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# Safety Instructions
# iTEMP TMT82

HART®

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


Endress+Hauser
People for Process Automation

# iTEMP TMT82

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**

To commission the device, please observe the Operating Instructions pertaining to the device:
www.endress.com/<product code>, e.g. TMT82

**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: GYJ23.1146X

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

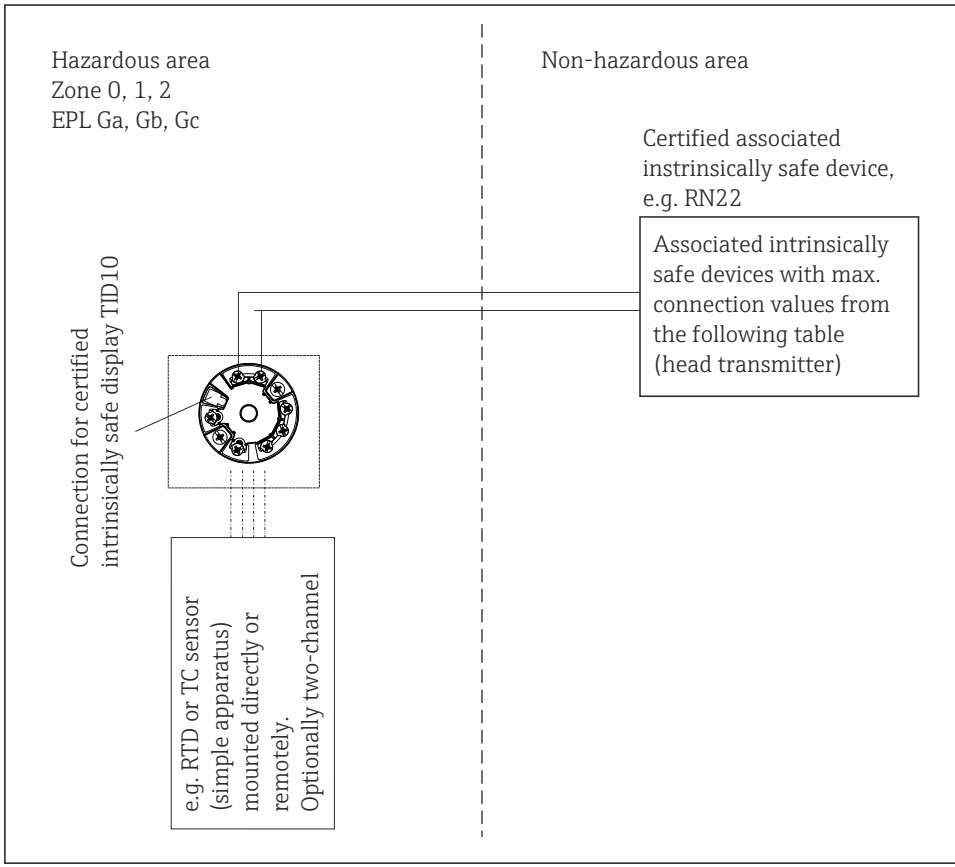
- GB/T 3836.1-2021
- GB/T 3836.4-2021

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

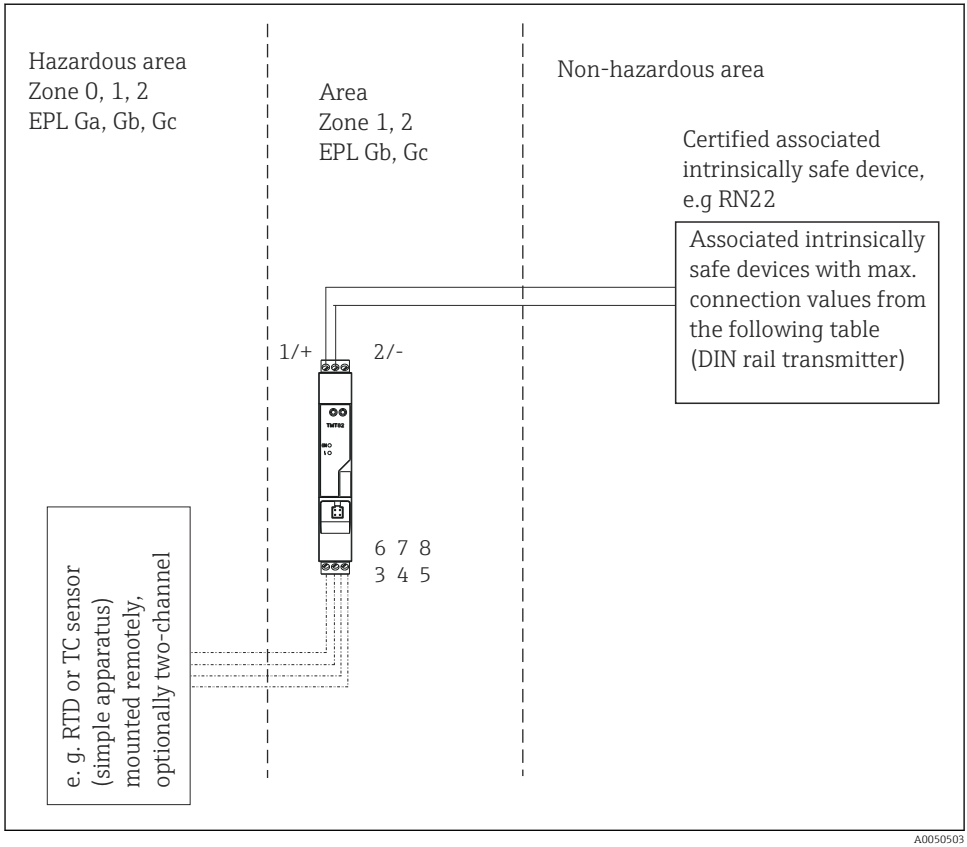
**Manufacturer address**

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

**Safety instructions:**




*1 Installation of the head transmitter*




*2 Installation of the DIN rail transmitter*

**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 (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: 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: 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 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.
  - $-52\ ^{\circ}C \leq Ta \leq +60\ ^{\circ}C$
  - $0.8\ bar \leq p \leq 1.1\ bar$

  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 manufacturers 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

The suffix "X" placed after the certificate number indicates that this product is subject to special conditions for safe use, that is:

- In hazardous areas it is not permitted to use the CDI interface of TMT82 for configuration.
- Ambient temperature as follows:

## Temperature tables

| Type (order option) | Temperature class | Ambient temperature zone 1 | Ambient temperature zone 0 |
|---|---|---|---|
| TMT82-xxA1xxxxxxxxx<br>TMT82-xxA2xxxxxxxxx<br>without display | T6 | −52 °C = Ta = +58 °C | −52 °C = Ta = +46 °C |
| | T5 | −52 °C = Ta = +75 °C | −52 °C = Ta = +60 °C |
| | T4 | −52 °C = Ta = +85 °C | −52 °C = Ta = +60 °C |
| TMT82-xxA1xxxxxxxxx<br>TMT82-xxA2xxxxxxxxx<br>with display (TID) | T6 | −40 °C = Ta = +55 °C | |
| | T5 | −40 °C = Ta = +70 °C | |
| | T4 | −40 °C = Ta = +85 °C | |
| TMT82-xxA3xxxxxxxxx<br>(DIN rail transmitter) | T6 | −40 °C = Ta = +46 °C | |
| | T5 | −40 °C = Ta = +61 °C | |
| | T4 | −40 °C = Ta = +85 °C | |

## Electrical connection data

| Type | Electrical data | | |
|---|---|---|---|
| TMT82 HART®<br>Order option:<br>TMT82-xxA1xxxxxxxxx<br>TMT82-xxA2xxxxxxxxx<br>(head transmitter) | Power supply<br>(terminals + and -) | Ui ≤ 30 $V_{DC}$<br>Ii ≤ 130 mA<br>Pi = 800 mW<br>Ci = negligibly small<br>Li = negligibly small | |
| | Sensor circuit<br>(terminals 3 to 7) | Uo ≤ 7.6 $V_{DC}$<br>Io ≤ 13 mA<br>Po ≤ 24.7 mW | |
| | Max. connection values<br>Ex ia IIC<br>Ex ia IIB<br>Ex ia IIA | <br>Lo = 10 mH<br>Lo = 50 mH<br>Lo = 50 mH | <br>Co = 1 µF<br>Co = 4.5 µF<br>Co = 6.7 µF |
| | Display connection<br>(optional) | Uo ≤ 7.6 $V_{DC}$<br>Ii ≤ 130 mA<br>Ci = negligibly small<br>Li = negligibly small | |

| Type | Electrical data | | |
|---|---|---|---|
| | Max. connection values | | |
| | Ex ia IIC | Lo = 3.1 mH | Co = 0.64 µF |
| | Ex ia IIB | Lo = 16 mH | Co = 3.8 µF |
| | Ex ia IIA | Lo = 27 mH | Co = 12 µF |
| TMT82 HART®<br>Order option:<br>TMT82-xxA3xxxxxxxxx<br>(DIN rail transmitter) | Power supply<br>(terminals + and -) | $U_i$ = 30 $V_{DC}$<br>$I_i$ = 130 mA<br>$P_i$ = 770 mW<br>$C_i$ = negligibly small<br>$L_i$ = negligibly small | |
| | Sensor circuit<br>(terminals 3 to 8) | $U_o$ = 9 $V_{DC}$<br>$I_o$ = 13 mA<br>$P_o$ = 29.3 mW | |
| | Max. connection values | | |
| | Ex ia IIC | Lo = 5 mH | Co = 0.93 µF |
| | Ex ia IIB | Lo = 20 mH | Co = 3.8 µF |
| | Ex ia IIA | Lo = 50 mH | Co = 4.8 µF |


www.addresses.endress.com

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