

Safety Instructions

Minicap FTC262

II 1/2 D

Ex ia/tb [ia Da] IIIC T₂₀₀ 108°C T91°C Da/Db



Minicap FTC262

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Associated documentation	<p>This document is an integral part of the following Operating Instructions:</p> <p>TI00287F/00, KA00155F/00</p>
Supplementary documentation	<p>Explosion-protection brochure: CP00021Z/11</p> <p>The Explosion-protection brochure is available:</p> <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	<p>UK Declaration of Conformity</p> <p>Declaration Number: UK_00238</p> <p>The UK Declaration of Conformity is available: In the download area of the Endress+Hauser website: www.endress.com -> Downloads -> Declaration -> Type: UKCA Declaration -> Product Code: ...</p> <p>UKCA type-examination certificate</p> <p>Certificate number: CML 21UKEX2454X</p> <p>List of applied standards: See UK Declaration of Conformity.</p>
Manufacturer address	<p>Endress+Hauser SE+Co. KG Hauptstraße 1 79689 Maulburg, Germany</p> <p>Address of the manufacturing plant: See nameplate.</p>
Other standards	<p>Among other things, the following standards shall be observed in their current version for proper installation:</p> <ul style="list-style-type: none">■ IEC/EN 60079-14: "Explosive atmospheres - Part 14: Electrical installations design, selection and erection"■ EN 1127-1: "Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology"

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

FTC262	–	*****	+	A*B*C*D*E*F*G*..
<i>(Device type)</i>		<i>(Basic specifications)</i>		<i>(Optional specifications)</i>

* = Placeholder

At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

Basic specifications

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.

Optional specifications

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).

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.

Extended order code: Minicap



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

FTC262

Basic specifications

Position 1 (Approval)		
Selected option		Description
FTC262	4	UK Ex II 1/2 D Ex ia/tb [ia Da] IIIC T ₂₀₀ 108°C T91°C Da/Db

Position 4 (Switch Output)		
Selected option		Description
FTC262	2	3-wire PNP 10.8-45VDC
	4	Relay 20-253VAC/20-55VDC

Position 5 (Housing, Cable Entry)		
Selected option		Description
FTC262	H	F34 Alu IP66; thread NPT1/2, NEMA Type 4 Encl.
	I	F34 Alu IP66; thread G1/2, NEMA Type 4 Encl.
	J	F34 Alu IP66; gland M20, NEMA Type 4 Encl.

Position 6 (Additional Option)		
Selected option		Description
FTC262	1	Basic version
	3	Glass inspection window, aluminium

Optional specifications

No options specific to hazardous locations are available.

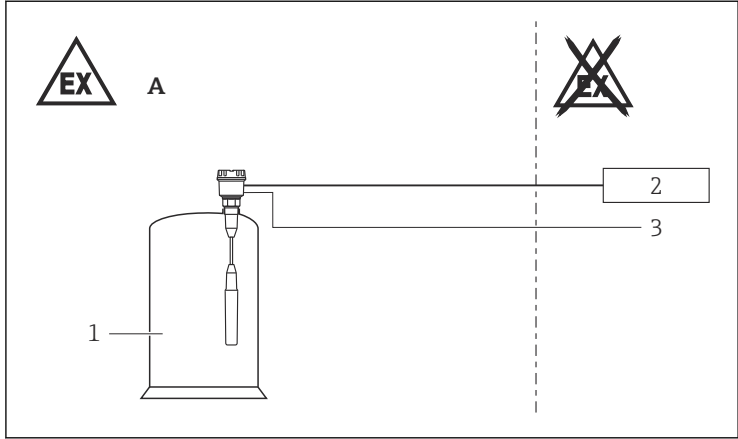
**Safety instructions:
General**

- Comply with the installation and safety instructions in the Operating Instructions.
- 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.
- Avoid electrostatic charging:
 - Of plastic surfaces (e.g. enclosure, sensor element, special varnishing, attached additional plates, ..)
 - Of isolated capacities (e.g. isolated metallic plates)

**Safety instructions:
Special conditions**

- To avoid electrostatic charging: Do not rub surfaces with a dry cloth.
- In the event of additional or alternative special varnishing on the enclosure or other metal parts or for adhesive plates:
 - Observe the danger of electrostatic charging and discharge.
 - Do not install in the vicinity of processes (≤ 0.5 m) generating strong electrostatic charges.

**Safety instructions:
Installation**



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- A Zone 21
- 1 Tank; Hazardous area Zone 20
- 2 Power supply or switching unit
- 3 Potential equalization

- The intrinsically safe signal circuit is grounded: For this reason potentials must be equalised along the route of the cable (inside and outside of the explosion hazardous area).
- After mounting and connecting the sensor, check that a degree of protection of at least IP66 has been achieved (screw lid tight, mount cable glands correctly).

Temperature tables

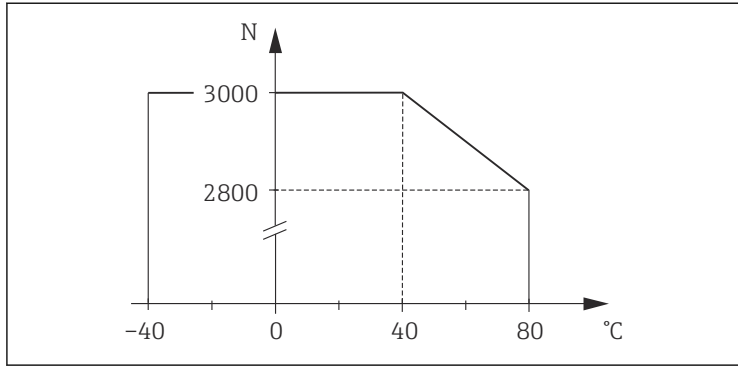
Thermal performance limits	
Temperature of the sensor (Zone 20)	Permissible process temperature -40 to +80 °C
	Maximum surface temperature
	at an ambient temperature of 40 °C 68 °C at an ambient temperature of 80 °C 108 °C
Temperature of the electronics enclosure (Zone 21)	Permissible ambient temperature -40 to +60 °C
	Maximum surface temperature
	at an ambient temperature of 40 °C 71 °C at an ambient temperature of 60 °C 91 °C

Degree of ingress protection	
Sensor (Zone 20)	IP66
Electronics enclosure (Zone 21)	IP66

Connection data

Electrical performance limits		
<i>Basic specification, Position 4 = 4</i> (AC/DC relay version)	Maximum operating voltage	20 to 253 V _{AC} , 50/60 Hz or 20 to 55 V _{DC}
	Current consumption	max. 2 W
	Relay circuit	253 V _{AC} / 4 A / 1 000 VA or 253 V _{DC} / 0.2 A / 50 W or 30 V _{DC} / 4 A / 120 W
	Fuse	500 mA
<i>Basic specification, Position 4 = 2</i> (DC PNP version)	Maximum operating voltage	10.8 to 45 V _{DC}
	Current consumption	max. 1.5 W
	Switch output (PNP)	
	Current	max. 200 mA
	Switching capacity	9 W

Mechanical performance limits		
On rope	Maximum pull-down forces	
	at room temperature and at -40 °C	3 000 N
	at +80 °C	2 800 N



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Cable entry: Connection compartment

Ex tb

Cable gland: *Basic specification, Position 5 = J*

preferably

Thread	Clamping range	Material	Sealing insert	O-ring
M20x1,5	ø 8 to 10.5 mm ¹⁾ (ø 6.5 to 13 mm) ²⁾	Ms, nickel-plated	Silicone	EPDM (ø 17x2)

- 1) Standard
- 2) Separate clamping inserts available

alternatively

Thread	Clamping range	Material	Sealing insert	O-ring
M20x1,5	ø 7 to 12 mm	1.4404	NBR	EPDM (ø 17x2)



- The tightening torque refers to cable glands installed by the manufacturer:
 - Recommended: 3.5 Nm
 - Maximum: 10 Nm
- This value may be different depending on the type of cable. However, the maximum value must not be exceeded.

- Only suitable for fixed installation. The operator must pay attention to a suitable strain relief of the cable.
- The cable glands are suitable for a low risk of mechanical danger (4 Joule) and must be mounted in a protected position if larger impact energy levels are expected.
- To maintain the ingress protection of the enclosure: Install the enclosure cover, cable glands and blind plugs correctly.



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