

# Safety Instructions

## Micropilot FMR20B

Control Drawing  
Class II, III, Div. 1, Groups E-G





# Micropilot FMR20B

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**About this document**

The document number of these Safety Instructions (XA) must match the information on the nameplate.

**Associated documentation**

All documentation is available on the Internet:

[www.endress.com/Deviceviewer](http://www.endress.com/Deviceviewer)

(enter the serial number from the nameplate).

To commission the device, please observe the Operating Instructions pertaining to the device:

BA02364F

**Certificates and declarations****FM C/US certificate**

Certificate number:

- FM 25US0123X
- FM 25CA0058X

**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**

|                      |   |                               |   |                                  |
|----------------------|---|-------------------------------|---|----------------------------------|
| FMR20B               | - | *****                         | + | 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: Micropilot**



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*

FMR20B

### *Basic specifications*

| Position 1, 2 (Approval) |                                     |
|--------------------------|-------------------------------------|
| Selected option          | Description                         |
| FMR20B FF                | CAN/US Cl. II, III, Div. 1, Gr. E-G |

| Position 3, 4 (Output) |                      |
|------------------------|----------------------|
| Selected option        | Description          |
| FMR20B BA              | 2-wire, 4-20 mA HART |

### *Optional specifications*

No options specific to hazardous locations are available.

**Safety  
instructions:  
General**

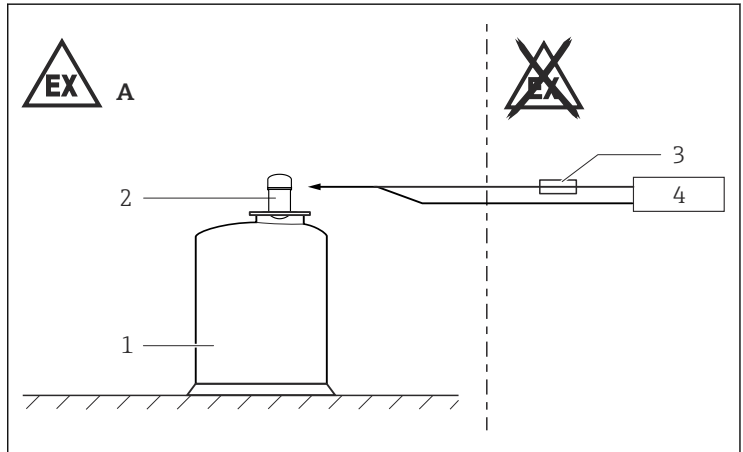
- The device is intended to be used in hazardous locations as defined in the Canadian Electrical Code, Part I or the National Electrical Code (NFPA70). If no potentially explosive atmospheres are present or if additional protective measures have been taken: The device may be operated according to the manufacturer's specifications.
- 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.
- Only use the device in media to which the wetted materials have sufficient durability.
- Avoid electrostatic charging:
  - Of plastic surfaces (e.g. enclosure, sensor element, special varnishing, attached additional plates, ...)
  - Of isolated capacities (e.g. isolated metallic plates)
- Alterations 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:  
Specific  
conditions of use**

- 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 ( $\leq 0.5$  m) generating strong electrostatic charges.
- Avoid sparks caused by impact and friction.
- In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
- The process connection of the device must be installed in such a way that guarantees a sufficiently tight joint (IP66/67).
- Applications in which the process temperature exceeds the maximum surface temperature limits of the required maximum surface temperature: The ignition hazard posed by hot surfaces on the process connecting parts of the device must be taken into account.
- It is essential for the device to use a power supply that is galvanically isolated from earth.
- Refer to the temperature tables for various ambient and process temperature ranges.

- The device corresponds to a low risk of mechanical danger.
- The user is required to protect the device with an external fuse with a breaking capacity of 1.5 kA.
- The internal fuse has a breaking capacity of 100 A.

## Safety instructions: Installation



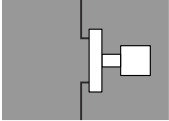
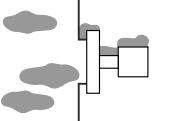
A0058202

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- A See Basic specifications, Position 1, 2 = FF  
 1 Tank; see Basic specifications, Position 1, 2 = FF  
 2 Micropilot FMR20B  
 3 Fuse  
 4 Power supply

- Observe the maximum process conditions according to the manufacturer's Operating Instructions.
- Install the device to exclude any mechanical damage or friction during the application. Pay particular attention to flow conditions and tank fittings.


*Permitted ambient conditions*

| Process Zone 20                                   |   | Enclosure Zone 20                                 |
|---|---|---|
| Continuous dust submersion                        |  | Continuous dust submersion                        |
| Continuous explosive dust atmosphere and deposits |  | Continuous explosive dust atmosphere and deposits |

**Temperature tables**

-  The specified surface temperature takes into account all direct heat influences from process heat and self-heating at the enclosure.
- The specified ambient and process temperature ranges exclusively refer to the explosion protection and must not be exceeded. Operationally permitted ambient temperature ranges can be restricted depending on the version: See Operating Instructions.
- Do not exceed the max. ambient temperature at the enclosure.

For detailed information see Technical Information.

 Protection type of enclosure: IP66/68

| Maximum surface temperature |
|-----------------------------|
| 135 °C                      |

| Input parameters |        |         | Maximum permitted ambient or process temperature |
|------------------|--------|---------|--|
| 675 mW           | 30.0 V | 22.5 mA | -20 to 48 °C                                     |
| 594 mW           | 26.4 V | 22.5 mA | -20 to 52 °C                                     |
| 540 mW           | 24.0 V | 22.5 mA | -20 to 55 °C                                     |

**Connection data**

| Entity parameter                     |
|--------------------------------------|
| U ≤ 30 V <sub>DC</sub><br>P ≤ 675 mW |









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[www.addresses.endress.com](http://www.addresses.endress.com)

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