

Safety Instructions

iTEMP TMT71, TMT72

Temperature transmitter

Ex ia IIC T4...T6 Ga

Ex ia IIC T4...T6 Gb

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



iTEMP TMT71, TMT72

Temperature transmitter

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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).

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

www.endress.com/<product code>, e.g. iTEMP TMT72

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:

www.endress.com/Downloads

Certificates and declarations**NEPSI certificate**

Certificate number: GYJ22.3604X

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

- GB/T 3836.1-2021
- GB/T 3836.4-2021



Please refer to NEPSI/CCC certificates for conditions of safe use.

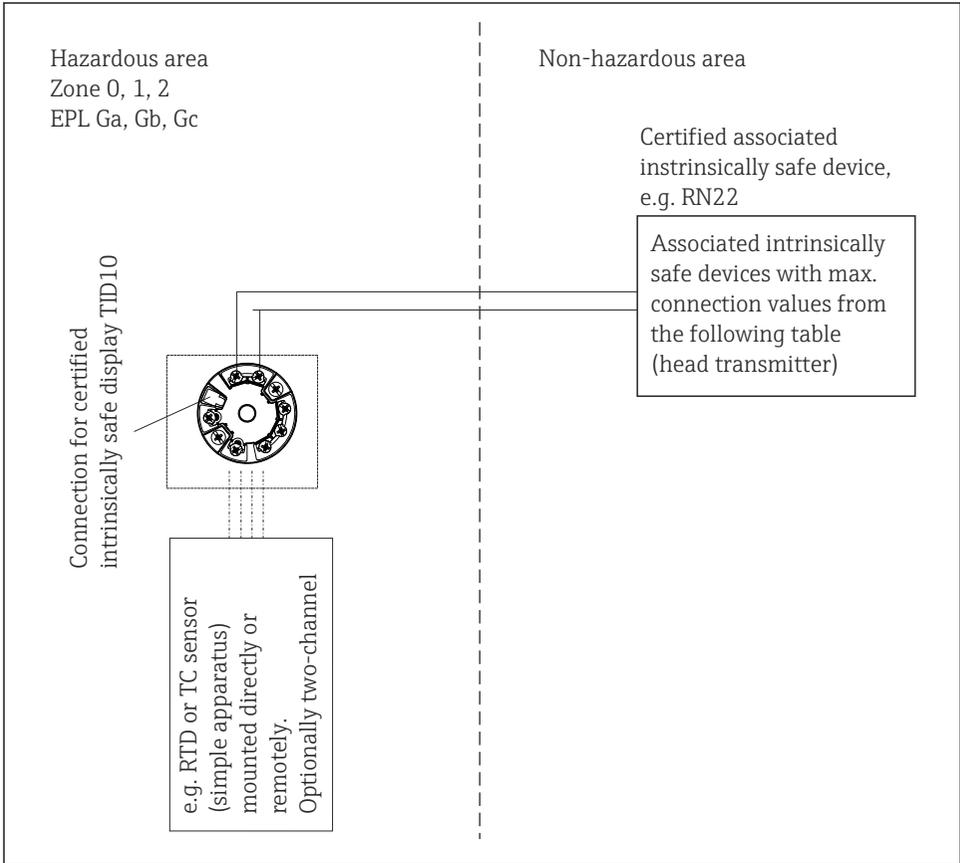
Manufacturer address

Endress+Hauser Wetzler GmbH + Co. KG

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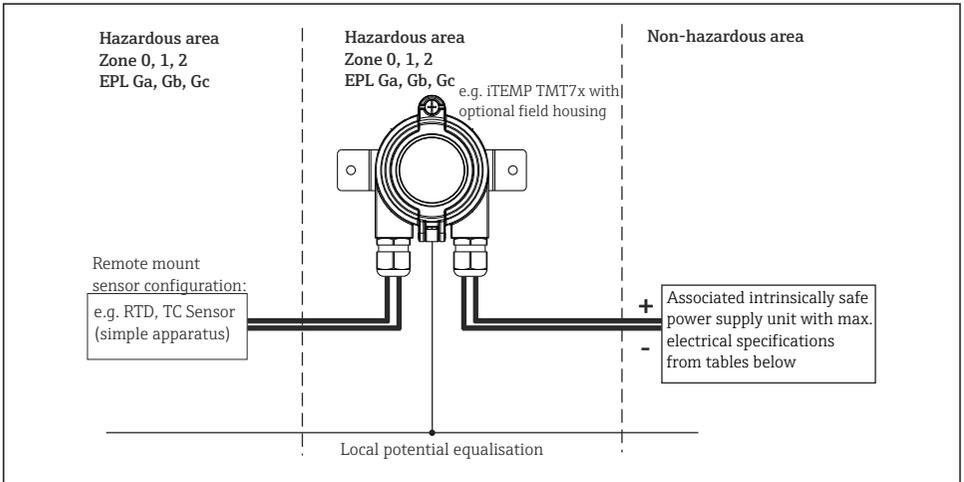
87484 Nesselwang, Germany

Safety instructions

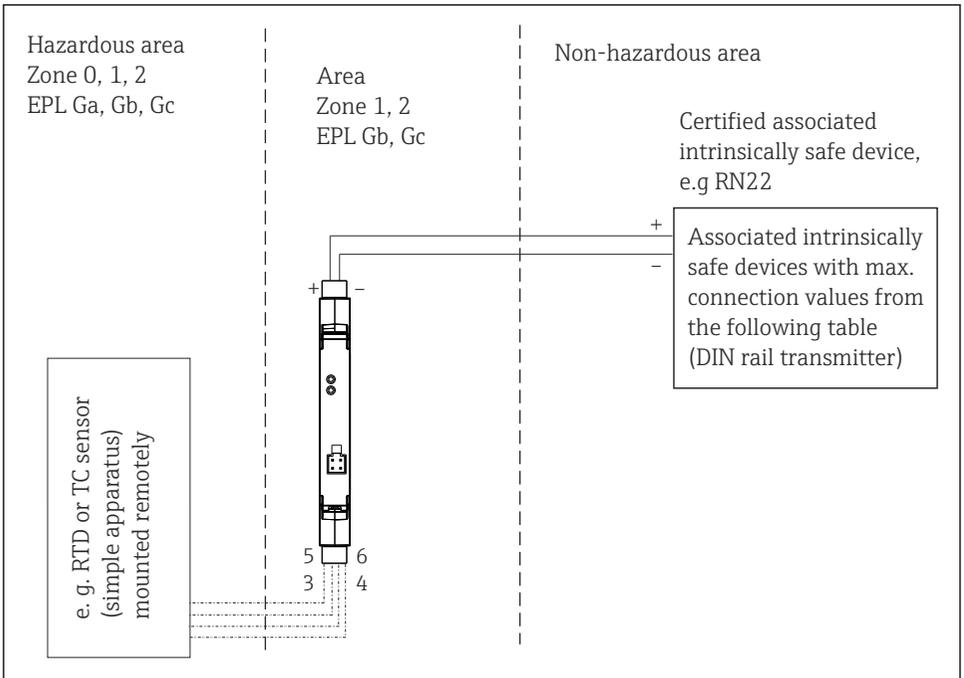


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 1 Installation of the head transmitter



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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 device 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 must be connected to the local potential equalization.

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

- The housing of the device must be connected to the potential matching line.
- The circuits of the installed head transmitter are insulated from its housing in accordance 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 potentially explosive mixtures are present, or if additional protective measures have been taken according to EN 1127-1, the device may also be operated under non-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 meet the specifications for explosion protection Ex ia IIC (EN/IEC 60079-14 12.3).

- The measuring devices may be used only in media to which the process-wetted materials have a sufficient level of resistance.
- When operating the complete device in Zone 0/EPL Ga, the compatibility of the device materials with the media must be guaranteed. (Housing: polycarbonate (PC), potting: silicone).
- The temperature transmitter must be mounted in such a way that electrostatic charging cannot occur, for example by installing in a 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 the device for configuration.
- The device 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.
- This product should be used in explosive gas atmospheres together with approved associated apparatus, follow the instruction manual of this product and associated apparatus when connecting the wiring. Connect the wiring terminals correctly
- The user shall not change the configuration in order to maintain/ensure the explosion protection performance of the equipment. Any change may impair safety.
- 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 3836.15-2024 “Explosive atmospheres- Part 15:Electrical installations design, selection and erection”
 - GB 3836.16-2024 “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”.
- Ambient temperature as follows:

Temperature tables

Type (order option)	Temperature class	Ambient temperature EPL Gb/Zone 1	Ambient temperature EPL Ga/Zone 0
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	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$

Type (order option)	Temperature class	Ambient temperature EPL Gb/Zone 1	Ambient temperature EPL Ga/Zone 0
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
TMT7x-xxx1xxxx Head transmitter with display (TID10)	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	$-40\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	$-40\text{ °C} \leq T_a \leq +60\text{ °C}$
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	$-40\text{ °C} \leq T_a \leq +60\text{ °C}$
TMT7x-xxx1xxxx Field housing 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 Field housing with display (TID10)	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	$-40\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	$-40\text{ °C} \leq T_a \leq +60\text{ °C}$
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	$-40\text{ °C} \leq T_a \leq +60\text{ °C}$
TMT7x-xxx2xxxxxxxx TMT7x-xxx3xxxxxxxx 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 Order option: TMT7x-xxx1xxxx (head transmitter) TMT7x-xxx2xxxx TMT7x-xxx3xxxx (DIN rail transmitter)	Power supply (Klemmen + und -) $U_i \leq 30\text{ V}_{DC}$ $I_i \leq 100\text{ mA}$ $P_i = 800\text{ mW}$ (head transmitter) $P_i = 700\text{ mW}$ (DIN rail transmitter) $C_i = \text{negligible}$ $L_i = \text{negligible}$
	Sensor circuit (terminals 3 to 6) $U_o \leq 4.3\text{ V}_{DC}$ $I_o \leq 4.8\text{ mA}$ $P_o \leq 5.2\text{ mW}$
	Max. connection data Ex ia IIC $L_o = 50\text{ mH}$ $C_o = 3\text{ }\mu\text{F}$ Ex ia IIB $L_o = 100\text{ mH}$ $C_o = 18\text{ }\mu\text{F}$ Ex ia IIA $L_o = 100\text{ mH}$ $C_o = 48\text{ }\mu\text{F}$

Type of protection (NEPSI)	Type
Ex ia IIC T4...T6 Ga Ex ia IIC T4...T6 Gb	Head transmitter, Field transmitter
Ex ib [ia Ga] IIC T4...T6 Gb	DIN rail transmitter



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www.addresses.endress.com
