

# Safety Instructions

## **TR10, TR11, TR12, TR13, TC10, TC12, TC13**

Modular RTD/TC assemblies

ATEX: II 1/2D Ex ta/tb IIIC T85 °C...T450 °C Da/Db

IECEX: Ex ta/tb IIIC T85 °C...T450 °C Da/Db

Safety instructions for electrical apparatus in  
explosion-hazardous areas





# TR10, TR11, TR12, TR13, TC10, TC12, TC13

Modular RTD/TC assemblies

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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](http://www.endress.com) -> Downloads -> Manuals and Datasheets -> Type: Ex Safety Instruction (XA) -> Text Search: ...
- In the Device Viewer: [www.endress.com](http://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:

- Technical information TR10, TC10: TI00256T
- Technical information TR12, TC12: TI01118T
- Technical information TR13, TC13: TI01097T

## 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](http://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 DEK 12.0018X

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

- IEC 60079-0 : 2017
- IEC 60079-31 : 2013

**ATEX certificate**

Certificate number: DEKRA 12ATEX0084 X

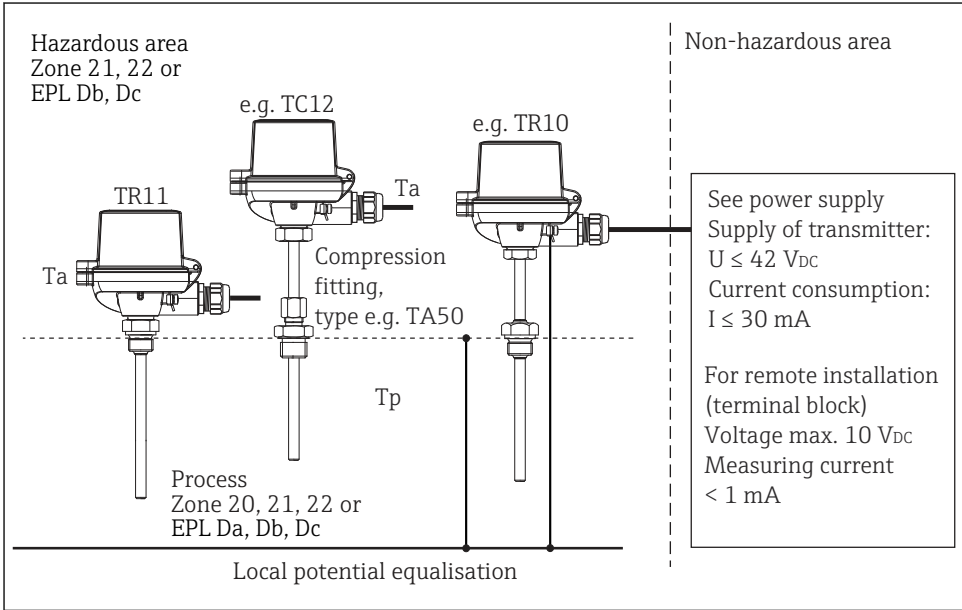
**EU Declaration of Conformity**

Declaration number: EC\_00191

**Manufacturer  
address**

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

## Safety instructions:



## Safety Instructions: Installation of Dust ignition protection

- 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 provided cable glands according to option code are suitable ATEX/IECEx Ex-certified cable glands with a temperature range of  $-20$  to  $+95 \text{ }^{\circ}\text{C}$ .
- For operating the thermometer at an ambient temperature under  $-20 \text{ }^{\circ}\text{C}$ , appropriate cables, cable entries and sealing facilities permitted for this application must be used.
- The housing of thermometer must be connected to the potential matching line.
- For ambient temperatures higher than  $+70 \text{ }^{\circ}\text{C}$ , use suitable heat-resisting cables or wires, cable entries and sealing facilities for Ta  $+5 \text{ K}$  above surrounding.

**⚠ 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).

**Safety instructions:**  
**Special conditions**

For maximum surface temperature and ambient temperature range see certificate or table in manual.

**Temperature tables**

Type	Electrical Data	
TR10, TR11, TR12, TR13 TC10, TC12, TC13	TMT180/TMT181/TMT182: TMT82: TMT84/TMT85:  Remote installation:	max. 35 V <sub>DC</sub> , 23 mA max. 42 V <sub>DC</sub> , 23 mA max. 35 V <sub>DC</sub> , 12 mA  Current consumption ≤ 30 mA Measuring current I < 1 mA

Category	Type of protection (ATEX)	Type
II 1/2D	Ex ta/tb IIIC T85 °C...T450 °C Da/Db	TR10, TR11, TR12, TR13 TC10, TC12, TC13

Type of protection (IEC)	Type
Ex ta/tb IIIC T85 °C...T450 °C Da/Db	TR10, TR11, TR12, TR13 TC10, TC12, TC13

*Permitted ambient temperatures:*

Type	Assembled head transmitter	Temperature code	Ambient temperature (housing)
Tx1x	TMT18x TMT8x	T85 °C	-40 °C ≤ Ta ≤ +65 °C
		T100 °C	-40 °C ≤ Ta ≤ +80 °C
		T135 °C	-40 °C ≤ Ta ≤ +85 °C
	Without electronic (terminal block)	T85 °C	-50 °C ≤ Ta ≤ +70 °C
		T100 °C	-50 °C ≤ Ta ≤ +80 °C
		T135 °C	-50 °C ≤ Ta ≤ +120 °C
		T200 °C	-50 °C ≤ Ta ≤ +120 °C

Type	Assembled head transmitter	Temperature code	Ambient temperature (housing)
		T300 °C	$-50\text{ °C} \leq T_a \leq +120\text{ °C}$
		T450 °C	$-50\text{ °C} \leq T_a \leq +120\text{ °C}$

Type	Process temperature range <sup>1)</sup>	Maximum surface temperature (sensor)
TR1x TC1x	$-50\text{ °C} \leq T_p \leq +70\text{ °C}$	T85 °C
	$-50\text{ °C} \leq T_p \leq +80\text{ °C}$	T100 °C
	$-50\text{ °C} \leq T_p \leq +120\text{ °C}$	T135 °C
	$-50\text{ °C} \leq T_p \leq +185\text{ °C}$	T200 °C
	$-50\text{ °C} \leq T_p \leq +285\text{ °C}$	T300 °C
	$-50\text{ °C} \leq T_p \leq +435\text{ °C}$	T450 °C

1) Maximum process pressure see relevant Technical Information of the assembly











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