

# Safety Instructions

## Display FHX40

4-20 mA HART, PROFIBUS PA,  
FOUNDATION Fieldbus

Ex ia IIC T5/T6 Gb





# Display FHX40

4-20 mA HART, PROFIBUS PA, FOUNDATION Fieldbus

## Table of contents

About this document .....	4
Associated documentation .....	4
Supplementary documentation .....	4
Manufacturer's certificates .....	4
Manufacturer address .....	4
Extended order code .....	4
Safety instructions: General .....	6
Safety instructions: Special conditions .....	7
Safety instructions: Installation .....	7
Temperature tables .....	8
Connection data .....	8

**About this document**

This document has been translated into several languages. Legally determined is solely the English source text.

**Associated documentation**

This document is an integral part of the following Operating Instructions:

KA00202F/00

**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****NEPSI Declaration of Conformity**

Certificate number:

GYJ21.1245

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

- GB 3836.1-2010
- GB 3836.4-2010

**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

FHX40	–	*****	+	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: Display FHX40



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*

FHX40

*Basic specifications*

Position 1 (Approval)		
Selected option		Description
FHX40	C	NEPSI Ex ia IIC T5/T6 Gb

Position 2 (Cable)		
Selected option		Description
FHX40	1	20m/65ft (> HART)
	5	20m/65ft (> PROFIBUS PA / FOUNDATION Fieldbus)
	9	Special version, TSP-no. to be spec.

*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
- For installation, use and maintenance of the device, users must also observe the requirements stated in the Operating Instructions and the standards:
  - GB 50257-2014: "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering".
  - GB 3836.13-2013: "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".
- Install the device according to the manufacturer's instructions and national regulations.
- Avoid electrostatic charging of isolated capacities (e.g. isolated metallic plates).
- Refer to the temperature tables for the relationship between the permitted ambient temperature for the electronics enclosure, depending on the range of application and the temperature class.

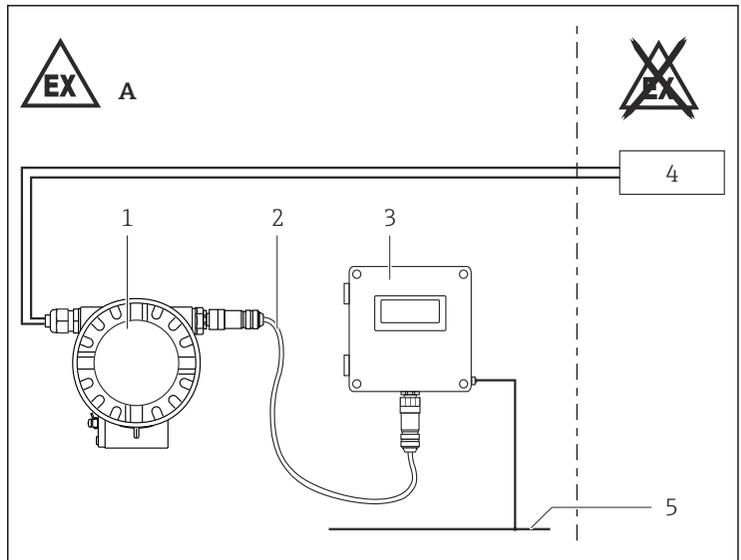
**Safety instructions:**  
**Special conditions**

Permitted ambient temperature range:  
 $-40\text{ °C} \leq T_a \leq +75\text{ °C}$

- Observe the information in the temperature tables.
- 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 ( $\leq 0.5\text{ m}$ ) generating strong electrostatic charges.

**Safety instructions:**  
**Installation**

-  For connection to Endress+Hauser devices with intrinsically safe display only.



A0033477

 1

- A Zone 1, Zone 2  
 1 Endress+Hauser measuring device  
 2 Supplied connection cable  
 3 Display FHX40  
 4 Power supply or certified associated apparatus (dependent on Endress+Hauser measuring device)  
 5 Local potential equalization

-  ■ The supplied connection cable may not be changed.  
 ■ Maximum cable length: 40 m.

### Intrinsic safety

The intrinsically safe input power circuit of the device is isolated from ground. The dielectric strength is at least  $500 V_{\text{rms}}$ .

### Potential equalization

Integrate the device into the local potential equalization.

### Temperature tables

Temperature class	Permitted ambient temperature range at the enclosure
T6	-40 to +60 °C
T5	-40 to +75 °C

### Connection data

Power supply circuit with protection type: intrinsic safety Ex ia IIC.



For connection to a certified intrinsically safe circuit only.

#### Maximum values

$$U_i = 5.6 \text{ V}$$

$$I_i = 47 \text{ mA}$$

$$P_i = 66 \text{ mW}$$

$$\text{effective inner inductance } L_i = L_i + L_{\text{cable}} = 30 \text{ } \mu\text{H}$$

$$\text{effective inner capacitance } C_i = C_i + C_{\text{cable}} = 11 \text{ } \mu\text{F}$$









71531558

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

---