

Safety Instructions

iTEMP TMT82

HART®

ATEX, IECEx: Ex ia IIC T6 Ga, Ex ib [ia Ga] IIC T6 Gb

Safety instructions for electrical apparatus in
explosion-hazardous areas




iTEMP TMT82

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: BA01028T
- Brief operating instructions: KA01095T
- Technical information: TI01010T

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 EPS 17.0039X

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: EPS 17 ATEX 1 074 X

EU Declaration of Conformity

Declaration number: EC_00727

UKCA certificate

Certificate number: CML 21UKEX2997X

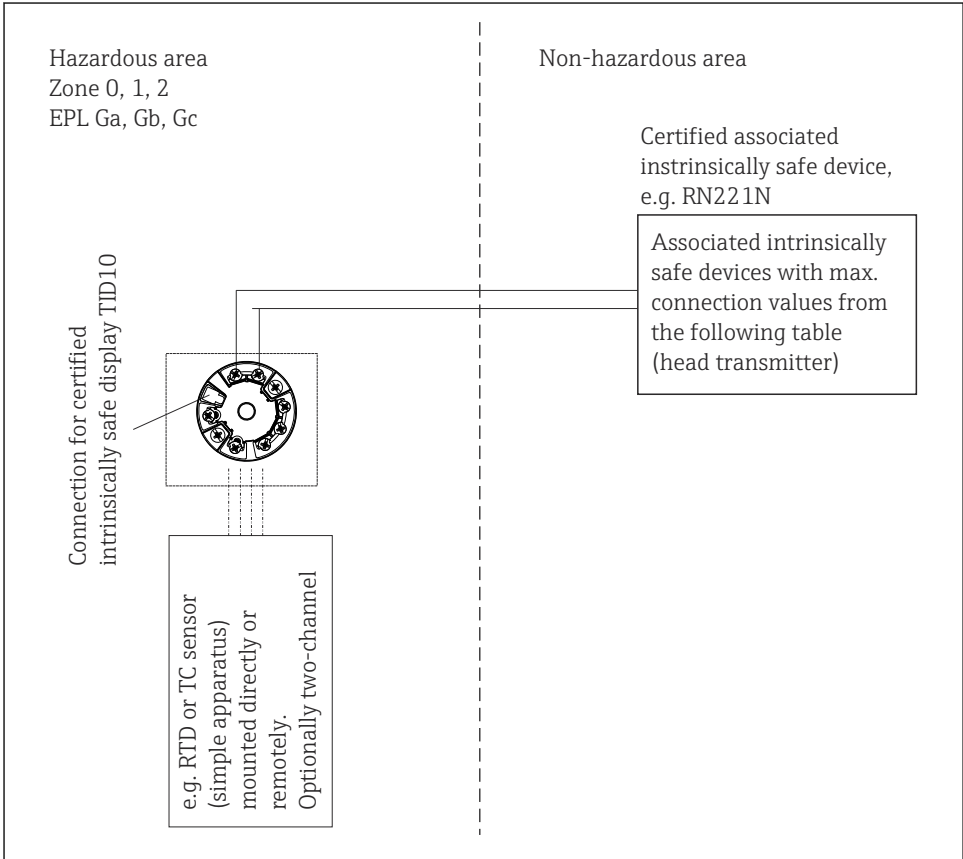
UKCA Declaration of Conformity

Declaration number: UK_00431


**Manufacturer
address**

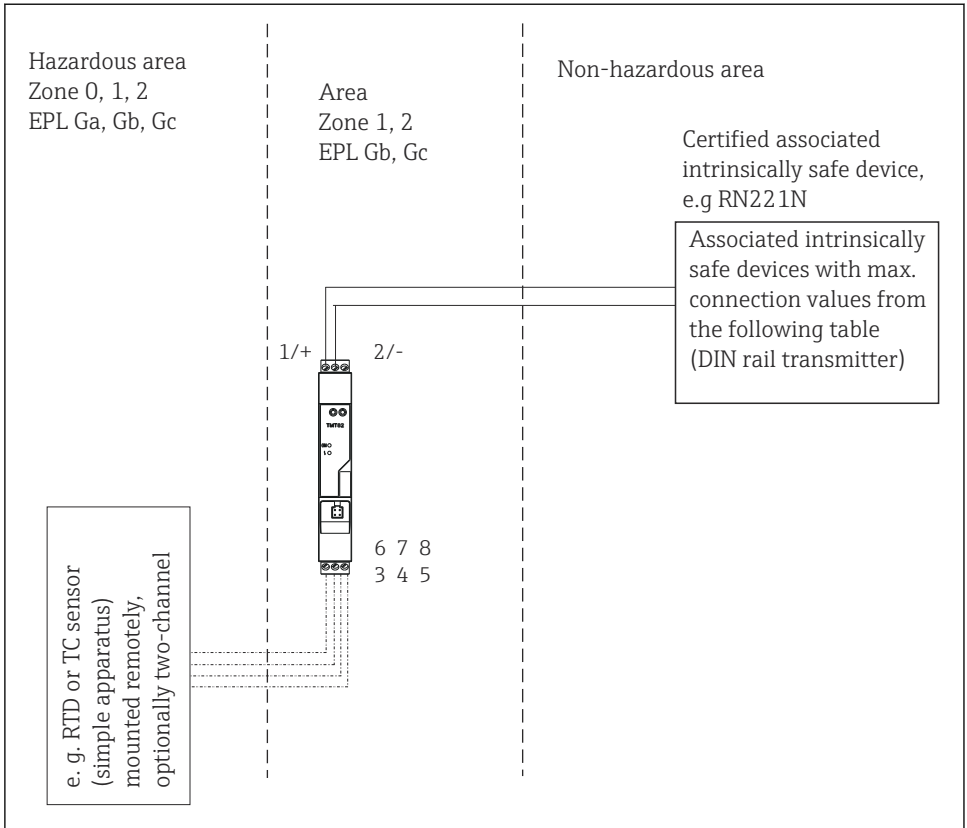
Endress+Hauser Wetzer GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

Safety instructions:




A0050493

 1 Installation of the head transmitter



A0050503

 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.
 - $-52\text{ °C} \leq T_a \leq +60\text{ °C}$
 - $0.8\text{ bar} \leq p \leq 1.1\text{ bar}$

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.

Temperature tables

Type (order option)	Temperature class	Ambient temperature zone 1	Ambient temperature zone 0
TMT82-xxA1xxxxxxxxx TMT82-xxA2xxxxxxxxx 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 TMT82-xxA2xxxxxxxxx with display (TID)	T6	-40 °C = Ta = +55 °C	
	T5	-40 °C = Ta = +70 °C	
	T4	-40 °C = Ta = +85 °C	
TMT82-xxA3xxxxxxxxx (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® Order option: TMT82-xxA1xxxxxxxxx TMT82-xxA2xxxxxxxxx (head transmitter)	Power supply (terminals + and -)	$U_i \leq 30 V_{DC}$ $I_i \leq 130 \text{ mA}$ $P_i = 800 \text{ mW}$ $C_i = \text{negligibly small}$ $L_i = \text{negligibly small}$	
	Sensor circuit (terminals 3 to 7)	$U_o \leq 7.6 V_{DC}$ $I_o \leq 13 \text{ mA}$ $P_o \leq 24.7 \text{ mW}$	
	Max. connection values		
	Ex ia IIC	$L_o = 10 \text{ mH}$	$C_o = 1 \mu\text{F}$
Ex ia IIB	$L_o = 50 \text{ mH}$	$C_o = 4.5 \mu\text{F}$	
Ex ia IIA	$L_o = 50 \text{ mH}$	$C_o = 6.7 \mu\text{F}$	
Display connection (optional)		$U_o \leq 7.6 V_{DC}$ $I_i \leq 130 \text{ mA}$ $C_i = \text{negligibly small}$ $L_i = \text{negligibly small}$	
	Max. connection values		
	Ex ia IIC	$L_o = 3.1 \text{ mH}$	$C_o = 0.64 \mu\text{F}$
	Ex ia IIB	$L_o = 16 \text{ mH}$	$C_o = 3.8 \mu\text{F}$
Ex ia IIA	$L_o = 27 \text{ mH}$	$C_o = 12 \mu\text{F}$	

Type	Electrical data		
TMT82 HART® Order option: TMT82-xxA3xxxxxxxxx (DIN rail transmitter)	Power supply (terminals + and -)	U _i = 30 V _{DC} I _i = 130 mA P _i = 770 mW C _i = negligibly small L _i = negligibly small	
	Sensor circuit (terminals 3 to 8)	U _o = 9 V _{DC} I _o = 13 mA P _o = 29.3 mW	
	Max. connection values		
	Ex ia IIC	L _o = 5 mH	C _o = 0.93 µF
	Ex ia IIB	L _o = 20 mH	C _o = 3.8 µF
	Ex ia IIA	L _o = 50 mH	C _o = 4.8 µF

Category	Type of protection (ATEX)	Type (order option)
II1G	Ex ia IIC T6...T4 Ga	TMT82-xxA1xxxxxxxxx TMT82-xxA2xxxxxxxxx
II2(1)G	Ex ib [ia Ga] IIC T6...T4 Gb	TMT82-xxA3xxxxxxxxx

Type of protection (IEC)	Type (order option)
Ex ia IIC T6...T4 Ga	TMT82-xxA1xxxxxxxxx TMT82-xxA2xxxxxxxxx
Ex ib [ia Ga] IIC T6...T4 Gb	TMT82-xxA3xxxxxxxxx



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