XA02626T/09/EN/01.21
71530734
2021-06-14

Safety Instructions
iTEMP TMT82

EAC: 0Ex ia IIC T6...T4 Ga X
Ex ia IIIC T85 °C...T120 °C Dc X

Endress+Hauser
People for Process Automation

iTEMP TMT82

Table of contents

Associated documentation

This document is an integral part of the following Operating Instructions:
Operating instructions: BA01028T
Brief Operating Instructions: KA01095T

Supplementary documentation

Explosion-protection brochure: CP00021Z/11

The Explosion-protection brochure is available: In the download area of the Endress+Hauser website: www.endress.com → Download → Advanced → Documentation code: CP00021Z

EAC certificate of conformity according to TR CU 012/2011

The temperature transmitters meet the fundamental health and safety requirements for the design and construction of devices and protective systems intended for use in potentially explosive atmospheres.

Certification body: НАНИО "ЦСВЭ"

Certificate number: ЕАЭС RU C-DE.AA87.B.00330/20

Affixing the certificate number certifies conformity with the following standards:

GOST 31610.0-2014 (IEC 60079-0:2011)

GOST 31610.11-2014 (IEC 60079-11:2011)

GOST 31610.26-2012/IEC 60079-26:2006

Manufacturer address

Endress+Hauser Wetzer GmbH + Co KG

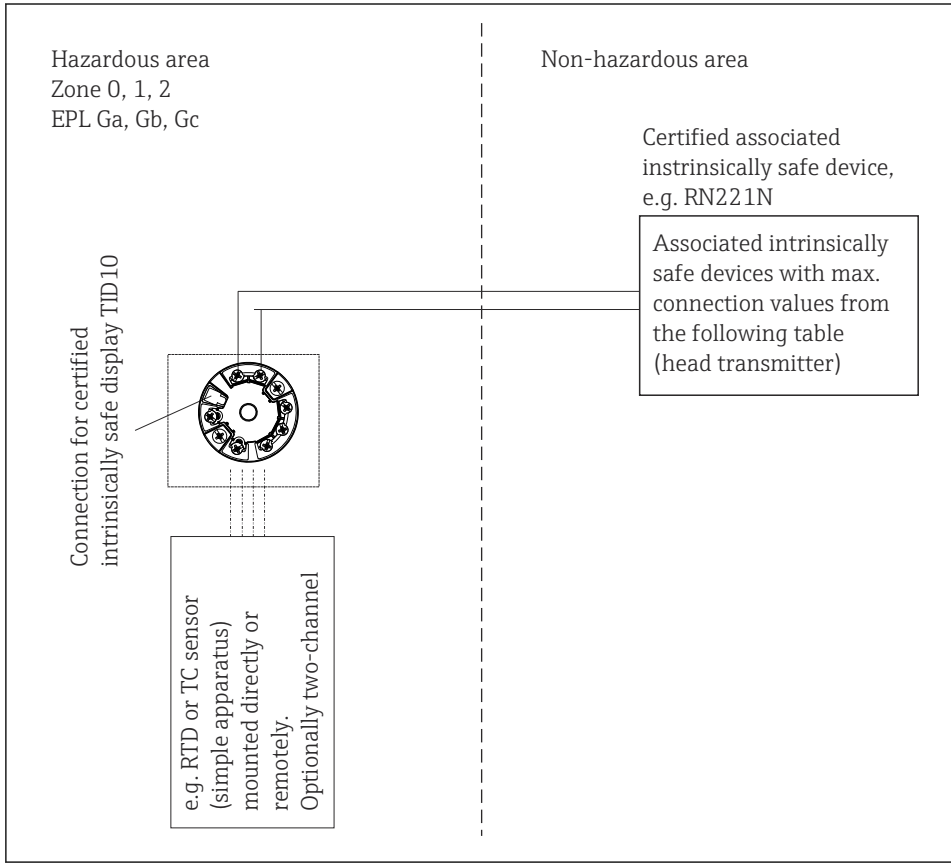
Obere Wank 1

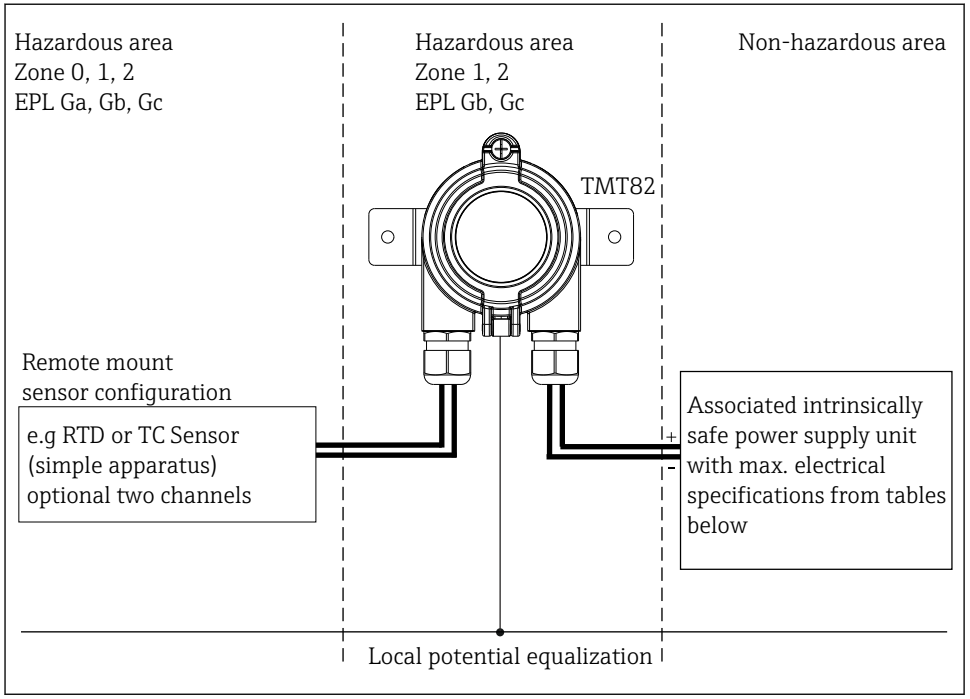
D-87484 Nesselwang

Germany

Phone: +49 (0)8361 308 0

Safety instructions Ex ia - Gas atmospheres





Safety instructions: Installation

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device and route the cable according to the manufacturer's instructions and any other valid standards and regulations (e.g. GOST 30852.13 (IEC 60079-14)).
- Install the device only with power supply disconnected.
- When installing the head transmitter note that the housing ingress protection classification IP20 according to EN/IEC 60529 is upheld.
- The housing of field transmitter must be connected to the potential matching line.
- The type of protection changes as follows when the devices are 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.
- In hazardous areas it is not permitted to use the CDI interface for configuration.
- When connecting two independent sensors to one transmitter make sure that the potential equalisation cables are at the same potential.

- The device (connection head) must be connected to the potential compensation cable.
- The certified TID10 display may only be installed in zone 1/EPL Gb or zone 2/EPL Gc.
- The permissible ambient temperatures for the display, type TID10, are to be observed.

Safety instructions: Zone 1 and Zone 2

- According to the specifications of the manufacturer, this apparatus can be operated in zone 1 (category 2)/EPL Gb or zone 2 (category 3) /EPL Gc.
- The sensor current circuit may be introduced into zone 0 (category 1)/EPL Ga.

Safety instructions: Zone 0 (only applicable for head transmitters)

These instructions are only valid if the unit is to be installed directly in the zone 0 (category 1)/EPL Ga.

- Explosive moisture/air mixtures are only allowed to occur under atmospheric conditions.
  - −20 °C ≤ Ta ≤ +60 °C
  - 0.8 bar ≤ p ≤ 1.1 bar
    If there is no explosive mixture present or the additional measures according to GOST 31438.1 (EN 1127-1) are upheld the unit can also be operated outside the atmospheric conditions according to the manufacturers specification.
- The restricted ambient temperatures as per GOST 31438.1 (EN 1127-1) 6.4.2 must be observed (see table).
- The power circuit to be supplied must meet the specifications for explosion protection Ex ia IIC (GOST 30852.13 (IEC 60079-14) 12.3).
- The devices can only be used in fluids if the process-wetted materials are sufficiently resistant to such fluids.
- If the entire device is operated in Zone 0/EPL Ga, the compatibility of the device materials with the fluids has to be ensured. (Housing: polycarbonate (PC), potting: polyurethane (PUR)).
- It is not permitted to mount the TID10 display in zone 0/EPL Ga.
- The temperature transmitter must be installed in such a way that electrostatic charge cannot occur, e.g. installation in grounded metallic head or grounded housing.

Safety Instructions: Special conditions

The temperature transmitter must be installed 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.

Temperature tables

Type	Temperature class	Ambient temperature Zone 1 and 2	Ambient temperature Zone 0
TMT82 without display TID10 (only head transmitter)	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
TMT82 without display TID10 (assembled in TA30x enclosure)	T6	−40 to +58 °C	
	T5	−40 to +75 °C	
	T4	−40 to +85 °C	
TMT82 with display TID10 (head transmitter or assembled in TA30x enclosure)	T6	−40 to +55 °C	
	T5	−40 to +70 °C	
	T4	−40 to +85 °C	

Electrical connection data

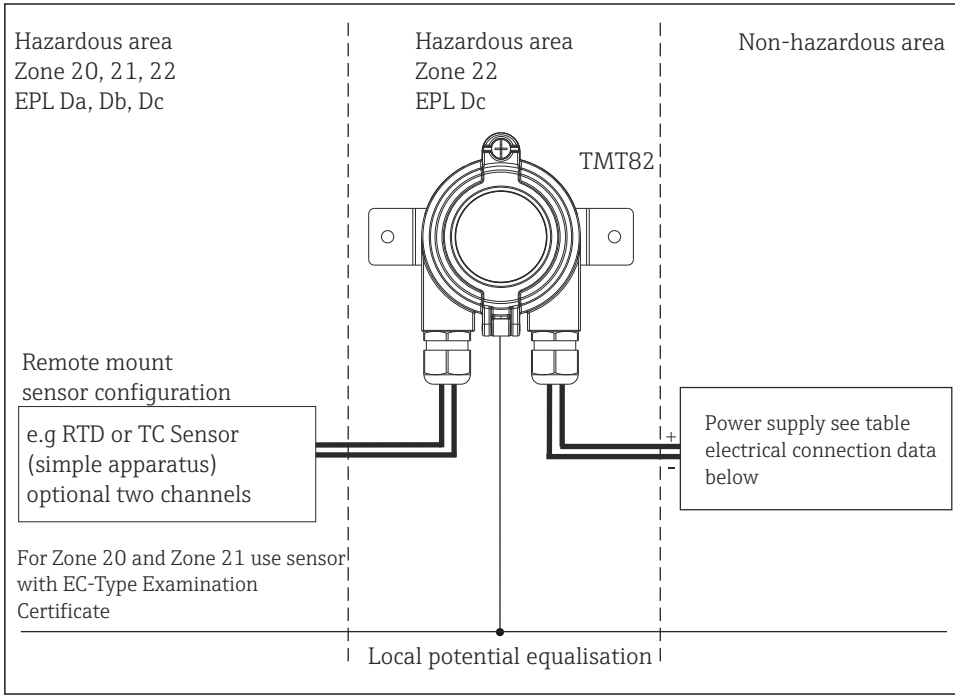
Type	Electrical Data			
TMT82	Supply (terminal + and -)	U_i	≤	30 V_{DC}
		I_i	≤	130 mA
		P_i	≤	800 mW
		C_i	=	negligible small
		L_i	=	negligible small
	Sensor circuit (terminal 3 to 7)	U_o	≤	7.6 V_{DC}
		I_o	≤	13 mA
		P_o	≤	24.7 mW
		C_i	=	negligible small
		L_i	=	negligible small

Type	Electrical Data						
TMT82	Max. connection values						
	Ex ia IIC	L_o	=	10 mH	C_o	=	1 µF
	Ex ia IIB	L_o	=	50 mH	C_o	=	4.5 µF
	Ex ia IIA	L_o	=	50 mH	C_o	=	6.7 µF

Type of protection Ex ia - Gas atmospheres

Type of protection (EAC)	Type
0Ex ia IIC T6...T4 Ga X	TMT82 (head transmitter only)
	TMT82 (assembled in TA30x enclosure)

Safety instructions: Ex ia - Dust atmospheres



Safety instructions: Installation

- Transmitters may only be connected to certified intrinsically safe barriers with the type of protection “intrinsically safe electrical circuit” level “ia”, which have a certificate of conformity with TR CU 012/2011 for subgroup IIIC.
- A housing that maintains a degree of protection of at least IP 6X as per IEC/EN 60529 must be used.
- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions (e.g. GOST 30852.13 (IEC 60079-14)) and any other valid standards and regulations (e.g. IEC/EN 60079-14).
- Seal the cable entries tight with certified cable glands (min. IP6X) IP6X according to IEC/EN 60529.
- The provided cable entries to option code glands are suitable GOST (ATEX/IECEx) Ex certified cable glands with a temperature range of –20 to +95 °C.

- For operating the transmitter at an ambient temperature under −20 °C, appropriate cables, cable entries and sealing facilities permitted for this application must be used.
- The housing of the field transmitter must be connected to the potential matching line.
- The inductance and capacity of intrinsically safe circuits, including connecting cables, must not exceed the maximum values indicated on the spark protection barrier on the side of the explosive area.
- The device should never be used for hybrid mixtures (gas, dust, air).
- When installing, make sure that the housing and cable glands used meet the requirements according to GOST 31610.0 (IEC 60079-0) for Group III enclosures.
- 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.
- Clean the housing regularly to avoid a layer of dust accumulating on the housing.
- The transmitter 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.

⚠ WARNING

Explosive atmosphere

- ▶ In an explosive atmosphere, do not open the device when voltage is supplied (ensure that the IP 66/67 housing protection is maintained during operation).

Temperature tables

Type	Type of protection	Ambient temperature	Maximum surface temperature housing
TMT82	Ex ia IIIC T85°C...T120°C Dc	−40 °C ≤ Ta ≤ +58 °C	T85°C
		−40 °C ≤ Ta ≤ +75 °C	T100°C
		−40 °C ≤ Ta ≤ +85 °C	T120°C
TMT82 with display	Ex ia IIIC T85°C...T120°C Dc	−40 °C ≤ Ta ≤ +55 °C	T85°C
		−40 °C ≤ Ta ≤ +70 °C	T100°C
		−40 °C ≤ Ta ≤ +85 °C	T120°C

Electrical connection data

Type	Electrical Data			
TMT82	Supply (terminal + and -)	U_i	≤	30 V_{DC}
		I_i	≤	130 mA
		P_i	≤	800 mW
		C_i	=	negligible small
		L_i	=	negligible small
	Sensor circuit (terminal 3 to 7)	U_o	≤	7.6 V_{DC}
		I_o	≤	13 mA
		P_o	≤	24.7 mW
		C_i	=	negligible small
		L_i	=	negligible small

Type	Electrical Data						
TMT82	Max. connection values						
	Ex ia IIC	L_o	=	10 mH	C_o	=	1 µF
	Ex ia IIB	L_o	=	50 mH	C_o	=	4.5 µF
	Ex ia IIA	L_o	=	50 mH	C_o	=	6.7 µF

Type of protection Ex ia - Dust atmospheres

Type of protection (EAC)	Type
Ex ia IIIC T85°C...T120°C Dc X	TMT82 (head transmitter only)
	TMT82 (assembled in TA30x enclosure)

www.addresses.endress.com

Endress+Hauser

People for Process Automation