

Safety Instructions

Soliphant T FTM20, FTM21

Ex ta/tc IIIC T170 °C Da/Dc



Document: XA01681F-B

Safety instructions for electrical apparatus for explosion-hazardous areas → 3

Soliphant T FTM20, FTM21

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Associated documentation	This document is an integral part of the following Operating Instructions: KA00227F/00										
Supplementary documentation	Explosion-protection brochure: CP00021Z/11 The Explosion-protection brochure is available: <ul style="list-style-type: none"> ■ 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	Certificate of Conformity Certificate number: TÜV 14.1913 Affixing the certificate number certifies conformity with the following standards (depending on the device version): <ul style="list-style-type: none"> ■ ABNT NBR IEC 60079-0 : 2013 ■ ABNT NBR IEC 60079-31 : 2014 										
Manufacturer address	Endress+Hauser SE+Co. KG Hauptstraße 1 79689 Maulburg, Germany Address of the manufacturing plant: See nameplate.										
Extended order code	The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions. Structure of the extended order code <table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 30%;">FTM20, FTM21</td> <td style="width: 10%;">–</td> <td style="width: 30%;">*****</td> <td style="width: 10%;">+</td> <td style="width: 20%;">A*B*C*D*E*F*G*..</td> </tr> <tr> <td><i>(Device type)</i></td> <td></td> <td><i>(Basic specifications)</i></td> <td></td> <td><i>(Optional specifications)</i></td> </tr> </table> <p>* = Placeholder At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.</p> <p><i>Basic specifications</i></p> <p>The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available. The selected option of a feature can consist of several positions.</p> <p><i>Optional specifications</i></p> <p>The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).</p> <p>More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.</p>	FTM20, FTM21	–	*****	+	A*B*C*D*E*F*G*..	<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>
FTM20, FTM21	–	*****	+	A*B*C*D*E*F*G*..							
<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>							

Extended order code: Soliphant T

The following specifications reproduce an extract from the product structure and are used to assign:

- This documentation to the device (using the extended order code on the nameplate).
- The device options cited in the document.

Device type

FTM20, FTM21

Basic specifications

Position 1 (Approval)		
Selected option		Description
FTM2x	M	INMETRO Ex ta/tc IIIC T170°C Da/Dc

Position 3 (Electronics; Output)		
Selected option		Description
FTM2x	2	FEM22; 3-wire PNP 10-45VDC
	4	FEM24; relay DPDT, 19-253VAC/55VDC

Optional specifications

No options specific to hazardous locations are available.

Safety instructions: General

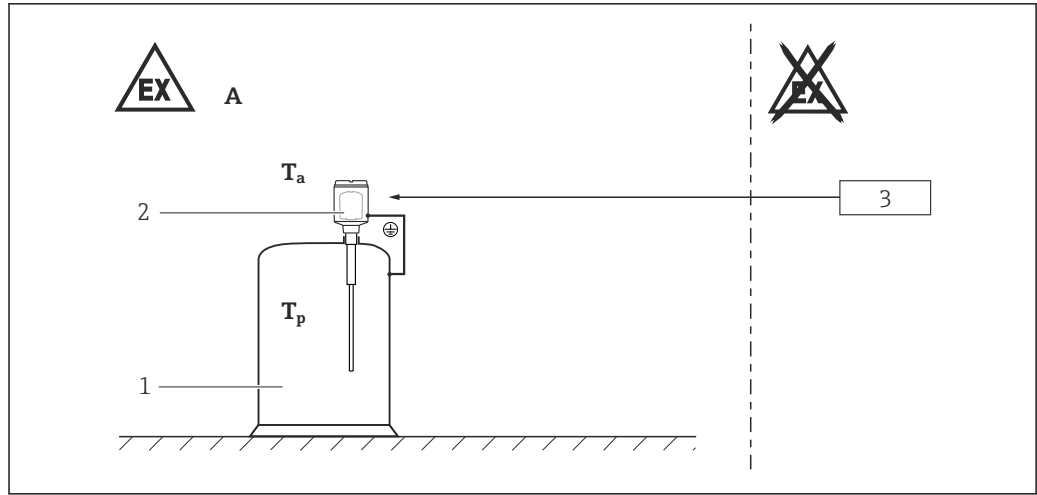
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
 - Be suitably qualified for their role and the tasks they perform
 - Be trained in explosion protection
 - Be familiar with national regulations
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Only use the device in media to which the wetted materials have sufficient durability.
- Avoid electrostatic charging:
 - Of plastic surfaces (e.g. housing, sensor element, special varnishing, attached additional plates, ..)
 - Of isolated capacities (e.g. isolated metallic plates)
- Modifications to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.

**Safety instructions:
Special conditions**

In the event of additional or alternative special varnishing on the housing or other metal parts:

- Observe the danger of electrostatic charging and discharge.
- Do not rub surfaces with a dry cloth.

**Safety instructions:
Installation**



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- T_a Ambient temperature
- T_p Process temperature
- A Zone 22
- 1 Tank, Hazardous area Zone 20
- 2 Electronic insert
- 3 Supply voltage

- The electronics housing of the device is suitable for use in Zone 22, while the sensor can be used in Zone 20.
- During installation and operation: Ensure that the ground terminal at the transmitter housing is reliably connected to ground.
- Max. heat-up of device surface in Zone 20 under fault conditions: ≤ 20 K (measured with deposited material with a layer >50 mm in thickness).
- Max. heat-up of housing surface in Zone 22 under fault conditions: ≤ 20 K.
- Support extension tube of the device if a dynamic load is expected.
- Use a process connection seal that meets the materials compatibility and temperature requirements.
- After mounting and connecting the sensor, check that a degree of protection of at least IP65 has been achieved (screw lid tight, mount cable glands correctly).
- Before operation:
 - Screw in the cover all the way.
 - Tighten the securing clamp on the cover.
- Only use cable glands and blind plugs with Ex approval and an ingress protection of IP6X.
- Do not open in an explosive atmosphere.

Accessory high pressure sliding sleeve

The high pressure sliding sleeve can be used for a continuous setting of the switch point and is suited for zone separation if mounted properly (see Operating Instructions).

Temperature tables

Ambient temperature T_a (ambient)	Process temperature T_p (process)	Surface temperature Zone 20 (under fault condition)	Surface temperature at the housing (under fault condition)
-40 to +70 °C	-40 to +150 °C	$T = 170$ °C	$T = 90$ °C

Connection data

Basic specification, Position 3 (Electronics; Output)	Supply voltage	Relay circuit
2	10 to 45 V _{DC}	-
4	19 to 253 V _{AC} or 19 to 55 V _{DC}	253 V _{AC} / 6 A 1 500 VA / $\cos \varphi = 1$ 750 VA / $\cos \varphi > 0.7$



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