

Safety Instructions

iTEMP TMT71, TMT72

ATEX/IECEX: Ex ia IIC T6...T4 Ga
Ex ia IIC T6...T4 Gb
Ex ia [ia Ga] IIC T6...T4 Gb
Ex ia III C T85 °C...T115 °C Db



iTEMP TMT71, TMT72

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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 TMT71

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: EPS 18.0026X

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

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

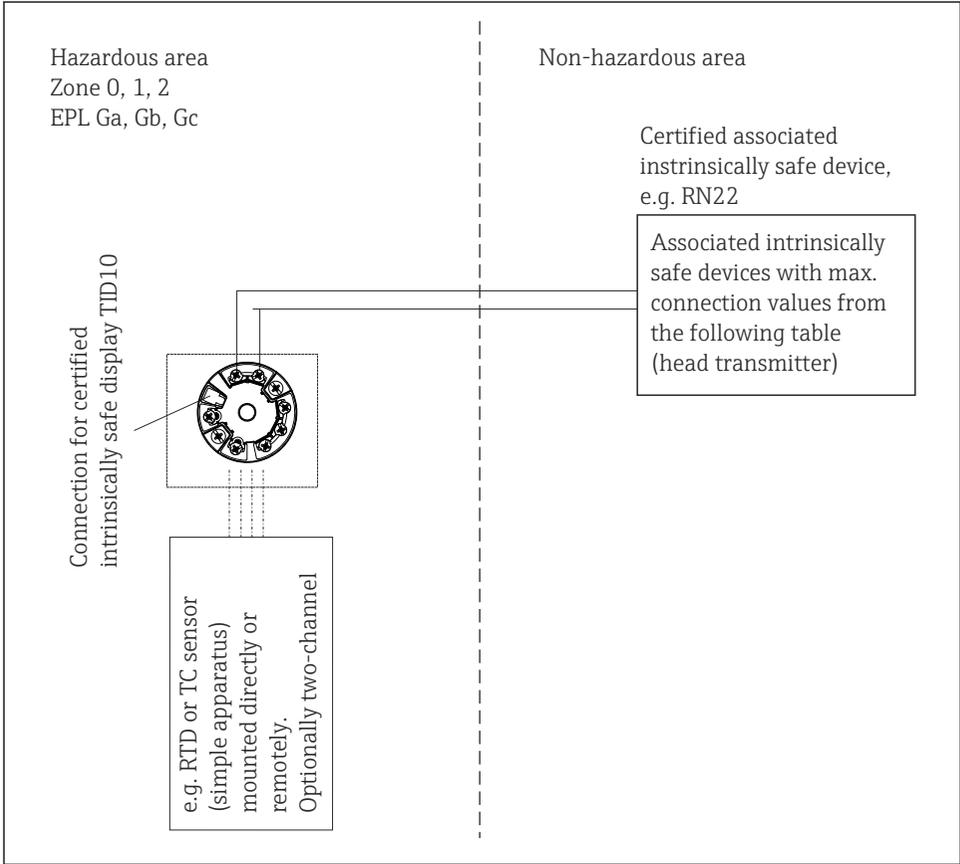
ATEX certificate

Certificate number: EPS 18 ATEX 1049 X

Manufacturer address

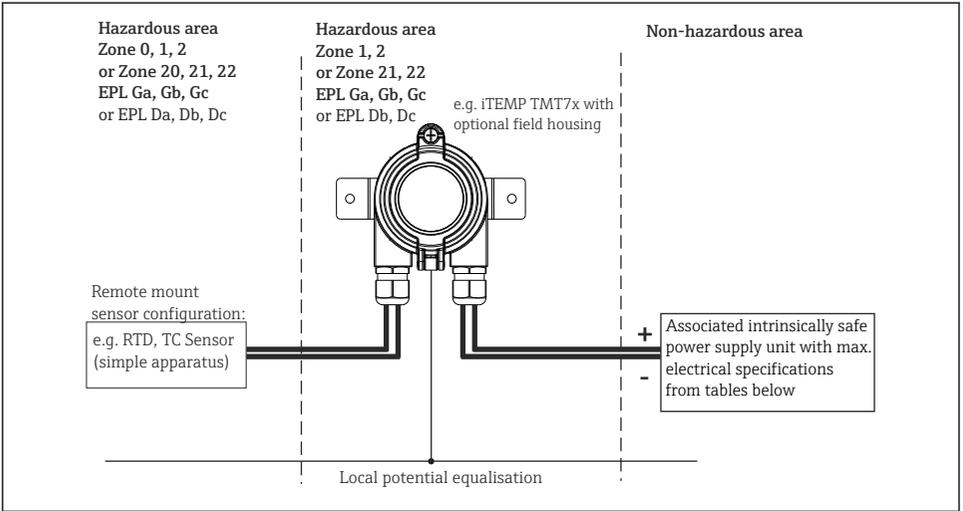
Endress+Hauser Wetzler GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

Safety instructions

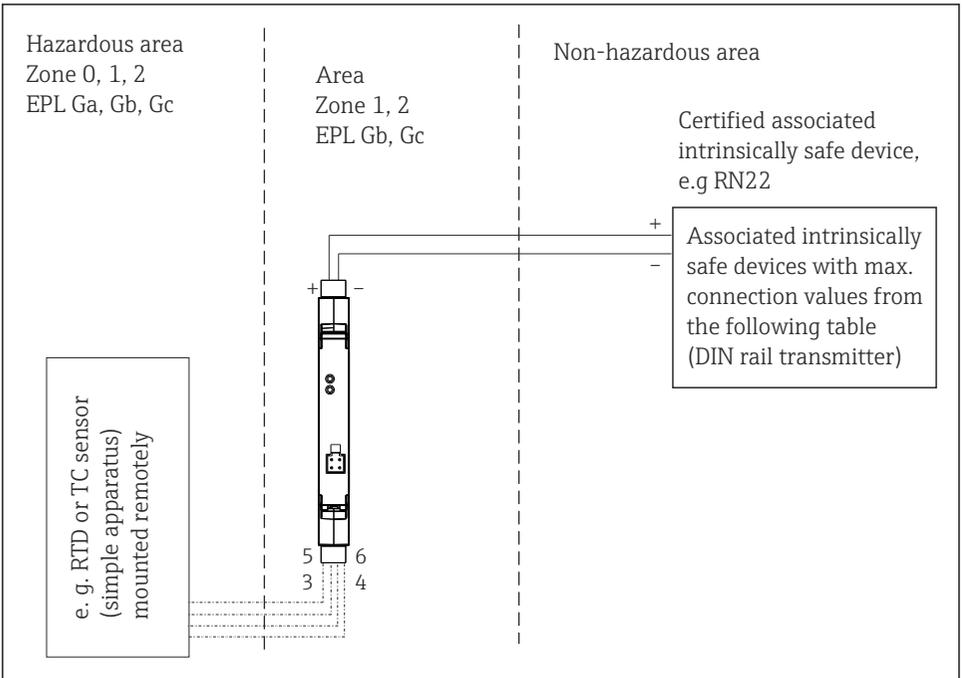


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1 Installation of the head transmitter



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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 permissible ambient temperatures for the display, type TID10, are to 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 device 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.
- 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

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

- Explosive moisture/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 there is no explosive mixture present or the additional measures according to EN 1127-1 are upheld the unit can also be operated outside the atmospheric conditions according to the manufacturer's specification.
- The restricted ambient temperatures as per 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 (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 iTEMP TMT7x or L2022x for configuration.
- The head- and DIN rail-transmitter must be protected against electrostatic charge/discharge.
- 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

Type (order option)	Temperature class/code	Ambient temperature EPL Gb/Zone 1	Ambient temperature EPL Ga/Zone 0
TMT7x-xxx1xxxx, L2022x-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	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
TMT7x-xxx1xxxx, L2022x-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	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	
TMT7x-xxx1xxxx, L2022x-xxx1xxxx Field housing without display	T6/T85 °C	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	$-50\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5/T100 °C	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
	T4/T115 °C	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
TMT7x-xxx1xxxx, L2022x-xxx1xxxx Field housing with display (TID10)	T6/T85 °C	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5/T100 °C	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4/T115 °C	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	
TMT7x-xxx2xxxxxxxx, L2022x-xxx2xxxx TMT7x-xxx3xxxxxxxx, L2022x-xxx3xxxx 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	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	

Electrical connection data

Type	Electrical data		
TMT7x, L2022x Order option: TMT7x-xxx1xxxx L2022x-xxx1xxxx (head transmitter) TMT7x-xxx2xxxx L2022x-xxx2xxxx TMT7x-xxx3xxxx L2022x-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 values		
	Ex ia IIC	$L_o = 50 \text{ mH}$	$C_o = 3 \mu\text{F}$
	Ex ia IIB/IIIC	$L_o = 100 \text{ mH}$	$C_o = 18 \mu\text{F}$
	Ex ia IIA	$L_o = 100 \text{ mH}$	$C_o = 48 \mu\text{F}$

Category	Type of protection (ATEX/IECEx)	Type (order option)
II1G	Ex ia IIC T6...T4 Ga	without display
II2G	Ex ia IIC T6...T4 Gb	with display
II2(1)G	Ex ia [ia Ga] IIC T6... T4 Gb	with field housing
II2(1)D	Ex ia IIIC T85 °C... T115 °C Db	with field housing



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www.addresses.endress.com
