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71580786
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Safety Instructions
iTHERM MultiSens Slim TMS21

TC thermometers

Ex ia IIC T1...T6 Ga/Gb
Ex ia IIIC T85 °C...T450 °C Db

Safety instructions for electrical apparatus in explosion-hazardous areas

Endress+Hauser
People for Process Automation

iTHERM MultiSens Slim TMS21

TC thermometers

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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: BA01705T
- Technical information: TI01298T

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

NEPSI Certificate of Conformity

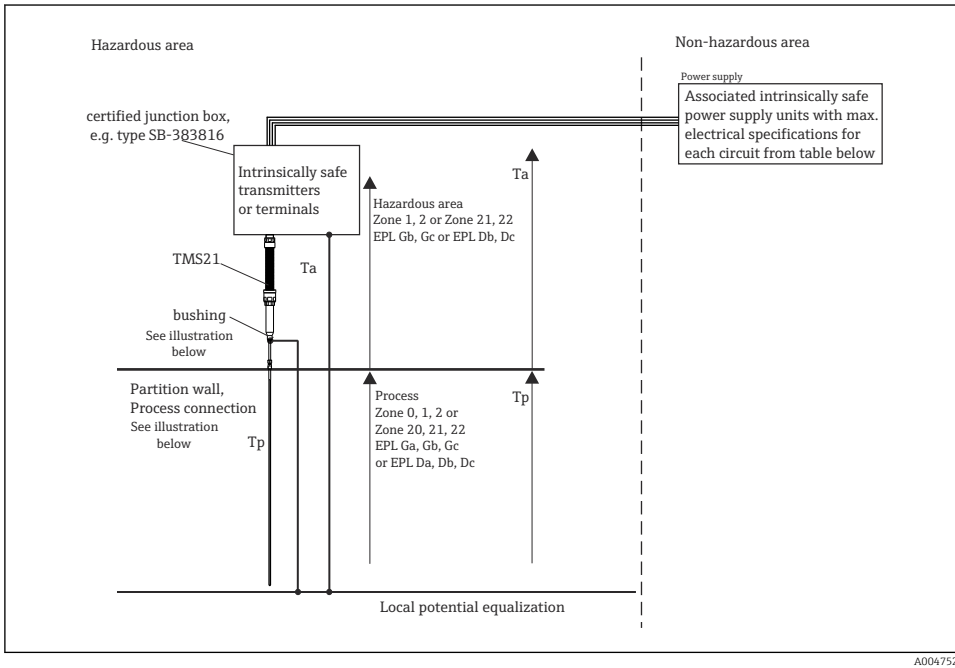
Certificate number: GYJ22.1798X

Affixing the certificate number certifies conformity with the following standards (depending on the device version).
- GB/T 3836.1 : 2021
- GB/T 3836.4 : 2021
- GB 3836.20 : 2010

Manufacturer address

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

Safety instructions



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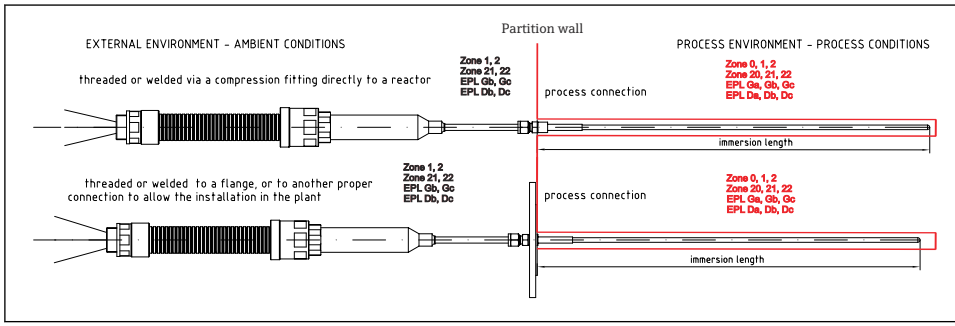

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Special conditions for Safe use

The suffix "X" placed after the certificate number indicates that this product is subject to special conditions for safe use, that is:

- If the equipment is mounted between an area requiring EPL Ga and an area with EPL Gb, the TMS21 shall be installed in a way that process connection meets the requirements of GB 3836.20-2010.
- For construction variants where the thickness of this wall is less than 1 mm, the user shall ensure that the equipment is not subject to environmental conditions that may adversely affect the partition wall.
- For ambient temperatures above +70 ℃, shall be used accessories with an operational temperature at least +5 K higher than the surrounding environment.

Condition for Safe use

- The connection of TMS21 with a junction box shall not invalidate the type of protection of the latter and the junction box and its accessories shall be certified according to GB/T 3836 relevant standard series. The equipment and the final junction box shall be connected equipotentially to each other.
- The sensors of the equipment are not isolated from the enclosure, therefore, the circuits shall be powered by intrinsically safe equipment galvanically isolated.
- The user shall not change the configuration in order to maintain/ ensure the explosion protection performance of this product. Any change may impair safety.
- For installation, use and maintenance of this product, the end user shall observe the instruction manual and the following standards
  - GB 3836.13-2021 "Explosive atmospheres- Part 13:Equipment repair, overhaul and reclamation".
  - GB/T 3836.15-2017 "Explosive atmospheres- Part 15:Electrical installations design, selection and erection".
  - GB/T 3836.16-2017 "Explosive atmospheres- Part 16:Electrical installations inspection and maintenance".
  - GB/T 3836.18-2017 “Explosive atmospheres- Part 18:Intrinsically safe electrical systems”.
  - GB50257-2014 “Code for construction and acceptance of electric equipment on fire and device for explosion hazard electrical installation engineering”.
  - GB 15577-2007 "Safety regulations for dust explosion prevention and protection".

Manufacturer’s Responsibility

- Conditions for safe use and special conditions for safe use, as specified above, should be included in the documentation the user is provided with.
- Manufacturing should be done according to the documentation approved by NEPSI.

Marking of equipment

Type of protection	Type
Ex ia IIC T6...T1 Ga/Gb Ex ia IIIC T85 °C...T450 °C Da/Db	TMS21

Temperature tables

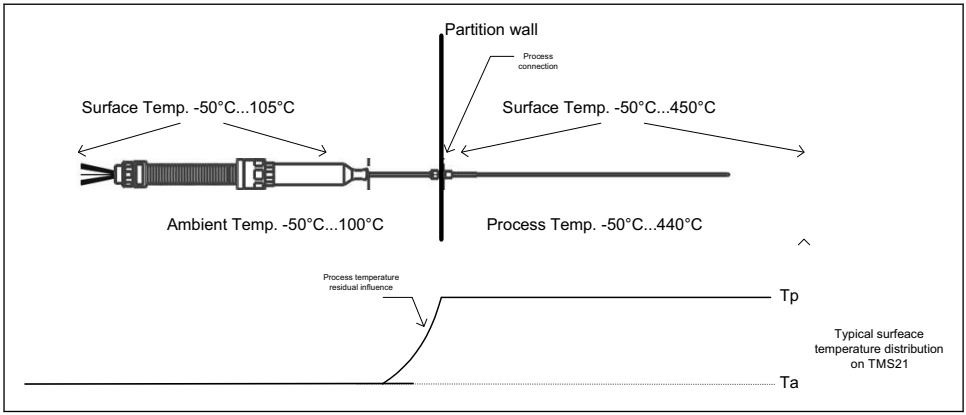
The relationship between process temperature, ambient temperature, temperature class and maximum surface temperature is shown as follows:

Sensor Type	Temperature class/ Maximum surface temperature	Tp (process) - Maximum allowed process temperature (sensor)	Ta (ambient temperature) - Maximum allowed ambient temperature cable/bushing
K, J, N, E	T1/T450 °C	−50 to +440 °C	−50 to +100 °C
	T2/T300 °C	−50 to +290 °C	−50 to +100 °C
	T3/T200 °C	−50 to +195 °C	−50 to +100 °C
	T4/T135 °C	−50 to +130 °C	−50 to +100 °C
	T5/T100 °C	−50 to +95 °C	−50 to +95 °C
	T6/T85 °C	−50 to +80 °C	−50 to +80 °C

⚠ WARNING

Ambient temperature

- ▶ It shall be verified, taking into account the worst case process and ambient temperatures of the application, that the temperature at cable/bushing does not exceed the maximum allowed surface temperature.



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Electrical connection data

For TMS21 the type of protection Ex ia IIC and Ex ia IIIC shall be connected from 2 up to 20 certified intrinsically safe circuits. Electrical parameters of each input circuit are the followings:

U_i	I_i	P_i	C_i	L_i
9 V	26 mA	0.05 W	10 nF	0.5 µH

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