

Safety Instructions

Micropilot

FMR50/51/52/53/54/56/57

PROFIBUS PA, FOUNDATION Fieldbus

Control Drawing XP/DIP



Document: XA01119F-B
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Micropilot FMR50/51/52/53/54/56/57

PROFIBUS PA, FOUNDATION Fieldbus

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Associated documentation This document is an integral part of the following Operating Instructions:

PROFIBUS PA

- BA01124F/00 (FMR50)
- BA01125F/00 (FMR51, FMR52)
- BA01126F/00 (FMR53, FMR54)
- BA01127F/00 (FMR56, FMR57)

FOUNDATION Fieldbus

- BA01120F/00 (FMR50)
- BA01121F/00 (FMR51, FMR52)
- BA01122F/00 (FMR53, FMR54)
- BA01123F/00 (FMR56, FMR57)

Manufacturer's certificates **FM C/US certificate**

Certificate number:

- FM19.US0045X
- FM19.CA0023X

Manufacturer address Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany
Address of the manufacturing plant: See nameplate.

Extended order code 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.

Structure of the extended order code

| | | | | |
|----------------------|---|-------------------------------|---|----------------------------------|
| FMR5x | – | ***** | + | A*B*C*D*E*F*G*.. |
| <i>(Device type)</i> | | <i>(Basic specifications)</i> | | <i>(Optional specifications)</i> |

* = Placeholder

At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

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).

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.

Extended order code: Micropilot



The following specifications reproduce an extract from the product structure and are used to assign:

- This documentation to the device (using the extended order code on the nameplate).
- The device options cited in the document.

Device type

FMR50, FMR51, FMR52, FMR53, FMR54, FMR56, FMR57

Basic specifications

| Position 1, 2 (Approval) | | |
|--------------------------|----|---|
| Selected option | | Description |
| FMR5x | FC | FM C/US XP-IS Cl. I, Div. 1, Groups A,B,C,D; AIS Cl. I, Div. 1, Groups A,B,C,D |
| | FD | FM C/US XP-IS Cl. I, Div. 1, Groups A,B,C,D; DIP-IS Cl. II, III, Div. 1, Groups E,F,G; NI Class I, Div. 2, Groups A,B,C,D; AIS Cl.I, II, III, Div.1 Groups A-G; Class I, Zone 0/1, AEx/Ex ia/db [ia Ga] IIC Ga/Gb |
| | FE | FM C/US DIP-IS Cl. II, III, Div. 1, Groups E, F,G; AIS Cl. I, II, III, Div.1 Groups A-G |
| | 8A | FM/CSA IS+XP-IS Cl. I, II, III, Div. 1, Groups A-G, AIS Cl. I, II, III, Div. 1, Groups A-G |

| Position 3 (Power Supply, Output) | | |
|-----------------------------------|---|--|
| Selected option | | Description |
| FMR5x | E | 2-wire, FOUNDATION Fieldbus, switch output (PFS) |
| | G | 2-wire, PROFIBUS PA, switch output (PFS) |

| Position 4 (Display, Operation) | | |
|---------------------------------|---|--|
| Selected option | | Description |
| FMR5x | A | Without, via communication |
| | C | SD02, 4-line, push buttons + data backup function |
| | E | SD03, 4-line, illum., touch control + data backup function |
| | L | Prepared for display FHX50 + M12 connection |
| | M | Prepared for display FHX50 + custom connection |
| | N | Prepared for display FHX50 + NPT1/2" |

| Position 5 (Housing) | | |
|----------------------|---|------------------------------------|
| Selected option | | Description |
| FMR51-54 FMR57 | B | GT18 dual compartment, 316L |
| FMR5x | C | GT20 dual compartment, Alu, coated |

| Position 7, 8 (Antenna) | | |
|-------------------------|----|--|
| Selected option | | Description |
| FMR50 | BM | Horn 40 mm/1½", PVDF encapsulated, -40...130°C |
| | BN | Horn 80 mm/3", PP cladded, -40...80°C |
| | BR | Horn 100 mm/4", PP cladded, -40...80°C |
| FMR51 | Bx | Horn (different sizes) |
| FMR52 | BO | Horn 50 mm/2", -196...200°C, flush mount |
| | BP | Horn 80 mm/3", -196...200°C, flush mount |
| FMR53 | Cx | Rod (different sizes) |
| FMR54 | Ax | Without Horn |
| | Bx | Horn (different sizes) |
| | Dx | Planar (different sizes) |
| FMR56 | BN | Horn 80 mm/3", PP cladded, -40...80°C |
| | BR | Horn 100 mm/4", PP cladded, -40...80°C |
| FMR57 | Bx | Horn (different sizes) |
| | Fx | Parabolic (different sizes) |

| Position 9, 10 (Seal) | | |
|-----------------------|----|--|
| Selected option | | Description |
| FMR51 | A5 | Viton GLT, -40...150°C |
| | C1 | Kalrez, -20...150°C |
| | D2 | Graphite, -196...450°C (HT) |
| | D3 | Graphite, -40...250°C (XT) |
| FMR54 | A7 | Viton, -20...150°C (Planar) |
| | A8 | Viton, -40...200°C |
| | B4 | EPDM, -40...150°C |
| | C2 | Kalrez, -20...200°C, conductive media max. 150°C |
| | D1 | Graphite, -196...280°C (XT) |
| | D2 | Graphite, -196...400°C (HT) |
| FMR57 | A6 | Viton GLT, -40...200°C |
| | D4 | Graphite, -40...400°C (HT) |

| Position 11-13 (Process Connection) | | |
|-------------------------------------|-------------------|---|
| Selected option | | Description |
| FMR51-54 FMR57 | Axx Cxx Kxx | Flange (different sizes) |
| FMR50 | GGF RGF | Thread, PVDF |
| | UAE | Mounting bracket |
| | XRO | Connection, without flange/mounting bracket |
| | XxG | Slip on flange (different sizes) |

| Position 11-13 (Process Connection) | | |
|-------------------------------------|-----|---|
| Selected option | | Description |
| FMR51 | Pxx | Flange (different sizes) |
| | Rxx | Thread |
| | Txx | Tri-Clamp |
| FMR52 | Mxx | Slotted-nut |
| | Txx | Tri-Clamp |
| FMR53 | RxJ | Thread, 316L |
| | RxF | Thread, PVDF |
| FMR56 | UAE | Mounting bracket |
| | XR0 | Connection, without flange/mounting bracket |
| | XxG | Slip on flange (different sizes) |
| FMR57 | RxJ | Thread, 316L |
| | XxJ | Align. device (different sizes) |

| Position 14 (Air Purge Connection) | | |
|------------------------------------|---|-------------|
| Selected option | | Description |
| FMR57 | 1 | G1/4 |
| | 2 | NPT1/4 |

Optional specifications

| ID Jx (Test, Certificate) | | |
|---|----|---------------------------------------|
| Selected option | | Description |
| FMR51 ¹⁾ FMR52 FMR54 ²⁾ | JN | Ambient temperature transmitter -50°C |

- 1) Only in connection with Position 9, 10 (Seal) = D2
- 2) Only in connection with Position 9, 10 (Seal) = D1, D2

| ID Nx, Ox (Accessory Mounted) | | |
|-------------------------------|----------------------|---|
| Selected option | | Description |
| FMR51 | OM OU OV | Antenna extension (different sizes) |
| | OW | Horn protection, PTFE, no airpurge possible |
| FMR54 | OM ON OR OS | Antenna extension (different sizes) |
| | OP OT | Antenna extension (different sizes) |
| | OW | Horn protection, PTFE, no airpurge possible |

Combined type of protection (Approval code, 8A)

Devices with approval code "8A" are suitable for installation with explosion protection type of Intrinsic Safety or Explosionproof.

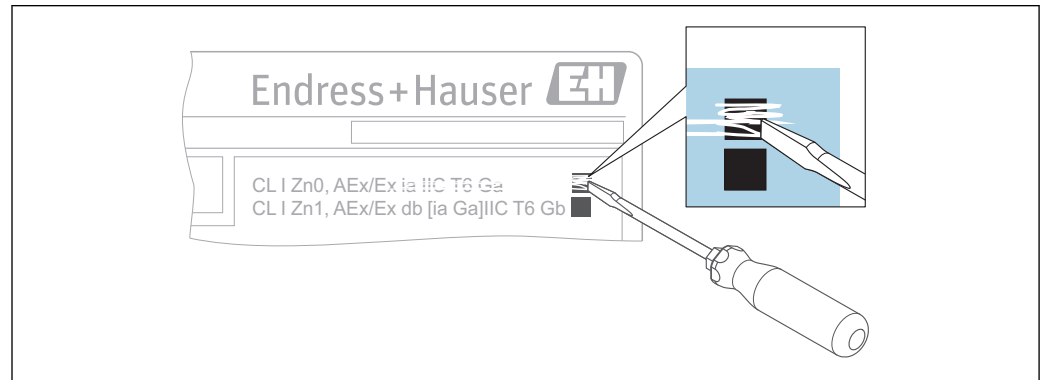
- Before initial commissioning, specify the type of protection.
- It is not permitted to change the type of protection after initial commissioning as this can jeopardize the explosion protection.

For aluminum housings:

Void out the explosion protection that is not used on the nameplate.

For stainless steel housings:

Using a striking tool, mark the explosion protection used, or void out the explosion protection that is not used.



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i It is critical to observe and follow the correct instructions for installation depending on the type of protection used. Refer to the following table for reference to the correct installation instructions.

| Type of protection | Agency approval | Control Drawing no. / Document no. |
|--------------------|-----------------|------------------------------------|
| Intrinsic Safety | CSA | XA01114F |
| | FM | XA01118F |
| Explosionproof | CSA | XA01115F |
| | FM | XA01119F |

Class I, Division 2 installation:

References in this manual to Class I, Division 2 installation are not applicable for devices with the combined type of protection. For installation in Class I, Division 2, these devices must be installed per the applicable Division 1 intrinsic safety or explosionproof requirements.

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
- 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.

**Safety instructions:
Special conditions**

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

Optional specification, ID Jx (Test, Certificate) = JN

Permitted ambient temperature range at the electronics housing:
 $-50\text{ °C} \leq T_a \leq +80\text{ °C}$

- Observe the information in the temperature tables.
- Use supply wires suitable for 20 K above the ambient temperature.
- 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.

Device type FMR50, FMR52, FMR53, FMR54 (planar, enamel), FMR56

An antenna coated with non-conductive material can be used if avoiding electrostatic charging (e.g. through friction, cleaning, maintenance, strong medium flow).

Device type FMR51, FMR57 and Optional specification, ID Nx, Ox (Accessory Mounted) = OW

An antenna coated with non-conductive material can be used if avoiding electrostatic charging (e.g. through friction, cleaning, maintenance, strong medium flow).

Device type FMR57 and Basic specification, Position 11-13 (Process Connection) = Xxj

- Changing the position of the alignment device must be impossible:
 - After the alignment of the antenna via the pivot bracket
 - After tightening of the clamping flange
 - After setting the damping ring (torque 15 Nm)
- Degree of protection IP67 must be fulfilled.

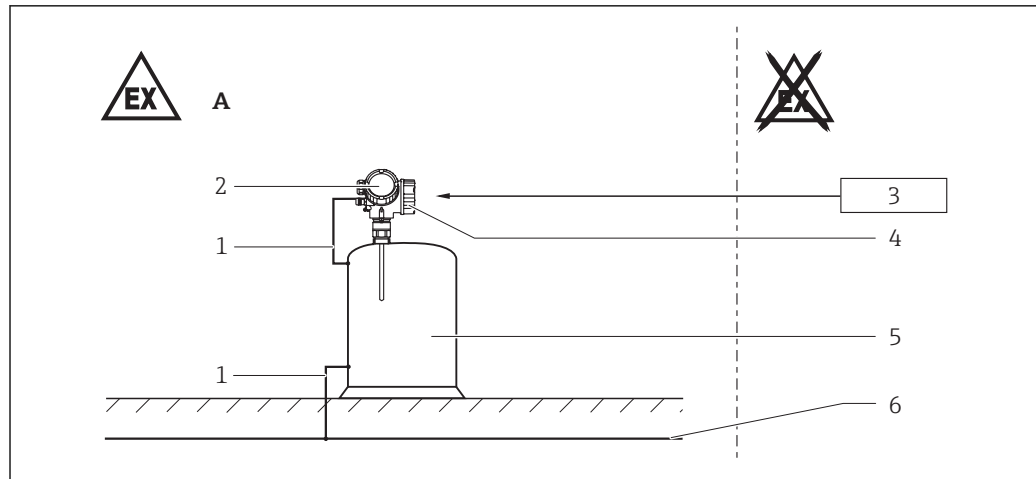
Device type FMR57 and Basic specification, Position 14 (Air Purge Connection) = 1, 2

- If equipment with Ga/Gb or Da/Db is required: In the closed state the minimum degree of protection of the installation must be IP67.
- After removing the air purge connection: Lock the opening with a suitable plug.
 - Torque: 6-7 Nm
 - For Da/Db: thread engagement > 5 turns
- Degree of protection IP67 must be fulfilled.

Device type FMR51, FMR54, FMR57 and Optional specification, ID Nx, Ox (Accessory Mounted) = OM, ON, OR, OS, OU, OV, OP, OT

Avoid contact between sensor and tank wall. Take into account tank fittings and flow conditions (avoid sparks caused by impact and friction).

Safety instructions: Installation



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- A Class I, Div. 1 or 2, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Zone 1
 1 Potential equalization line
 2 Electronics compartment Ex ia; Electronic insert
 3 Power supply
 4 Connection compartment XP/Ex db
 5 Tank; Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Zone 0 or Zone 1
 6 Potential equalization

- After aligning (rotating) the housing, retighten the fixing screw (see Operating Instructions).
- Install the device to exclude any mechanical damage or friction during the application.
Pay particular attention to flow conditions and tank fittings.
- Before operation:
 - Screw in the cover all the way.
 - Tighten the securing clamp on the cover.
- Continuous service temperature of the connecting cable: -40 °C to $\geq +85\text{ °C}$; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{a,\min}$), ($T_{a,\max} + 20\text{ K}$).

Optional specification, ID Jx (Test, Certificate) = JN

Continuous service temperature of the connecting cable: -50 °C to $\geq +85\text{ °C}$; in accordance with the range of service temperature taking into account additional influences of the process conditions ($T_{a,\min}$), ($T_{a,\max} + 20\text{ K}$).

Basic specification, Position Position 4 (Display, Operation) = N

Observe national regulations and standards for conduit systems.

Explosionproof / Flameproof

Class I, Div. 1, Groups A, B, C, D, Class II, Div. 1, Groups E, F, G, Class III
 Class I, Zone 1, AEx db [ia] IIC/Ex db [ia] IIC

- Install as per National Electrical Code (NFPA70) or Canadian Electrical Code, Part I (C22.1), as applicable.
- For the maximum supply voltage: See "Connection data" section.
- Control room equipment may not use or generate over $250\text{ V}_{\text{rms}}$.
- Seal unused entries with approved 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.
- Antenna is intrinsically safe, AEx ia/Ex ia, and suitable for installation in Class I, II, III, Division 1 or Class I, Zone 0/1.
- When prepared for use with an approved remote display FHX50, remote display is intrinsically safe suitable for Class I, Division 1/Zone 0 locations and connection between transmitter housing and remote display is intrinsically safe field wiring.
- WARNINGS: Substitution of components may impair intrinsic safety.

Factory sealed

Explosionproof conduit seal not required for terminal compartment when installed in Division 1 locations.

Terminal compartment
Do not open when explosive atmosphere is present.

Class II and III

- Keep covers tight unless power has been switched off.
- Use a dust-tight seal at the conduit entry in a Class II and III location.

Class I, Div. 2, Groups A-D

The following instructions apply only for *Device type FMR5x, Basic specification, Position 1, 2 (Approval) = FD*

Device type FMR5x, Basic specification, Position 1, 2 (Approval) = FC and 8A are not marked for use in Class I, Division 2; however, these devices are suitable for this application when installed using the intrinsic safety instructions for Class I, Division 1.

Standard Wiring installation (only for NPT conduit entries)

- Install as per National Electrical Code (NFPA70) or Canadian Electrical Code, Part I (C22.1), as applicable.
- Using wiring methods appropriate for the location.
- Associated apparatus not required.
- For the maximum supply voltage: See "Connection data" section.
- Antenna is intrinsically safe, AEx ia/Ex ia, and suitable for installation in Class I, II, III, Division 1 or Class I, Zone 0/1.
- When prepared for use with an approved remote display FHX50, remote display is intrinsically safe suitable for Class I, Division 1/Zone 0 locations and connection between transmitter housing and remote display is intrinsically safe field wiring.
- WARNINGS: Explosion hazard - Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- WARNINGS: Substitution of components may impair suitability for Class I, Div. 2.

Factory sealed


Explosionproof conduit seal not required for terminal compartment.

Process seals

The following device types are Dual Seal devices per ANSI/ISA 12.27.01 and do not require the use of an external secondary process seal.

| Device type | Basic specification, Position 1, 2 (Approval) | MWP ¹⁾ | Method of annunciation |
|----------------------------|---|-------------------|---|
| FMR53 FMR54 | FC, FD, 8A | 12 bar | Process fluid leakage through vent located in electronics compartment. |
| FMR50-52 FMR56 FMR57 | FC, FD, 8A | 40 bar | When using the remote display FHX50: Leakage may also occur from the vent located in the remote display housing. No maintenance of annunciator necessary. |

1) Maximum Working Pressure for the Dual Seal rating.
This value may be a value less than the MWP for the device.

 Verify the chemical compatibility of the process seal specified on the nameplate in first position with the process fluid (see field "Mat." on the nameplate).

Basic specification, Position 4 (Display, Operation) = L M, N and a cable provided by customer, gland M16 or thread NPT1/2

To prevent possible leakage of process fluids in an area classified as non-hazardous, the FHX50 must be installed in the hazardous location when used with a device with a Dual Seal rating.

Temperature tables

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Connection data

Connection compartment XP / AEx db/Ex db

Basic specification, Position 3 (Power Supply, Output) = E, G

| Terminal 1 (+), 2 (-) | Terminal 3 (+), 4 (-) |
|---|--|
| Power supply: $U_N = 32 V_{DC}$ $U_m = 250 V$ | Switch output (PFS): $U_N = 35 V_{DC}$ $U_m = 250 V$ |

The power consumption of I/O modules with passive PFS output can be limited for certain applications.

- Recommended: Power consumption = 1 W. This is obtained for a supply voltage at the terminals of 27 V_{DC}.
- For higher supply voltages (U_{max}): Insert a serial resistance (R_V) in order to limit the power consumption, see table below.

Table for the PFS serial resistance (R_V):

| | |
|---------------------------|--------|
| Power consumption | 1.0 W |
| Total power consumption | 1.88 W |
| Internal resistance R_i | 760 Ω |

| U_{max} [V] | R_V min |
|---------------|-----------|
| 35 | 205 Ω |
| 34 | 177 Ω |
| 33 | 150 Ω |
| 32 | 122 Ω |
| 31 | 95 Ω |
| 30 | 67 Ω |
| 29 | 39 Ω |
| 28 | 12 Ω |
| 27 | 0 Ω |

 For values associated with a higher or lower internal power consumption please contact Endress+Hauser.

Electronics compartment, intrinsically safe (AEx ia/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 | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|-------|-------|-------|--|
| $U_i = 7.3 V$ effective inner inductance $L_i =$ negligible effective inner capacitance $C_i =$ negligible | | | | | | | | | | | | | |
| $U_o = 7.3 V$ $I_o = 100 mA$ $P_o = 160 mW$ | | | | | | | | | | | | | |
| L_o (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 (µF) = | 0.73 | 1.20 | 1.60 | 2.00 | 2.60 | 3.20 | 4.00 | 5.50 | 7.30 | 10.00 | 12.70 | 12.70 | |

Remote display interface

- Devices with *Basic specification, Position 4 (Display, Operation) = L, M, N* can be connected to the approved Endress+Hauser remote display FHX50.
- Refer to Safety Instructions XA01096F for additional installation instructions.

Micropilot FMR50/51/52/53/54/56/57

PROFIBUS PA, FOUNDATION Fieldbus

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| Class II, III, Division 1; 2 channels | 63 |

Notes on the structure

Extract from the extended order code

Device type

FMR50, FMR51, FMR52, FMR53, FMR54, FMR56, FMR57


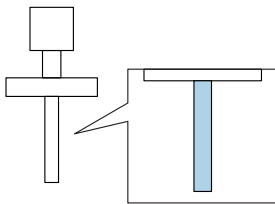
Basic specifications


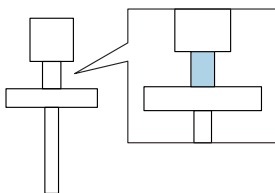
| Position 1, 2 (Approval) | | |
|--------------------------|----|--|
| Selected option | | Description |
| FMR5x | FC | FM C/US XP-IS Cl. I, Div. 1, Groups A,B,C,D; AIS Cl. I, Div. 1, Groups A,B,C,D |
| | FD | FM C/US XP-IS Cl. I, Div. 1, Groups A,B,C,D; DIP-IS Cl. II, III, Div. 1, Groups E,F,G; NI Class I, Div. 2, Groups A,B,C,D; AIS Cl. I, II, III, Div.1 Groups A-G; Class I, Zone 0/1, AEx/Ex ia/db [ia Ga] IIC Ga/Gb |
| | FE | FM C/US DIP-IS Cl. II, III, Div. 1, Groups E, F,G; AIS Cl. I, II, III, Div.1 Groups A-G |
| | 8A | FM/CSA IS+XP-IS Cl. I, II, III, Div. 1, Groups A-G, AIS Cl. I, II, III, Div. 1, Groups A-G |

| Position 3 (Power Supply, Output) | | |
|-----------------------------------|---|--|
| Selected option | | Description |
| FMR5x | E | 2-wire, FOUNDATION Fieldbus, switch output (PFS) |
| | G | 2-wire, PROFIBUS PA, switch output (PFS) |

| Position 5 (Housing) | | |
|----------------------|---|------------------------------------|
| Selected option | | Description |
| FMR51-54 FMR57 | B | GT18 dual compartment, 316L |
| FMR5x | C | GT20 dual compartment, Alu, coated |

| Position 7, 8 (Antenna) | | |
|-------------------------|----|--|
| Selected option | | Description |
| FMR50 | BM | Horn 40 mm/1½", PVDF encapsulated, -40...130°C |
| | BN | Horn 80 mm/3", PP cladded, -40...80°C |
| | BR | Horn 100 mm/4", PP cladded, -40...80°C |
| FMR51 | Bx | Horn (different sizes) |
| FMR52 | BO | Horn 50 mm/2", -196...200°C, flush mount |
| | BP | Horn 80 mm/3", -196...200°C, flush mount |
| FMR53 | Cx | Rod (different sizes) |
| FMR54 | Ax | Without Horn |
| | Bx | Horn (different sizes) |
| | Dx | Planar (different sizes) |
| FMR56 | BN | Horn 80 mm/3", PP cladded, -40...80°C |
| | BR | Horn 100 mm/4", PP cladded, -40...80°C |

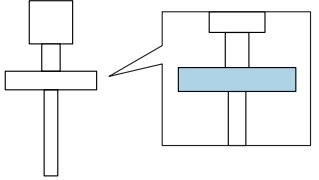
| Position 7, 8 (Antenna) | | |
|---|----|---|
| Selected option | | Description |
| FMR57 | Bx | Horn (different sizes) |
| | Fx | Parabolic (different sizes) |
|  Shown in the temperature tables exemplary as follows: | |  |

| Position 9, 10 (Seal) | | |
|---|----|---|
| Selected option | | Description |
| FMR51 | A5 | Viton GLT, -40...150°C |
| | C1 | Kalrez, -20...150°C |
| | D2 | Graphite, -196...450°C (HT) |
| | D3 | Graphite, -40...250°C (XT) |
| FMR54 | A7 | Viton, -20...150°C (Planar) |
| | A8 | Viton, -40...200°C |
| | B4 | EPDM, -40...150°C |
| | C2 | Kalrez, -20...200°C, conductive media max. 150°C |
| | D1 | Graphite, -196...280°C (XT) |
| | D2 | Graphite, -196...400°C (HT) |
| FMR57 | A6 | Viton GLT, -40...200°C |
| | D4 | Graphite, -40...400°C (HT) |
|  Shown in the temperature tables exemplary as follows: | |  |

| Position 11-13 (Process Connection) | | |
|-------------------------------------|-------------------|---|
| Selected option | | Description |
| FMR51-54 FMR57 | Axx Cxx Kxx | Flange (different sizes) |
| FMR50 | GGF RGF | Thread, PVDF |
| | UAE | Mounting bracket |
| | XR0 | Connection, without flange/mounting bracket |
| | XxG | Slip on flange (different sizes) |
| | FMR51 | Pxx |
| Rxx | | Thread |
| Txx | | Tri-Clamp |

| Position 11-13 (Process Connection) | | |
|-------------------------------------|-----|---|
| Selected option | | Description |
| FMR52 | Mxx | Slotted-nut |
| | Txx | Tri-Clamp |
| FMR53 | Rxj | Thread, 316L |
| | RxF | Thread, PVDF |
| FMR56 | UAE | Mounting bracket |
| | XRO | Connection, without flange/mounting bracket |
| | XxG | Slip on flange (different sizes) |
| FMR57 | Rxj | Thread, 316L |
| | Xxj | Align. device (different sizes) |

i Shown in the temperature tables exemplary as follows:




Optional specifications

| ID Jx (Test, Certificate) | | |
|---|----|---------------------------------------|
| Selected option | | Description |
| FMR51 ¹⁾ FMR52 FMR54 ²⁾ | JN | Ambient temperature transmitter -50°C |

- 1) Only in connection with Position 9, 10 (Seal) = D2
- 2) Only in connection with Position 9, 10 (Seal) = D1, D2

General notes

- i** Observe the permitted temperature range at the antenna.
- i** Basic specification, Position 3 (Power Supply, Output) = E, G
Deratings are based on a power consumption of 1 W (PFS); →  12.

Description notes

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

1st column: Position 5 (Housing) = A, B, ...

2nd column: Position 3 (Power Supply, Output) = A, B, ..

- (1): 1 channel used
- (2): 2 channels used

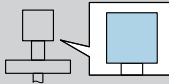
3rd column: Temperature classes T6 (85 °C) to T1 (450 °C)

Column P1 to P6: Position (temperature value) on the axes of the derating

- T_a: Ambient temperature in °C
- T_p: Process temperature in °C

- i** Column P6 is only relevant for version B of the derating.

→  19

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 80 | 80 | 135 | 67 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 80 | 80 | 200 | 51 | 200 | -40 | -40 | -40 | - | - |

A0038026-EN

Class II, III, Division 1

1st column: Position 5 (Housing) = A, B, ...

2nd column: Position 3 (Power Supply, Output) = A, B, ..

- (1): 1 channel used
- (2): 2 channels used

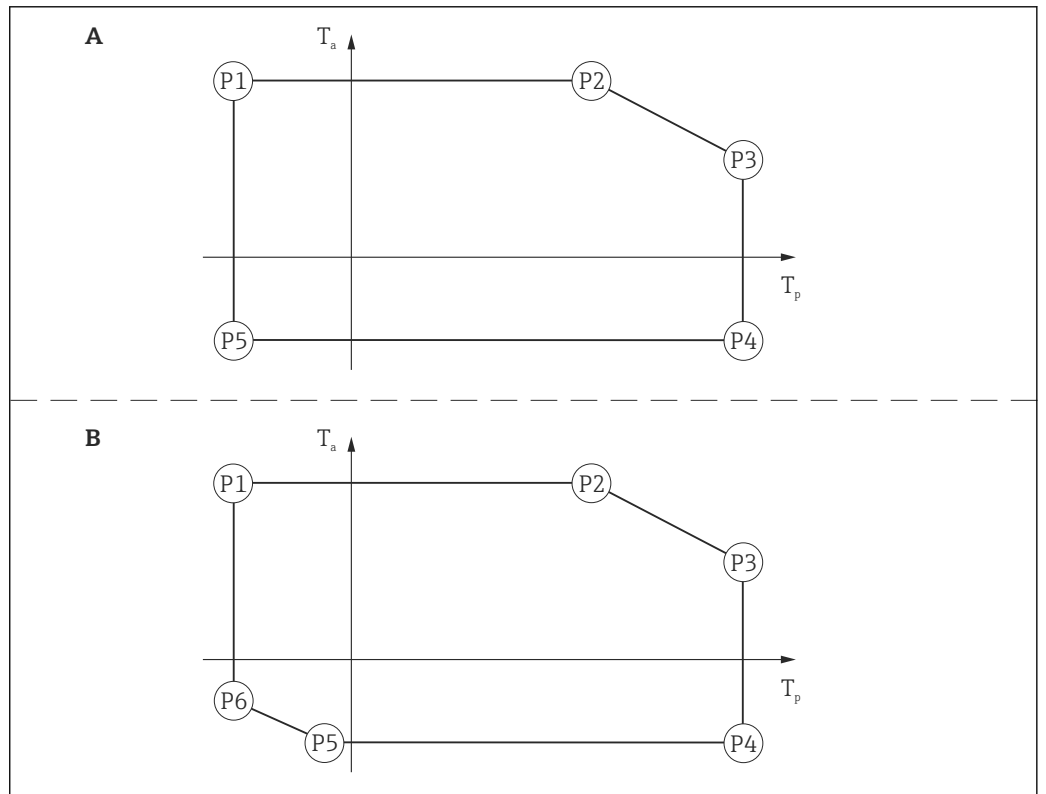
3rd column: Temperature values

|  = C | (1) | |
|---|------|---------------------------|
| | E, G | T = T _a + 10 K |

A0039400-EN

 T_a: Ambient temperature in °C

Example diagrams of possible deratings



A0022717

 3

Compact; 1 channel

Position 3 (Power Supply, Output) = E, G: 1 channel used

Page references to the temperature tables of the respective device types: See the following list.

- FMR50 → 20
- FMR51 → 21
- FMR52 → 24
- FMR53 → 26
- FMR54 → 28
- FMR56 → 32
- FMR57 → 33

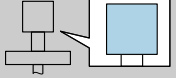


Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;

Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

FMR50

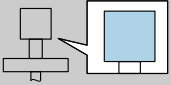
|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

 Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

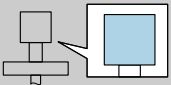
Antenna: Class I, Zone 0 / Class I, Division 1;

Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

FMR51

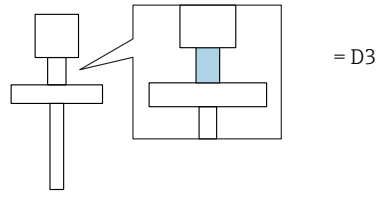
|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 69 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 80 | 81 | 80 | 150 | 66 | 150 | -40 | -40 | -40 | - | - |

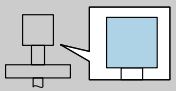
1) Functional: Maximum permissible process temperature

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 71 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 80 | 81 | 80 | 150 | 68 | 150 | -40 | -40 | -40 | - | - |

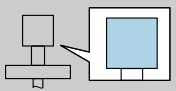
1) Functional: Maximum permissible process temperature

FMR51



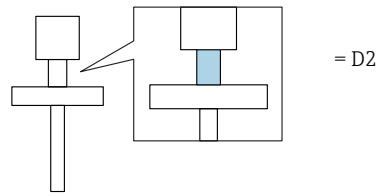
|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 75 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 68 | 200 | -40 | -40 | -40 | - | - |
| | | T2 ¹⁾ | -40 | 80 | 81 | 80 | 250 | 63 | 250 | -40 | -40 | -40 | - | - |

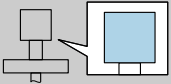
1) Functional: Maximum permissible process temperature

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 58 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 73 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 76 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 71 | 200 | -40 | -40 | -40 | - | - |
| | | T2 ¹⁾ | -40 | 80 | 81 | 80 | 250 | 67 | 250 | -40 | -40 | -40 | - | - |

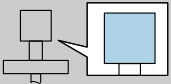
1) Functional: Maximum permissible process temperature

FMR51



|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 73 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 64 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T2 | -196 | 80 | 81 | 80 | 300 | 50 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |

1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 57 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 72 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 75 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 68 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T2 | -196 | 80 | 81 | 80 | 300 | 57 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T1 | -196 | 80 | 81 | 80 | 450 | 39 | 450 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |

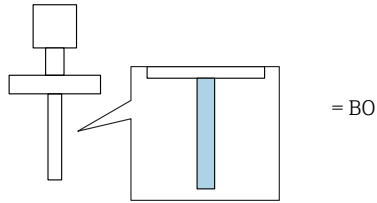
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

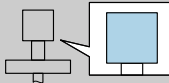
 Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;

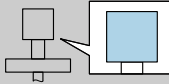
Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

FMR52



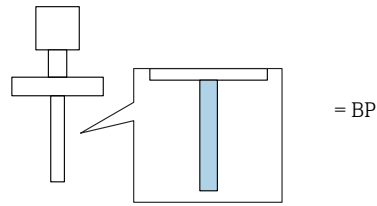
|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 71 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 60 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |

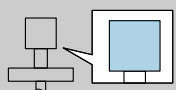
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 73 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 64 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |

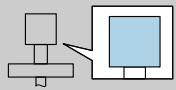
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

FMR52



|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 54 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 69 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 69 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 56 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |

1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 72 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 61 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |

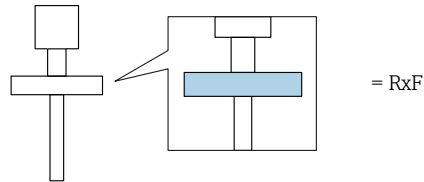
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

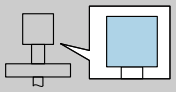
i Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;

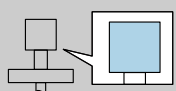
Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

FMR53

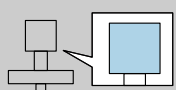


|  = B, C | (1) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

FMR53

|  = B | (1) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 68 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 80 | 81 | 80 | 150 | 65 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

|  = C | (1) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 70 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 80 | 81 | 80 | 150 | 67 | 150 | -40 | -40 | -40 | - | - |

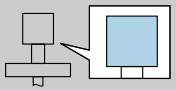
1) Functional: Maximum permissible process temperature

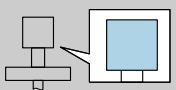
 Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;

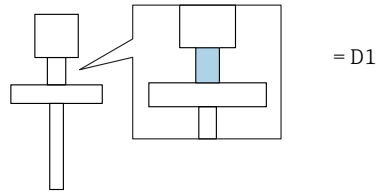
Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

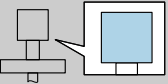
FMR54

|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 67 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 52 | 200 | -40 | -40 | -40 | - | - |

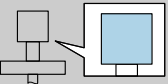
|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 70 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 57 | 200 | -40 | -40 | -40 | - | - |

FMR54



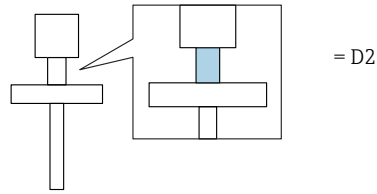
|  = B | (1) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 71 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 60 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T2 ²⁾ | -196 | 80 | 81 | 80 | 280 | 46 | 280 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |

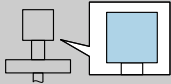
- 1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN
- 2) Functional: Maximum permissible process temperature

|  = C | (1) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 73 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 64 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T2 ²⁾ | -196 | 80 | 81 | 80 | 280 | 53 | 280 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |

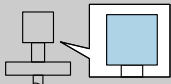
- 1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN
- 2) Functional: Maximum permissible process temperature

FMR54



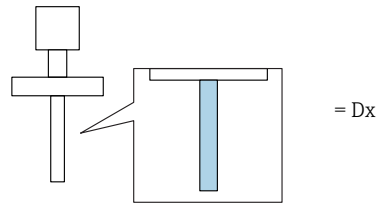
|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 73 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 63 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T2 | -196 | 80 | 81 | 80 | 300 | 48 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T1 ²⁾ | -196 | 80 | 81 | 80 | 400 | 31 | 400 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |

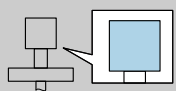
- 1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN
- 2) Functional: Maximum permissible process temperature

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 57 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 72 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T4 | -196 | 80 | 81 | 80 | 135 | 74 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T3 | -196 | 80 | 81 | 80 | 200 | 67 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T2 | -196 | 80 | 81 | 80 | 300 | 55 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T1 ²⁾ | -196 | 80 | 81 | 80 | 400 | 42 | 400 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |

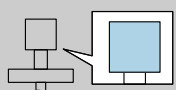
- 1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN
- 2) Functional: Maximum permissible process temperature

FMR54




|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 71 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 80 | 81 | 80 | 150 | 68 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 73 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 80 | 81 | 80 | 150 | 71 | 150 | -40 | -40 | -40 | - | - |

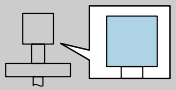
1) Functional: Maximum permissible process temperature

 Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;

Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

FMR56

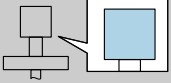
|  = C | (1) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|--|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

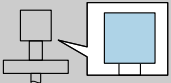
 Explosion protection: XP / AEx db [ia]/Ex db [ia] or Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;

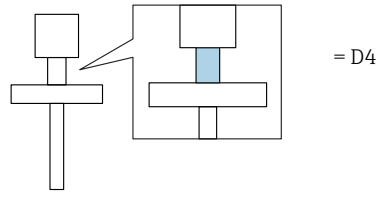
Electronics housing: Class I, Zone 1 / Class I, Division 1 or Division 2

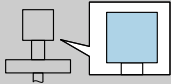
FMR57

|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 74 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 66 | 200 | -40 | -40 | -40 | - | - |

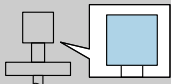
|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 75 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 69 | 200 | -40 | -40 | -40 | - | - |

FMR57



|  = B | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 76 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 70 | 200 | -40 | -40 | -40 | - | - |
| | | T2 | -40 | 80 | 81 | 80 | 300 | 61 | 300 | -40 | -40 | -40 | - | - |
| | | T1 ¹⁾ | -40 | 80 | 81 | 80 | 400 | 51 | 400 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

|  = C | (1) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 58 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 73 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 80 | 81 | 80 | 135 | 77 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 80 | 81 | 80 | 200 | 72 | 200 | -40 | -40 | -40 | - | - |
| | | T2 | -40 | 80 | 81 | 80 | 300 | 65 | 300 | -40 | -40 | -40 | - | - |
| | | T1 ¹⁾ | -40 | 80 | 81 | 80 | 400 | 58 | 400 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

Compact; 2 channels

Position 3 (Power Supply, Output) = E, G: 2 channels used

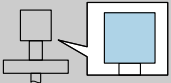
Page references to the temperature tables of the respective device types: See the following list.

- FMR50 → 35
- FMR51 → 36
- FMR52 → 42
- FMR53 → 46
- FMR54 → 50
- FMR56 → 58
- FMR57 → 59

 Explosion protection: XP / AEx db [ia]/Ex db [ia]

Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Zone 1 / Class I, Division 1

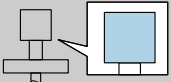
FMR50

|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

 Explosion protection: Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

FMR50

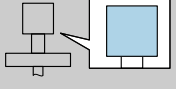
|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

 Explosion protection: XP / AEx db [ia]/Ex db [ia]

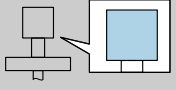
Antenna: Class I, Zone 0 / Class I, Division 1;

Electronics housing: Class I, Zone 1 / Class I, Division 1

FMR51

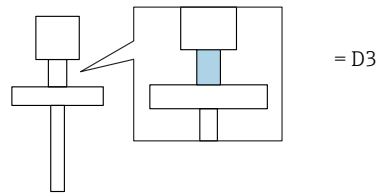
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 63 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 60 | 150 | -40 | -40 | -40 | - | - |

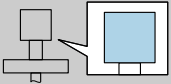
1) Functional: Maximum permissible process temperature

|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 65 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 63 | 150 | -40 | -40 | -40 | - | - |

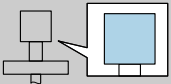
1) Functional: Maximum permissible process temperature

FMR51



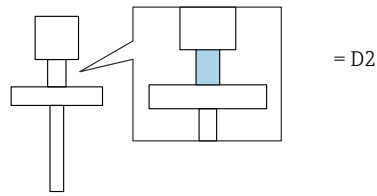
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 69 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 62 | 200 | -40 | -40 | -40 | - | - |
| | | T2 ¹⁾ | -40 | 76 | 76 | 76 | 250 | 57 | 250 | -40 | -40 | -40 | - | - |

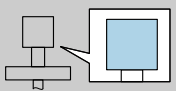
1) Functional: Maximum permissible process temperature

|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 58 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 73 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 71 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 65 | 200 | -40 | -40 | -40 | - | - |
| | | T2 ¹⁾ | -40 | 76 | 76 | 76 | 250 | 61 | 250 | -40 | -40 | -40 | - | - |

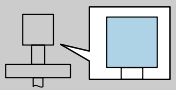
1) Functional: Maximum permissible process temperature

FMR51



|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 59 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 45 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |

1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

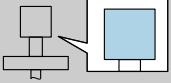
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 57 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 72 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 69 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 62 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 51 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |
| | | T1 | -196 | 76 | 76 | 76 | 450 | 35 | 450 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -20 -28 ¹⁾ |

1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

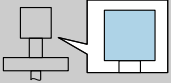
 Explosion protection: Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

FMR51

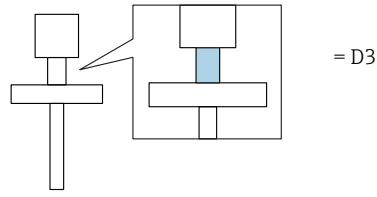
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 63 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 60 | 150 | -40 | -40 | -40 | - | - |

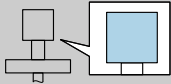
1) Functional: Maximum permissible process temperature

|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 65 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 63 | 150 | -40 | -40 | -40 | - | - |

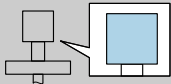
1) Functional: Maximum permissible process temperature

FMR51



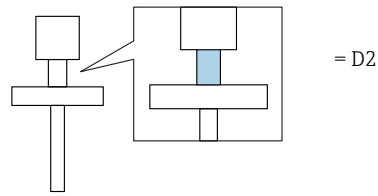
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 69 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 62 | 200 | -40 | -40 | -40 | - | - |
| | | T2 ¹⁾ | -40 | 76 | 76 | 76 | 250 | 57 | 250 | -40 | -40 | -40 | - | - |

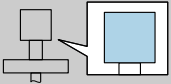
1) Functional: Maximum permissible process temperature

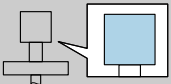
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 58 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 73 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 71 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 65 | 200 | -40 | -40 | -40 | - | - |
| | | T2 ¹⁾ | -40 | 76 | 76 | 76 | 250 | 61 | 250 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

FMR51



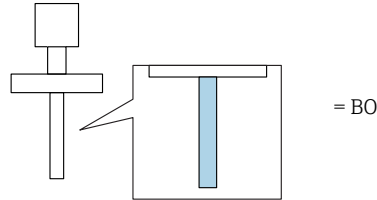
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | -196 | -15 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | -196 | -15 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 | -40 | -40 | -196 | -15 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 59 | 200 | -40 | -40 | -40 | -196 | -15 |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 45 | 300 | -40 | -40 | -40 | -196 | -15 |

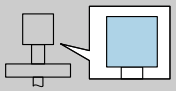
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | -196 | -20 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | -196 | -20 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 69 | 135 | -40 | -40 | -40 | -196 | -20 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 62 | 200 | -40 | -40 | -40 | -196 | -20 |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 51 | 300 | -40 | -40 | -40 | -196 | -20 |
| | | T1 | -196 | 76 | 76 | 76 | 450 | 35 | 450 | -40 | -40 | -40 | -196 | -20 |

 Explosion protection: XP / AEx db [ia]/Ex db [ia]

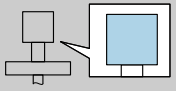
Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Zone 1 / Class I, Division 1

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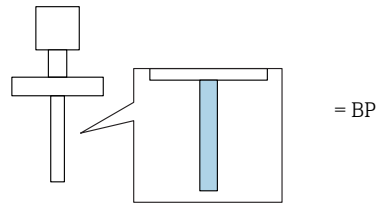
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 65 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 54 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -3 |

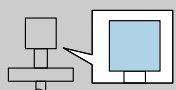
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 58 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -14 |

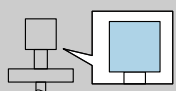
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

FMR52



|  = B | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 54 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 69 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 63 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 50 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | 10 |

1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

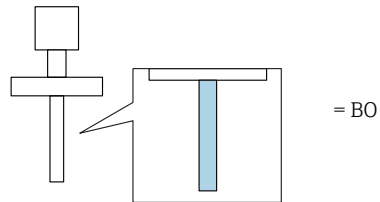
|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 66 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 55 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -8 |

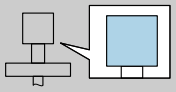
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

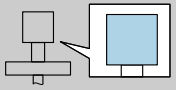
 Explosion protection: Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

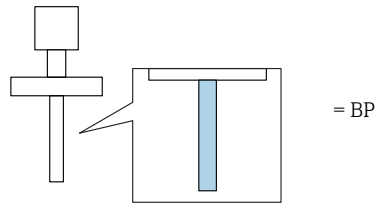
FMR52

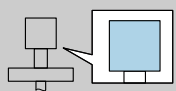


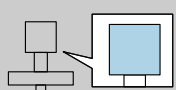
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | -196 | -3 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | -196 | -3 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 65 | 135 | -40 | -40 | -40 | -196 | -3 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 54 | 200 | -40 | -40 | -40 | -196 | -3 |


|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | -196 | -14 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | -196 | -14 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 | -40 | -40 | -196 | -14 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 58 | 200 | -40 | -40 | -40 | -196 | -14 |

FMR52



|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | -196 | 10 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | -196 | 10 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 63 | 135 | -40 | -40 | -40 | -196 | 10 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 50 | 200 | -40 | -40 | -40 | -196 | 10 |

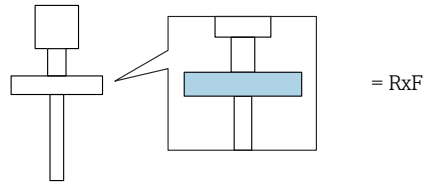
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | -196 | -8 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | -196 | -8 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 66 | 135 | -40 | -40 | -40 | -196 | -8 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 55 | 200 | -40 | -40 | -40 | -196 | -8 |

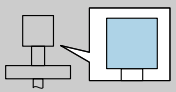
 Explosion protection: XP / AEx db [ia]/Ex db [ia]

Antenna: Class I, Zone 0 / Class I, Division 1;

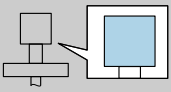
Electronics housing: Class I, Zone 1 / Class I, Division 1

FMR53

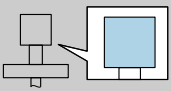


|  = B, C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

FMR53

|  = B | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 62 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 58 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

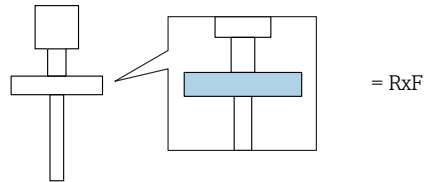
|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 64 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 62 | 150 | -40 | -40 | -40 | - | - |

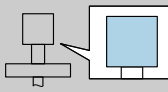
1) Functional: Maximum permissible process temperature

 Explosion protection: Division 2

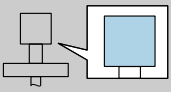
Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

FMR53

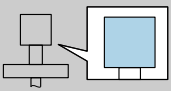


|  = B, C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

FMR53

|  = B | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 62 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 58 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 64 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 62 | 150 | -40 | -40 | -40 | - | - |

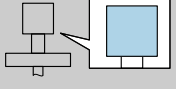
1) Functional: Maximum permissible process temperature

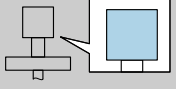
 Explosion protection: XP / AEx db [ia]/Ex db [ia]

Antenna: Class I, Zone 0 / Class I, Division 1;

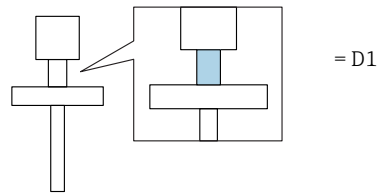
Electronics housing: Class I, Zone 1 / Class I, Division 1

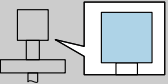
FMR54

|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 61 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 45 | 200 | -40 | -40 | -40 | - | - |

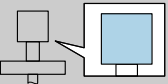
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 64 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 51 | 200 | -40 | -40 | -40 | - | - |

FMR54



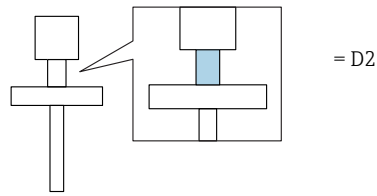
|  = B | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 65 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 54 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |
| | | T2 ²⁾ | -196 | 76 | 76 | 76 | 280 | 41 | 280 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -4 |

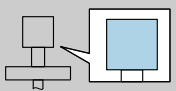
- 1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN
- 2) Functional: Maximum permissible process temperature

|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 59 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |
| | | T2 ²⁾ | -196 | 76 | 76 | 76 | 280 | 48 | 280 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -15 |

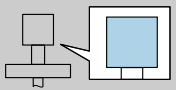
- 1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN
- 2) Functional: Maximum permissible process temperature

FMR54



|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 57 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 43 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -13 |

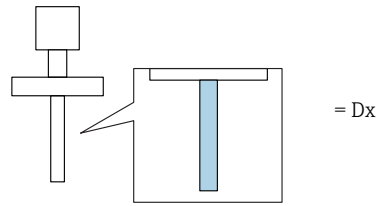
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------|--------------------------|--------------------------|----------------|--------------------------|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 57 | 85 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 72 | 100 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 69 | 135 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 61 | 200 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 49 | 300 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |
| | | T1 ²⁾ | -196 | 76 | 76 | 76 | 400 | 38 | 400 | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -40 -50 ¹⁾ | -196 | -19 -26 ¹⁾ |

1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

2) Functional: Maximum permissible process temperature

FMR54



| | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 65 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 62 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

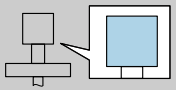
| | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 67 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 65 | 150 | -40 | -40 | -40 | - | - |

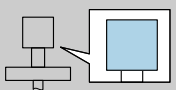
1) Functional: Maximum permissible process temperature

 Explosion protection: Division 2

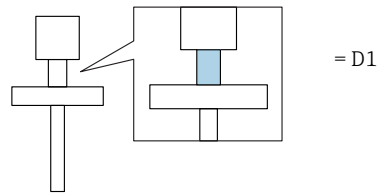
Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

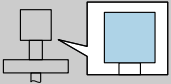
FMR54

|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 53 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 68 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 61 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 45 | 200 | -40 | -40 | -40 | - | - |

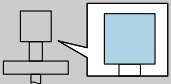
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 54 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 69 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 64 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 51 | 200 | -40 | -40 | -40 | - | - |

FMR54



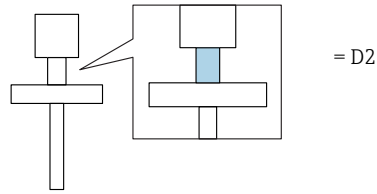
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | -196 | -4 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | -196 | -4 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 65 | 135 | -40 | -40 | -40 | -196 | -4 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 54 | 200 | -40 | -40 | -40 | -196 | -4 |
| | | T2 ¹⁾ | -196 | 76 | 76 | 76 | 280 | 41 | 280 | -40 | -40 | -40 | -196 | -4 |

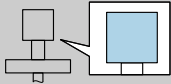
1) Functional: Maximum permissible process temperature

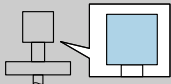
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | -196 | -15 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | -196 | -15 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 | -40 | -40 | -196 | -15 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 59 | 200 | -40 | -40 | -40 | -196 | -15 |
| | | T2 ¹⁾ | -196 | 76 | 76 | 76 | 280 | 48 | 280 | -40 | -40 | -40 | -196 | -15 |

1) Functional: Maximum permissible process temperature

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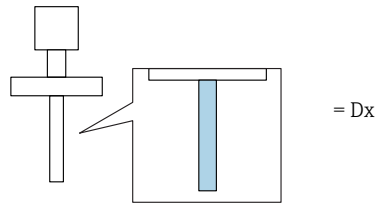


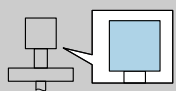
|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | -196 | -13 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | -196 | -13 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 67 | 135 | -40 | -40 | -40 | -196 | -13 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 57 | 200 | -40 | -40 | -40 | -196 | -13 |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 43 | 300 | -40 | -40 | -40 | -196 | -13 |

|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -196 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | -196 | -19 |
| | | T5 | -196 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | -196 | -19 |
| | | T4 | -196 | 76 | 76 | 76 | 135 | 69 | 135 | -40 | -40 | -40 | -196 | -19 |
| | | T3 | -196 | 76 | 76 | 76 | 200 | 61 | 200 | -40 | -40 | -40 | -196 | -19 |
| | | T2 | -196 | 76 | 76 | 76 | 300 | 49 | 300 | -40 | -40 | -40 | -196 | -19 |
| | | T1 ¹⁾ | -196 | 76 | 76 | 76 | 400 | 38 | 400 | -40 | -40 | -40 | -196 | -19 |

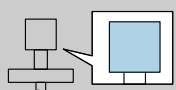
1) Functional: Maximum permissible process temperature

FMR54



|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 55 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 70 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 65 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 62 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

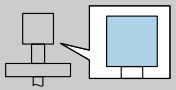
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 67 | 135 | -40 | -40 | -40 | - | - |
| | | T3 ¹⁾ | -40 | 76 | 76 | 76 | 150 | 65 | 150 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

 Explosion protection: XP / AEx db [ia]/Ex db [ia]

Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Zone 1 / Class I, Division 1

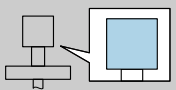
FMR56


|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|--|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

 Explosion protection: Division 2

Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

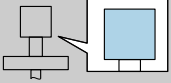
FMR56

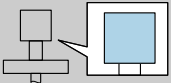
|  = C | (2) | | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | |
|--|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a |
| | E, G | T6 | -40 | 60 | 60 | 60 | 80 | 58 | 80 | -40 | -40 | -40 | - | - |

 Explosion protection: XP / AEx db [ia]/Ex db [ia]

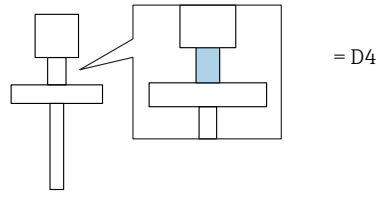
Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Zone 1 / Class I, Division 1

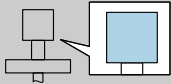
FMR57

|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 68 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 61 | 200 | -40 | -40 | -40 | - | - |

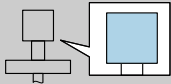
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 70 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 64 | 200 | -40 | -40 | -40 | - | - |

FMR57



|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 70 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 64 | 200 | -40 | -40 | -40 | - | - |
| | | T2 | -40 | 76 | 76 | 76 | 300 | 55 | 300 | -40 | -40 | -40 | - | - |
| | | T1 ¹⁾ | -40 | 76 | 76 | 76 | 400 | 46 | 400 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

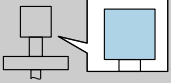
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 58 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 73 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 71 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 67 | 200 | -40 | -40 | -40 | - | - |
| | | T2 | -40 | 76 | 76 | 76 | 300 | 60 | 300 | -40 | -40 | -40 | - | - |
| | | T1 ¹⁾ | -40 | 76 | 76 | 76 | 400 | 52 | 400 | -40 | -40 | -40 | - | - |

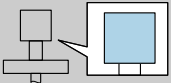
1) Functional: Maximum permissible process temperature

 Explosion protection: Division 2

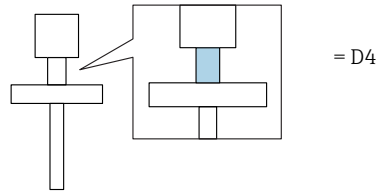
Antenna: Class I, Zone 0 / Class I, Division 1;
 Electronics housing: Class I, Division 2

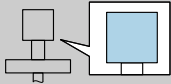
FMR57

|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 56 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 71 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 68 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 61 | 200 | -40 | -40 | -40 | - | - |

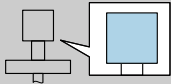
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 70 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 64 | 200 | -40 | -40 | -40 | - | - |

FMR57



|  = B | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 57 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 72 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 70 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 64 | 200 | -40 | -40 | -40 | - | - |
| | | T2 | -40 | 76 | 76 | 76 | 300 | 55 | 300 | -40 | -40 | -40 | - | - |
| | | T1 ¹⁾ | -40 | 76 | 76 | 76 | 400 | 46 | 400 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

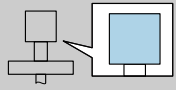
|  = C | (2) | P1 | | P2 | | P3 | | P4 | | P5 | | P6 | | |
|--|------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| | | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | T _p | T _a | |
| | E, G | T6 | -40 | 60 | 60 | 60 | 85 | 58 | 85 | -40 | -40 | -40 | - | - |
| | | T5 | -40 | 75 | 75 | 75 | 100 | 73 | 100 | -40 | -40 | -40 | - | - |
| | | T4 | -40 | 76 | 76 | 76 | 135 | 71 | 135 | -40 | -40 | -40 | - | - |
| | | T3 | -40 | 76 | 76 | 76 | 200 | 67 | 200 | -40 | -40 | -40 | - | - |
| | | T2 | -40 | 76 | 76 | 76 | 300 | 60 | 300 | -40 | -40 | -40 | - | - |
| | | T1 ¹⁾ | -40 | 76 | 76 | 76 | 400 | 52 | 400 | -40 | -40 | -40 | - | - |

1) Functional: Maximum permissible process temperature

**Class II, III, Division 1;
1 channel**

Position 3 (Power Supply, Output) = E, G: 1 channel used

FMR5x

| | | |
|---|------|-------------------------|
|  = B, C | (1) | |
| | E, G | $T = T_a + 5 \text{ K}$ |

**Class II, III, Division 1;
2 channels**

Position 3 (Power Supply, Output) = E, G: 2 channels used

FMR5x

| | | |
|---|------|--------------------------|
|  = B, C | (2) | |
| | E, G | $T = T_a + 20 \text{ K}$ |

Micropilot FMR50/51/52/53/54/56/57

PROFIBUS PA, FOUNDATION Fieldbus

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Attachment: Nameplate view 66

Attachment: Nameplate view

Riveted or screwed label

Adhesive label

Micropilot **Endress+Hauser**

Order code: IP68/66 Type 4X / 6P Encl.

Ser. no.: xxxxxxxx FM19.US0045X, FM19.CA0023X
CRN OF18572.5C

Ext. ord. cd.: FMR5x-FCbcdffgghhh

XP-IS CL I, DIV 1, GP A,B,C,D T6...T1
AIS CL I, DIV 1, GP A,B,C,D [Exia]

Switch output

TP max = MWP:

Ln =

Ta > 60 °C: $\leq 2Ta + 20 K$

Mat.:

See warning sign fixed to the enclosure.
Voir plaque d'avertissement fixée au boîtier.
Factory Sealed / XP conduit seals not required.

→

■ X = if modification see sep. label Patents →

Date: JJJJ-MM

WARNINGS: Potential electrostatic charging hazard - see instructions. Substitution of components may impair suitability for hazardous locations.

○ AVERTISSEMENTS: Risque potentiel de décharges électrostatiques - voir consignes. La substitution de composants peut compromettre l'adaptabilité aux emplacements dangereux.

Riveted or screwed label

Adhesive label

Micropilot **Endress+Hauser**

Order code: IP68/66 Type 4X / 6P Encl.

Ser. no.: xxxxxxxx FM19.US0045X, FM19.CA0023X
CRN OF18572.5C

Ext. ord. cd.: FMR5x-FDbcdffgghhh

XP-IS CL I, DIV 1, GP A,B,C,D T6...T1
DIP-IS CL I, II, III, DIV 1, GP E,F,G
NI CL I, DIV 2, GP A,B,C,D T6...T1
AIS CL I, II, III, DIV 1, GP A-G [Exia]
CL I, Zn 0/1, AEx/Ex ia/db [ia Ga] IIC T6 Ga/Gb

Switch output

TP max = MWP:

Ln =

Ta > 60 °C: $\leq 2Ta + 20 K$

Mat.:

See warning sign fixed to the enclosure.
Voir plaque d'avertissement fixée au boîtier.
Factory Sealed / XP conduit seals not required.

→

■ X = if modification see sep. label Patents →

Date: JJJJ-MM

WARNINGS: Potential electrostatic charging hazard - see instructions. Substitution of components may impair suitability for hazardous locations. For Div. 2, do not disconnect equipment unless power has been switched off or area is known to be non-hazardous.

○ AVERTISSEMENTS: Risque potentiel de décharges électrostatiques - voir consignes. La substitution de composants peut compromettre l'adaptabilité aux emplacements dangereux. Pour Div. 2, débrancher appareil uniquement après avoir coupé l'alimentation électrique ou avoir vérifié qu'il ne soit pas installé en zone dangereuse.

Riveted or screwed label

Adhesive label

Micropilot **Endress+Hauser**

Order code: IP68/66 Type 4X / 6P Encl.

Ser. no.: xxxxxxxx FM19.US0045X, FM19.CA0023X
CRN OF18572.5C

Ext. ord. cd.: FMR5x-FEbcdffgghhh

DIP-IS CL II, III, DIV 1, GP E,F,G
AIS CL I, II, III, DIV 1, GP A-G [Exia]

Switch output

TP max = MWP:

Ln =

Ta > 60 °C: $\leq 2Ta + 20 K$

Mat.:

See warning sign fixed to the enclosure.
Voir plaque d'avertissement fixée au boîtier.

→

■ X = if modification see sep. label Patents →

Date: JJJJ-MM

WARNINGS: Potential electrostatic charging hazard - see instructions. Keep covers tight when explosive dust atmosphere is present.

○ AVERTISSEMENTS: Risque potentiel de décharges électrostatiques - voir consignes. Garder les couvercles bien fermés en présence d'une atmosphère poussiéreuse explosive.

Riveted or screwed label

Adhesive label

Micropilot **Endress+Hauser**

Order code: IP68/66 Type 4X / 6P Encl.

Ser. no.: xxxxxxxx CRN OF18572.5C
151079 CSA 14.2675458

Ext. ord. cd.: FMR5x-8Abcdffgghhh

IS CL I, II, III, DIV 1, GP A-G T6...T1
XP-IS CL I, DIV 1, GP A-D T6...T1
DIP-IS CL II, III, DIV 1, GP E-G T6...T1
AIS CL I, II, III, DIV 1, GP A-G [Exia]

Switch output

TP max = MWP:

Ln =

Ta > 60 °C: $\leq 2Ta + 20 K$

Mat.:

See warning sign fixed to the enclosure.
Voir plaque d'avertissement fixée au boîtier.
Factory Sealed / XP conduit seals not required.

→

■ X = if modification see sep. label Patents →

Date: JJJJ-MM

WARNINGS: Potential electrostatic charging hazard - see instructions. Substitution of components may impair suitability for hazardous locations.

○ AVERTISSEMENTS: Risque potentiel de décharges électrostatiques - voir consignes. La substitution de composants peut compromettre l'adaptabilité aux emplacements dangereux.

Factory Sealed / XP conduit seals not required.

| Field no. | Order code FMR5x-aabcdeffgghh +options | Contents | Comment |
|-----------|--|---|---|
| 3 | - | Made in Germany, 79689 Maulburg | Depending on production plant |
| | | Assembled in USA | |
| | | Assembled in India | |
| 6 | - | +*****# | +options added to Order Code (multiple options may be added; options relevant to approval are included below) |
| 8 | - | Ident.-No. | Individual no. for identically configured devices |
| 12 | - | Actual process temperature | Depends on options ff, gg and hhh |
| 13 | - | Permissible pressure (process): bar or psi | Depends on antenna type FMR5x and process connection (options hhh) |
| 15 | - | Process wetted materials | Depends on options ff, gg and hhh |
| 21 | e = A,B,I,M | M20x1,5 / M16x1,5 | Cable Entry |
| | e = D | NPT ½ / M16x1,5 | |
| 23 | b = E,G | - | Electrical Ratings (fieldbus connection) |
| 25 | b = E | FOUNDATION Fieldbus | Fieldbus protocol |
| | b = G | PROFIBUS PA (MBP) | |
| 52 | FMR50 FMR51 FMR52 FMR56 FMR57 | Dual Seal | Dual Seal rating (MWP ...) required only when permissible pressure (Field 13) > 12 bar (174 psi). Use same units as Field 13. |
| | FMR53 FMP54 | Dual Seal (MWP: 12 bar (174 psi)) | |
| 63, 64 | - | (checkbox) | First installation checkbox |
| 78 | - | T _a : -40 to +80 °C | Ambient temperature range |
| | +options = JN | T _a : -50 to +80 °C | |



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