

Safety Instructions

iTEMP TMT71, iTEMP TMT72, iTEMP TMT182B

Temperature transmitters

0Ex ia IIC T6...T4 Ga X

1Ex ia IIC T6...T4 Gb X

1Ex ib [ia Ga] IIC T6...T4 Gb X



iTEMP TMT71, iTEMP TMT72, iTEMP TMT182B

Temperature transmitters

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About this document

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

Associated documentation

To commission the device, please observe the Operating Instructions pertaining to the device:

www.endress.com/<product code>, e.g. TMT71

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:

www.endress.com/Downloads

Certificates and declarations**EAC certificate**

The device 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: ТОО/Ж ШС "Т-Стандарт"
- Certificate number: EAЭC KZ 7500525.01.01.01840

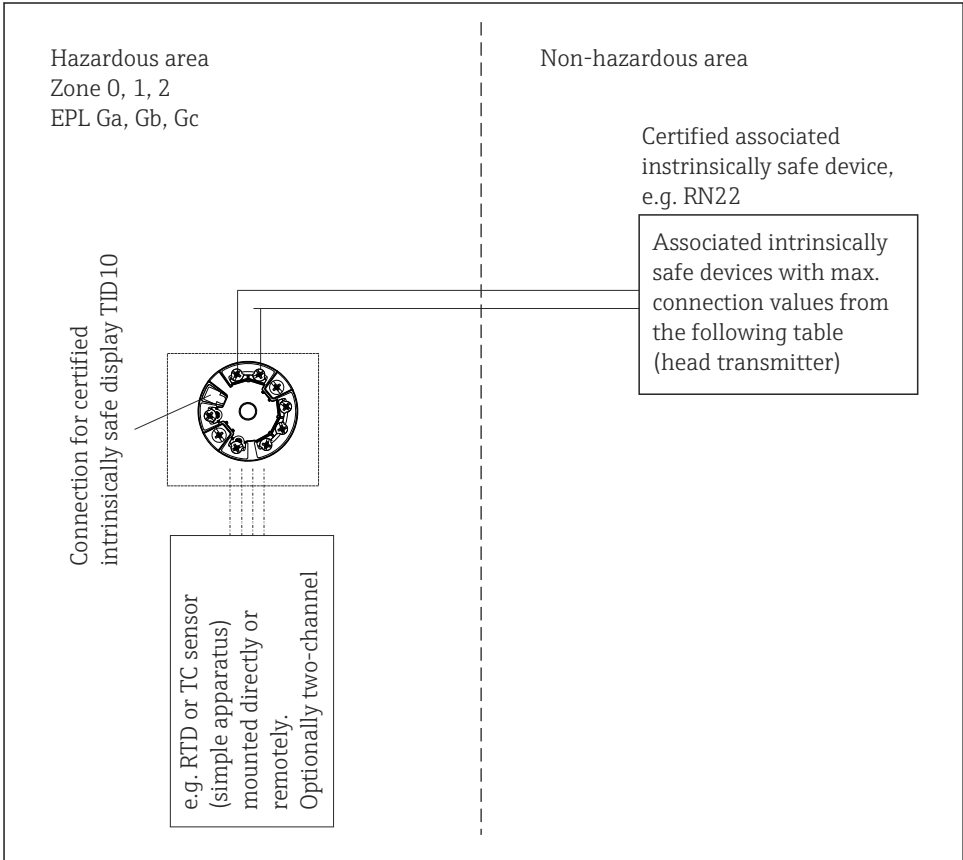
Affixing the certificate number certifies conformity with the following standards:

- GOST 31610.0-2019 (IEC 60079-0:2017)
- GOST 31610.11-2014 (IEC 60079-11:2011)

Manufacturer address

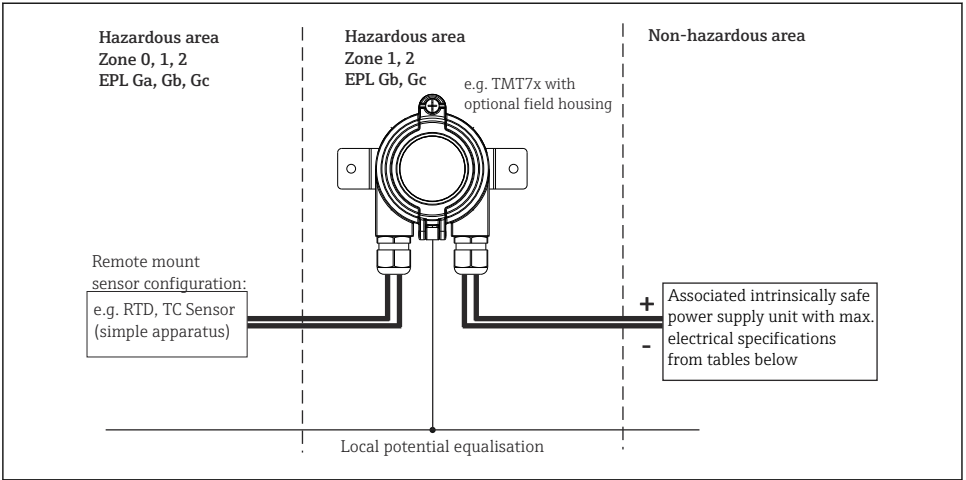
Endress+Hauser Wetzler GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

Safety instructions:
**iTEMP TMT7x/
TMT182B**

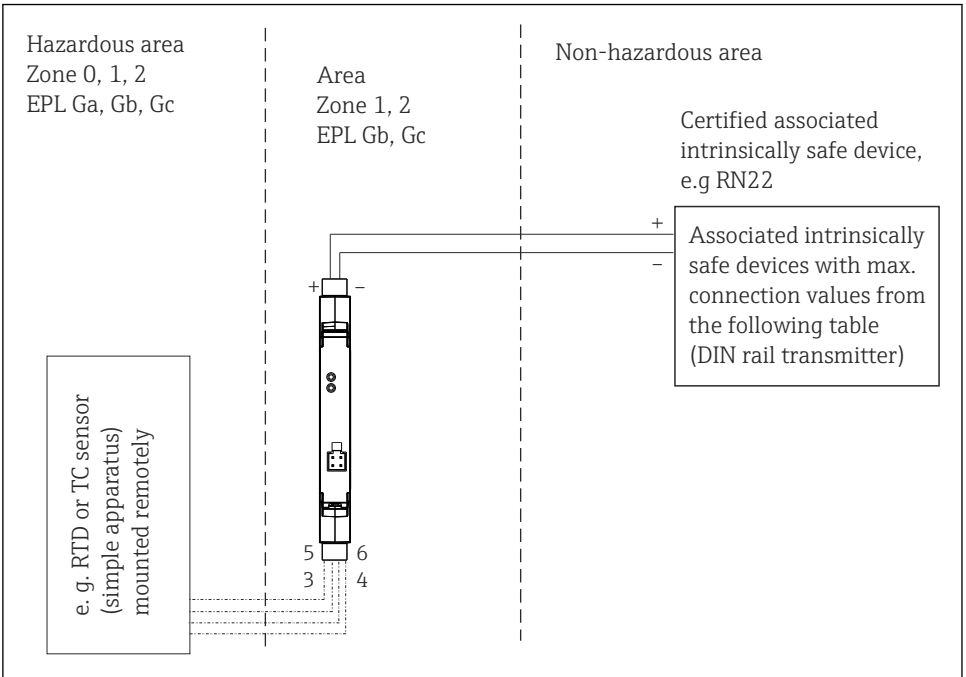


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1 Installation of the head transmitter



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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).
- When installing the unit note that the housing ingress protection classification IP20 according to EN/IEC 60529 is upheld.
- When connecting the measurement unit with a certified circuit of category "ib" into an IIC or IIB hazardous area the ignition class changes to: Ex ib IIC or Ex ib IIB.
- In hazardous areas it is not permitted to use the CDI interface for configuration.

Safety instructions: Head transmitter

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

Safety Instructions: DIN rail transmitter

On installation please make sure that the spacing between the intrinsically safe and non-intrinsically safe circuits is at least 50 mm.

Safety instructions: Field housing (optionally)

- The housing of the field transmitter must be connected to the potential matching line.
- When connecting two independent sensors make sure that the potential equalization 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.

Safety instructions: Zone 0

(These instructions are only valid if the device is installed directly in Zone 0 (Category 1)/EPL Ga.)

- Explosive steam/air mixtures may only occur under atmospheric conditions.
 - $-50\text{ °C} \leq T_a \leq +60\text{ °C}$
 - $0.8\text{ bar} \leq p \leq 1.1\text{ bar}$
- 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.
- The ambient temperature restrictions outlined in EN 1127-1 6.4.2 must be observed (see table).
- The power circuit to be supplied must comply with Ex ia IIC type of protection (EN/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: silicone).
- 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: Specific conditions of use

- In hazardous areas it is not permitted to use the CDI interface of TMT7x or TMT182B for configuration.
- The head- and DIN rail-transmitter must be protected against electrostatic charge/discharge.

Temperature tables

Type (order option)	Temperature class	Ambient temperature EPL Gb/Zone 1	Ambient temperature EPL Ga/Zone 0
iTEMP TMT7x-xxx1xxxx, Head transmitter without display	T6	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	$-50\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
iTEMP TMT7x-xxx1xxxx, Head transmitter with display (TID10)	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	
iTEMP TMT7x-xxx1xxxx, Field housing without display	T6	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	
iTEMP TMT7x-xxx1xxxx, Field housing with display (TID10)	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	
iTEMP TMT7x-xxx2xxxxxxxxxx, iTEMP TMT7x-xxx3xxxxxxxxxx, DIN rail transmitter	T6	$-50\text{ °C} \leq T_a \leq +43\text{ °C}$	
	T5	$-50\text{ °C} \leq T_a \leq +58\text{ °C}$	
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	

Type (order option)	Temperature class	Ambient temperature EPL Gb/Zone 1	Ambient temperature EPL Ga/Zone 0
iTEMP TMT182B Head transmitter	T6	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	$-50\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$

Electrical connection data

Type	Electrical data		
iTEMP TMT7x Order option: iTEMP TMT7x-xxx1xxxx (head transmitter) iTEMP TMT7x-xxx2xxxx iTEMP TMT7x-xxx3xxxx (DIN rail transmitter)	Power supply (Klemmen + und -)	$U_i \leq 30 V_{DC}$ $I_i \leq 100 \text{ mA}$ $P_i = 800 \text{ mW}$ (head transmitter) $P_i = 700 \text{ mW}$ (DIN rail transmitter) $C_i = \text{negligible}$ $L_i = \text{negligible}$	
	Sensor circuit (terminals 3 to 6)	$U_o \leq 4.3 V_{DC}$ $I_o \leq 4.8 \text{ mA}$ $P_o \leq 5.2 \text{ mW}$	
	Max. connection data		
	Ex ia IIC	$L_o = 50 \text{ mH}$	$C_o = 3 \mu\text{F}$
	Ex ia IIB	$L_o = 100 \text{ mH}$	$C_o = 18 \mu\text{F}$
	Ex ia IIA	$L_o = 100 \text{ mH}$	$C_o = 48 \mu\text{F}$

	Electrical data		
iTEMP TMT182B	Power supply (terminals + and -)	$U_i \leq 30 V_{DC}$ $I_i \leq 100 \text{ mA}$ $P_i = 800 \text{ mW}$ $C_i = \text{negligibly small}$ $L_i = \text{negligibly small}$	
	Sensor circuit (terminals 3 to 6)	$U_o \leq 5 V_{DC}$ $I_o \leq 5.4 \text{ mA}$ $P_o \leq 6.6 \text{ mW}$	
	Max. combined connection values		
	Ex ia IIC	$L_o = 20 \text{ mH}$	$C_o = 2.4 \mu\text{F}$
	Ex ia IIB	$L_o = 100 \text{ mH}$	$C_o = 14 \mu\text{F}$
	Ex ia IIA	$L_o = 100 \text{ mH}$	$C_o = 36 \mu\text{F}$



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www.addresses.endress.com
