

Safety Instructions

iTEMP TMT71, TMT72

ATEX/IECEX: Ex ia IIC T6 Ga

Safety instructions for electrical apparatus in
explosion-hazardous areas



iTEMP TMT71, TMT72

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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:

TMT71

- Operating instructions: BA01927T
- Brief operating instructions: KA01414T
- Technical information: TI01393T

TMT72

- Operating instructions: BA01854T
- Brief operating instructions: KA01414T
- Technical information: TI01392T

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: EPS 18.0026X

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 18 ATEX 1049 X

EU Declaration of Conformity

Declaration number: EC_00695

UKCA certificate

Certificate number: CML 21UKEX21009X

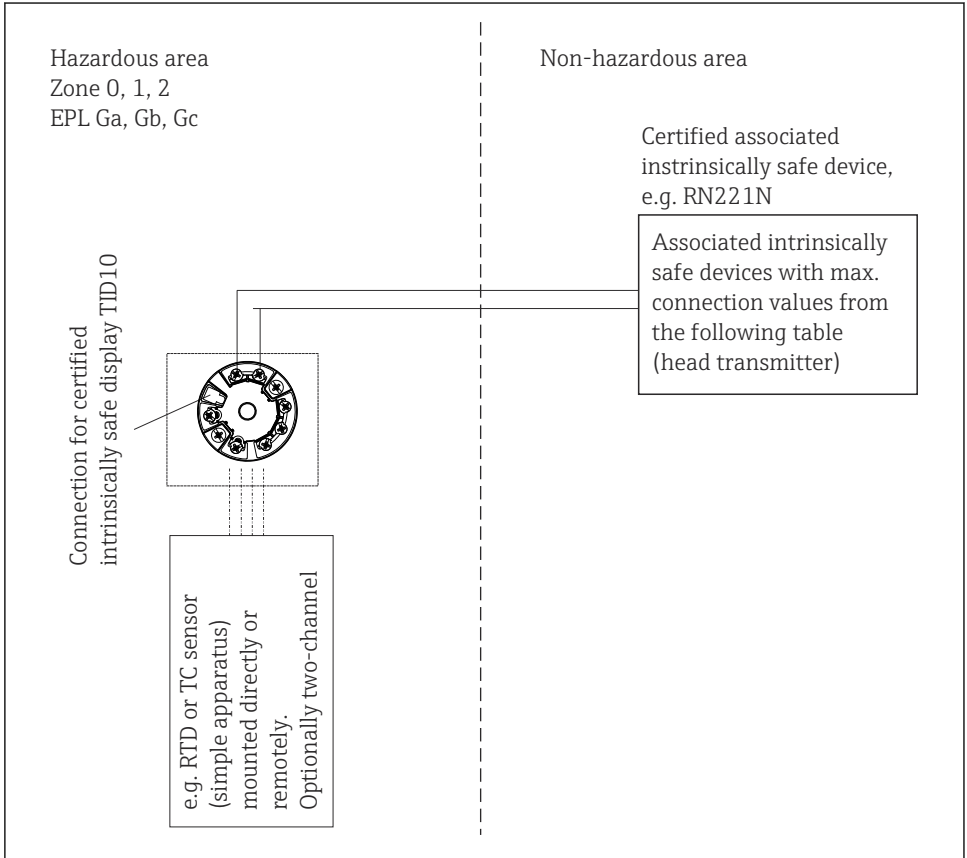
UKCA Declaration of Conformity

Declaration number: UK_00432


**Manufacturer
address**

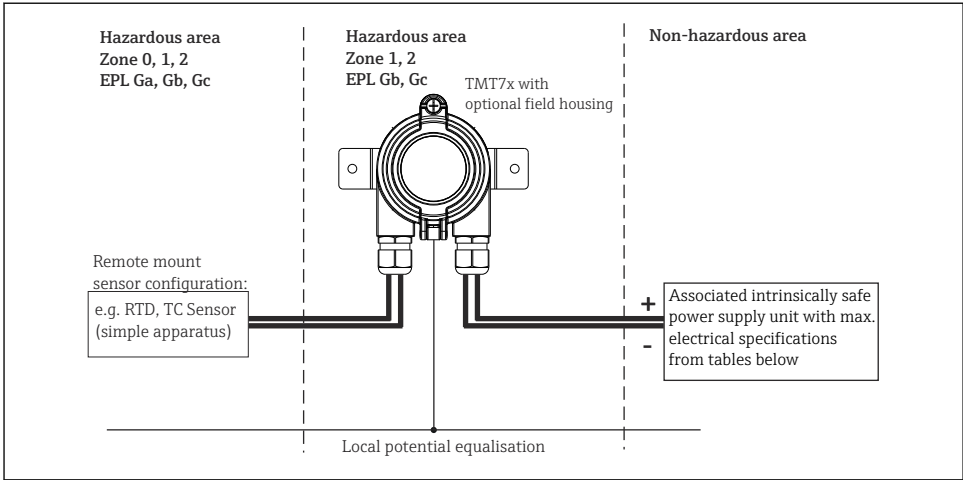
Endress+Hauser Wetzler GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

Safety instructions

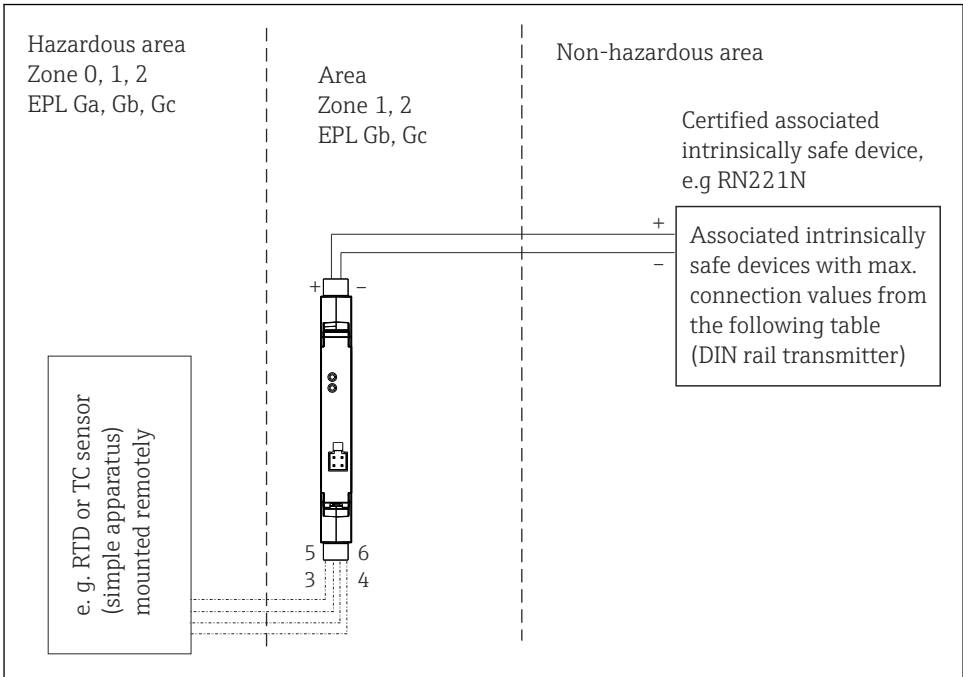


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 1 Installation of the head transmitter



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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 device, the IP20 protection rating of the housing must be maintained in accordance with EN/IEC 60529.
- When connecting the measuring device with a certified circuit of category "iB" into an IIB hazardous area, the ignition class changes to: Ex ib IIC or Ex ib IIB.
- The use of the CDI interface for configuration in hazardous areas is not permitted.

Safety instructions: head transmitter

- The device (terminal head) must be connected to the potential compensation cable.
- The certified display, type TID10, may only be installed in Zone 1/EPL Gb or Zone 2/EPL Gc.
- The permitted ambient temperatures for display type TID10 must 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: field housing

- The housing of the field transmitter must be connected to the potential matching line.
- The circuits of the installed head transmitter are insulated from its housing in accordance with EN/IEC 60079-11 chapter 6.3.13.

Safety instructions: Zone 0

(These instructions are only valid if the device is installed directly in Zone 0 (Category 1)/EPL Ga.)

- Explosive steam/air mixtures may only occur 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 explosive mixtures are present, or if additional measures have been taken in accordance with EN 1127-1, the devices may also be operated outside the atmospheric conditions in accordance with the manufacturer's specifications.
- The ambient temperature restrictions outlined in EN 1127-1 6.4.2 must be observed (see table).
- The power circuit to be supplied must comply with Ex ia IIC type of protection (EN/IEC 60079-14 12.3).

- The measuring devices may be used only in media to which the process-wetted materials have a sufficient level of resistance.
- When operating the complete device in Zone 0/EPL Ga, the compatibility of the device materials with the media must be guaranteed. (Housing: polycarbonate (PC), potting: silicone).
- The installation of display TID10 in Zone 0/EPL Ga is not permitted.
- The temperature transmitter must be mounted in such a way that electrostatic charging cannot occur, for example by installing in a grounded metallic head or grounded housing.

Safety instructions:
Specific conditions of use

- In hazardous areas it is not permitted to use the CDI interface of TMT7x for configuration.
- The head- and DIN rail-transmitter must be protected against electrostatic charge/discharge.

Temperature tables

Type (order option)	Temperature class	Ambient temperature EPL Gb/Zone 1	Ambient temperature EPL Ga/Zone 0
TMT7x-xxx1xxxx Head transmitter without display	T6	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	$-50\text{ °C} \leq T_a \leq +40\text{ °C}$
	T5	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	$-50\text{ °C} \leq T_a \leq +60\text{ °C}$
TMT7x-xxx1xxxx Head transmitter with display (TID10)	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	
TMT7x-xxx1xxxx Field housing without display	T6	$-50\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5	$-50\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	
TMT7x-xxx1xxxx Field housing with display (TID10)	T6	$-40\text{ °C} \leq T_a \leq +55\text{ °C}$	
	T5	$-40\text{ °C} \leq T_a \leq +70\text{ °C}$	
	T4	$-40\text{ °C} \leq T_a \leq +85\text{ °C}$	
TMT7x-xxx2xxxxxxxxx TMT7x-xxx3xxxxxxxxx DIN rail transmitter	T6	$-50\text{ °C} \leq T_a \leq +43\text{ °C}$	
	T5	$-50\text{ °C} \leq T_a \leq +58\text{ °C}$	
	T4	$-50\text{ °C} \leq T_a \leq +85\text{ °C}$	

Electrical connection data

Type	Electrical data									
TMT7x Order option: TMT7x-xxx1.xxxx (head transmitter) TMT7x-xxx2.xxxx TMT7x-xxx3.xxxx (DIN rail transmitter)	Power supply (Klemmen + und -)	$U_i \leq 30 V_{DC}$ $I_i \leq 100 \text{ mA}$ $P_i = 800 \text{ mW}$ (head transmitter) $P_i = 700 \text{ mW}$ (DIN rail transmitter) $C_i = \text{negligible}$ $L_i = \text{negligible}$								
	Sensor circuit (terminals 3 to 6)	$U_o \leq 4.3 V_{DC}$ $I_o \leq 4.8 \text{ mA}$ $P_o \leq 5.2 \text{ mW}$								
	Max. connection data	<table border="0"> <tr> <td>Ex ia IIC</td> <td>$L_o = 50 \text{ mH}$</td> <td>$C_o = 3 \mu\text{F}$</td> </tr> <tr> <td>Ex ia IIB</td> <td>$L_o = 100 \text{ mH}$</td> <td>$C_o = 18 \mu\text{F}$</td> </tr> <tr> <td>Ex ia IIA</td> <td>$L_o = 100 \text{ mH}$</td> <td>$C_o = 48 \mu\text{F}$</td> </tr> </table>	Ex ia IIC	$L_o = 50 \text{ mH}$	$C_o = 3 \mu\text{F}$	Ex ia IIB	$L_o = 100 \text{ mH}$	$C_o = 18 \mu\text{F}$	Ex ia IIA	$L_o = 100 \text{ mH}$
Ex ia IIC	$L_o = 50 \text{ mH}$	$C_o = 3 \mu\text{F}$								
Ex ia IIB	$L_o = 100 \text{ mH}$	$C_o = 18 \mu\text{F}$								
Ex ia IIA	$L_o = 100 \text{ mH}$	$C_o = 48 \mu\text{F}$								

Category	Type of protection (ATEX)	Type
II1G	Ex ia IIC T6...T4 Ga	without display
II2G	Ex ia IIC T6...T4 Gb	with display
II2(1)G	Ex ia [ia Ga] IIC T6... T4 Gb	with field housing
II2(1)G	Ex ib [ia Ga] IIC T6... T4 Gb	with DIN rail housing

Type of protection (IEC)	Type
Ex ia IIC T6...T4 Ga	without display
Ex ia IIC T6...T4 Gb	with display
Ex ia [ia Ga] IIC T6... T4 Gb	with field housing
Ex ib [ia Ga] IIC T6... T4 Gb	with DIN rail housing



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