

# Safety Instructions

## **iTHERM MultiSens Flex TMS01**

Ex ia IIC T6...T1 Ga

Ex ia IIC T6...T1 Ga/Gb

Ex ia IIIC T<sub>200</sub>85°C...T<sub>200</sub>450°C Da/Db

Ex ia/db IIC T6...T1 Ga/Gb


Ex ia/tb IIIC T<sub>200</sub>85°C...T<sub>200</sub>450°C Da/Db



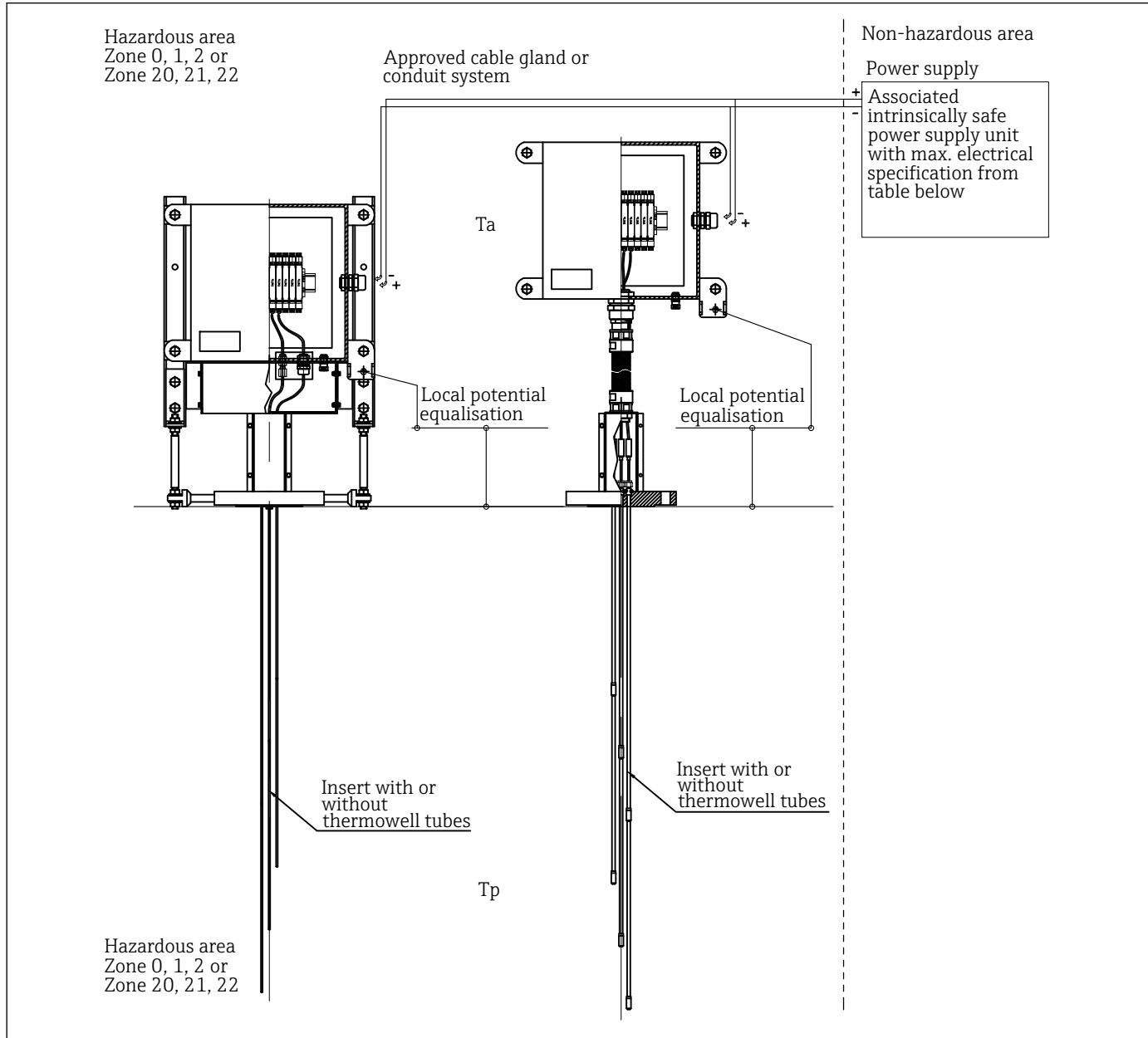
# iTHERM MultiSens Flex TMS01

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<b>About this document</b>	 The document number of these Safety Instructions (XA) must match the information on the nameplate.
<b>Associated documentation</b>	All documentation is available on the Internet: <a href="http://www.endress.com/Deviceviewer">www.endress.com/Deviceviewer</a> (enter the serial number from the nameplate). To commission the device, please observe the Operating Instructions pertaining to the device: <a href="http://www.endress.com/&lt;product code&gt;">www.endress.com/&lt;product code&gt;</a> , e.g. iTHERM TMS01
<b>Supplementary documentation</b>	Explosion protection brochure: CP00021Z The Explosion-protection brochure is available: <ul style="list-style-type: none"><li>▪ In the download area of the Endress+Hauser website: <a href="http://www.endress.com">www.endress.com</a> -&gt; Downloads -&gt; Brochures and Catalogs -&gt; Text Search: CP00021Z</li><li>▪ On the CD for devices with CD-based documentation</li></ul>
<b>Certificates and declarations</b>	<b>NEPSI certificate</b> Certificate number: GYJ25.1105X Affixing the certificate number certifies conformity with the following standards (depending on the device version) <ul style="list-style-type: none"><li>▪ GB/T 3836.1-2021</li><li>▪ GB/T 3836.2-2021</li><li>▪ GB/T 3836.4-2021</li><li>▪ GB/T 3836.31-2021</li><li>▪ IEC 60079.26-2021</li></ul>
<b>Manufacturer address</b>	Endress+Hauser Wetzler GmbH + Co. KG Obere Wank 1 87484 Nesselwang, Germany  Endress+Hauser Wetzler (Suzhou) Co. Ltd. No.31 JiangTianLilu Suzhou Industrial Park (SIP) Suzhou 215126, China  Endress+Hauser Sicestherm S.r.l Via Martin Luther King 7/9 Pessano con Bornago (MI) I-20042, Italy

## Safety instructions



A0059163

## 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 or guidelines (e.g. IEC 60079-14)
- 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.
- The relationship between the permitted ambient temperature for the electronics housing, dependent on the range of application, and the temperature classes is shown in next tables.
- Alterations to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.

**Safety instructions:  
Installation in equipment of  
Group III**

- Refer to the enclosed Safety instructions of assembled Transmitters.
- Refer to the marked maximum ratings for assembled temperature transmitter's supply.
- Install the sensor in thermometer/enclosure suitable for Group III in compliance with GB/T 3836.4 and GB/T 3836.1 and its ultimate application.
- The device must be installed and maintained so, that even in the event of rare incidents, an ignition source due to impact or friction between the enclosure and iron/steel is excluded.
- For ambient temperatures higher than +70 °C, use suitable heat-resisting cables or wires, cable entries and sealing facilities for Ta +5 K above surrounding.
- The degree of protection shall be at least equal to IP6X throughout the equipment.
- The cable gland (or other accessories) chosen as ingress into junction box shall be certified accordingly to relevant Standards (GB/T 3836.1 and GB/T 3836.31).
- User must regularly clean enclosure external surface due to avoid formation and deposition of dust layers on the surface itself (the maximum allowed thickness of dust is equal to 5 mm).
- For dust 'Ex t' applications, the compression fittings installed on junction box connection thread must have PTFE or graphite sealing tape applied to maintain the approval stated.

**Only for Group III**

**⚠ WARNING**

**Explosive atmosphere**

- ▶ In an explosive atmosphere, do not open the device when voltage is supplied (ensure that the IP6x housing protection is maintained during operation).

**Safety instructions: Partition  
wall**

Install the equipment in a partition wall which is in compliance with IEC 60079-26 in reference to its ultimate application.

**Only for iTHERM TMS01\_010 = -NE**

**⚠ WARNING**

**Explosive atmosphere**

- ▶ In an explosive atmosphere, do not open the device when voltage is supplied (ensure that the IP6x housing protection is maintained during operation).

**Intrinsic safety**

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and any other valid standards and regulations (e.g. IEC 60079-14).
- Observe the safety instructions for the used transmitters (if any).
- Observe the safety instructions for the other used equipment.
- The device must be connected to the local potential equalization.
- Connect the device using suitable cable and wire entries of protection type "Intrinsic safety (Ex i)".
- For sensor elements an intrinsically safe supply with galvanic isolation must be used.
- Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits shall be preferred.
- The type of protection changes as follows when the devices are connected to certified intrinsically safe circuits of Category Ex ib for Equipment Groups IIC and IIB: Ex ib IIC T6 or Ex ib IIB T6.
- Continuous duty temperature of the cable Ta +5 K.
- To maintain the ingress protection of the enclosure IP66: Install the enclosure cover, cable glands and blind plugs correctly.
- Close unused entry glands with sealing plugs.
- The pertinent guidelines must be observed when intrinsically safe circuits are connected together acc. IEC 60079-14 (Proof of Intrinsic Safety).
- When connecting multiple sensors make sure that the potential equalizations are at the same local potential equalization.
- Pay attention to the maximum process conditions according to the manufacturer's operating Instructions.
- Respect the maximum ambient temperature permitted in base of used junction box, temperature transmitters and its number.
- Install the device to exclude any mechanical damage or friction. The device Connection Head enclosures, when made in Aluminum light alloy, shall be mounted in a way to avoid an ignition hazard due to impact or friction. Pay particular attention to flow conditions and tank fittings.

**Safety instructions:  
Zone 0, Zone 20**

- The aluminum housing must **not** be installed in Zone 0(Ga)/Zone 20(Da), only the sensors or an optional mechanical protection (e.g. a thermowell) are allowed to extend through Zone 0(Ga)/Zone 20(Da) as shown in the scheme on page 4
- The iTHERM TMS01\_010 = -NA can be installed completely in Zone 0(Ga)/Zone 20(Da). Only Stainless Steel Junction box shall be used.
- Associated devices with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.

**Potential equalization**

The device must be connected to the local potential equalization.

**Safety instructions:  
Flameproof**

- Only certified cable glands (or other accessories) in accordance to GB/T 3836.1 and GB/T 3836.2 shall be used. Cable entry system shall be in compliance with IEC 60079-14 and/or other Local Regulations and Laws.
- User's cable entries always assure at least 5 engaged threads.
- The thread of cover must be always sprinkled by silicone grease (LOCTITE\_8104 or LOXEAL\_GS9) or copper paste or similar.
- The ground terminal board in and out is preview for the conductor which must be placed between the anti-rotation washer and the flat washer. If the connection is made by means of lug, this must be with an anti-rotation pin, or must be provide on fitting to avoid the rotation of the cable.
- Any unused holes in the enclosure must be closed with conical or cylindrical plugs in such way that anti-explosion seal characteristics of the enclosure are preserved. These plugs must only be removed with special tools.
- Degree of protection IP66 is guaranteed only if the cover is provided with an appropriate O-ring gasket; after each opening integrity of such gasket shall be verified.
- Any damaged parts may **only** be replaced or repaired by the manufacturer, unless of express authorization of itself. It is forbidden to machine further the junction box.
- As a general rule, whichever operations and maintenance on the electrical or mechanical parts or on the system, must be preceded from the interruption of the electrical supply system.

**Ex d Compression Fitting - Junction box side**

- When assembling the compression fitting, tighten the nut by hand and ensure that the nut is in the finger-tight position and mark/scribe it for a visual reference.
- Tight the nut to the required setting using the following table:

Insert Diameter	Torque settings (No. of turns past finger-tight)
≤ 4.5 mm	1 full turn
4.76 to 9.53 mm	3/4 turn

This equipment is not re-usable or repairable. Once installed it must be replaced if any damage is observed.

**Version with Field Housing Transmitters Devices**

When iTHERM TMS01 is fitted with Field Housing Transmitters (i.e. iTEMP TMT142B, iTEMP TMT162 - for iTHERM TMS01\_220=-GA, -GB, -GC, -GD, -GG) the ambient temperature and temperature class is given by the following table:

Transmitter	EPL Gb			EPL Db		
	T6	T5	T4	T85 °C	T100 °C	T135 °C
iTEMP TMT162	-40 to +55 °C	-40 to +70 °C	-40 to +85 °C	-40 to +55 °C	-40 to +70 °C	-40 to +85 °C
iTEMP TMT142B	-50 to +55 °C	-50 to +70 °C	-50 to +85 °C	-40 to +55 °C	-40 to +70 °C	-40 to +85 °C

Electrical parameters in Chapter Electrical connection data:

Transmitter	Dissipated Power (W)
iTEMP TMT162	5.32 W
iTEMP TMT142B	1.00 W

**Safety instructions: Specific conditions of use**

- The device must be installed and maintained so, that even in the event of rare incidents, an ignition source due to impact or friction between the enclosure and iron/steel is excluded.
- When installing and commissioning the device, make sure that an electrostatic charge of the connection cable is avoided.
- As a rule of the thumb, the whole length of each thermoelement installed within the iTHERM TMS01 shall be limited to 200 m for single thermocouple, to 100 m for double and to 66.7 m for triple ones. For special applications (i.e. very long thermoelements), it shall always be verified the verification of total Capacitance and Inductance.
- When install the device, all the accessories used (e.g. cable glands, etc.) shall be certified according to GB/T 3836.1, GB/T 3836.2, GB/T 3836.31, providing a degree of protection at least equal to the junction box one. For the correct choice of the cable entry system, please refer to IEC 60079-14 (latest revision) and/or to National Regulations and Laws..
- Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred.
- The separation between Zone 0/20 and Zone 1/21 shall be in compliance with requirements of IEC/EN 60079-26.
- The device shall be connected to the same local potential equalization in at least one point (alternatively through the junction box or at process connection). The user shall assess the functionality.
- For the use of the enclosures in environments with explosive atmosphere for the combustible dust presence, the following precautions must be taken: to avoid the accumulation of dust on the surfaces, the user must proceed with a regular cleaning of the enclosures; the dust layer shall always less than 5 mm.
- The width of the flameproof joints is superior to those specified in tables of GB/T 3836.2 standard.
- No battery is permitted within the device assemblies.
- The ambient temperature  $T_a$  shall not exceed the values given in tables into safety instructions.
- The Ambient Temperature range of the device, may vary depending on the number and the type of the transmitters mounted inside to the Connection Head. For a safe use of the products, the Safety Instructions shall be followed precisely.
- When the iTHERM TMS01\_020= -C, -D, the maximum total length of each thermoelement shall be limited to 50 m for single thermocouple, to 25 m for double.
- If process temperatures are lower than  $-55\text{ }^{\circ}\text{C}$ , the minimum ambient temperature of TMS01 shall be reduced to  $-50\text{ }^{\circ}\text{C}$  and the minimum value of neck length shall be 240 mm.
- Process temperatures from  $-55$  to  $-196\text{ }^{\circ}\text{C}$  are permitted with the following materials only:
  - 316/1.4401 + 316L/1.4404, 304/1.4301 + 304L/1.4307, 316Ti/1.4571, 321/1.4541, 347/1.4550 according to Table B.2-11 of EN 13445-2.
  - Alloy 625 (UNS N06625), Alloy 800 (UNS N08800) and Alloy 825 (UNS N08825) according to Table A-1 of ASME B31-3.
- For installation, use and maintenance of this product, the end user shall observe the instruction manual and the following standards:
  - GB/T 3836.13-2021 “Explosive atmospheres- Part 13:Equipment repair, overhaul, reclamation and modification”.
  - GB/T3836.15-2017 “Explosive atmospheres- Part 15:Electrical installations design, selection and erection”.
  - GB/T 3836.16-2022 “Explosive atmospheres- Part 16:Electrical installations inspection and maintenance”.
  - GB/T 3836.18-2024 “Explosive atmospheres- Part 18:Intrinsically safe electrical systems”.
  - GB50257-2014 “Code for construction and acceptance of electric equipment on fire and device for explosion hazard electrical installation engineering”.
  - GB15577-2018 “Safety regulations for dust explosion prevention and protection”.

## Temperature tables

The dependency of *PROCESS* temperatures upon the temperature class for the device for RTD sensors:

Insert Diameter	Temperature class/ Maximum surface temperature	Maximum allowed process temperature (sensor) $T_p$ (process)	
		$P_i \leq 50$ mW	$P_i \leq 100$ mW
1.5 mm 3.0 mm 4.8 mm 6.0 mm 8.0 mm	T1/T450 °C	426 °C	415 °C
	T2/T300 °C	276 °C	265 °C
	T3/T200 °C	181 °C	170 °C
	T4/T135 °C	116 °C	105 °C
	T5/T100 °C	81 °C	70 °C
	T6/T85 °C	66 °C	55 °C

For iTHERM TMS01\_220=-GA, -GB, -GC, -GG, refer to column  $P_i \leq 100$  mW for RTD inserts.

For TC sensors:

Insert Diameter	Temperature class/ Maximum surface temperature	Maximum allowed process temperature (sensor) $T_p$ (process)
0.5 mm ÷ 12.7 mm iTHERM TS901	T1/T450 °C	440 °C
	T2/T300 °C	290 °C
	T3/T200 °C	195 °C
	T4/T135 °C	130 °C
	T5/T100 °C	95 °C
	T6/T85 °C	80 °C

Minimum process temperature	-196 °C
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### Ambient temperature:

Minimum ambient temperature is  $T_a \geq -55$  °C (depending on enclosure)

Minimum ambient temperature is  $T_a \geq -50$  °C if process temperature is lower than  $-55$  °C.

Minimum ambient temperatures for transmitters are as follows:

Assembled transmitters	Minimum ambient temperature
iTEMP TMT82	-52 °C
iTEMP TMT82_DIN	-40 °C
iTEMP TMT86	-52 °C
iTEMP TMT71	-50 °C
iTEMP TMT71_DIN	-50 °C
iTEMP TMT72	-50 °C
iTEMP TMT72_DIN	-50 °C
iTEMP TMT84	-40 °C
iTEMP TMT85	-40 °C

Maximum ambient temperature depends on product configuration:

- The type of enclosure selected
- The type and the number of mounted transmitters as summarized in the following tables:

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T6/T85°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT71 TMT72 TMT86	BARTEC FN	GUE1	-50°C	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB0	-50°C	52	50	49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB1	-50°C	53	52	51	51	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB2	-50°C	54	53	53	52	52	51	51	50	50	49	48	47	—	—	—	—	—	—	—	—				
		GUB3	-50°C	54	54	53	53	53	52	52	52	51	51	50	49	—	—	—	—	—	—	—	—				
		GUB4	-50°C	54	54	54	54	53	53	53	53	53	52	52	52	51	51	50	50	49	49	48	47	—			
	GUB5	-50°C	54	54	54	54	53	53	53	53	53	52	52	52	51	51	50	50	49	49	48	47	46				
	AD Vigand	GUB0	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB01	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB02	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB03	-40°C	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—				
		GUB04	-40°C	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—				
		GUB04A	-40°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB05	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—				
		GUB06	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40				
	Cortem	GUB07	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40				
		CCA-0E	-60°C	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCA-01E	-60°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCA-02E	-60°C	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCA-03E	-60°C	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—				
	Cortem	CCA-04E	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—				
		GUB-0	-60°C	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-01	-60°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-02	-60°C	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-03	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—				
	Cortem	GUB-04	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—				
		GUB-05	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40				
		CCAI2020	-50°C	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCAI3020	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—				
	Technor	CCAI3030	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—				
		CCAI4030	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—				
		GUB-01	-60°C	54	53	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-02	-60°C	54	54	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-03	-60°C	54	54	53	53	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-04	-60°C	54	54	54	54	53	53	53	53	53	52	52	—	—	—	—	—	—	—	—	—				
	Warom	GUB-05	-60°C	54	54	54	54	53	53	53	53	53	52	52	52	—	—	—	—	—	—	—	—				
		GUB-06	-60°C	54	54	54	54	53	53	53	53	53	52	52	52	51	—	—	—	—	—	—	—				
		BXJ-IIC-I	-20°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-IIC-II	-20°C	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-IIC-III	-20°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-IIC-IV	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—				
	Rose	BXJ-IIC-V	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—				
		BXJ-IIC-VI	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—				
		GUB 01 AL	-20°C	54	53	53	52	52	51	51	50	50	—	—	—	—	—	—	—	—	—	—	—				
		GUB 02 AL	-20°C	54	53	53	52	52	51	51	50	50	—	—	—	—	—	—	—	—	—	—	—				
		GUB 03 AL	-20°C	54	54	53	53	53	52	52	52	51	51	50	49	—	—	—	—	—	—	—	—				
		GUB 04 AL	-20°C	54	54	53	53	53	52	52	52	51	51	50	49	49	48	47	46	45	—	—	—				
	GUB 05 AL	-20°C	54	54	54	54	53	53	53	53	53	52	52	52	51	51	50	50	49	49	48	47	—				
GUB 06 AL	-20°C	54	54	54	54	53	53	53	53	53	52	52	52	51	51	50	50	49	49	48	47	46					

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1 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T5/T100°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT71 TMT72 TMT86	BARTEC FN	GUE1	-50°C	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB0	-50°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB1	-50°C	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB2	-50°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				
		GUB3	-50°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				
		GUB4	-50°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				
	GUB5	-50°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60					
	AD Vigand	GUB0	-40°C	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB01	-40°C	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB02	-40°C	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB03	-40°C	50	50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—				
		GUB04	-40°C	50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB04A	-40°C	50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB05	-40°C	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50				
		GUB06	-40°C	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50				
	GUB07	-40°C	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50					
	Cortem	CCA-0E	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCA-01E	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCA-02E	-60°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		CCA-03E	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
	Cortem	GUB-0	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-01	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-02	-60°C	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-03	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
		GUB-04	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
	Cortem	GUB-05	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
		CCAI2020	-50°C	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—				
		CCAI3020	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
		CCAI3030	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
	Technor	CCAI4030	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
		GUB-01	-60°C	69	68	68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-02	-60°C	69	69	68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-03	-60°C	69	69	68	68	68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB-04	-60°C	69	69	69	69	68	68	68	68	68	67	67	—	—	—	—	—	—	—	—	—				
		GUB-05	-60°C	69	69	69	69	68	68	68	68	68	67	67	67	—	—	—	—	—	—	—	—				
	Warom	GUB-06	-60°C	69	69	69	69	68	68	68	68	67	67	67	66	—	—	—	—	—	—	—	—				
		BXJ-IIC-I	-20°C	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-IIC-II	-20°C	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-IIC-III	-20°C	50	50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-IIC-IV	-20°C	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50				
		BXJ-IIC-V	-20°C	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50				
	Rose	BXJ-IIC-VI	-20°C	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50				
		GUB 01 AL	-20°C	69	68	68	67	67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB 02 AL	-20°C	69	68	68	67	67	66	66	65	65	—	—	—	—	—	—	—	—	—	—	—				
		GUB 03 AL	-20°C	69	69	68	68	68	67	67	67	66	66	65	64	—	—	—	—	—	—	—	—				
		GUB 04 AL	-20°C	69	69	68	68	68	67	67	67	66	66	65	64	64	63	62	61	60	—	—	—				
		GUB 05 AL	-20°C	69	69	69	69	68	68	68	68	68	67	67	67	66	66	65	65	64	64	63	62	—			
	GUB 06 AL	-20°C	69	69	69	69	68	68	68	68	68	67	67	67	66	66	65	65	64	64	63	62	61				

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2 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T4/T135°C																										
				Max Ambient temperature °C																										
				Number of transmitters																										
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48				
TMT71 TMT72 TMT86	BARTEC FN	GUB1	-50°C	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB0	-50°C	80	80	79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		GUB1	-50°C	80	80	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		GUB2	-50°C	80	80	80	80	80	80	80	80	80	80	79	78	77	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB3	-50°C	80	80	80	80	80	80	80	80	80	80	80	80	80	79	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB4	-50°C	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	79	79	78	77	—	—	—	—	
	AD Viganò	GUB5	-50°C	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	79	79	78	77	—	—	—	—	
		GUB0	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB01	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB02	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB03	-40°C	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB04	-40°C	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB04A	-40°C	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB05	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	Cortem	GUB07	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		CCA-0E	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-01E	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-02E	-60°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Cortem	CCA-03E	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		CCA-04E	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		GUB-0	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-01	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-02	-60°C	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-03	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
	Cortem	GUB-04	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
		GUB-05	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
		CCAI2020	-50°C	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCAI3020	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
	Technor	CCAI4030	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
		GUB-01	-60°C	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-02	-60°C	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-03	-60°C	80	80	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-04	-60°C	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
		GUB-05	-60°C	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
	Warom	GUB-06	-60°C	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
		BXJ-IIC-I	-20°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-II	-20°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-III	-20°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-IV	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
		BXJ-IIC-V	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
	Rose	BXJ-IIC-VI	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
		GUB 01 AL	-20°C	84	83	83	82	82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB 02 AL	-20°C	84	83	83	82	82	81	81	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB 03 AL	-20°C	84	84	83	83	83	82	82	82	81	81	80	79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		GUB 04 AL	-20°C	84	84	83	83	83	82	82	82	81	81	80	79	79	78	77	76	75	—	—	—	—	—	—	—	—	—	—
		GUB 05 AL	-20°C	84	84	84	84	83	83	83	83	83	82	82	82	81	81	80	80	79	79	78	77	77	77	77	77	76	76	
	GUB 06 AL	-20°C	84	84	84	84	83	83	83	83	83	82	82	82	81	81	80	80	79	79	78	77	77	77	77	76	76	76		

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3 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T6/T85°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT82	BARTEC FN	GUE1	-50°C	54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB0	-50°C	54	52	51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB1	-50°C	56	55	54	53	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB2	-50°C	56	56	55	55	54	53	53	52	52	50	49	48	—	—	—	—	—	—	—	—	—			
		GUB3	-50°C	57	56	56	56	55	55	54	54	54	53	52	51	—	—	—	—	—	—	—	—	—			
		GUB4	-50°C	57	57	57	56	56	56	56	56	55	55	54	54	54	53	52	51	51	50	49	49	—	—		
		GUB5	-50°C	57	57	57	56	56	56	56	56	55	55	54	54	54	53	52	51	51	50	49	49	48	47		
	AD Vigand	GUB0	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB01	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB02	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB03	-40°C	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB04	-40°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB04A	-40°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB05	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—			
		GUB06	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—			
	Cortem	GUB07	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40			
		CCA-0E	-60°C	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCA-01E	-60°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCA-02E	-60°C	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCA-03E	-60°C	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—			
	Cortem	CCA-04E	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—			
		GUB-0	-60°C	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-01	-60°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-02	-60°C	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-03	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—			
		GUB-04	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—			
	Cortem	GUB-05	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40			
		CCAI2020	-50°C	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCAI3020	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—			
		CCAI3030	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—			
	Technor	CCAI4030	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—			
		GUB-01	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-02	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-03	-60°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-04	-60°C	55	55	55	55	55	55	55	55	55	55	54	—	—	—	—	—	—	—	—	—	—			
		GUB-05	-60°C	55	55	55	55	55	55	55	55	55	55	54	54	—	—	—	—	—	—	—	—	—			
	Warom	GUB-06	-60°C	55	55	55	55	55	55	55	55	55	54	54	54	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-I	-20°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-II	-20°C	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-III	-20°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-IV	-20°C	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-V	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—			
	Rose	BXJ-IIC-VI	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—			
		GUB 01 AL	-20°C	56	56	55	55	54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB 02 AL	-20°C	56	56	55	55	54	53	53	52	52	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB 03 AL	-20°C	57	56	56	56	55	55	54	54	54	53	52	51	—	—	—	—	—	—	—	—	—			
		GUB 04 AL	-20°C	57	56	56	56	55	55	54	54	54	53	52	51	50	50	48	46	46	—	—	—	—			
		GUB 05 AL	-20°C	57	57	57	56	56	56	56	56	55	55	54	54	54	53	52	51	51	50	49	49	—			
GUB 06 AL	-20°C	57	57	57	56	56	56	56	56	55	55	54	54	54	53	52	51	51	50	49	49	48					

A0060029

4 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T5/T100°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
<b>TMT82</b>	<b>BARTECFN</b>	GUE1	-50°C	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		GUB0		60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB1		60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB2		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60		
		GUB3		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60		
		GUB4		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60		
	GUB5	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				
	<b>AD Vigant</b>	GUB0	-40°C	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		GUB01		50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB02		50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB03		50	50	50	50	50	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB04		50	50	50	50	50	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB04A		50	50	50	50	50	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB05		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50			
		GUB06		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50			
	GUB07	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50					
	<b>Cortem</b>	CCA-0E	-60°C	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		CCA-01E		55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		CCA-02E		55	55	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		CCA-03E		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
		CCA-04E		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
	<b>Cortem</b>	GUB-0	-60°C	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		GUB-01		55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB-02		55	55	55	55	55	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB-03		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
		GUB-04		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
	<b>Cortem</b>	CCAI2020	-50°C	55	55	55	55	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-				
		CCAI3020		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55				
		CCAI3030		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
		CCAI4030		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
	<b>Technor</b>	GUB-01	-60°C	70	70	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		GUB-02		70	70	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB-03		70	70	70	70	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB-04		70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70			
		GUB-05		70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70			
	<b>Warom</b>	BXJ-IIC-I	-20°C	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		BXJ-IIC-II		50	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		BXJ-IIC-III		50	50	50	50	50	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-			
		BXJ-IIC-IV		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50			
		BXJ-IIC-V		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50			
		BXJ-IIC-VI		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50			
	<b>Rose</b>	GUB 01 AL	-20°C	73	73	72	72	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		GUB 02 AL		73	73	72	72	71	70	70	69	69	-	-	-	-	-	-	-	-	-	-	-	-			
		GUB 03 AL		74	73	73	73	72	72	71	71	71	70	69	68	-	-	-	-	-	-	-	-	-			
		GUB 04 AL		74	73	73	73	72	72	71	71	71	70	69	68	67	67	65	63	63	-	-	-	-	-		
		GUB 05 AL		74	74	74	73	73	73	73	73	72	72	71	71	71	70	69	68	68	67	66	66	-	-		
		GUB 06 AL		74	74	74	73	73	73	73	73	72	72	71	71	71	70	69	68	68	67	66	66	65	64		

A0060030

5 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T4/T135°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT82	BARTEC FN	GUE1	-50°C	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		GUB0	-50°C	80	79	78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB1	-50°C	80	80	80	80	79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB2	-50°C	80	80	80	80	80	80	79	79	77	76	75	—	—	—	—	—	—	—	—	—	—			
		GUB3	-50°C	80	80	80	80	80	80	80	80	80	80	79	78	—	—	—	—	—	—	—	—	—			
		GUB4	-50°C	80	80	80	80	80	80	80	80	80	80	80	80	80	79	78	78	77	76	76	—	—	—		
		GUB5	-50°C	80	80	80	80	80	80	80	80	80	80	80	80	80	79	78	78	77	76	76	75	74	74		
	AD Vigand	GUB0	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB01	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB02	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB03	-40°C	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB04	-40°C	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB04A	-40°C	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB05	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—			
		GUB06	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60			
	GUB07	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60				
	Cortem	CCA-0E	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCA-01E	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCA-02E	-60°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCA-03E	-60°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—			
		CCA-04E	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—			
	Cortem	GUB-0	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-01	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-02	-60°C	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-03	-60°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—			
		GUB-04	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—			
		GUB-05	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
	Cortem	CCAI2020	-50°C	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CCAI3020	-50°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—			
		CCAI3030	-50°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—			
		CCAI4030	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—			
	Technor	GUB-01	-60°C	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-02	-60°C	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-03	-60°C	80	80	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB-04	-60°C	80	80	80	80	80	80	80	80	80	80	—	—	—	—	—	—	—	—	—	—	—			
		GUB-05	-60°C	80	80	80	80	80	80	80	80	80	80	80	80	—	—	—	—	—	—	—	—	—			
		GUB-06	-60°C	80	80	80	80	80	80	80	80	80	80	80	80	80	—	—	—	—	—	—	—	—			
	Warom	BXJ-IIC-I	-20°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-II	-20°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-III	-20°C	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-IV	-20°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—			
		BXJ-IIC-V	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—			
		BXJ-IIC-VI	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—			
	Rose	GUB 01 AL	-20°C	83	83	82	82	81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB 02 AL	-20°C	83	83	82	82	81	80	80	79	79	—	—	—	—	—	—	—	—	—	—	—	—			
		GUB 03 AL	-20°C	84	83	83	83	82	82	81	81	81	80	79	78	—	—	—	—	—	—	—	—	—			
		GUB 04 AL	-20°C	84	83	83	83	82	82	81	81	81	80	79	78	77	77	75	73	73	—	—	—	—			
		GUB 05 AL	-20°C	84	84	84	83	83	83	83	83	82	82	81	81	81	80	79	78	78	77	76	76	—	—		
GUB 06 AL		-20°C	84	84	84	83	83	83	83	83	82	82	81	81	81	80	79	78	78	77	76	76	75	74			

A0060037

6 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T6/T85°C																				
				Max Ambient temperature °C																				
				Number of transmitters																				
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42
TMT84 TMT85 (17,5Vx0,5 A) version	BARTEC FN	GUE1	-50°C	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB0	-50°C	47	43	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB1	-50°C	50	48	46	44	42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB2	-50°C	52	51	49	48	47	45	44	43	41	60	60	60	—	—	—	—	—	—	—	—	
		GUB3	-50°C	53	52	51	50	49	48	48	47	46	44	42	41	—	—	—	—	—	—	—	—	—
		GUB4	-50°C	54	53	53	52	52	51	51	50	50	49	48	47	46	45	43	41	40	—	—	—	—
	GUB5	-50°C	54	53	53	52	52	51	51	50	50	49	48	47	46	45	43	41	40	—	—	—	—	
	AD Viganò	GUB0	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB01	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB02	-40°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB03	-40°C	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	
		GUB04	-40°C	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	
		GUB04A	-40°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB05	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	
		GUB06	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—
	GUB07	-40°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
	Cortem	CCA-0E	-60°C	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-01E	-60°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-02E	-60°C	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-03E	-60°C	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	
	CCA-04E	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	
	Cortem	GUB-0	-60°C	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-01	-60°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-02	-60°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-03	-60°C	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	
		GUB-04	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—
	GUB-05	-60°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	
	Cortem	CCAI2020	-50°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	
		CCAI3020	-50°C	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	
		CCAI3030	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	
		CCAI4030	-50°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	
	Technor	GUB-01	-60°C	52	51	49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-02	-60°C	53	52	51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-03	-60°C	53	52	51	50	49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-04	-60°C	54	53	53	52	52	51	51	50	50	49	48	—	—	—	—	—	—	—	—	—	
		GUB-05	-60°C	54	53	53	52	52	51	51	50	50	49	48	47	—	—	—	—	—	—	—	—	
		GUB-06	-60°C	54	53	53	52	52	51	51	50	50	49	48	47	46	—	—	—	—	—	—	—	
	Warom	BXJ-IIC-I	-20°C	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-II	-20°C	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-III	-20°C	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-IV	-20°C	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-V	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	—	—	
		BXJ-IIC-VI	-20°C	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	—	—	—	—	
	Rose	GUB 01 AL	-20°C	52	51	49	48	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB 02 AL	-20°C	52	51	49	48	47	45	44	43	41	—	—	—	—	—	—	—	—	—	—	—	
		GUB 03 AL	-20°C	53	52	51	50	49	48	48	47	46	44	42	41	—	—	—	—	—	—	—	—	
		GUB 04 AL	-20°C	53	52	51	50	49	48	48	47	46	44	42	41	—	—	—	—	—	—	—	—	
		GUB 05 AL	-20°C	54	53	53	52	52	51	51	50	50	49	48	47	46	45	43	41	40	—	—	—	—
GUB 06 AL		-20°C	54	53	53	52	52	51	51	50	50	49	48	47	46	45	43	41	40	—	—	—	—	

7 Temperature class for Ex d

A0060041

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T5/T100°C																						
				Max Ambient temperature °C																						
				Number of transmitters																						
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48
TMT84 TMT85 (17,5Vx0,5 A) version	BARTEC FN	GUE1	-50°C	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		GUB0		60	58	54	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		GUB1		60	60	60	59	57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB2		60	60	60	60	60	60	59	58	56	54	51	49	—	—	—	—	—	—	—	—	—	—	
		GUB3		60	60	60	60	60	60	60	60	60	59	57	56	—	—	—	—	—	—	—	—	—	—	
	GUB4	60	60	60	60	60	60	60	60	60	60	60	60	60	60	58	56	55	53	51	50	—	—	—		
	GUB5	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	58	56	55	53	51	50	49	47	46	
	GUB0	AD Viganò	GUB01	-40°C	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	GUB02		50		50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	GUB03		50		50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	
	GUB04		50		50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	GUB04A		50		50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	GUB05		50		50	50	50	50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	
	GUB06		50		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	—	—	
	GUB07		50		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	47	46
	CCA-0E	Cortem	CCA-01E	-60°C	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	CCA-02E		50		40	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	CCA-03E		55		55	54	50	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	CCA-04E		55		55	55	55	55	55	53	51	49	45	40	55	—	—	—	—	—	—	—	—	—	—	
	GUB-0	Cortem	GUB-01	-60°C	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	GUB-02		55		55	54	50	47	43	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—		
	GUB-03		55		55	55	55	55	55	53	51	49	45	40	55	—	—	—	—	—	—	—	—	—		
	GUB-04		55		55	55	55	55	55	55	55	55	55	55	55	54	52	49	45	43	40	55	55	—	—	
	GUB-05		55		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	53	51	50	49	47	46
	CCAI2020	Cortem	CCAI3020	-50°C	55	55	54	50	47	43	55	55	—	—	—	—	—	—	—	—	—	—	—	—		
	CCAI3030		55		55	55	55	55	55	53	51	49	45	40	55	—	—	—	—	—	—	—	—	—		
	CCAI4030		55		55	55	55	55	55	55	55	55	55	55	55	54	52	49	—	—	—	—	—	—	—	
	GUB-01	Technor	GUB-02	-60°C	67	66	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	GUB-03		68		67	66	65	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	GUB-04		69		68	68	67	67	66	66	65	65	64	63	—	—	—	—	—	—	—	—	—	—	—	
	GUB-05		69		68	68	67	67	66	66	65	65	64	63	62	—	—	—	—	—	—	—	—	—	—	
	GUB-06		69		68	68	67	67	66	66	65	65	64	63	62	61	—	—	—	—	—	—	—	—	—	
	BXJ-IIC-I		Warom		BXJ-IIC-II	-20°C	50	50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	BXJ-IIC-III	50		50	50		50	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	BXJ-IIC-IV	50		50	50		50	50	50	50	50	50	50	—	—	—	—	—	—	—	—	—	—	—		
	BXJ-IIC-V	50		50	50		50	50	50	50	50	50	50	50	50	50	50	50	—	—	—	—	—	—	—	
	BXJ-IIC-VI	50		50	50		50	50	50	50	50	50	50	50	50	50	50	50	50	—	—	—	—	—	—	
	GUB 01 AL	Rose		GUB 02 AL	-20°C		67	66	64	63	62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	GUB 03 AL		68	67		66	65	64	63	63	62	61	59	57	56	—	—	—	—	—	—	—	—	—		
	GUB 04 AL		68	67		66	65	64	63	63	62	61	59	57	56	54	52	49	45	43	—	—	—	—	—	
	GUB 05 AL		69	68		68	67	67	66	66	65	65	64	63	62	61	60	58	56	55	53	51	50	—	—	
	GUB 06 AL		69	68		68	67	67	66	66	65	65	64	63	62	61	60	58	56	55	53	51	50	49	47	46

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8 Temperature class for Ex d

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T4/T135°C																					
				Max Ambient temperature °C																					
				Number of transmitters																					
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46
TMT84 TMT85 (17,5Vx0,5 A) version	BARTEC FN	GUE1	-50°C	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
		GUB0	-50°C	77	73	69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB1	-50°C	80	78	76	74	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB2	-50°C	80	80	79	78	77	75	74	73	71	69	66	64	—	—	—	—	—	—	—	—	—	
		GUB3	-50°C	80	80	80	80	79	78	78	77	76	74	72	71	—	—	—	—	—	—	—	—	—	
		GUB4	-50°C	80	80	80	80	80	80	80	80	80	79	78	77	76	75	73	71	70	68	66	65	—	—
	GUB5	-50°C	80	80	80	80	80	80	80	80	80	79	78	77	76	75	73	71	70	68	66	65	64	62	61
	AD Viganò	GUB0	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB01	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB02	-40°C	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB03	-40°C	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB04	-40°C	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB04A	-40°C	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB05	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	
		GUB06	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	—
	GUB07	-40°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	Cortem	CCA-0E	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-01E	-60°C	55	55	46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-02E	-60°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCA-03E	-60°C	55	55	55	55	55	55	55	55	55	55	51	—	—	—	—	—	—	—	—	—	—	
		CCA-04E	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	51	50	—	—	
	Cortem	GUB-0	-60°C	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-01	-60°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-02	-60°C	55	55	55	55	55	55	54	50	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-03	-60°C	55	55	55	55	55	55	55	55	55	55	51	—	—	—	—	—	—	—	—	—	—	
		GUB-04	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	51	50	—	—	
	Cortem	GUB-05	-60°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	
		CCAI2020	-50°C	55	55	55	55	55	55	54	50	—	—	—	—	—	—	—	—	—	—	—	—	—	
		CCAI3020	-50°C	55	55	55	55	55	55	55	55	55	55	55	51	—	—	—	—	—	—	—	—	—	
		CCAI3030	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	
	Technor	CCAI4030	-50°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	
		GUB-01	-60°C	80	80	79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-02	-60°C	80	80	80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-03	-60°C	80	80	80	80	79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB-04	-60°C	80	80	80	80	80	80	80	80	80	79	78	—	—	—	—	—	—	—	—	—	—	
		GUB-05	-60°C	80	80	80	80	80	80	80	80	80	79	78	77	—	—	—	—	—	—	—	—	—	
	Warom	GUB-06	-60°C	80	80	80	80	80	80	80	80	79	78	77	76	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-I	-20°C	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-II	-20°C	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-III	-20°C	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-IV	-20°C	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	—	—	—	—	
		BXJ-IIC-V	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	—	
	Rose	BXJ-IIC-VI	-20°C	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	—	—	—	—	—	—	
		GUB 01 AL	-20°C	82	81	79	78	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB 02 AL	-20°C	82	81	79	78	77	75	74	73	71	—	—	—	—	—	—	—	—	—	—	—	—	
		GUB 03 AL	-20°C	83	82	81	80	79	78	78	77	76	74	72	71	—	—	—	—	—	—	—	—	—	
		GUB 04 AL	-20°C	83	82	81	80	79	78	78	77	76	74	72	71	69	67	64	60	58	—	—	—	—	
		GUB 05 AL	-20°C	84	83	83	82	82	81	81	80	80	79	78	77	76	75	73	71	70	68	66	65	—	—
GUB 06 AL	-20°C	84	83	83	82	82	81	81	80	80	79	78	77	76	75	73	71	70	68	66	65	64	62	61	

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9 Temperature class for Ex d







Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T6/T85°C																						
				Max Ambient temperature °C																						
				Number of transmitters																						
2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48				
TMT84 TMT85 (17,5Vx0,5A) version	TECHNOR	SB-151510	-50°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		SB-202016		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SB-272716		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SB-282816		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SB-273516		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SB-353516		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	AD VIGANÒ	CSX151514	-40°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		CSX201514		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX302014		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX303014		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX453014		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX454514		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX594514		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX595914		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX705014		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX807014		40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX302019		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX303019		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX453019		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX454519		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX594519		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX595919		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX705019		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX807019		40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX118019		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	
		CSA 0		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSA 11		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	CSA 12	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	CSA 13	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	CSA 35	40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-			
	BARTEC FN	ESX013013B	-60°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		ESX017017B		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX022016A		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX022022A		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX033022A		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX033033A		40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX040040D		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA1313A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA1717A		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA2216A		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA2222A		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		WAROM		ESX3322A	-60°C	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ESA3333A		40	40		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	ESA4433A		40	40		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	ESA5242A		40	40		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	ESA6348A		40	40		40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	
	BXJ-e-I		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	BXJ-e-II		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BXJ-e-III	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-e-IV	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-e-V	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-e-VI	40		40	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-e-VII	40		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-e-VIII	40		40	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-S-I	-		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-S-II	40		40	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-S-III	40		40	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-S-IIIB	40		-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-S-IV	40		40	40		40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BXJ-S-IVB	40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-V	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-VB	40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-VI	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-VIB	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-VII	40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-VIIB	40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-				
BXJ-S-VIII	40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-				

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13 Temperature class for Ex e

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T6/T85°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
<b>TMT84 TMT85 (17,5Vx0,5A ) version</b>	Rose	X5.08 08 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		X5.08 13 06		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.08 18 06		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 10 08		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 16 08		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 20 08		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 08		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 09		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 08		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 09		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 36 08		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 14 09		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 20 09		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 16 09		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 26 09		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 36 09		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 56 09		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.18 18 10		40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.18 28 10		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 10 11		40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 11		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 18		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 28 11		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 33 11		40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 33 18		40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 40 11		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 40 23		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 60 11		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.31 40 11		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.31 40 14		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.31 40 18		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.31 40 23		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.31 60 11		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.31 60 18		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		X5.60 60 20		40	40	40	40	40	40	40	40	40	40	-	-	-	-	-	-	-	-	-	-	-			
		Rose		Rose	3X.10 10 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3X.15 10 06	-		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.15 15 08	-		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.20 10 06	-		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.20 20 08	-		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.20 20 12	40		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 15 08	40		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 20 08	40		-		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 20 12	40		40		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 30 12	40		40		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 30 16	40		40		40		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.38 38 16	40		40		40		40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.40 15 08	40		40		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.40 20 12	40		40		-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.40 30 16	40		40		40		40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.50 30 16	40		40		40		40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.50 40 16	40		40		40		40	40	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.60 20 12	40		40		40		40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

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14 Temperature class for Ex e

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T5/T100°C																					
				Max Ambient temperature °C																					
				Number of transmitters																					
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46
TMT84 TMT85 (17,5Vx0,5A) version	TECHNOR	SB-151510	-50°C	50	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SB-202016		50	50	50	47	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SB-272716		50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		SB-282816		50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		SB-273516		50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		SB-353516		50	50	50	50	50	50	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-	-
	AD VIGANÒ	CSX151514	-40°C	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		CSX201514		55	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX302014		55	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX303014		55	55	52	47	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX453014		55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX454514		55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX594514		55	55	55	55	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX595914		55	55	55	55	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX705014		55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		CSX807014		55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-
		CSX302019		55	55	52	47	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX303019		55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX453019		55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX454519		55	55	55	55	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSX594519		55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		CSX595919		55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		CSX705019		55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		CSX807019		55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-
		CSX118019		55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-
		CSA 0		55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSA 11		55	55	55	55	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-	-
		CSA 12		55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		CSA 13		55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		CSA 35		55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-
	BARTEC FN	ESX013013B	-60°C	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX017017B		50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX022016A		50	50	50	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX022022A		50	50	50	50	50	50	49	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		ESX033022A		50	50	50	50	50	50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		ESX033033A		50	50	50	50	50	50	50	50	50	50	50	50	48	43	-	-	-	-	-	-	-	-
		ESX040040D		50	50	50	50	50	50	50	50	50	50	50	50	50	48	43	-	-	-	-	-	-	-
		ESA1313A		50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		ESA1717A		50	50	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		ESA2216A		50	50	50	50	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		ESA2222A		50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		ESA3322A		50	50	50	50	50	50	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-	-
		ESA3333A		50	50	50	50	50	50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-
		ESA4433A		50	50	50	50	50	50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-
	ESA5242A	50	50	50	50	50	50	50	50	50	46	42	-	-	-	-	-	-	-	-	-	-	-		
	ESA6348A	50	50	50	50	50	50	50	50	50	50	50	50	50	48	43	-	-	-	-	-	-	-		
	WAROM	BXJ-e-I	-50°C	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-e-II		53	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-e-III		47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-e-IV		47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-e-V		53	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-e-VI		55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-e-VII		55	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-e-VIII		55	55	52	47	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-S-I		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		BXJ-S-II	55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-III	55	55	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-IIIB	55	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-IV	55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-IVB	55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-	
		BXJ-S-V	55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-VB	55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-	
		BXJ-S-VI	55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-VIB	55	55	55	55	55	55	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-	-	
	BXJ-S-VII	55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-		
	BXJ-S-VIIB	55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-		
	BXJ-S-VIII	55	55	55	55	55	55	55	55	55	55	54	52	50	48	43	-	-	-	-	-	-	-		

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15 Temperature class for Ex e

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T5/T100°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT84 TMT85 (17,5Vx0,5A) version	Rose	X5.08 08 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		X5.08 13 06	-55°C	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.08 18 06	-55°C	57	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 10 08	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 16 08	-55°C	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 20 08	-55°C	61	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 08	-55°C	57	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 09	-55°C	57	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 08	-55°C	62	58	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 09	-55°C	62	58	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 36 08	-55°C	64	62	59	56	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 14 09	-55°C	61	56	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 20 09	-55°C	62	58	54	50	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 16 09	-55°C	62	58	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 26 09	-55°C	64	62	59	56	54	51	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 36 09	-55°C	65	64	62	60	58	56	54	52	50	46	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 56 09	-55°C	65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-			
		X5.18 18 10	-55°C	64	62	59	56	54	51	49	46	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.18 28 10	-55°C	65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-			
		X5.23 10 11	-55°C	62	58	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 11	-55°C	65	64	62	60	58	56	54	52	50	46	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 18	-55°C	65	64	62	60	58	56	54	52	50	46	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 28 11	-55°C	65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-			
		X5.23 33 11	-55°C	65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-	-			
		X5.23 33 18	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.23 40 11	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.23 40 23	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.23 60 11	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.31 40 11	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.31 40 14	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.31 40 18	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.31 40 23	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.31 60 11	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.31 60 18	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		X5.60 60 20	-55°C	65	65	65	64	63	62	61	60	59	56	54	52	50	48	43	-	-	-	-	-	-			
		TMT84 TMT85 (17,5Vx0,5A) version	Rose	3X.10 10 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
				3X.15 10 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.15 15 08	-55°C	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.20 10 06	-55°C	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.20 20 08	-55°C	53	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3X.20 20 12	-55°C			57	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 15 08	-55°C			57	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 20 08	-55°C			57	51	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 20 12	-55°C			62	58	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 30 12	-55°C			62	58	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 30 16	-55°C			64	62	59	56	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-				
3X.38 38 16	-55°C			65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-				
3X.40 15 08	-55°C			61	56	52	47	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.40 20 12	-55°C			62	58	54	50	46	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.40 30 16	-55°C			65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-				
3X.50 30 16	-55°C			65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-				
3X.50 40 16	-55°C			65	64	62	60	58	56	54	52	50	46	42	-	-	-	-	-	-	-	-	-				
3X.60 20 12	-55°C			64	62	59	56	54	51	49	46	43	-	-	-	-	-	-	-	-	-	-	-				

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16 Temperature class for Ex e

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T4/T135°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT84 TMT85 (17,5Vx0,5A) version	TECHNOR	SB-151510	-50°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60			
		SB-202016		60	60	60	60	60	58	54	49	45	—	—	—	—	—	—	—	—	—	—	—	—			
		SB-272716		60	60	60	60	60	60	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		SB-282816		60	60	60	60	60	60	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		SB-273516		60	60	60	60	60	60	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		SB-353516		60	60	60	60	60	60	60	60	60	56	48	43	—	—	—	—	—	—	—	—	—	—		
	AD VIGANÒ	CSX151514	-40°C	65	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CSX201514		65	65	65	59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CSX302014		65	65	65	59	53	47	41	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		CSX303014		65	65	65	65	62	58	54	49	45	—	—	—	—	—	—	—	—	—	—	—	—			
		CSX453014		65	65	65	65	65	61	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		CSX454514		65	65	65	65	65	61	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		CSX5954514		65	65	65	65	65	65	65	64	61	56	48	43	—	—	—	—	—	—	—	—	—			
		CSX595914		65	65	65	65	65	65	65	64	61	56	48	43	—	—	—	—	—	—	—	—	—			
		CSX705014		65	65	65	65	65	65	65	65	65	63	57	53	49	45	—	—	—	—	—	—	—			
		CSX807014		65	65	65	65	65	65	65	65	65	65	65	65	63	58	54	52	47	43	41	—	—			
		CSX302019		65	65	65	65	62	58	54	49	45	—	—	—	—	—	—	—	—	—	—	—	—			
		CSX303019		65	65	65	65	65	61	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		CSX453019		65	65	65	65	65	61	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		CSX454519		65	65	65	65	65	65	65	64	61	56	48	43	—	—	—	—	—	—	—	—	—			
		CSX594519		65	65	65	65	65	65	65	65	65	63	57	53	49	45	—	—	—	—	—	—	—			
		CSX595919		65	65	65	65	65	65	65	65	65	63	57	53	49	45	—	—	—	—	—	—	—			
		CSX705019		65	65	65	65	65	65	65	65	65	63	57	53	49	45	—	—	—	—	—	—	—			
		CSX807019		65	65	65	65	65	65	65	65	65	65	65	65	65	63	58	54	52	47	43	41	—			
		CSX118019		65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	58	54	52	47	43	41			
		CSA 0		65	65	65	65	65	61	57	54	50	42	—	—	—	—	—	—	—	—	—	—	—			
		CSA 11		65	65	65	65	65	65	65	64	61	56	48	43	—	—	—	—	—	—	—	—	—			
		CSA 12		65	65	65	65	65	65	65	65	65	63	57	53	49	45	—	—	—	—	—	—	—			
		CSA 13		65	65	65	65	65	65	65	65	65	63	57	53	49	45	—	—	—	—	—	—	—			
		CSA 35		65	65	65	65	65	65	65	65	65	65	65	65	65	63	58	54	52	47	43	41	—			
	BARTEC FN	ESX013013B	-60°C	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		ESX017017B		60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		ESX022016A		60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		ESX022022A		60	60	60	60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—				
		ESX033022A		60	60	60	60	60	60	60	60	60	60	57	—	—	—	—	—	—	—	—	—	—			
		ESX033033A		60	60	60	60	60	60	60	60	60	60	60	60	60	58	—	—	—	—	—	—	—			
		ESX040040D		60	60	60	60	60	60	60	60	60	60	60	60	60	60	58	54	52	47	43	41	—			
		ESA1313A		60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		ESA1717A		60	60	60	59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		ESA2216A		60	60	60	60	60	60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
		ESA2222A		60	60	60	60	60	60	57	54	50	—	—	—	—	—	—	—	—	—	—	—	—			
		ESA3322A		60	60	60	60	60	60	60	60	60	56	48	—	—	—	—	—	—	—	—	—	—			
		ESA3333A		60	60	60	60	60	60	60	60	60	60	57	53	49	45	—	—	—	—	—	—	—			
		ESA4433A		60	60	60	60	60	60	60	60	60	60	57	53	49	45	—	—	—	—	—	—	—			
	ESA5242A	60	60	60	60	60	60	60	60	60	60	57	53	49	45	—	—	—	—	—	—	—					
	ESA6348A	60	60	60	60	60	60	60	60	60	60	60	60	60	60	58	54	52	47	43	41	—					
	WAROM	BXJ-e-I	-50°C	55	55	51	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-II		55	55	55	52	43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-III		55	55	51	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-IV		55	55	51	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-V		55	55	55	52	43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-VI		55	55	55	55	55	55	55	54	50	42	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-VII		55	55	55	55	53	47	41	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-e-VIII		55	55	55	55	55	55	54	49	45	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-S-I	-60°C	55	47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-S-II		55	55	55	55	55	55	55	54	50	42	—	—	—	—	—	—	—	—	—	—				
		BXJ-S-III		55	55	55	55	55	55	55	55	54	50	42	—	—	—	—	—	—	—	—	—				
		BXJ-S-IIIB		55	55	55	55	53	47	41	—	—	—	—	—	—	—	—	—	—	—	—	—				
		BXJ-S-IV		55	55	55	55	55	55	55	55	55	55	55	53	49	45	—	—	—	—	—	—				
		BXJ-S-IVB		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	54	52	—	—	—	—			
		BXJ-S-V		55	55	55	55	55	55	55	55	55	55	55	53	49	45	—	—	—	—	—	—				
		BXJ-S-VB		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	54	52	47	43	41			
		BXJ-S-VI		55	55	55	55	55	55	55	55	55	55	55	53	49	45	—	—	—	—	—	—				
		BXJ-S-VIB		55	55	55	55	55	55	55	55	55	55	55	53	49	45	—	—	—	—	—	—				
		BXJ-S-VII		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	54	52	47	43	41			
		BXJ-S-VIIB		55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	54	52	47	43	41			
	BXJ-S-VIII	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	54	52	47	43	41					

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17 Temperature class for Ex e

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T4/T135°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
TMT84 TMT85 (17,5Vx0,5A) version	Rose	X5.08 08 06	-55°C	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		X5.08 13 06	76	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.08 18 06	78	72	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 10 08	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 16 08	78	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 20 08	80	76	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 08	78	72	66	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 09	78	72	66	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 08	81	77	73	69	65	61	57	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 09	81	77	73	69	65	61	57	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 36 08	82	79	77	74	71	69	66	64	61	56	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 14 09	80	76	71	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 20 09	81	77	73	69	65	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 16 09	81	77	73	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 26 09	82	79	77	74	71	69	66	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 36 09	83	81	79	77	75	73	71	69	67	63	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 56 09	83	81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-	-			
		X5.18 18 10	82	79	77	74	71	69	66	64	61	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.18 28 10	83	81	79	77	75	73	71	69	67	63	57	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 10 11	81	77	73	69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 11	83	81	79	77	75	73	71	69	67	63	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 18	83	81	79	77	75	73	71	69	67	63	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 28 11	83	81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-	-			
		X5.23 33 11	83	81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-	-			
		X5.23 33 18	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	-	-	-	-	-	-	-			
		X5.23 40 11	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	-	-	-	-	-	-			
		X5.23 40 23	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	43	41	-	-			
		X5.23 60 11	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	43	41	-	-			
		X5.31 40 11	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	-	-	-	-			
		X5.31 40 14	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	-	-	-	-			
		X5.31 40 18	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	-	-	-	-			
		X5.31 40 23	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	-	-	-	-			
		X5.31 60 11	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	43	41	-	-			
		X5.31 60 18	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	43	41	-	-			
		X5.60 60 20	83	82	81	80	79	78	77	76	75	72	69	67	65	63	58	54	52	47	43	41	-	-			
		Rose	Rose	3X.10 10 06	-55°C	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
				3X.15 10 06	66	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.15 15 08	73	62	51	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.20 10 06	73	62	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.20 20 08	76	68	60	52	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.20 20 12	78	72	66	59	53	47	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
				3X.30 15 08	78	72	66	59	53	47	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3X.30 20 08	78			72	66	59	53	47	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3X.30 20 12	81			77	73	69	65	61	57	54	50	42	-	-	-	-	-	-	-	-	-	-	-				
3X.30 30 12	81			77	73	69	65	61	57	54	50	42	-	-	-	-	-	-	-	-	-	-	-				
3X.30 30 16	82			79	77	74	71	69	66	64	61	56	48	43	-	-	-	-	-	-	-	-	-				
3X.38 38 16	83			81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-				
3X.40 15 08	80			76	71	67	62	58	54	49	45	-	-	-	-	-	-	-	-	-	-	-	-				
3X.40 20 12	81			77	73	69	65	61	57	54	50	42	-	-	-	-	-	-	-	-	-	-	-				
3X.40 30 16	83			81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-				
3X.50 30 16	83			81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-				
3X.50 40 16	83			81	79	77	75	73	71	69	67	63	57	53	49	45	-	-	-	-	-	-	-				
3X.60 20 12	82			79	77	74	71	69	66	64	61	56	48	43	-	-	-	-	-	-	-	-	-				

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18 Temperature class for Ex e







Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T5/T100°C																							
				Max Ambient temperature °C																							
				Number of transmitters																							
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48	
Rose	Rose	X5.08 08 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		X5.08 13 06	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.08 18 06	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 10 08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 16 08	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.10 20 08	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 08	65	65	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 12 09	65	65	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 08	65	65	65	65	64	62	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 22 09	65	65	65	65	64	62	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.12 36 08	65	65	65	65	65	65	65	64	63	60	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 14 09	65	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.14 20 09	65	65	65	65	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 16 09	65	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 26 09	65	65	65	65	65	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 36 09	65	65	65	65	65	65	65	65	65	64	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.16 56 09	65	65	65	65	65	65	65	65	65	64	62	60	58	56	-	-	-	-	-	-	-	-			
		X5.18 18 10	65	65	65	65	65	65	65	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.18 28 10	65	65	65	65	65	65	65	65	65	64	62	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 10 11	65	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 11	65	65	65	65	65	65	65	65	65	64	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 20 18	65	65	65	65	65	65	65	65	65	64	-	-	-	-	-	-	-	-	-	-	-	-			
		X5.23 28 11	65	65	65	65	65	65	65	65	65	64	62	60	58	56	-	-	-	-	-	-	-	-			
		X5.23 33 11	65	65	65	65	65	65	65	65	65	64	62	60	58	56	53	-	-	-	-	-	-	-			
		X5.23 33 18	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	-	-	-	-	-	-			
		X5.23 40 11	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	-	-	-	-	-			
		X5.23 40 23	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	56	55	54			
		X5.23 60 11	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	56	55	54			
		X5.31 40 11	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	-	-	-			
		X5.31 40 14	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	-	-	-			
		X5.31 40 18	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	-	-	-			
		X5.31 40 23	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	-	-	-			
X5.31 60 11	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	56	55	54					
X5.31 60 18	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	56	55	54					
X5.60 60 20	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	63	61	60	58	56	55	54					
Rose	Rose	3X.10 10 06	-55°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
		3X.15 10 06	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		3X.15 15 08	64	59	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		3X.20 10 06	64	59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		3X.20 20 08	65	63	60	56	52	48	45	41	-	-	-	-	-	-	-	-	-	-	-	-	-				
		3X.20 20 12	65	65	63	60	57	54	52	49	-	-	-	-	-	-	-	-	-	-	-	-	-				
		3X.30 15 08	65	65	63	60	57	54	52	49	46	-	-	-	-	-	-	-	-	-	-	-	-				
		3X.30 20 08	65	65	63	60	57	54	52	49	46	40	-	-	-	-	-	-	-	-	-	-	-				
		3X.30 20 12	65	65	65	65	64	62	60	59	57	53	50	-	-	-	-	-	-	-	-	-	-				
		3X.30 30 12	65	65	65	65	64	62	60	59	57	53	50	46	43	-	-	-	-	-	-	-	-				
		3X.30 30 16	65	65	65	65	65	65	65	64	63	60	58	55	53	51	46	-	-	-	-	-	-				
		3X.38 38 16	65	65	65	65	65	65	65	65	65	64	62	60	58	56	53	49	47	44	40	-	-				
		3X.40 15 08	65	65	65	64	62	60	58	56	54	50	46	-	-	-	-	-	-	-	-	-	-				
		3X.40 20 12	65	65	65	65	64	62	60	59	57	53	50	46	43	-	-	-	-	-	-	-	-				
		3X.40 30 16	65	65	65	65	65	65	65	65	65	64	62	60	58	56	53	49	47	44	40	-	-				
		3X.50 30 16	65	65	65	65	65	65	65	65	65	64	62	60	58	56	53	49	47	44	40	-	-				
3X.50 40 16	65	65	65	65	65	65	65	65	65	64	62	60	58	56	53	49	47	44	40	-	-						
3X.60 20 12	65	65	65	65	65	65	65	64	63	60	58	55	53	51	46	41	-	-	-	-	-						

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22 Temperature class for Ex e

Assembled transmitter	Manufacturer	ENCLOSURE TYPE	MINIMUM AMBIENT TEMP.	TEMPERATURE CLASS T4/T135°C																						
				Max Ambient temperature °C																						
				Number of transmitters																						
				2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	30	34	38	40	42	46	48
TMT82	TECHNOR	SB-151510	-50°C	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		SB-202016		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		SB-272716		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		SB-282816		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		SB-273516		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		SB-353516		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	AD VIGANÒ	CSX151514	-40°C	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		CSX201514		65	65	65	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		CSX302014		65	65	65	65	65	64	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		CSX303014		65	65	65	65	65	65	65	65	62	56	52	-	-	-	-	-	-	-	-	-	-		
		CSX453014		65	65	65	65	65	65	65	65	65	60	56	53	49	42	-	-	-	-	-	-	-	-	
		CSX454514		65	65	65	65	65	65	65	65	65	60	56	53	49	42	-	-	-	-	-	-	-	-	
		CSX594514		65	65	65	65	65	65	65	65	65	65	65	63	61	56	51	49	44	-	-	-	-	-	
		CSX595914		65	65	65	65	65	65	65	65	65	65	65	63	61	56	51	49	44	-	-	-	-	-	
		CSX705014		65	65	65	65	65	65	65	65	65	65	65	65	65	63	59	57	54	50	48	46	43	41	
		CSX807014		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	64	62	61
		CSX302019		65	65	65	65	65	65	65	65	65	62	56	52	-	-	-	-	-	-	-	-	-	-	
		CSX303019		65	65	65	65	65	65	65	65	65	60	56	53	-	-	-	-	-	-	-	-	-	-	
		CSX453019		65	65	65	65	65	65	65	65	65	60	56	53	49	42	-	-	-	-	-	-	-	-	
		CSX454519		65	65	65	65	65	65	65	65	65	65	65	63	61	56	51	49	44	-	-	-	-	-	
		CSX594519		65	65	65	65	65	65	65	65	65	65	65	65	65	63	59	57	54	50	48	46	43	41	
		CSX595919		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
		CSX705019		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
		CSX807019		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
		CSX118019		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
		CSA 0		65	65	65	65	65	65	65	65	65	65	60	-	-	-	-	-	-	-	-	-	-	-	
		CSA 11		65	65	65	65	65	65	65	65	65	65	65	63	-	-	-	-	-	-	-	-	-	-	
		CSA 12		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
		CSA 13		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
		CSA 35		65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	
	BARTEC FN	ESX013013B	-60°C	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		ESX017017B		60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		ESX022016A		60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		ESX022022A		60	60	60	60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESX033022A		60	60	60	60	60	60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	
		ESX033033A		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		ESX040040D		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		ESA1313A		60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA1717A		60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA2216A		60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA2222A		60	60	60	60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	
		ESA3322A		60	60	60	60	60	60	60	60	60	60	60	-	-	-	-	-	-	-	-	-	-	-	
		ESA3333A		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		ESA4433A		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	ESA5242A	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60			
	ESA6348A	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60			
	WAROM	BXJ-e-I	-50°C	55	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		BXJ-e-II		55	55	55	55	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		BXJ-e-III		55	55	55	55	55	54	49	44	-	-	-	-	-	-	-	-	-	-	-	-	-		
		BXJ-e-IV		55	55	55	55	55	54	49	44	-	-	-	-	-	-	-	-	-	-	-	-	-		
		BXJ-e-V		55	55	55	55	55	55	55	55	51	43	-	-	-	-	-	-	-	-	-	-	-		
		BXJ-e-VI		55	55	55	55	55	55	55	55	55	55	55	53	-	-	-	-	-	-	-	-	-	-	
		BXJ-e-VII		55	55	55	55	55	55	55	55	55	53	44	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-e-VIII		55	55	55	55	55	55	55	55	55	55	55	52	48	44	-	-	-	-	-	-	-	-	
		BXJ-S-I		55	55	55	50	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		BXJ-S-II	55	55	55	55	55	55	55	55	55	55	55	-	-	-	-	-	-	-	-	-	-	-		
		BXJ-S-III	55	55	55	55	55	55	55	55	55	55	55	55	53	-	-	-	-	-	-	-	-	-		
		BXJ-S-IIIB	55	55	55	55	55	55	55	55	55	55	55	53	44	-	-	-	-	-	-	-	-	-		
		BXJ-S-IV	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		BXJ-S-IVB	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		BXJ-S-V	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		BXJ-S-VB	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		BXJ-S-VI	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
		BXJ-S-VIB	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55		
	BXJ-S-VII	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
	BXJ-S-VIIB	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			
	BXJ-S-VIII	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55			

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23 Temperature class for Ex e



Transmitter	Power supply			Sensor circuit		
	U <sub>i</sub>	I <sub>i</sub>	P <sub>i</sub>	U <sub>o</sub>	I <sub>o</sub>	P <sub>o</sub>
iTEMP TMT142B	30 V	300 mA	1 000 mW	7.6 V	13 mA	24.7 mW
iTEMP TMT162 <sup>4) 5) 6)</sup>	17.5 V/24 V	500 mA/250 mA	5 320 mW/1 200 mW	7.6 V/8.6 V	29.3 mA/ 26.9 mA	55.6 mW/57.6 mW

- 1) Values on left: Head transmitter version / Values on right: DIN Rail version
- 2) Values on left: 17.5 V version / Values on right: 24 V version
- 3) FISCO field device
- 4) For sensor circuit: Values on left: Transmitters 4-20 mA / Values on right: Transmitters with Fieldbus connection
- 5) For power supply: Values on left: for FISCO / Values on right: LS.circuit
- 6) Not available for RTD

Supply circuit: in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, for connection to a certified intrinsically safe circuit with following maximum values for each intrinsic safe circuits:

Insert	U <sub>i</sub>	I <sub>i</sub>	P <sub>i</sub> (RTD)	P <sub>i</sub> (TC)
Single apparatus	9.8 V	30 mA	50 mW	60 mW
iTHERM TS901	9.0 V	80 mA	-	160 mW
iTHERM TS111	9.8 V	30 mA	50 mW	60 mW
iTHERM TSx310	9.8 V	30 mA	50 mW	60 mW

Capacitance and inductance assessment:

Insert	Single/Double/Triple	C <sub>i_nom,n</sub>	L <sub>i_nom,n</sub>
iTHERM TS901 <sup>1) 2)</sup>	Single/Double	10.0 nF	50.0 μH
	Triple	-	-
iTHERM TS111	Single/Double	40.2 nF	200.8 μH
	Triple	N/A	N/A
iTHERM TSx310 <sup>1)</sup>	Single/Double	40.0 nF	200.0 μH
	Triple	N/A	N/A

- 1) = an additional length of 20 m for the extension cables have been considered.
- 2) = maximum permitted length is 50 m for single and 25 m for double.



Where **n** indicates the intrinsic safe input circuits (from 2 up to 48).

Simple apparatus (only for TC's):

Sensor type	Extension Cable		Sensor	
Single	200 pF/m	1 μH/m	200 pF/m	1 μH/m
Double	400 pF/m	2 μH/m	400 pF/m	2 μH/m
Triple	600 pF/m	3 μH/m	600 pF/m	3 μH/m

**Determination of total inner capacitances C<sub>i</sub> and inductances L<sub>i</sub> for sensors:**

- C<sub>i</sub> = C<sub>i</sub> Sensor X L Sensor + C<sub>i</sub> Extension Cable X L Extension Cable, C<sub>i</sub> ≤ 42.3 nF
- L<sub>i</sub> = L<sub>i</sub> Sensor X L Sensor + L<sub>i</sub> Extension Cable X L Extension Cable, L<sub>i</sub> ≤ 201.3 μH



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