

# Safety Instructions

## **iTEMP TMT142B**

HART®

Ex ia IIC T6...T4 Ga

Ex ia IIIC T85 °C...T110 °C Db



# iTEMP TMT142B

HART®

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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](http://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>](http://www.endress.com/<product code>), e.g. iTEMP TMT142B

**Supplementary documentation**

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:

[www.endress.com/Downloads](http://www.endress.com/Downloads)

**Certificates and declarations****Korean certificate**

Certificate number:

25-KA4BO-0700X

25-KA4BO-0701X

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

Protect Device Safety Certification Notice No. 2021-22



Please refer to Korean certificates for conditions of safe use.

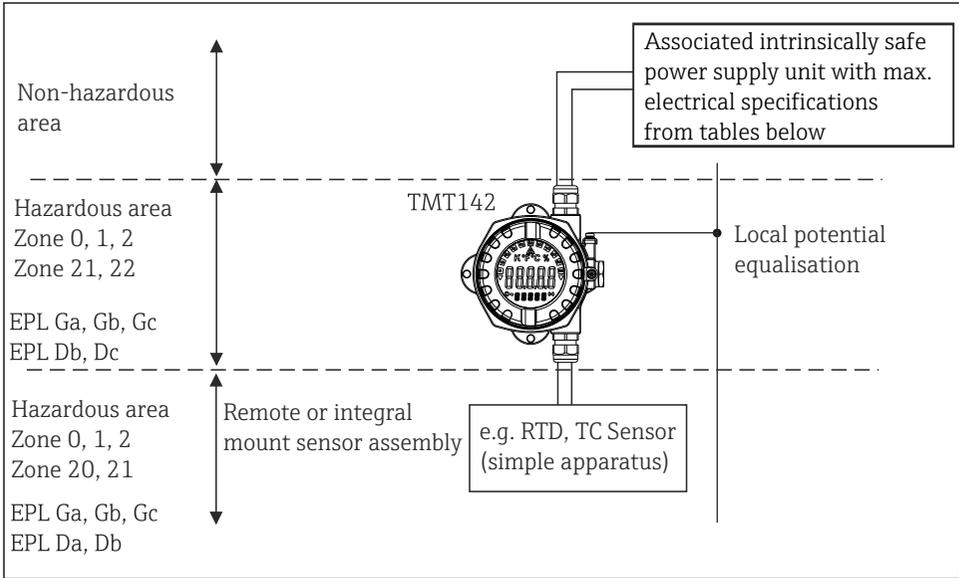
**Manufacturer address**

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).
- Connect the device using suitable cable and wire entries of protection type "Intrinsic safety (Ex i)".
- 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.
- Continuous duty temperature of the cable  $T_a + 5 \text{ K}$ .
- To maintain the ingress protection of the housing IP66/67 install the housing cover and cable glands correctly.
- Close unused entry glands with sealing plugs.
- The pertinent guidelines must be observed when intrinsically safe circuits are connected together acc. IEC/EN 60079-14 (Proof of Intrinsic Safety).
- The electrical apparatus must be integrated into the local potential equalization.
- When connecting two independent sensors make sure that the potential equalisation cables are at the same potential.

**Safety instructions:**  
**Zone 0**

- Only operate devices in potentially explosive vapour/air mixtures 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 transmitters may be operated under other 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**

- Unit is may not be used when hybrid mixtures (gas, dust, air) are present.
- 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.
- Use for integral temperature sensors only approved sensors certified for category 1D or 2D marked not less than II1/2D Ex ia IIIC T110 °C Da/Db or II2D Ex ia IIIC T110 °C Db for use in Zone 20 or Zone 21.
- Use for remote temperature sensors only approved sensors certified for category 2D marked not less than II2D Ex ia IIIC T110 °C Db for use in Zone 21.

**Temperature tables**

The ambient temperature range is depending on temperature class and maximum temperature of the enclosure  $T_{xx}\text{°C}$ , applicable to the maximum dust layer thickness of 5 mm, listed in the following table:

Type	Temperature class	Ambient temperature	
		Zone 1 EPL Gb	Zone 0 EPL Ga
iTEMP TMT142B	T6	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	$-50\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	$-50\text{ °C} \leq T_a \leq +50\text{ °C}$
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$

Type	Maximum surface temperature	Ambient temperature Zone 21 EPL Db
iTEMP TMT142B	T85 °C	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$
	T100 °C	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$
	T110 °C	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$

## Electrical connection data

Type	Electrical data
iTEMP TMT142B	Supply (terminals + and -):  $U_i \leq 30 \text{ V}_{\text{DC}}$ $I_i \leq 300 \text{ mA}$ $P_i \leq 1000 \text{ mW}$ $C_i \leq 5 \text{ nF}$ $L_i = 0$
	Sensor circuit (terminals 1 to 4):  $U_o \leq 4,3 \text{ V}_{\text{DC}}$ $I_o \leq 4,8 \text{ mA}$ $P_o \leq 5,2 \text{ mW}$
	Maximum connection values: Ex ia IIC $L_o = 40 \text{ mH}$ $C_o = 10,4 \mu\text{F}$ Ex ia IIB $L_o = 150 \text{ mH}$ $C_o = 160 \mu\text{F}$ Ex ia IIA $L_o = 300 \text{ mH}$ $C_o = 1000 \mu\text{F}$





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[www.addresses.endress.com](http://www.addresses.endress.com)

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