

Safety Instructions

iTEMP TMT162

PROFIBUS® PA, FOUNDATION Fieldbus™

ATEX: II1G Ex ia IIC T6...T4 Ga

IECEX: Ex ia IIC T6...T4 Ga

Safety instructions for electrical apparatus in
explosion-hazardous areas




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PROFIBUS® PA, FOUNDATION Fieldbus™

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About this document

 This document has been translated into several languages. Legally determined is solely the English source text.

The document translated into EU languages is available:

- In the download area of the Endress+Hauser website:
www.endress.com -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: www.endress.com -> Product tools -> Access device specific information -> Check device features

 If not yet available, the document can be ordered.

Associated documentation

This document is an integral part of the following Operating Instructions:

HART®:

- Operating instructions: BA00132R
- Brief operating instructions: KA00250R
- Technical information: TI00086R

PROFIBUS® PA:

- Operating instructions: BA00275R
- Brief operating instructions: KA00276R
- Technical information: TI00086R

FOUNDATION Fieldbus™:

- Operating instructions: BA00224R
Brief operating instructions: KA00189R
- Technical information: TI00086R

Supplementary documentation

Explosion-protection brochure: CP00021Z/11

The Explosion-protection brochure is available:

- In the download area of the Endress+Hauser website:
www.endress.com -> Downloads -> Brochures and Catalogs -> Text Search: CP00021Z
- On the CD for devices with CD-based documentation

**Manufacturer's
certificates****IECEX certificate**

Certificate number: IECEX KEM 06.0038X

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: DEKRA 17ATEX0048 X

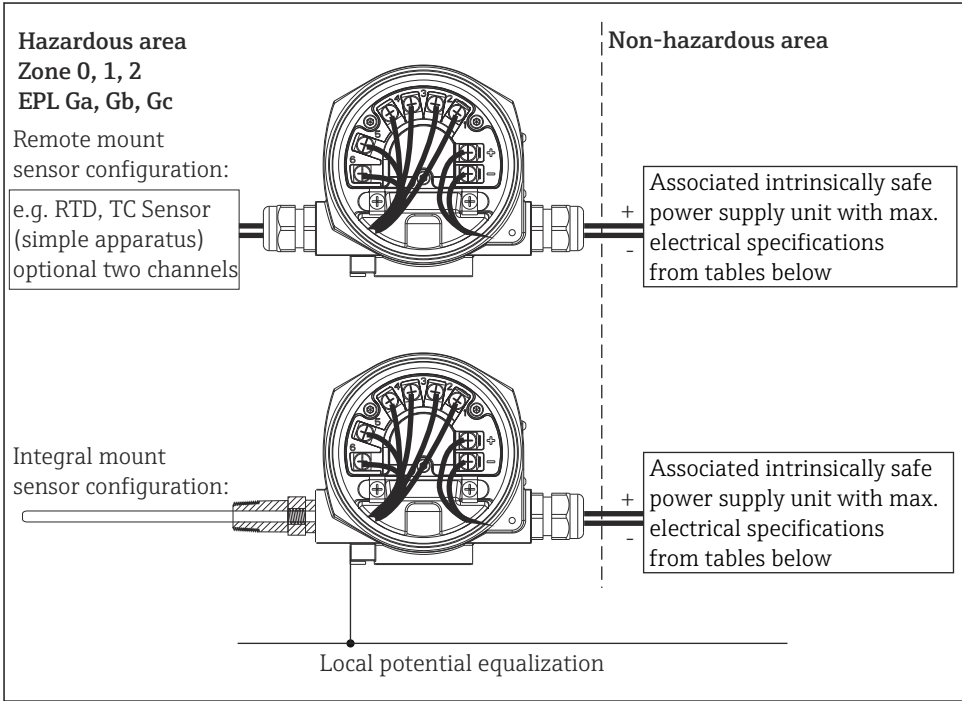
EU Declaration of Conformity

Declaration number: EC_00649

**Manufacturer
address**

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

Safety instructions:



A0048819

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).
- 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.
- When connecting two independent sensors make sure that the potential equalisation cables are at the same potential.
- The circuits of the transmitter are isolated from its enclosure in conformance with EN/IEC 60079-11 chapter 6.3.13.

Safety instructions:
Zone 0

- Only operate devices in potentially explosive vapour/air mixtures under atmospheric conditions:
 - $-20\text{ °C} \leq T_a \leq +60\text{ °C}$
 - $0.8\text{ bar} \leq p \leq 1.1\text{ bar}$
- 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

- 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.
- When the optional non-conductive coating is applied the risk from electrostatic discharge shall be minimized.

Temperature tables

Type	Temperature class	Ambient temperature
TMT162 - HART® - PROFIBUS® PA - FOUNDATION Fieldbus™	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$

Electrical connection data

Type	Electrical data	
TMT162 HART®	Supply (terminals + and -):	$U_i \leq 30\text{ V}_{DC}$ $I_i \leq 300\text{ mA}$ $P_i \leq 1000\text{ mW}$ $C_i \leq 5\text{ nF}$ $L_i = 0$
	Sensor circuit (terminals 1 to 6):	$U_o \leq 7.6\text{ V}_{DC}$ $I_o \leq 29.3\text{ mA}$ $P_o \leq 55.6\text{ mW}$
	Maximum connection values:	$L_o \leq 40\text{ mH}$ $C_o = 10.4\text{ }\mu\text{F}$ $L_o \leq 150\text{ mH}$ $C_o = 160\text{ }\mu\text{F}$ $L_o \leq 300\text{ mH}$ $C_o = 1000\text{ }\mu\text{F}$

Type	Electrical data	
TMT162 - PROFIBUS® PA - FOUNDATION Fieldbus™	Supply (terminals + and -):	$U_i \leq 17.5 V_{DC}$ or $U_i \leq 24 V_{DC}$ $I_i \leq 500 \text{ mA}$ $I_i \leq 250 \text{ mA}$ $P_i \leq 5.32 \text{ mW}$ $P_i \leq 1.2 \text{ W}$ $C_i \leq 5 \text{ nF}$ $L_i = 10 \text{ } \mu\text{H}$
	Applicable for connection to a Fieldbus system according to FISCO-model	
	Sensor circuit (terminals 1 to 6):	$U_o \leq 8.6 V_{DC}$ $I_o \leq 26.9 \text{ mA}$ $P_o \leq 57.6 \text{ mW}$
	Maximum connection values:	
Ex ia IIC	$L_o = 48 \text{ mH}$	$C_o = 6.2 \text{ } \mu\text{F}$
Ex ia IIB	$L_o = 180 \text{ mH}$	$C_o = 55 \text{ } \mu\text{F}$
Ex ia IIA	$L_o = 380 \text{ mH}$	$C_o = 1000 \text{ } \mu\text{F}$

Category	Type of protection (ATEX)	Type
II 1G	Ex ia IIC T6...T4 Ga	TMT162

Type of protection (IEC)	Type
Ex ia IIC T6...T4 Ga	TMT162



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