

Safety Instructions

iTEMP TMT142B

HART®

ATEX: Ex ic IIC T6 Gc
Ex tc IIIIC Dc
Ex nA IIC T6 Gc



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HART®

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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:

- Operating instructions: BA00191R
- Brief operating instructions: KA00222R
- Technical Information: TI00107R

Supplementary documentation

Explosion-protection brochure: CP00021Z

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****EU Declaration of Conformity**

Declaration number: EC_00165

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

- EN IEC 60079-0: 2018
- EN 60079-11: 2012
- EN 60079-15: 2010
- EN 60079-31: 2014

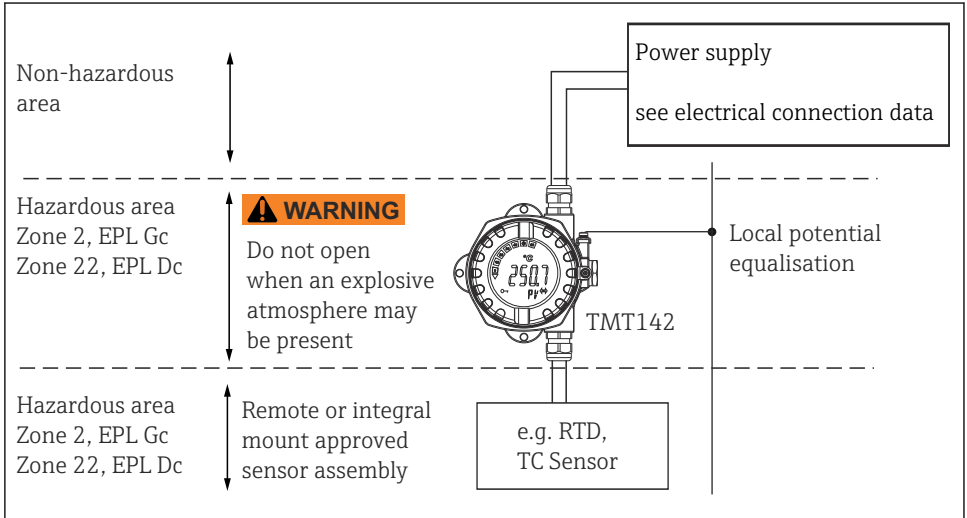
UKCA Declaration of Conformity

Declaration number: UK_00433

**Manufacturer
address**

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

Safety instructions



Safety instructions: Installation of type of protection 'n'

WARNING

Explosive atmosphere

- ▶ In an explosive atmosphere, do not open the device when voltage is supplied (ensure that the IP67 housing protection is maintained during operation).
- 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).
- Seal the cable entries tight with certified cable glands (minimum IP6X) IP6X according to EN/IEC 60529.
- The provided cable entries to option code glands are suitable ATEX/IECEX certified cable glands with a temperature range of -20 to +95 °C.
- For operating the transmitter housing at an ambient temperature under -20 °C, appropriate cables and cable entries permitted for this application must be used.

- The housing of field transmitter must be connected to the potential matching line.
- For ambient temperatures higher than +70°C, use suitable heat-resisting cables or wires, cable entries and sealing facilities for Ta +5K above surrounding.
- The temperature transmitter must be installed and maintained so, that even in the event of rare incidents, an ignition source due to impact or friction between the housing and iron/steel is excluded.

**Safety instructions:
Installation of
dust ignition
protection**

⚠ WARNING

Explosive atmosphere

- ▶ In an explosive atmosphere, do not open the device when voltage is supplied (ensure that the IP66/67 housing protection is maintained during operation).
 - 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).
 - Seal the cable entries tight with certified cable glands which have at least type of protection Ex tb suitable for Group IIIC (degree of protection IP6X).
 - The housing of the field transmitter must be connected to the potential matching line.
 - The provided cable entries to option code glands are suitable ATEX/IECEX certified cable glands with a temperature range of -20 to +95 °C.
 - For ambient temperatures higher than +70 °C, use suitable heat-resisting cables or wires, cable entries and sealing facilities for application temperature +5 K above surrounding.
 - The remote or integral mounted temperature sensor must comply with the requirements according to EN/IEC 60079-31.
 - The maximum surface temperature specified for the certified temperature sensor shall be taken into account.

**Safety instructions:
Installation of
type of protection
'intrinsic safety'**

- 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 device is only suitable for connection to certified, intrinsically safe equipment with explosion protection of at least Ex ic.

- If the conditions $U_i > U_o$, $(I_i > I_o)$, $C_a > C_i + C_{cable}$ and $L_a > L_i + L_{cable}$ are met, the energy-limited installation concept (Ex ic) allows energy-limited devices or associated energy-limited devices to be connected according to the entity concept.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits (e.g. EN/IEC 60079-14, Proof of Intrinsic Safety).
- The housing of the field transmitter must be connected to the potential matching line.

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.

Temperature tables

Approval (option code)	Type of protection	Ambient temperature	Maximum surface temperature housing
-B5	Ex tc IIIC T85 °C...T110 °C Dc	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	T85 °C
		$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	T100 °C
		$-40\text{ °C} \leq T_a \leq +80\text{ °C}$	T110 °C
-BG	Ex tc IIIC T110 °C Dc	$-40\text{ °C} \leq T_a \leq +80\text{ °C}$	T110 °C

Approval (option code)	Type of protection	Ambient temperature	Temperature class
-B2, -B5	Ex nA IIC T6...T4 Gc	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	T6
		$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	T5
		$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	T4
-BC	Ex ic IIC T6...T4 Gc	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	T6
		$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	T5
		$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	T4

Electrical connection data

Approval (option code)	Type of protection	Power supply (terminals + and -)	Sensor circuit (terminals 1 to 4)	Maximum connection values
-BC	Ex ic IIC T6...T4 Gc	$U_i \leq 30 V_{DC}$ $I_i \leq 300 \text{ mA}$ $P_i \leq 1000 \text{ mW}$ $C_i \leq 5 \text{ nF}$ $L_i = \text{negligible small}$	$U_o \leq 4.3 V_{DC}$ $I_o \leq 4.8 \text{ mA}$ $P_o \leq 5.2 \text{ mW}$	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 IIB $L_o = 300 \text{ mH}$ $C_o = 1000 \mu\text{F}$
-BG	Ex tc IIIC T110 °C Dc	$U_b = 11 \text{ to } 36 V_{DC}$ $P \leq 3 \text{ W}$ Output: 4 to 20 mA		
-B5	Ex tc IIIC T85 °C...T110 °C Dc			
-B2, -B5	Ex nA IIC T6...T4 Gc			

Category	Type of protection	Type
II 3D	Ex tc IIIC T85 °C...T110 °C Dc	iTEMP TMT142B
	Ex tc IIIC T110 °C Dc	
II 3G	Ex nA IIC T6...T4 Gc	
	Ex ic IIC T6...T4 Gc	



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