °C	450 °C	48 °C	450 °C	-40 °C	-40 °C	-40 °C	-196 °C	-26 °C

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-196 °C	60 °C	60 °C	60 °C	85 °C	58 °C	85 °C	-40 °C	-40 °C	-40 °C	-196 °C	-27 °C
T5 (100 °C)	-196 °C	75 °C	75 °C	75 °C	100 °C	73 °C	100 °C	-40 °C	-40 °C	-40 °C	-196 °C	-27 °C
T4 (135 °C)	-196 °C	76 °C	76 °C	76 °C	135 °C	72 °C	135 °C	-40 °C	-40 °C	-40 °C	-196 °C	-27 °C
T3 (200 °C)	-196 °C	76 °C	76 °C	76 °C	200 °C	67 °C	200 °C	-40 °C	-40 °C	-40 °C	-196 °C	-27 °C
T2 (300 °C)	-196 °C	76 °C	76 °C	76 °C	300 °C	60 °C	300 °C	-40 °C	-40 °C	-40 °C	-196 °C	-27 °C
T1 (450 °C) *1	-196 °C	76 °C	76 °C	76 °C	450 °C	50 °C	450 °C	-40 °C	-40 °C	-40 °C	-196 °C	-27 °C

Probe and electronics housing: Zone 1**FMP55****Position 3 (Power Supply; Output) = K, L (TRC [09/08])**

Position 5 (Housing) = B												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-50 °C	60 °C	60 °C	60 °C	85 °C	52 °C	85 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T5 (100 °C)	-50 °C	75 °C	75 °C	75 °C	100 °C	67 °C	100 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T4 (135 °C)	-50 °C	76 °C	76 °C	76 °C	135 °C	63 °C	135 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T3 (200 °C)	-50 °C	76 °C	76 °C	76 °C	200 °C	48 °C	200 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C

Position 5 (Housing) = C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-50 °C	60 °C	60 °C	60 °C	85 °C	54 °C	85 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T5 (100 °C)	-50 °C	75 °C	75 °C	75 °C	100 °C	69 °C	100 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T4 (135 °C)	-50 °C	76 °C	76 °C	76 °C	135 °C	64 °C	135 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C
T3 (200 °C)	-50 °C	76 °C	76 °C	76 °C	200 °C	52 °C	200 °C	-40 °C	-40 °C	-40 °C	-50 °C	-37 °C

Probe: Zone 0, Electronics housing: Zone 1**FMP5x****Position 3 (Power Supply; Output) = K, L (TRC [09/08])**

Position 5 (Housing) = B, C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a *2	T _p	T _a *2	T _p	T _a
T6 (85 °C)	-20 °C	60 °C	60 °C	60 °C	60 °C	60 °C	60 °C	-40 °C	-20 °C	-40 °C	-	-

*2 FMP50, FMP53
without remote sensor = -20 °C

Probe design: remote

Probe: Zone 0, Zone 1, Electronics housing: Zone 1

FMP5x, Optional specification, ID Mx (Probe Design) = MB, MC, MD

Position 3 (Power Supply; Output) = K, L (TRC [09/08])

Position 5 (Housing) = B, C												
Temperature class	P 1		P 2		P 3		P 4		P 5		P 6	
	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
T6 (85 °C)	-	60 °C	-	60 °C	-	60 °C	-	-40 °C	-	-40 °C	-	-

T_p = dependent on the sensor



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