

Safety Instructions

Remote display FHX50B

Ex ia IIC T6 Ga

Ex ia IIC T6 Gb



Remote display FHX50B

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Associated documentation

All documentation is available on the Internet:
www.endress.com/Deviceviewer
(enter the serial number from the nameplate).

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

SD02991F

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:
www.endress.com/Downloads

Certificates and declarations**KC Declaration of Conformity**

Certificate number:

Ex ia IIC Ga

23-KA4BO-0792X, 23-KA4BO-0799X

Ex ia IIC Gb

23-KA4BO-0793X, 23-KA4BO-0800X

IEC Declaration of Conformity

Certificate number:

IECEX SEV 23.0002X

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

- IEC 60079-0 : 2017
- IEC 60079-11 : 2011
- Protection Device Safety Certification Notification No. 2021-22

Certificate holder

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

FHX50B	–	*****	+	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: Remote display



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

FHX50B

Basic specifications

Position 1, 2 (Approval)		
Selected option		Description
FHX50B	KA	KC Ex ia IIC T6 Ga
	KB	KC Ex ia IIC T6 Gb

Position 4 (Housing, Material)		
Selected option		Description
FHX50B	B	Single compartment; Alu, coated

Position 5 (Electrical Connection, Cable)		
Selected option		Description
FHX50B	A	Plug M12; w/o
	C	Plug M12; 5m
	D	Plug M12; 10m
	F	Plug M12; 20m
	H	Plug M12; 30m
	1	Gland M20, plastic; w/o
	2	Gland M20, brass nickel plated; w/o
	3	Gland M20, 316L; w/o
	4	Gland M20, 316L, hygiene; w/o
	5	Thread M20; w/o
	6	Thread G1/2; w/o
	7	Thread NPT1/2; w/o

Optional specifications

ID Jx, Kx (Test, Certificate, Declaration)		
Selected option		Description
FHX50B	JL	Ambient temperature -50°C/-58°F

**Safety
instructions:
General**



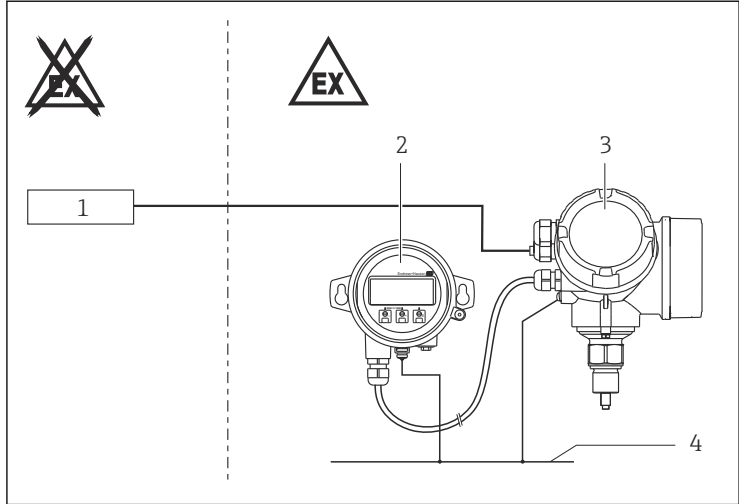
The FHX50B remote display can only be operated with compatible Endress+Hauser measuring devices.

- The device is intended to be used in explosive atmospheres as defined in the scope of IEC 60079-0 or equivalent national standards. 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 (≤ 0.5 m) generating strong electrostatic charges.
- In Zone 0, avoid sparks caused by impact and friction.

Safety instructions: Installation



A0032629

- 1 Power supply or certified associated apparatus (dependent on Endress+Hauser measuring device)
- 2 FHX50B in Zone 0 or Zone 1
- 3 Endress+Hauser measuring device
- 4 Local potential equalization

- After aligning (rotating) the enclosure, retighten the fixing screw.
- Continuous service temperature of the connecting cable: -40 °C to $\geq +85\text{ °C}$.
- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.
- 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.

Basic specification, Position 5 = C, D, F, H

Continuous service temperature of the connecting cable: -40 °C to $\geq +85\text{ °C}$.

Basic specification, Position 5 = 7

Observe the requirements according to IEC/EN 60079-14 for conduit systems and the wiring and installation instructions of the suitable Safety Instructions (XA). In addition, observe national regulations and standards for conduit systems.

Optional specification, ID Jx, Kx = JL

Continuous service temperature of the connecting cable: -50 °C to $\geq +85\text{ °C}$; in accordance with the range of service temperature

taking into account additional influences of the process conditions ($T_{a,\min}$), ($T_{a,\max} + 20 \text{ K}$).

Intrinsic safety

- The device is only suitable for connection to certified, intrinsically safe equipment with explosion protection Ex ia.
- 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



- The specified ambient 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.



Optional specification, ID Jx, Kx = JL

Lower limit of the ambient temperature for explosion protection changes to $-50 \text{ }^\circ\text{C}$.

Temperature class	Ambient temperature range
T6	$-40 \text{ }^\circ\text{C} \leq T_a \leq +60 \text{ }^\circ\text{C}$

Connection data

Power supply
$U_i \leq 6 \text{ V}$ $I_i \leq 53 \text{ mA}$ $P_i \leq 200 \text{ mW}$ $C_i \leq 15.5 \text{ } \mu\text{F}$ $L_i = 0$

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

Connectable transmitters

The device must meet the following conditions to be connected to an Endress+Hauser measuring device:

- The device has an intrinsically safe display circuit
- The device is specifically defined as "Prepared for display FHX50B"

The measuring device that has already been prepared for the FHX50B has an intrinsically safe display circuit with the following characteristic values:

Power supply
$U_i \leq 6 \text{ V}$ $I_i \leq 53 \text{ mA}$ $P_i \leq 200 \text{ mW}$ $C_i \leq 11 \text{ }\mu\text{F}$ $L_i = 0$

Connectable cables

- Cables which are optionally available from Endress+Hauser: can be ordered up to a total length of 30 m.
- Maximum cable length: 60 m.
- A customer's cable can be used provided the effective capacitance of the cable does not exceed the following value:
Total capacitance of cable $C_c \leq 1.6 \text{ }\mu\text{F}$ (wire to wire)



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