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Safety Instructions
iTEMP TMT82, TMT84, TMT85

PROFIBUS®, FOUNDATION Fieldbus™

ATEX, IECEx: Ex ia [ia Ga] IIC T6...T4 Gb
Ex ia IIIC T85 °C...T115 °C Db
Ex ia IIC T6...T4 Ga

Endress+Hauser
People for Process Automation

iTEMP TMT82, TMT84, TMT85

PROFIBUS®, FOUNDATION Fieldbus™

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About this document

The document number of these Safety Instructions (XA) must match the information on the nameplate.

Associated documentation

All documentation is available on the Internet:
www.endress.com/Deviceviewer
(enter the serial number from the nameplate).

If not yet available, a translation into EU languages can be ordered.

To commission the device, please observe the Operating Instructions pertaining to the device:
www.endress.com/<product code>, e.g. iTEMP TMT82

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:
www.endress.com/Downloads

Certificates and declarations

IECEx certificate

Certificate number: IECEx DEK 11.0096X

Affixing the certificate number certifies conformity with the following standards (depending on the device version)

- IEC 60079-0 : 2017
- IEC 60079-11 : 2011

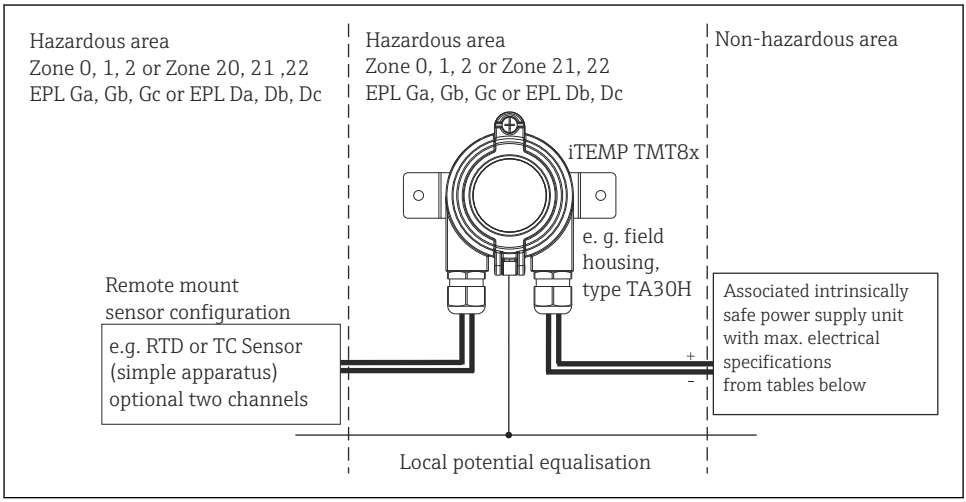
ATEX certificate

Certificate number: DEKRA 11ATEX0265 X

Manufacturer address

Endress+Hauser Wetzer GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

Safety instructions



Safety instructions: Installation

- 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. EN/IEC 60079-14).
- The housing of the device must be connected to the potential matching line.
- The type of protection changes as follows when the device is connected to certified intrinsically safe circuits of Category ib: Ex ib IIC.
  When connecting an intrinsically safe ib circuit, do not operate the sensor at Zone 0 (EPL Ga).
- When connecting two independent sensors make sure that the potential equalisation cables are at the same potential.
- The circuits of assembled head transmitter are isolated from its enclosure in conformance with EN/IEC 60079-11 chapter 6.3.13.
- Unit must not be used when hybrid mixtures (gas, dust, air) are present.

Safety instructions: Installation in equipment of Group III:

- Seal the cable entries tight with certified cable glands (min. IP6X) IP6X according to IEC/EN 60529.
- The used glands shall be certificated also according to EN/IEC 60079-0.
- The provided cable entries to option code glands are suitable ATEX/ IECEx Ex certified cable glands with a temperature range of −20 to +95 °C
- For operating the thermometer at an ambient temperature under −20 °C, appropriate cables, cable entries and sealing facilities permitted for this application must be used.
- For ambient temperatures higher than +65 °C, use suitable heat-resisting cables or wires, cable entries and sealing facilities for Ta +5 K above surrounding.

⚠ 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: Zone 0

- Only operate devices in potentially explosive vapour/air mixtures under atmospheric conditions:
  - −50 °C ≤ Ta ≤ +60 °C
  - 0.8 bar ≤ p ≤ 1.1 bar
- If no explosive mixtures are present, or if additional measures have been taken in accordance with EN 1127-1, the devices may also be operated outside the atmospheric conditions in accordance with the manufacturer's specifications.
- Associated apparatus with galvanic isolation between the intrinsically safe and non-intrinsically safe circuits are preferred..

Safety instructions: Specific conditions of use

When used in an area requiring the use of equipment with EPL Ga, the aluminium enclosure shall be protected from friction and impact.

Temperature tables

Transmitter version with field housing, type TA30H, TA30A, TA30D		Temperature class/ code	Ambient temperature range	
			EPL Gb/EPL Db	EPL Ga
Ex ia IIC	iTEMP TMT82 without display TID10	T6	−52 to +58 °C	−52 to +46 °C
		T5	−52 to +75 °C	−52 to +60 °C
		T4	−52 to +85 °C	−52 to +60 °C
Ex ia IIIC	iTEMP TMT82 without display TID10	T85 °C	−50 to +58 °C	
		T100 °C	−50 to +75 °C	
		T115 °C	−50 to +85 °C	
Ex ia IIC/ Ex ia IIIC	iTEMP TMT84 and iTEMP TMT85 without display TID10	T6/T85 °C	−40 to +55 °C	−20 to +40 °C
		T5/T100 °C	−40 to +70 °C	−20 to +50 °C
		T4/T115 °C	−40 to +85 °C	−20 to +60 °C
	iTEMP TMT82, TMT84, TMT85 with display TID10	T6/T85 °C	−40 to +55 °C	
		T5/T100 °C	−40 to +70 °C	
		T4/T115 °C	−40 to +85 °C	

Transmitter version with field mount housing (dual compartment)		Temperature class/ code	Ambient temperature range	
			EPL Gb/EPL Db	EPL Ga
Ex ia IIC	iTEMP TMT82 without display TID10	T6	−40 to +58 °C	−40 to +46 °C
		T5	−40 to +75 °C	−40 to +60 °C
		T4	−40 to +85 °C	−40 to +60 °C
Ex ia IIIC	iTEMP TMT82 without display TID10	T85 °C	−40 to +55 °C	
		T100 °C	−40 to +70 °C	
		T115 °C	−40 to +85 °C	
Ex ia IIC/ Ex ia IIIC	iTEMP TMT82 with display TID10	T6/T85 °C	−40 to +55 °C	
		T5/T100 °C	−40 to +70 °C	
		T4/T115 °C	−40 to +85 °C	

Electrical connection data

Type	Electrical data		
iTEMP TMT82 HART®-protocol	Supply voltage (terminal + and -)	$U_i \leq 30\ V_{DC}$ $I_i \leq 130$ mA $P_i \leq 800$ mW C_i = negligibly small L_i = negligibly small	
	Sensor circuit (terminal 3 to 7)	$U_o \leq 7.6\ V_{DC}$ $I_o \leq 13$ mA $P_o \leq 24.7$ mW C_i = negligibly small L_i = negligibly small	
	Maximum connection values Ex ia IIC Ex ia IIB/IIIC Ex ia IIA	 $L_o = 10$ mH $L_o = 50$ mH $L_o = 50$ mH	 $C_o = 1$ µF $C_o = 4.5$ µF $C_o = 6.7$ µF
	Maximum connection values (dual compartment) Ex ia IIC Ex ia IIB/IIIC Ex ia IIA	 $L_o = 0.5$ mH $L_o = 20$ mH $L_o = 50$ mH	 $C_o = 0.7$ µF $C_o = 4.1$ µF $C_o = 5.0$ µF
iTEMP TMT84 PROFIBUS® PA-protocol iTEMP TMT85 FOUNDATION Fieldbus™-protocol	Supply voltage (terminal + and -)	 $U_i \leq 17.5\ V_{DC}$ $I_i \leq 380$ mA $C_i \leq 5$ nF $L_i = 2.75$ µH	or: $U_i \leq 24\ V_{DC}$ $I_i \leq 250$ mA $C_i \leq 5$ nF $L_i = 2.75$ µH
	Applicable for connection to a Fieldbus system according to FISCO-model		
	Sensor circuit (terminal 3 to 7)	$U_o \leq 7.2\ V_{DC}$ $I_o \leq 25.9$ mA $P_o \leq 46.7$ mW $C_i \leq 5$ nF L_i = negligibly low	
	Max. connection values Ex ia IIC Ex ia IIB/IIIC Ex ia IIA	 $L_o = 20$ mH $L_o = 50$ mH $L_o = 100$ mH	 $C_o = 0.97$ µF $C_o = 4.6$ µF $C_o = 6$ µF

Category	Type of protection (ATEX, IECEx)	Type
II 2(1)G	Ex ia |ia Ga| IIC T6...T4 Gb	iTEMP TMT82, TMT84, TMT85
II2 D	Ex ia IIIC T85 °C...T115 °C Db	
II1 G	Ex ia IIC T6...T4 Ga	

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