

Safety Instructions

Micropilot

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

4-20 mA HART

Ex ia IIC T6...T1 Ga

Ex ia IIC T6...T1 Ga/Gb



Document: XA01286F-B

Safety instructions for electrical apparatus for explosion-hazardous areas → 3

Document: XA01286F-B

Temperature tables → 13

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

4-20 mA HART

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Associated documentation	This document is an integral part of the following Operating Instructions: ■ BA01045F/00 (FMR50) ■ BA01049F/00 (FMR51, FMR52) ■ BA01050F/00 (FMR53, FMR54) ■ BA01048F/00 (FMR56, FMR57)										
Supplementary documentation	Explosion-protection brochure: CP00021Z/11 The Explosion-protection brochure is available: ■ In the download area of the Endress+Hauser website: www.endress.com -> Downloads -> Media Type: Documentation -> Documentation Type: Brochures and catalogs -> Text Search: CP00021Z ■ On the CD for devices with CD-based documentation										
Manufacturer's certificates	Certificate of Conformity Certificate number: TÜV 13.2010 X Affixing the certificate number certifies conformity with the following standards (depending on the device version): ■ ABNT NBR IEC 60079-0:2013 ■ ABNT NBR IEC 60079-11:2013 ■ ABNT NBR IEC 60079-26:2016										
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 <table><tr><td>FMR5x</td><td>–</td><td>*****</td><td>+</td><td>A*B*C*D*E*F*G*..</td></tr><tr><td>(Device type)</td><td></td><td>(Basic specifications)</td><td></td><td>(Optional specifications)</td></tr></table> * = Placeholder At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders. <i>Basic specifications</i> 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. <i>Optional specifications</i> 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).	FMR5x	–	*****	+	A*B*C*D*E*F*G*..	(Device type)		(Basic specifications)		(Optional specifications)
FMR5x	–	*****	+	A*B*C*D*E*F*G*..							
(Device type)		(Basic specifications)		(Optional specifications)							

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	MA	INMETRO Ex ia IIC T6...T1 Ga
	MB	INMETRO Ex ia IIC T6...T1 Ga/Gb

Position 3 (Power Supply, Output)		
Selected option		Description
FMR5x	A	2-wire, 4-20 mA HART
	B	2-wire, 4-20 mA HART, switch output (PFS)
	C	2-wire, 4-20 mA HART, 4...20 mA

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 ¹⁾	Prepared for display FHX50 + M12 connection
	M ¹⁾	Prepared for display FHX50 + custom connection
	N ²⁾	Prepared for display FHX50 + NPT1/2"

- 1) In connection with Position 5 (Housing) = A: Observe the specifications in the "Overvoltage protection" and "Temperature tables" chapters!
- 2) Only in connection with Position 5 (Housing) = B, C

Position 5 (Housing)		
Selected option		Description
FMR5x	A	GT19 dual compartment, plastics PBT
	C	GT20 dual compartment, Alu coated
FMR51-54 FMR57	B	GT18 dual compartment, 316L

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", -40...200°C ¹⁾ , -196...200°C ²⁾ , flush mount
	BP	Horn 80 mm/3", -40...200°C ¹⁾ , -196...200°C ²⁾ , 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)

1) In connection with Position 5 (Housing) = A

2) Only in connection with Position 5 (Housing) = B, C

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 ³⁾	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
 3) Only in connection with Position 5 (Housing) = B, C

ID Nx, Ox (Accessory Mounted)		
Selected option		Description
FMR5x	NA	Overvoltage protection
	NF ¹⁾	Bluetooth
FMR51	OM OU OV	Antenna extension (different sizes)
	OW	Horn protection, PTFE, no airpurge possible
FMR54	OM ON OR OS	Antenna extension (different sizes)
FMR57	OP OT	Antenna extension (different sizes)
	OW	Horn protection, PTFE, no airpurge possible

- 1) Only in connection with Position 4 (Display, Operation) = C, E

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

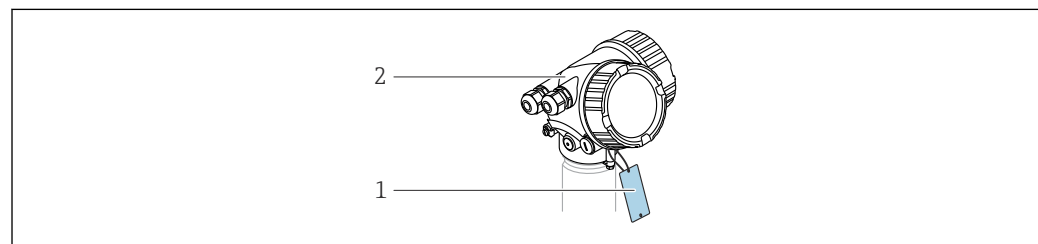
Permitted ambient temperature range at the electronics housing:

$$-50\text{ °C} \leq T_a \leq +80\text{ °C}$$

- Observe the information in the temperature tables.
- In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
- To avoid electrostatic charging: Do not rub surfaces with a dry cloth.
- In the event of additional or alternative special varnishing on the housing or other metal parts or for adhesive plates:
 - Observe the danger of electrostatic charging and discharge.
 - Do not install in the vicinity of processes ($\leq 0.5\text{ m}$) generating strong electrostatic charges.

Basic specification, Position 5 (Housing) = A

Avoid electrostatic charging of the housing (e.g. friction, cleaning, maintenance, strong medium flow).



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- 1 *Isolated capacitance:*
 - with one metal plate: $\leq 3\text{ pF}$ (permitted in all areas for Equipment Groups II and III)
 - with two to three metal plates: $\leq 10\text{ pF}$ (not permitted in Zone 0 and for Equipment Group IIC)
- 2 *Housing*

Basic specification, Position 5 (Housing) = C

In Zone 0, avoid sparks caused by impact and friction.

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.

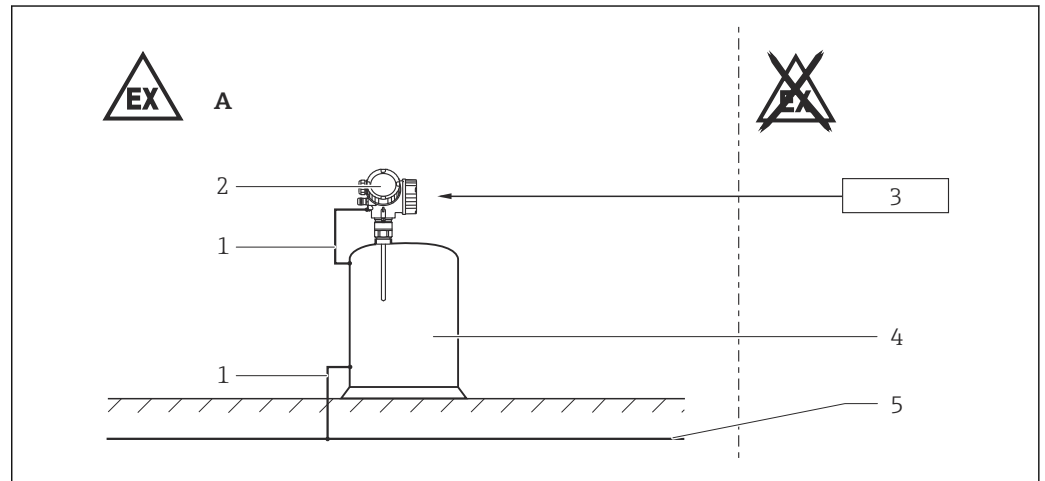
Device type FMR57 and Basic specification, Position 14 (Air Purge Connection) = 1, 2

- 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



2

- A Zone 0, Zone 1
- 1 Potential equalization line
- 2 Electronic insert
- 3 Certified associated apparatus
- 4 Tank; Zone 0, Zone 1
- 5 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.
- 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 4 (Display, Operation) = N

Observe the requirements according to IEC/EN 60079-14 for conduit systems and the wiring- and installation instructions of the suitable Safety Instructions (XA). In addition, observe national regulations and standards for conduit systems.

Intrinsic safety

- The device is only suitable for connection to certified, intrinsically safe equipment with explosion protection Ex ia / Ex ib.
- The intrinsically safe input power circuit of the device is isolated from ground. If the device is only equipped with one input, the dielectric strength of the input is at least 500 V_{rms}. If the device is equipped with more than one input, the dielectric strength of each individual input to ground is at least 500 V_{rms}, and the dielectric strength of the inputs vis-à-vis one another is also at least 500 V_{rms}.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.
- The device can be connected to the Endress+Hauser FXA291 service tool: refer to the Operating Instructions and specifications in the "Overvoltage protection" chapter.
- The device can be equipped with the Bluetooth® module: refer to the Operating Instructions and specifications in the "Bluetooth® module" chapter.

Basic specification, Position 3 (Power Supply, Output) = A

When the device is connected to certified intrinsically safe circuits of Category Ex ib for Equipment Groups IIC and IIB, the type of protection changes to Ex ib IIC and Ex ib IIB. Do not operate the antenna in Zone 0 if connecting to an intrinsically safe circuit of Category Ex ib.

Basic specification, Position 3 (Power Supply, Output) = B, C

When the intrinsically safe Ex ia circuits of the device are connected to certified intrinsically safe circuits of Category Ex ib for Equipment Groups IIC or IIB, the type of protection changes to Ex ib [ia] IIC or Ex ib [ia] IIB. Regardless of the power supply, all the internal circuits correspond to Ex ia IIC type of protection (e.g. service interface, external display, sensor).

Potential equalization

Integrate the device into the local potential equalization.

Overvoltage protection

- If an overvoltage protection against atmospheric over voltages is required: no other circuits may leave the housing during normal operation without additional measures.
- For installations which require overvoltage protection to comply with national regulations or standards, install the device using overvoltage protection (e.g. HAW56x from Endress+Hauser).
- Observe the safety instructions of the overvoltage protection.

Optional specification, ID Nx, Ox (Accessory Mounted) = NA

(Overvoltage protection Type OVP10 and Type OVP20)

The intrinsically safe input power circuit of the device is isolated from ground. If the device is only equipped with one input, the dielectric strength of the input is at least 290 V_{rms}. If the device is equipped with more than one input, the dielectric strength of each individual input to ground is at least 290 V_{rms}, and the dielectric strength of the inputs vis-à-vis one another is also at least 290 V_{rms}.

Bluetooth® module

Optional specification, ID Nx, Ox (Accessory Mounted) = NF

- With Bluetooth® module installed: Use of external hardware not allowed (e.g. external display, service interface).
- The intrinsically safe input power circuit of the Bluetooth® module is isolated from ground.

Safety instructions: Zone 0

- In the event of potentially explosive vapor/air mixtures, only operate the device under atmospheric conditions.
 - Temperature: -20 to +60 °C
 - Pressure: 80 to 110 kPa (0.8 to 1.1 bar)
 - Air with normal oxygen content, usually 21 % (V/V)
- If no potentially explosive mixtures are present, or if additional protective measures have been taken, the device may also be operated under non-atmospheric conditions in accordance with the manufacturer's specifications.
- Associated devices with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.
- Only use the device in media to which the silicone rubber potting compound of the electronic insert and the housing made of PBT, aluminum or 316L have sufficient durability.
- If there is a risk of dangerous potential differences within Zone 0 (e.g. through the occurrence of atmospheric electricity), implement suitable measures for intrinsically safe circuits in Zone 0.

Temperature tables → 14

Connection data

*Optional specification, ID Nx, Ox (Accessory Mounted) = NA
(Overvoltage protection Type OVP10 and Type OVP20)*
When using the internal overvoltage protection: No changes to the connection values.

Optional specification, ID Nx, Ox (Accessory Mounted) = NF
When using the Bluetooth® module: No changes to the connection values.

Ex ia

Power supply and signal circuit with protection type: intrinsic safety Ex ia IIC, Ex ia IIB.

Basic specification, Position 3 (Power Supply, Output) = A

Terminal 1 (+), 2 (-)
Power supply $U_i = 30\text{ V}$ $I_i = 300\text{ mA}$ $P_i = 1\text{ W}$ effective inner inductance $L_i = 0$ effective inner capacitance $C_i = 12\text{ nF}$

Basic specification, Position 3 (Power Supply, Output) = B

Terminal 1 (+), 2 (-)	Terminal 3 (+), 4 (-)
Power supply $U_i = 30\text{ V}$ $I_i = 300\text{ mA}$ $P_i = 1\text{ W}$ effective inner inductance $L_i = 0$ effective inner capacitance $C_i = 5\text{ nF}$	Switch output (PFS) $U_i = 30\text{ V}$ $I_i = 300\text{ mA}$ $P_i = 1\text{ W}$ effective inner inductance $L_i = 0$ effective inner capacitance $C_i = 6\text{ nF}$

Basic specification, Position 3 (Power Supply, Output) = C

Terminal 1 (+), 2 (-)	Terminal 3 (+), 4 (-)
Power supply $U_i = 30\text{ V}$ $I_i = 300\text{ mA}$ $P_i = 1\text{ W}$ effective inner inductance $L_i = 0$ effective inner capacitance $C_i = 30\text{ nF}$	Output 4 to 20 mA $U_i = 30\text{ V}$ $I_i = 300\text{ mA}$ $P_i = 1\text{ W}$ effective inner inductance $L_i = 0$ effective inner capacitance $C_i = 30\text{ nF}$

Service interface (CDI)

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

Service interface													
$U_i = 7.3 \text{ V}$ effective inner inductance $L_i = \text{negligible}$ effective inner capacitance $C_i = \text{negligible}$													
$U_o = 7.3 \text{ V}$ $I_o = 100 \text{ mA}$ $P_o = 160 \text{ mW}$													
$L_o \text{ (mH)} =$	5.00	2.00	1.00	0.50	0.20	0.15	0.10	0.05	0.02	0.01	0.005	0.002	0.001
$C_o \text{ (}\mu\text{F)}^{1)} =$	0.73	1.20	1.60	2.00	2.60	-	3.20	4.00	5.50	7.30	10.00	12.70	12.70
$C_o \text{ (}\mu\text{F)}^{2)} =$	-	0.49	0.90	1.40	-	2.00	-	-	-	-	-	-	-

1) Values according to PTB "ispark" program

2) Values according to ABNT NBR IEC 60079-25, Annex C

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

4-20 mA HART

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Zone 0: 2 channels 19

Zone 0, Zone 1: 1 channel 20

Zone 0, Zone 1: 2 channels 21

Zone 1: 1 channel 22

Zone 1: 2 channels 40

Notes on the structure

Extract from the extended order code

Device type

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

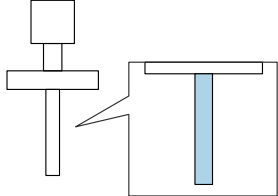
Basic specifications

Position 1, 2 (Approval)		
Selected option		Description
FMR5x	MA	INMETRO Ex ia IIC T6...T1 Ga
	MB	INMETRO Ex ia IIC T6...T1 Ga/Gb

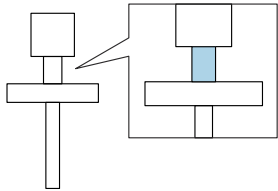
Position 3 (Power Supply, Output)		
Selected option		Description
FMR5x	A	2-wire, 4-20 mA HART
	B	2-wire, 4-20 mA HART, switch output (PFS)
	C	2-wire, 4-20 mA HART, 4...20 mA

Position 5 (Housing)		
Selected option		Description
FMR5x	A	GT19 dual compartment, plastics PBT
	C	GT20 dual compartment, Alu coated
FMR51-54 FMR57	B	GT18 dual compartment, 316L

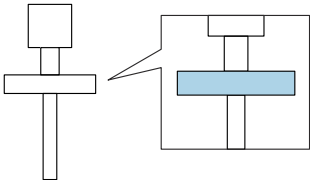
Position 7, 8 (Antenna)		
Selected option		Description
FMR50	BM	Horn 40 mm/1½", PVDF encapsulated, -40...130°C
	BN	Horn 80 mm/3", PP cladded, -40...80°C
	BR	Horn 100 mm/4", PP cladded, -40...80°C
FMR51	Bx	Horn (different sizes)
FMR52	BO	Horn 50 mm/2", -40...200°C ¹⁾ , -196...200°C ²⁾ , flush mount
	BP	Horn 80 mm/3", -40...200°C ¹⁾ , -196...200°C ²⁾ , 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: 		

- 1) In connection with Position 5 (Housing) = A
- 2) Only in connection with Position 5 (Housing) = B, C

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)
	GGF RGF	Thread, PVDF
	UAE	Mounting bracket
FMR50	XR0	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
	XRO	Connection, without flange/mounting bracket
	XxG	Slip on flange (different sizes)
FMR57	RxJ	Thread, 316L
	XxJ	Align. device (different sizes)
 Shown in the temperature tables exemplary as follows: 		

Optional specifications

ID Jx (Test, Certificate)		
Selected option		Description
FMR51 ¹⁾ FMR52 FMR54 ²⁾	JN ³⁾	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
- 3) Only in connection with Position 5 (Housing) = B, C

General notes

 *Optional specification, ID Nx, Ox (Accessory Mounted) = NA*
(Overvoltage protection Type OVP10 and Type OVP20)

When using the internal overvoltage protection: Reduce the admissible ambient temperature at the housing by 2 K.

Basic specification, Position 5 (Housing) = A

When using the remote display FHX50: Reduce the admissible ambient temperature at the housing by 3 K.

 Observe the permitted temperature range at the antenna.

Description notes

 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)

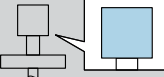
Column P1 to P6: Position (temperature value) on the axes of the derating

■ T_a : Ambient temperature in °C

■ T_p : Process temperature in °C

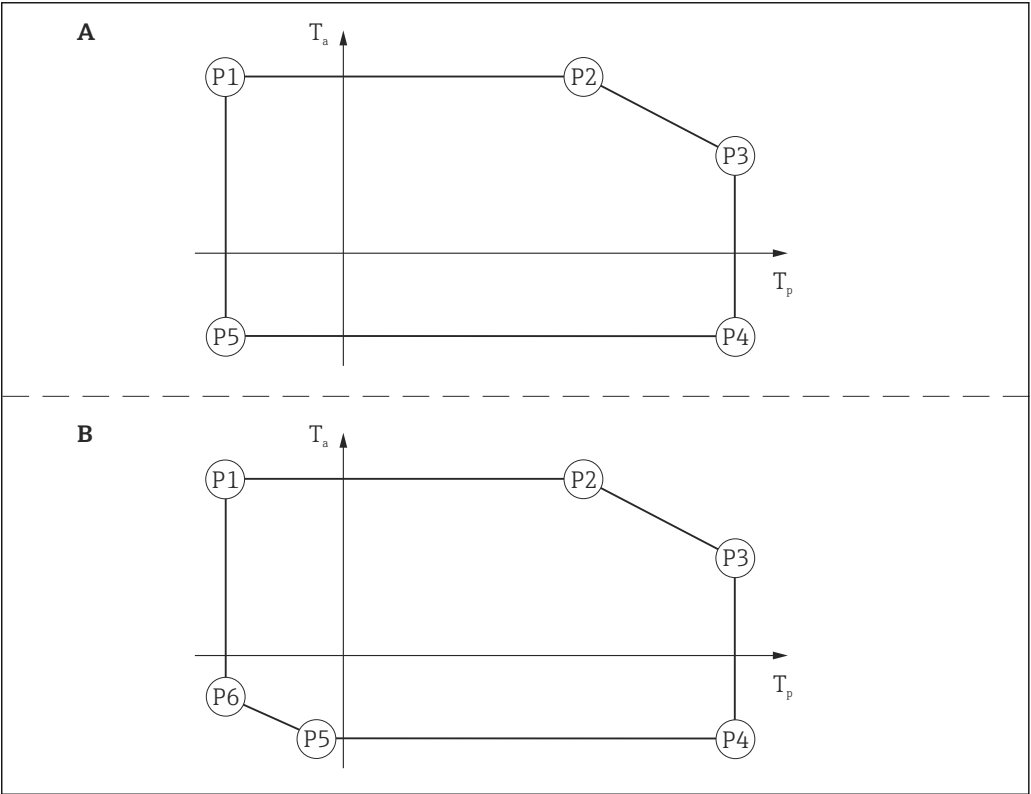
 Column P6 is only relevant for version B of the derating.

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 = 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
	A, B, C	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	-	-

A0038021-EN

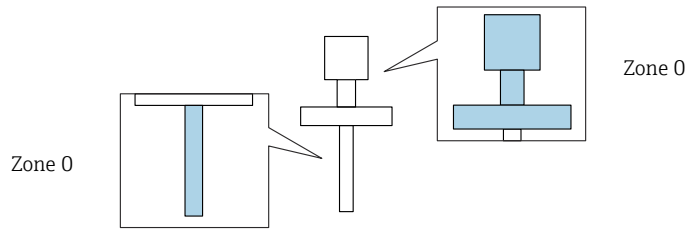
Example diagrams
of possible deratings



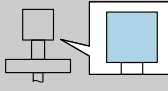
A0022717

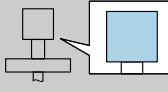
Zone 0: 1 channel

Position 3 (Power Supply, Output) = A, B, C: 1 channel used



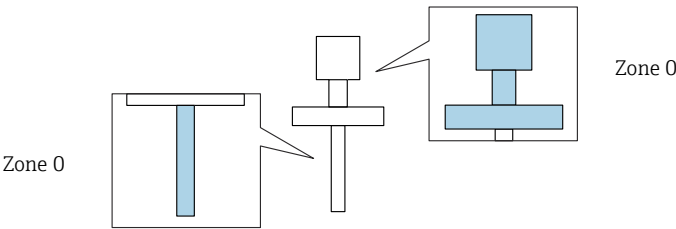
FMR5x

 = A	(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
	A	T6	-20	48	48	48	60	42	60	-20	-20	-20	-	-
		T5	-20	58	58	58	60	57	60	-20	-20	-20	-	-
	B	T6	-20	45	45	45	60	42	60	-20	-20	-20	-	-
		T5	-20	57	57	57	60	57	60	-20	-20	-20	-	-
		T4	-20	60	60	60	60	60	60	-20	-20	-20	-	-
	C	T6	-20	48	48	48	48	42	48	-20	-20	-20	-	-
		T5	-20	60	60	60	60	60	60	-20	-20	-20	-	-

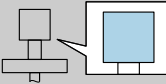
 = B, C	(1)	P1			P2		P3		P4		P5		P6	
		T _p	T _a		T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B	T6	-20	48	48	48	60	44	60	-20	-20	-20	-	-
		T5	-20	60	60	60	60	60	60	-20	-20	-20	-	-
	C	T6	-20	48	48	48	48	44	48	-20	-20	-20	-	-
		T5	-20	60	60	60	60	60	60	-20	-20	-20	-	-

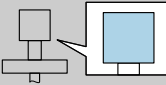
Zone 0: 2 channels

Position 3 (Power Supply, Output) = B, C: 2 channels used

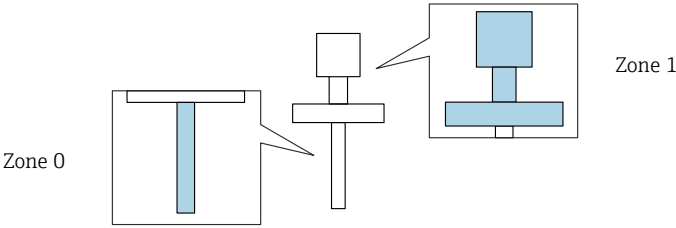


FMR5x

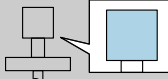
 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-20	31	31	31	60	24	60	-20	-20	-20	-	-
		T5	-20	43	43	43	60	39	60	-20	-20	-20	-	-
		T4	-20	56	56	56	60	55	60	-20	-20	-20	-	-
	C	T6	-20	41	41	41	41	36	41	-20	-20	-20	-	-
		T5	-20	53	53	53	53	51	53	-20	-20	-20	-	-
		T4	-20	60	60	60	60	60	60	-20	-20	-20	-	-

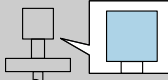
 = B, C	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-20	39	39	39	60	34	60	-20	-20	-20	-	-
		T5	-20	51	51	51	60	49	60	-20	-20	-20	-	-
	C	T6	-20	42	42	42	42	38	42	-20	-20	-20	-	-
		T5	-20	54	54	54	54	53	54	-20	-20	-20	-	-
		T4	-20	60	60	60	60	60	60	-20	-20	-20	-	-

Zone 0, Zone 1: 1 channel Position 3 (Power Supply, Output) = A, B, C: 1 channel used



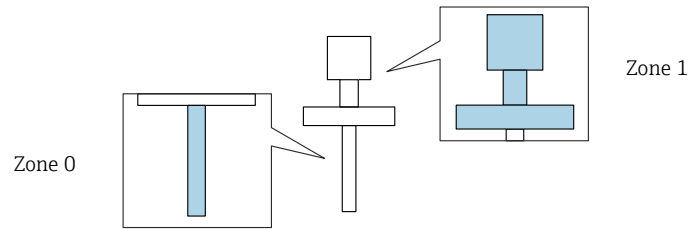
FMR5x

 = A	(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
	A	T6	-20	58	58	58	58	58	-40	-20	-40	-	-
		T5	-20	73	60	73	60	73	-40	-20	-40	-	-
		T4	-20	79	60	79	60	79	-40	-20	-40	-	-
	B	T6	-20	57	57	57	57	57	-40	-20	-40	-	-
		T5	-20	72	60	72	60	72	-40	-20	-40	-	-
	C	T6	-20	60	60	60	60	60	-40	-20	-40	-	-
		T5	-20	75	60	75	60	75	-40	-20	-40	-	-
		T4	-20	80	60	80	60	80	-40	-20	-40	-	-

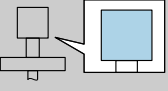
 = B, C	(1)	P1		P2		P3		P4		P5		P6	
		T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-20	60	60	60	60	60	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
		T5	-20	75	60	75	60	75	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
		T4	-20	80	60	80	60	80	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-

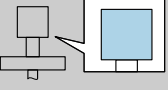
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

Zone 0, Zone 1: 2 channels *Position 3 (Power Supply, Output) = B, C: 2 channels used*



FMR5x

 = A	(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
	B	T6	-20	43	43	43	60	39	60	-40	-20	-40	-	-
		T5	-20	56	56	56	60	55	60	-40	-20	-40	-	-
	C	T6	-20	53	53	53	53	51	53	-40	-20	-40	-	-
		T5	-20	68	68	68	60	68	60	-40	-20	-40	-	-
		T4	-20	73	73	73	60	73	60	-40	-20	-40	-	-

 = 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
	B	T6	-20	51	51	51	51	49	51	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
		T5	-20	66	60	66	60	66	60	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
		T4	-20	75	60	75	60	75	60	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
	C	T6	-20	54	54	54	54	53	54	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
		T5	-20	69	60	69	60	69	60	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-
		T4	-20	78	60	78	60	78	60	-40 -50 ¹⁾	-20	-40 -50 ¹⁾	-	-

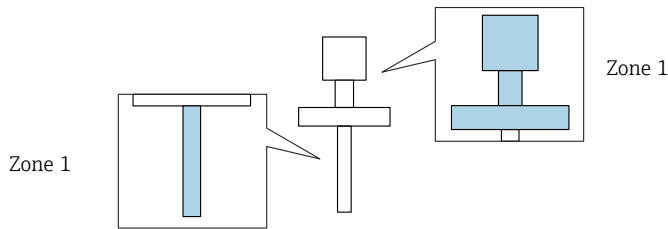
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

Zone 1: 1 channel

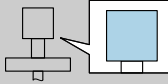
Position 3 (Power Supply, Output) = A, B, C: 1 channel used

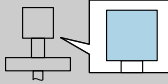
Page references to the temperature tables of the respective device types: See the following list.

- FMR50 → 22
- FMR51 → 23
- FMR52 → 27
- FMR53 → 29
- FMR54 → 31
- FMR56 → 37
- FMR57 → 38

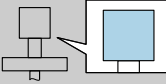


FMR50

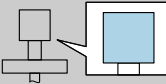
 = A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B	T6	-40	57	57	57	80	54	80	-40	-40	-40	-	-
	C	T6	-40	60	60	60	80	55	80	-40	-40	-40	-	-

 = 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
	A, B, C	T6	-40	60	60	60	80	58	80	-40	-40	-40	-	-

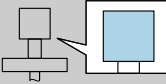
FMR51

 = A	(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
	A, C	T6	-40	60	60	60	85	49	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	64	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	63	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	79	79	79	150	56	150	-40	-40	-40	-	-
	B	T6	-40	60	60	60	85	49	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	64	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	57	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	72	72	72	150	53	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

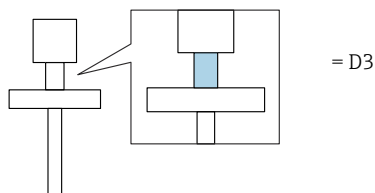
 = B	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-40	60	60	60	85	54	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	69	100	-40	-40	-40	-	-
		T4	-40	80	80	80	135	68	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	80	80	80	150	65	150	-40	-40	-40	-	-

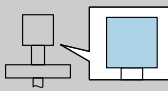
1) Functional: Maximum permissible process temperature

 = 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
	A, B, C	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	80	80	135	70	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	80	80	80	150	68	150	-40	-40	-40	-	-

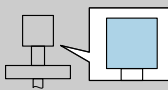
1) Functional: Maximum permissible process temperature

FMR51

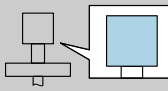


 = A	(1)				P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, C	T6	-40	60	60	60	85	54	85	-40	-40	-40	-	-	-	-
		T5	-40	75	75	75	100	69	100	-40	-40	-40	-	-	-	-
		T4	-40	79	79	79	135	71	135	-40	-40	-40	-	-	-	-
		T3	-40	79	79	79	200	56	200	-40	-40	-40	-	-	-	-
		T2 ¹⁾	-40	79	79	79	250	44	250	-40	-40	-40	-	-	-	-
	B	T6	-40	57	57	57	85	53	85	-40	-40	-40	-	-	-	-
		T5	-40	72	72	72	100	68	100	-40	-40	-40	-	-	-	-
		T4	-40	72	72	72	135	63	135	-40	-40	-40	-	-	-	-
		T3	-40	72	72	72	200	53	200	-40	-40	-40	-	-	-	-
		T2 ¹⁾	-40	72	72	72	250	44	250	-40	-40	-40	-	-	-	-

1) Functional: Maximum permissible process temperature

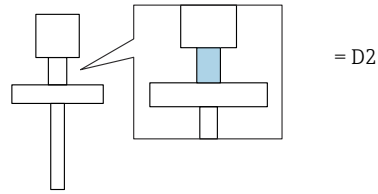
 = B	(1)				P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-40	60	60	60	85	57	85	-40	-40	-40	-	-	-	-
		T5	-40	75	75	75	100	72	100	-40	-40	-40	-	-	-	-
		T4	-40	80	80	80	135	74	135	-40	-40	-40	-	-	-	-
		T3	-40	80	80	80	200	67	200	-40	-40	-40	-	-	-	-
		T2 ¹⁾	-40	80	80	80	250	62	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	T _p	T _a
	A, B, C	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	80	80	135	75	135	-40	-40	-40	-	-	-	-
		T3	-40	80	80	80	200	70	200	-40	-40	-40	-	-	-	-
		T2 ¹⁾	-40	80	80	80	250	66	250	-40	-40	-40	-	-	-	-

1) Functional: Maximum permissible process temperature

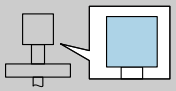
FMR51



= A	(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
	A, C	T6	-196	60	60	60	85	52	85	-40	-40	-40	-196	9
		T5	-196	75	75	75	100	67	100	-40	-40	-40	-196	9
		T4	-196	79	79	79	135	69	135	-40	-40	-40	-196	9
		T3	-196	79	79	79	200	49	200	-40	-40	-40	-196	9
	B	T6	-196	60	60	60	85	52	85	-40	-40	-40	-196	9
		T5	-196	72	72	72	100	67	100	-40	-40	-40	-196	9
		T4	-196	72	72	72	135	61	135	-40	-40	-40	-196	9
		T3	-196	72	72	72	200	49	200	-40	-40	-40	-196	9

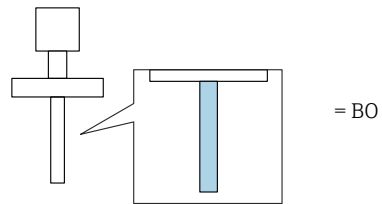
= B	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	56	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T5	-196	75	75	75	100	71	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T4	-196	80	80	80	135	72	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T3	-196	80	80	80	200	64	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T2	-196	80	80	80	300	50	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15

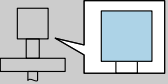
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

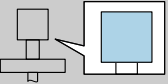
	(1)	P1			P2		P3		P4		P5		P6	
		T _p	T _a		T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	57	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T5	-196	75	75	75	100	72	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T4	-196	80	80	80	135	74	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T3	-196	80	80	80	200	67	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T2	-196	80	80	80	300	56	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T1	-196	80	80	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

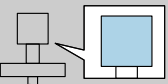
FMR52



 = A	(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
	A, C	T6	-40	60	60	60	85	51	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	66	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	66	135	-40	-40	-40	-	-
		T3	-40	79	79	79	200	42	200	-40	-40	-40	-	-
	B	T6	-40	60	60	60	85	51	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	66	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	59	135	-40	-40	-40	-	-
		T3	-40	72	72	72	200	42	200	-40	-40	-40	-	-

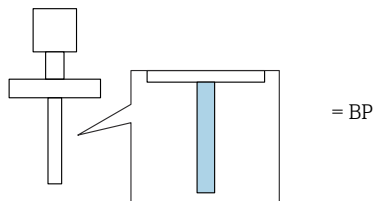
 = B	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	55	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T5	-196	75	75	75	100	70	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T4	-196	80	80	80	135	71	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T3	-196	80	80	80	200	59	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3

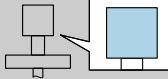
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

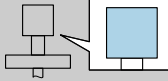
 = C	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	56	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T5	-196	75	75	75	100	71	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T4	-196	80	80	80	135	72	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T3	-196	80	80	80	200	63	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14

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

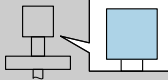
FMR52



 = A	(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
	A, C	T6	-40	60	60	60	85	49	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	64	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	64	135	-40	-40	-40	-	-
		T3	-40	79	79	79	200	36	200	-40	-40	-40	-	-
	B	T6	-40	60	60	60	85	49	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	64	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	57	135	-40	-40	-40	-	-
		T3	-40	72	72	72	200	36	200	-40	-40	-40	-	-

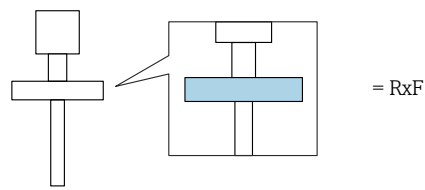
 = B	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	54	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T5	-196	75	75	75	100	69	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T4	-196	80	80	80	135	69	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T3	-196	80	80	80	200	55	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10

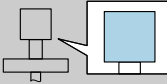
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

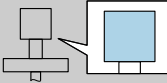
 = C	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	55	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T5	-196	75	75	75	100	70	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T4	-196	80	80	80	135	71	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T3	-196	80	80	80	200	60	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8

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

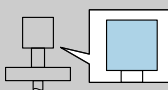
FMR53



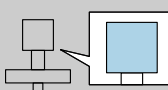
 = A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B	T6	-40	57	57	57	80	55	80	-40	-40	-40	-	-
	C	T6	-40	60	60	60	80	56	80	-40	-40	-40	-	-

 = 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
A, B, C		T6	-40	60	60	60	80	58	80	-40	-40	-40	-	-

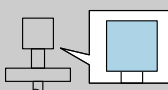
FMR53

 = A	(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
	A, C	T6	-40	60	60	60	85	48	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	63	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	62	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	79	79	79	150	55	150	-40	-40	-40	-	-
	B	T6	-40	60	60	60	85	48	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	63	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	56	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	72	72	72	150	52	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

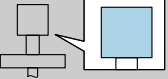
 = B	(1)	P1			P2		P3		P4		P5		P6	
		T _p	T _a		T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-40	60	60	60	85	53	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	68	100	-40	-40	-40	-	-
		T4	-40	80	80	80	135	67	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	80	80	80	150	64	150	-40	-40	-40	-	-

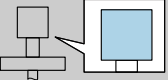
1) Functional: Maximum permissible process temperature

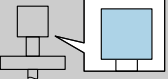
 = C	(1)	P1			P2		P3		P4		P5		P6	
		T _p	T _a		T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-40	60	60	60	85	54	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	69	100	-40	-40	-40	-	-
		T4	-40	80	80	80	135	70	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	80	80	80	150	67	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

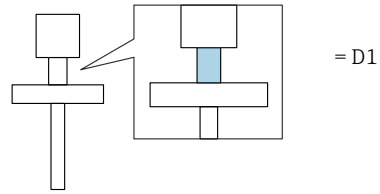
FMR54

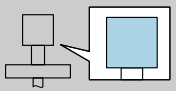
 = A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, C	T6	-40	60	60	60	85	48	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	63	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	61	135	-40	-40	-40	-	-
	B	T6	-40	60	60	60	85	48	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	63	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	55	135	-40	-40	-40	-	-

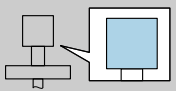
 = B	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-40	60	60	60	85	53	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	68	100	-40	-40	-40	-	-
		T4	-40	80	80	80	135	67	135	-40	-40	-40	-	-
		T3	-40	80	80	80	200	51	200	-40	-40	-40	-	-

 = 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
	A, B, C	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	80	80	135	69	135	-40	-40	-40	-	-
		T3	-40	80	80	80	200	56	200	-40	-40	-40	-	-

FMR54

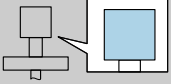


 = A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, C	T6	-196	60	60	60	85	51	85	-40	-40	-40	-196	18
		T5	-196	75	75	75	100	66	100	-40	-40	-40	-196	18
		T4	-196	79	79	79	135	66	135	-40	-40	-40	-196	18
		T3	-196	79	79	79	200	42	200	-40	-40	-40	-196	18
	B	T6	-196	60	60	60	85	51	85	-40	-40	-40	-196	18
		T5	-196	72	72	72	100	66	100	-40	-40	-40	-196	18
		T4	-196	72	72	72	135	59	135	-40	-40	-40	-196	18
		T3	-196	72	72	72	200	42	200	-40	-40	-40	-196	18

 = 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
	A, B, C	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	80	80	135	71	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T3	-196	80	80	80	200	60	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T2 ²⁾	-196	80	80	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

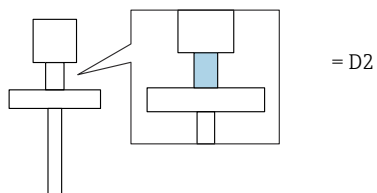
2) Functional: Maximum permissible process temperature

	(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
	A, B, C	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	80	80	135	72	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T3	-196	80	80	80	200	64	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T2 ²⁾	-196	80	80	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

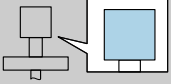


= A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, C	T6	-196	60	60	60	85	52	85	-40	-40	-40	-196	11
		T5	-196	75	75	75	100	67	100	-40	-40	-40	-196	11
		T4	-196	79	79	79	135	69	135	-40	-40	-40	-196	11
		T3	-196	79	79	79	200	47	200	-40	-40	-40	-196	11
	B	T6	-196	60	60	60	85	52	85	-40	-40	-40	-196	11
		T5	-196	72	72	72	100	67	100	-40	-40	-40	-196	11
		T4	-196	72	72	72	135	60	135	-40	-40	-40	-196	11
		T3	-196	72	72	72	200	47	200	-40	-40	-40	-196	11

= 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
	A, B, C	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	80	80	135	72	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T3	-196	80	80	80	200	62	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T2	-196	80	80	80	300	48	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T1 ²⁾	-196	80	80	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

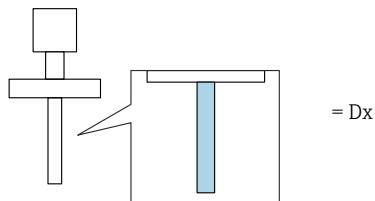
2) Functional: Maximum permissible process temperature

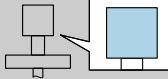
 = C	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-196	60	60	60	85	57	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T5	-196	75	75	75	100	72	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T4	-196	80	80	80	135	74	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T3	-196	80	80	80	200	66	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T2	-196	80	80	80	300	54	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T1 ²⁾	-196	80	80	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

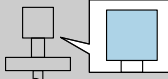
2) Functional: Maximum permissible process temperature

FMR54

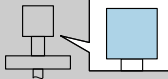


 = A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, C	T6	-40	60	60	60	85	50	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	65	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	66	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	79	79	79	150	60	150	-40	-40	-40	-	-
	B	T6	-40	60	60	60	85	50	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	65	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	58	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	72	72	72	150	55	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

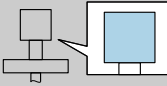
 = B	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B, C	T6	-40	60	60	60	85	55	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	70	100	-40	-40	-40	-	-
		T4	-40	80	80	80	135	70	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	80	80	80	150	68	150	-40	-40	-40	-	-

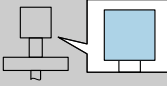
1) Functional: Maximum permissible process temperature

 = 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
	A, B, C	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	80	80	135	72	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	80	80	80	150	70	150	-40	-40	-40	-	-

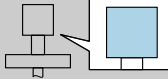
1) Functional: Maximum permissible process temperature

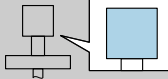
FMR56

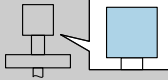
 = A	(1)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	A, B	T6	-40	57	57	57	80	54	80	-40	-40	-40	-	-
	C	T6	-40	60	60	60	80	55	80	-40	-40	-40	-	-

 = 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
	A, B, C	T6	-40	60	60	60	80	58	80	-40	-40	-40	-	-

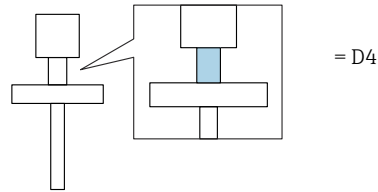
FMR57

 = A	(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
	A, C	T6	-40	60	60	60	85	53	85	-40	-40	-40	-	-
		T5	-40	75	75	75	100	68	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	70	135	-40	-40	-40	-	-
		T3	-40	79	79	79	200	53	200	-40	-40	-40	-	-
	B	T6	-40	57	57	57	85	53	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	67	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	62	135	-40	-40	-40	-	-
		T3	-40	72	72	72	200	51	200	-40	-40	-40	-	-

 = 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
	A, B, C	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	80	80	135	73	135	-40	-40	-40	-	-
		T3	-40	80	80	80	200	65	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
	A, B, C	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	80	80	135	75	135	-40	-40	-40	-	-
		T3	-40	80	80	80	200	69	200	-40	-40	-40	-	-

FMR57



= A	(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
	A, C	T6	-40	58	58	58	85	54	85	-40	-40	-40	-	-
		T5	-40	73	73	73	100	69	100	-40	-40	-40	-	-
		T4	-40	79	79	79	135	72	135	-40	-40	-40	-	-
		T3	-40	79	79	79	200	59	200	-40	-40	-40	-	-
		T2	-40	79	79	79	300	37	300	-40	-40	-40	-	-
	B	T6	-40	57	57	57	85	54	85	-40	-40	-40	-	-
		T5	-40	72	72	72	100	68	100	-40	-40	-40	-	-
		T4	-40	72	72	72	135	64	135	-40	-40	-40	-	-
		T3	-40	72	72	72	200	55	200	-40	-40	-40	-	-
		T2	-40	72	72	72	300	37	300	-40	-40	-40	-	-

= 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
	A, B, C	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	80	80	135	75	135	-40	-40	-40	-	-
		T3	-40	80	80	80	200	69	200	-40	-40	-40	-	-
		T2	-40	80	80	80	300	60	300	-40	-40	-40	-	-
		T1 ¹⁾	-40	80	80	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
	A, B, C	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	80	80	135	76	135	-40	-40	-40	-	-
		T3	-40	80	80	80	200	71	200	-40	-40	-40	-	-
		T2	-40	80	80	80	300	64	300	-40	-40	-40	-	-
		T1 ¹⁾	-40	80	80	80	400	57	400	-40	-40	-40	-	-

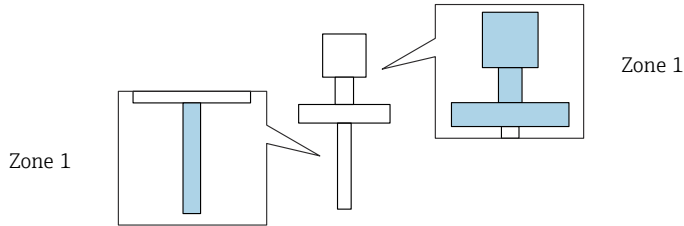
1) Functional: Maximum permissible process temperature

Zone 1: 2 channels

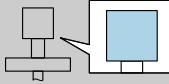
Position 3 (Power Supply, Output) = B, C: 2 channels used

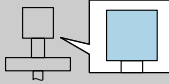
Page references to the temperature tables of the respective device types: See the following list.

- FMR50 → 40
- FMR51 → 41
- FMR52 → 46
- FMR53 → 50
- FMR54 → 52
- FMR56 → 59
- FMR57 → 60

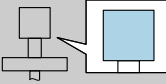


FMR50

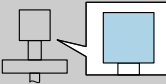
 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	43	43	43	80	38	80	-40	-40	-40	-	-
	C	T6	-40	53	53	53	80	48	80	-40	-40	-40	-	-

 = 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
	B	T6	-40	51	51	51	80	49	80	-40	-40	-40	-	-
	C	T6	-40	54	54	54	80	52	80	-40	-40	-40	-	-

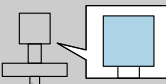
FMR51

 = A	(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
	B	T6	-40	43	43	43	85	33	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	46	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	37	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	56	56	56	150	33	150	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	45	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	60	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	58	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	73	73	73	150	54	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

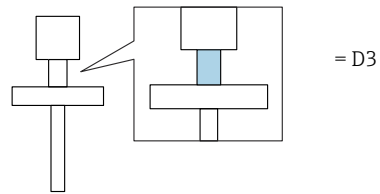
 = B	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	44	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	59	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	62	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	75	75	75	150	59	150	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	48	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	63	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	66	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	78	78	78	150	63	150	-40	-40	-40	-	-

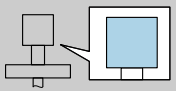
1) Functional: Maximum permissible process temperature

 = 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
	B	T6	-40	51	51	51	85	45	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	60	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	65	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	75	75	75	150	62	150	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	49	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	64	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	68	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	78	78	78	150	66	150	-40	-40	-40	-	-

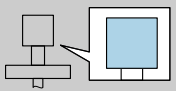
1) Functional: Maximum permissible process temperature

FMR51

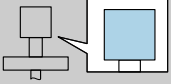


 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	43	43	43	85	37	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	50	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	45	135	-40	-40	-40	-	-
		T3	-40	56	56	56	200	35	200	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	48	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	63	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	64	135	-40	-40	-40	-	-
		T3	-40	73	73	73	200	54	200	-40	-40	-40	-	-
		T2 ¹⁾	-40	73	73	73	250	44	250	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

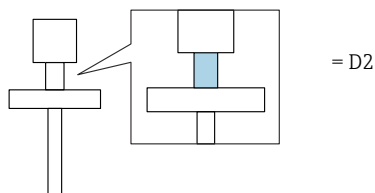
 = B	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	48	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	63	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	69	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	62	200	-40	-40	-40	-	-
		T2 ¹⁾	-40	75	75	75	250	57	250	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	51	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	66	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	72	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	65	200	-40	-40	-40	-	-
		T2 ¹⁾	-40	78	78	78	250	60	250	-40	-40	-40	-	-

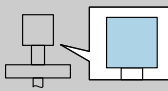
1) Functional: Maximum permissible process temperature

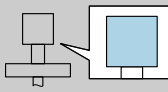
	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	48	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	63	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	70	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	65	200	-40	-40	-40	-	-
		T2 ¹⁾	-40	75	75	75	250	60	250	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	52	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	67	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	73	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	68	200	-40	-40	-40	-	-
		T2 ¹⁾	-40	78	78	78	250	64	250	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

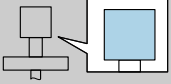
FMR51



 = A	(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
	B	T6	-196	43	43	43	85	36	85	-40	-40	-40	-196	9
		T5	-196	56	56	56	100	48	100	-40	-40	-40	-196	9
		T4	-196	56	56	56	135	42	135	-40	-40	-40	-196	9
		T3	-196	56	56	56	200	30	200	-40	-40	-40	-196	9
	C	T6	-196	53	53	53	85	47	85	-40	-40	-40	-196	9
		T5	-196	68	68	68	100	62	100	-40	-40	-40	-196	9
		T4	-196	73	73	73	135	62	135	-40	-40	-40	-196	9
		T3	-196	73	73	73	200	49	200	-40	-40	-40	-196	9

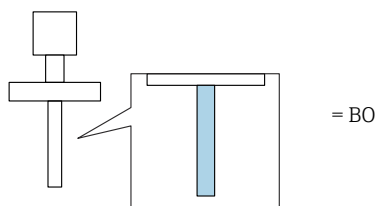
 = B	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	51	51	51	85	47	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T5	-196	66	66	66	100	62	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T4	-196	75	75	75	135	67	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T3	-196	75	75	75	200	58	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T2	-196	75	75	75	300	44	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
	C	T6	-196	54	54	54	85	50	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T5	-196	69	69	69	100	65	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T4	-196	78	78	78	135	70	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T3	-196	78	78	78	200	61	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T2	-196	78	78	78	300	48	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15

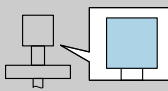
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

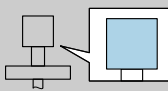
	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	51	51	51	85	48	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T5	-196	66	66	66	100	63	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T4	-196	75	75	75	135	68	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T3	-196	75	75	75	200	61	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T2	-196	75	75	75	300	51	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T1	-196	75	75	75	450	34	450	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
	C	T6	-196	54	54	54	85	51	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T5	-196	69	69	69	100	66	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T4	-196	78	78	78	135	72	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T3	-196	78	78	78	200	65	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T2	-196	78	78	78	300	54	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-20 -28 ¹⁾
		T1	-196	78	78	78	450	38	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

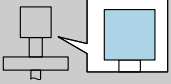
FMR52



 = A	(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
	B	T6	-40	43	43	43	85	35	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	47	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	40	135	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	46	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	61	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	60	135	-40	-40	-40	-	-
		T3	-40	73	73	73	200	42	200	-40	-40	-40	-	-

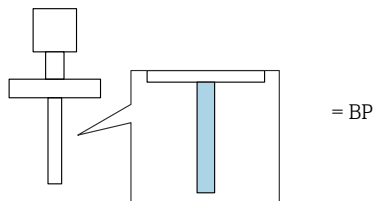
 = B	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	51	51	51	85	45	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T5	-196	66	66	66	100	60	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T4	-196	75	75	75	135	65	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T3	-196	75	75	75	200	53	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
	C	T6	-196	54	54	54	85	49	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T5	-196	69	69	69	100	64	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T4	-196	78	78	78	135	68	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3
		T3	-196	78	78	78	200	57	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-3

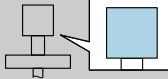
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

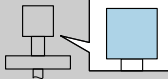
	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	51	51	51	85	47	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T5	-196	66	66	66	100	62	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T4	-196	75	75	75	135	67	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T3	-196	75	75	75	200	58	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
	C	T6	-196	54	54	54	85	50	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T5	-196	69	69	69	100	65	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T4	-196	78	78	78	135	70	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14
		T3	-196	78	78	78	200	61	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-14

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

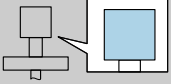
FMR52



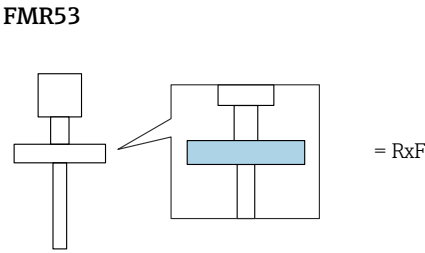
 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	43	43	43	85	33	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	46	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	38	135	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	45	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	60	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	58	135	-40	-40	-40	-	-
		T3	-40	73	73	73	200	36	200	-40	-40	-40	-	-

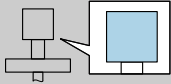
 = B	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	51	51	51	85	44	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T5	-196	66	66	66	100	59	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T4	-196	75	75	75	135	63	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T3	-196	75	75	75	200	49	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
	C	T6	-196	54	54	54	85	48	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T5	-196	69	69	69	100	63	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T4	-196	78	78	78	135	66	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10
		T3	-196	78	78	78	200	53	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	10

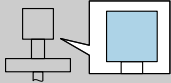
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

	(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
	B	T6	-196	51	51	51	85	46	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T5	-196	66	66	66	100	61	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T4	-196	75	75	75	135	65	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T3	-196	75	75	75	200	54	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
	C	T6	-196	54	54	54	85	49	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T5	-196	69	69	69	100	64	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T4	-196	78	78	78	135	69	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8
		T3	-196	78	78	78	200	58	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-8

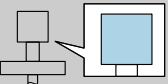
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN



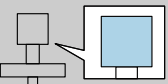
 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	43	43	43	80	39	80	-40	-40	-40	-	-
	C	T6	-40	53	53	53	80	49	80	-40	-40	-40	-	-

 = 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
	B	T6	-40	51	51	51	80	49	80	-40	-40	-40	-	-
	C	T6	-40	54	54	54	80	52	80	-40	-40	-40	-	-

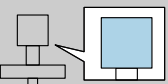
FMR53

 = A	(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
	B	T6	-40	43	43	43	85	33	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	45	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	36	135	-20	-40	-40	-	-
		T3 ¹⁾	-40	56	56	56	150	32	150	-20	-40	-40	-	-
	C	T6	-40	53	53	53	85	44	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	59	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	57	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	73	73	73	150	53	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

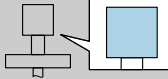
 = B	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	43	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	58	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	61	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	75	75	75	150	58	150	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	47	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	62	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	65	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	78	78	78	150	61	150	-40	-40	-40	-	-

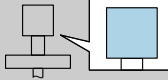
1) Functional: Maximum permissible process temperature

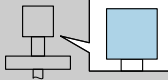
 = C	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	45	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	60	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	64	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	75	75	75	150	61	150	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	49	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	64	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	67	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	78	78	78	150	64	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

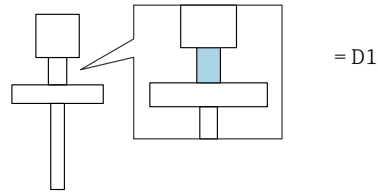
FMR54

 = A	(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
	B	T6	-40	43	43	43	85	32	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	45	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	35	135	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	44	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	59	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	56	135	-40	-40	-40	-	-

 = 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
	B	T6	-40	51	51	51	85	43	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	58	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	60	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	45	200	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	47	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	62	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	64	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	48	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
	B	T6	-40	51	51	51	85	44	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	59	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	63	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	50	200	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	48	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	63	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	67	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	54	200	-40	-40	-40	-	-

FMR54

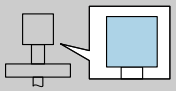


= A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	43	43	43	85	35	85	-40	-40	-40	-196	18
		T5	-196	56	56	56	100	47	100	-40	-40	-40	-196	18
		T4	-196	56	56	56	135	40	135	-40	-40	-40	-196	18
	C	T6	-196	53	53	53	85	46	85	-40	-40	-40	-196	18
		T5	-196	68	68	68	100	61	100	-40	-40	-40	-196	18
		T4	-196	73	73	73	135	60	135	-40	-40	-40	-196	18
		T3	-196	73	73	73	200	42	200	-40	-40	-40	-196	18

= 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
	B	T6	-196	51	51	51	85	45	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T5	-196	66	66	66	100	60	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T4	-196	75	75	75	135	65	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T3	-196	75	75	75	200	54	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T2 ²⁾	-196	75	75	75	280	40	280	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
	C	T6	-196	54	54	54	85	49	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T5	-196	69	69	69	100	64	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T4	-196	78	78	78	135	68	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T3	-196	78	78	78	200	57	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4
		T2 ²⁾	-196	78	78	78	280	44	280	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-4

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

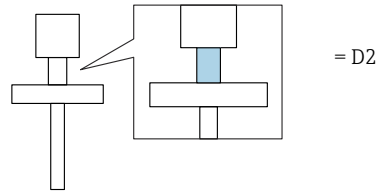
2) Functional: Maximum permissible process temperature

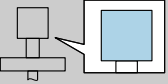
	(2)	P1			P2		P3		P4		P5		P6	
		T _p	T _a		T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	51	51	51	85	47	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T5	-196	66	66	66	100	62	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T4	-196	75	75	75	135	67	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T3	-196	75	75	75	200	58	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T2 ²⁾	-196	75	75	75	280	47	280	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
	C	T6	-196	54	54	54	85	50	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T5	-196	69	69	69	100	65	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T4	-196	78	78	78	135	70	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T3	-196	78	78	78	200	61	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15
		T2 ²⁾	-196	78	78	78	280	51	280	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-15

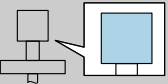
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

2) Functional: Maximum permissible process temperature

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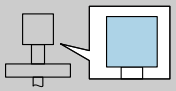


 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-196	43	43	43	85	36	85	-40	-40	-40	-196	11
		T5	-196	56	56	56	100	48	100	-40	-40	-40	-196	11
		T4	-196	56	56	56	135	41	135	-40	-40	-40	-196	11
	C	T6	-196	53	53	53	85	46	85	-40	-40	-40	-196	11
		T5	-196	68	68	68	100	61	100	-40	-40	-40	-196	11
		T4	-196	73	73	73	135	61	135	-40	-40	-40	-196	11
		T3	-196	73	73	73	200	47	200	-40	-40	-40	-196	11

 = 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
	B	T6	-196	51	51	51	85	46	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T5	-196	66	66	66	100	61	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T4	-196	75	75	75	135	66	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T3	-196	75	75	75	200	57	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T2	-196	75	75	75	300	42	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
	C	T6	-196	54	54	54	85	50	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T5	-196	69	69	69	100	65	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T4	-196	78	78	78	135	70	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T3	-196	78	78	78	200	60	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T2	-196	78	78	78	300	46	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13
		T1 ²⁾	-196	78	78	78	400	31	400	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-13

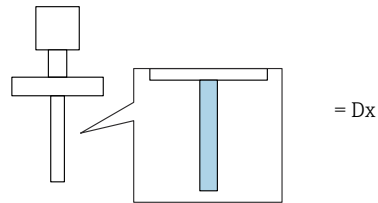
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

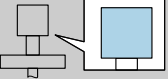
2) Functional: Maximum permissible process temperature

	(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
	B	T6	-196	51	51	51	85	47	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T5	-196	66	66	66	100	62	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T4	-196	75	75	75	135	68	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T3	-196	75	75	75	200	60	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T2	-196	75	75	75	300	49	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T1 ²⁾	-196	75	75	75	400	37	400	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
	C	T6	-196	54	54	54	85	51	85	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T5	-196	69	69	69	100	66	100	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T4	-196	78	78	78	135	71	135	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T3	-196	78	78	78	200	64	200	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T2	-196	78	78	78	300	52	300	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾
		T1 ²⁾	-196	78	78	78	400	41	400	-40 -50 ¹⁾	-40 -50 ¹⁾	-40 -50 ¹⁾	-196	-19 -26 ¹⁾

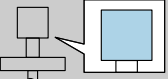
1) Only in connection with Optional specification, ID Jx (Test, Certificate) = JN

2) Functional: Maximum permissible process temperature

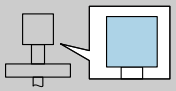
FMR54

	(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
	B	T6	-40	43	43	43	85	34	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	47	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	39	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	56	56	56	150	36	150	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	46	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	61	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	59	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	73	73	73	150	56	150	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature

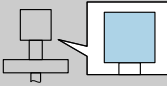
	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	45	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	60	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	64	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	75	75	75	150	62	150	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	49	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	64	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	68	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	78	78	78	150	65	150	-40	-40	-40	-	-

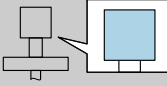
1) Functional: Maximum permissible process temperature

	(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
	B	T6	-40	51	51	51	85	46	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	61	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	66	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	75	75	75	150	64	150	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	50	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	65	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	70	135	-40	-40	-40	-	-
		T3 ¹⁾	-40	78	78	78	150	68	150	-40	-40	-40	-	-

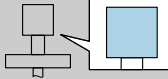
1) Functional: Maximum permissible process temperature

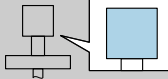
FMR56

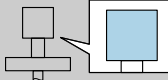
 = A	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	43	43	43	80	38	80	-40	-40	-40	-	-
	C	T6	-40	53	53	53	80	48	80	-40	-40	-40	-	-

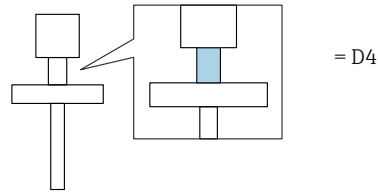
 = C	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	80	49	80	-40	-40	-40	-	-
	C	T6	-40	54	54	54	80	52	80	-40	-40	-40	-	-

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 = A	(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
	B	T6	-40	43	43	43	85	37	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	49	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	43	135	-40	-40	-40	-	-
		T3	-40	56	56	56	200	33	200	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	47	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	62	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	63	135	-40	-40	-40	-	-
		T3	-40	73	73	73	200	52	200	-40	-40	-40	-	-

 = 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
	B	T6	-40	51	51	51	85	47	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	62	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	68	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	60	200	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	51	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	66	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	71	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	63	200	-40	-40	-40	-	-

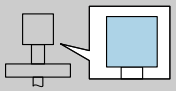
 = C	(2)		P1		P2		P3		P4		P5		P6	
			T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a	T _p	T _a
	B	T6	-40	51	51	51	85	48	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	63	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	69	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	63	200	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	51	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	66	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	73	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	66	200	-40	-40	-40	-	-

FMR57

= A	(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
	B	T6	-40	43	43	43	85	38	85	-40	-40	-40	-	-
		T5	-40	56	56	56	100	51	100	-40	-40	-40	-	-
		T4	-40	56	56	56	135	46	135	-40	-40	-40	-	-
		T3	-40	56	56	56	200	37	200	-40	-40	-40	-	-
	C	T6	-40	53	53	53	85	48	85	-40	-40	-40	-	-
		T5	-40	68	68	68	100	63	100	-40	-40	-40	-	-
		T4	-40	73	73	73	135	65	135	-40	-40	-40	-	-
		T3	-40	73	73	73	200	56	200	-40	-40	-40	-	-
		T2	-40	73	73	73	300	37	300	-40	-40	-40	-	-

= 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
	B	T6	-40	51	51	51	85	48	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	63	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	70	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	64	200	-40	-40	-40	-	-
		T2	-40	75	75	75	300	54	300	-40	-40	-40	-	-
		T1 ¹⁾	-40	75	75	75	400	45	400	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	52	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	67	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	73	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	67	200	-40	-40	-40	-	-
		T2	-40	78	78	78	300	58	300	-40	-40	-40	-	-
		T1 ¹⁾	-40	78	78	78	400	49	400	-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
	B	T6	-40	51	51	51	85	49	85	-40	-40	-40	-	-
		T5	-40	66	66	66	100	64	100	-40	-40	-40	-	-
		T4	-40	75	75	75	135	71	135	-40	-40	-40	-	-
		T3	-40	75	75	75	200	66	200	-40	-40	-40	-	-
		T2	-40	75	75	75	300	59	300	-40	-40	-40	-	-
		T1 ¹⁾	-40	75	75	75	400	52	400	-40	-40	-40	-	-
	C	T6	-40	54	54	54	85	52	85	-40	-40	-40	-	-
		T5	-40	69	69	69	100	67	100	-40	-40	-40	-	-
		T4	-40	78	78	78	135	74	135	-40	-40	-40	-	-
		T3	-40	78	78	78	200	69	200	-40	-40	-40	-	-
		T2	-40	78	78	78	300	62	300	-40	-40	-40	-	-
		T1 ¹⁾	-40	78	78	78	400	55	400	-40	-40	-40	-	-

1) Functional: Maximum permissible process temperature



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