

Special Documentation

Remote display FHX50

Level and flow measurement

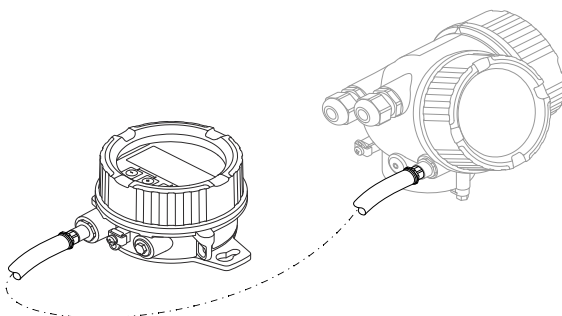


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1 Safety instructions

WARNING

Dust explosion hazard

- ▶ The version with a M12 plug must not be used in potentially explosive dust atmospheres.



Retrofitting is not possible on transmitters with:

- An approval for use in areas with flammable dust (dust ignition-proof approval)
- Type of protection Ex nA

NOTICE

Changing the labeling of explosion-protected electrical apparatus (Ex label)

- ▶ If a device is retrofitted, the Ex label on the device must be adapted and documented. The changes to the Ex label depend on the individual transmitter. Please refer to the Safety Instructions (XA) of the relevant transmitter for details. An additional label can be provided as the documentation, for example.

NOTICE

Changing the order code

- ▶ If a device is retrofitted, the label for the order code on the device must be adapted and documented. Feature 030 "Display, operation" changes to L (for M12 connection) in the order code or M (in the case of customer-supplied connection). An additional label can be provided as the documentation, for example.

2 Connectable transmitters

- Micropilot FMR5x
- Micropilot FMR6x
- Levelflex FMP5x
- Prowirl 200 / 7x2B, 7x2C
- Promass 200 / 8x2B, 8x2C
- Promag 200 / 5x2B
- Prosonic Flow 200 / 9x2B



Use of the FHX50 may be restricted for transmitters with an approval. A device can only be retrofitted with the FHX50 if the option L or M ("Prepared for FHX50") is listed under *Basic specifications*, "Display, operation" in the Safety Instructions (XA) for the device. Option N with housing GT19 is not permitted.

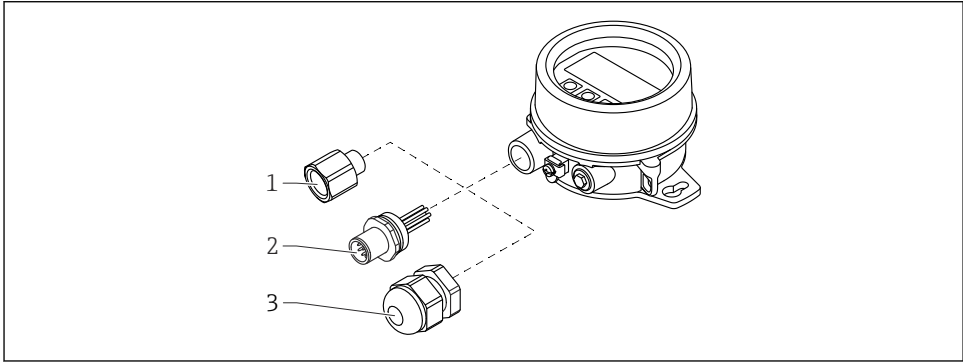
Observe the Safety Instructions (XA) for the FHX50.

3 Scope of delivery


The scope of delivery depends on the version ordered according to the product structure.

3.1 Cable with cable entries

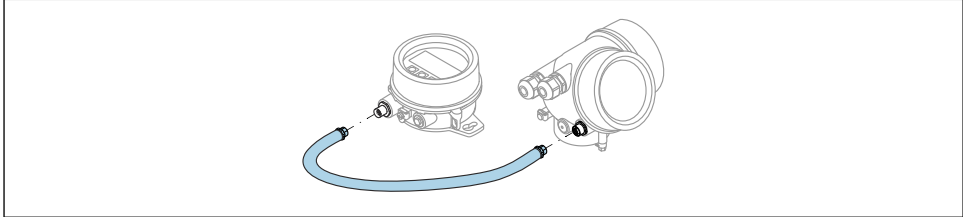
Scope of delivery, order code 040 for "Cable"




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 1 Housing FHX50; cable entry depends on the cable (order code 040)

- 1 1/2 NPT thread
- 2 M12 plug
- 3 M16 cable gland



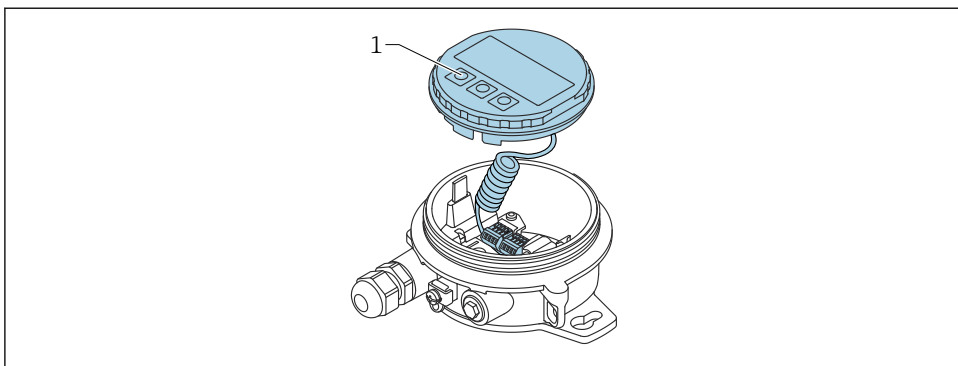
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 2 Cable with M12 plug


-  Cable length available in 5 m (16 ft), 10 m (33 ft), 20 m (66 ft) and 30 m (98 ft) and M12 plug.
- Cable provided by customer (maximum 60 m (197 ft)) for cable gland M16 and NPT 1/2 thread.

3.2 Display module, installed in the housing

Scope of delivery, order code 020 for "Display, operation"



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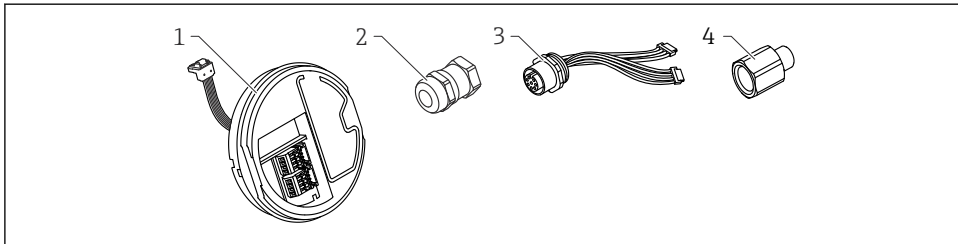
 3 Display module, installed in the housing

1 Option C "SD02 4-line, push buttons + data back-up function"


1 Option E "SD03 4-line, illuminated, touch control + data back-up function"

3.3 Retrofit kit for measuring device

Scope of delivery, order code 050 for "Measuring device version" (option B: Not prepared for display FHX50+retrofit kit)



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 4 Retrofit kit (can be ordered as a separate accessory: 71248380)

1 Terminal board used to replace the display module

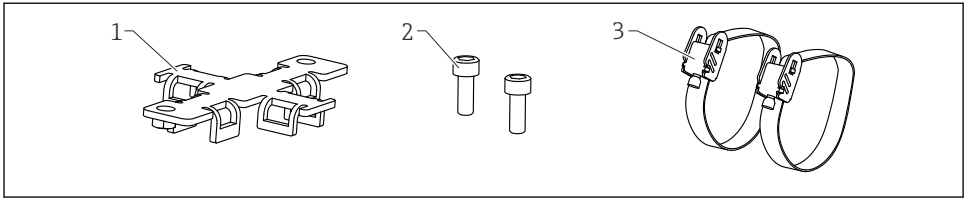
2 M16 cable gland (for use with cable provided by customer, maximum 60 m (197 ft))

3 M12 socket (for use with the cable provided with M12 plug)

4 NPT 1/2 thread, (for use with cable provided by customer, maximum 60 m (197 ft))

3.4 Mounting kit for pipe mounting

Scope of delivery, order code 620 for "Enclosed accessories" (option AA: Mounting bracket, 1 1/2" pipe).



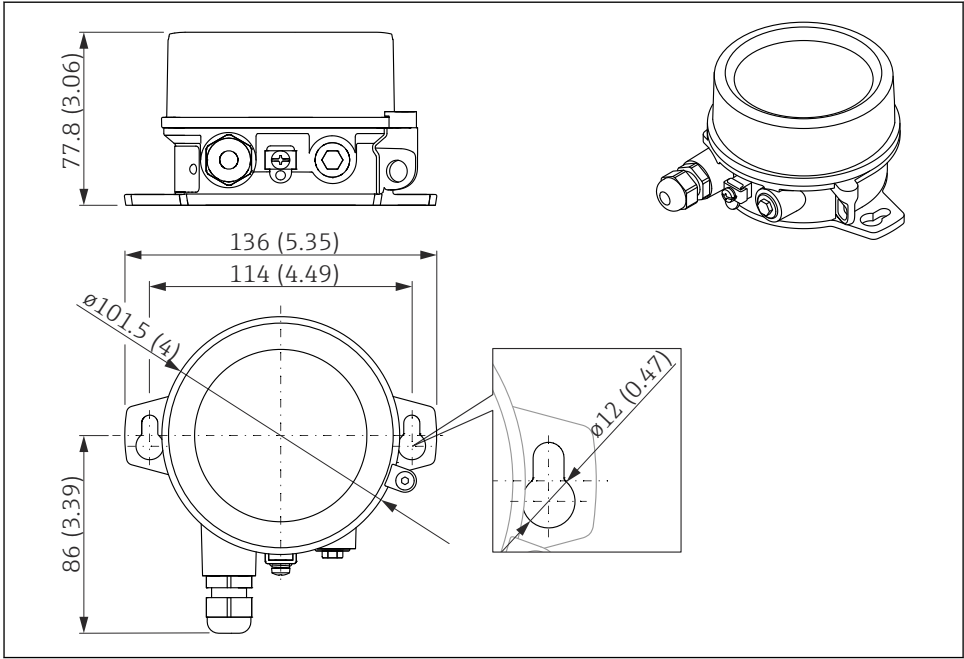
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5 *Mounting kit for pipe mounting*

- 1 *Mounting bracket, 304 (1.4301)*
- 2 *2 × screws, A2*
- 3 *2 × hose clip, 304 (1.4301)*

4 Technical data

4.1 Dimensions



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Unit of measurement mm (in)

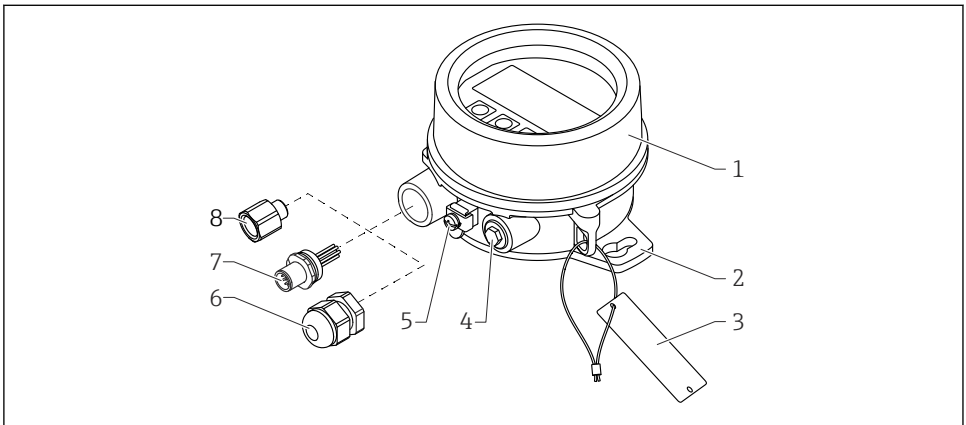
4.2 Additional data

- Degree of protection: IP68, NEMA 6P
- Ambient temperature: -40 to 80 °C (-40 to 176 °F)
- Storage temperature: -40 to +80 °C (-40 to +176 °F)
- Climate class: DIN EN 60068-2-38 (test Z/AD)
- Vibration resistance: DIN EN 60068-2-64 / IEC 68-2-64: 20 to 2 000 Hz, 1 (m/s²)/Hz
- Electromagnetic compatibility (EMC): Electromagnetic compatibility in accordance with all of the relevant requirements outlined in the EN 61326 series and NAMUR Recommendation EMC (NE 21). For details, refer to the Declaration of Conformity.

5 Materials

5.1 Housing 316L

Order code 030 for "Housing", option B "Single compartment, 316L"

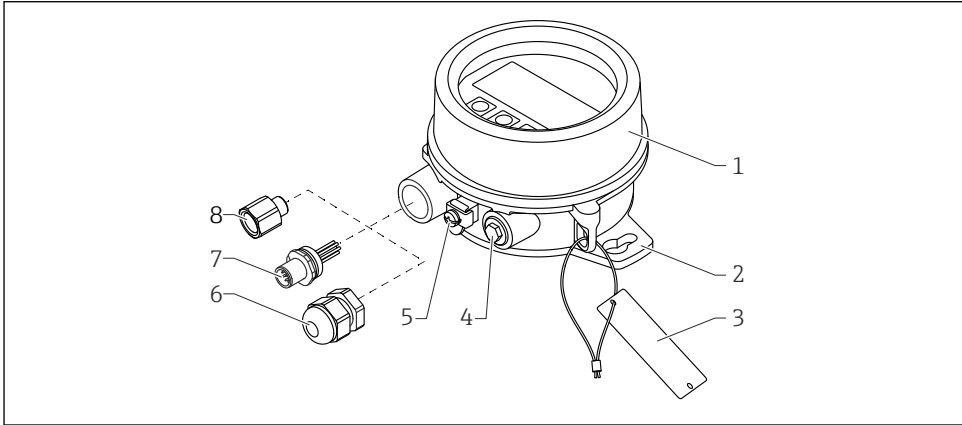


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- 1 Cover; CF3M
- 1.1 Cover clamp; A4 and 316L (1.4404)
- 1.2 Seal; NBR, PTFE-coated
- 2 Housing; CF3M
- 3 Tie-on label; 316 (1.4401) and 316L (1.4404)
- 4 Plug; 316L (1.4404)
- 4.1 Gore-Tex filter; ePTFE
- 4.2 Seal; Santoprene™
- 5 Ground terminal; A4 and 304 (1.4301)
- 6 Cable gland; 316L (1.4404)
- 7 M12 plug; 316L (1.4404)
- 8 NPT ½ adapter; 316L (1.4404) and NBR

5.2 Housing, aluminum

Order code 030 for "Housing", option C "Single compartment, aluminum, coated"

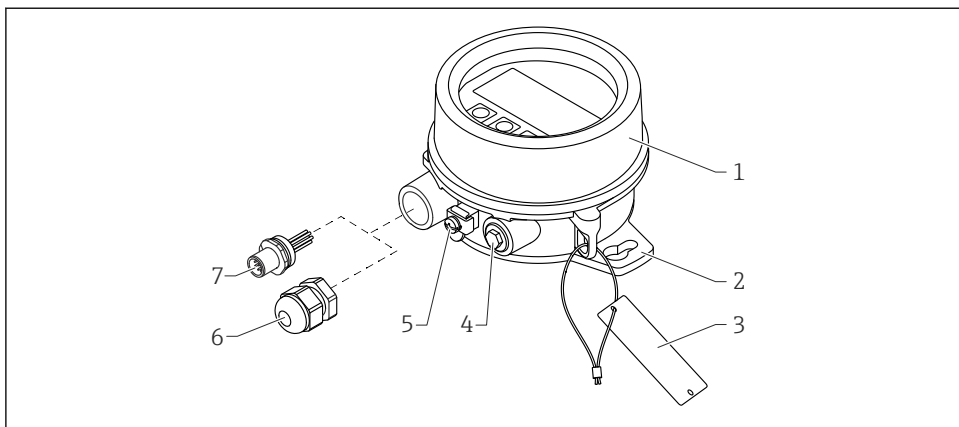


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- 1 Cover; aluminum EN-AC 43400
- 1.1 Cover clamp; A4 and 316L (1.4404)
- 1.2 Seal; NBR, PTFE-coated
- 2 Housing; aluminum EN-AC 43400
- 3 Tie-on label; 316 (1.4401) and adhesive label
- 4 Plug; nickel-plated brass (CuZn)
- 4.1 Gore-Tex filter; ePTFE
- 4.2 Seal; Santoprene™
- 5 Ground terminal; A2, A4, 304 (1.4301) and 301 (1.4301)
- 6 Cable gland; nickel-plated brass (CuZn)
- 7 M12 plug; zinc (Zn)
- 8 NPT 1/2 adapter; 316L (1.4404) and NBR

5.3 Housing plastic PBT

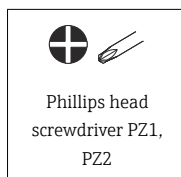
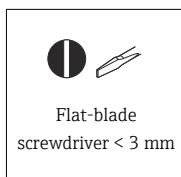
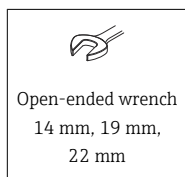
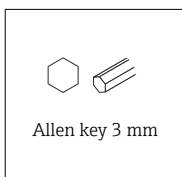
Order code 030 for "Housing", option D "Single compartment, plastic PBT"



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- 1 Cover; PBT-PC and PC
- 1.1 Cover clamp; A4 and 316L (1.4404)
- 1.2 Seal; EPDM, PTFE-coated
- 2 Housing; PBT
- 3 Tie-on label; 316 (1.4401) and adhesive label
- 4 Plug; nickel-plated brass (CuZn)
- 4.1 Gore-Tex filter; ePTFE
- 4.2 Seal; Santoprene™
- 5 Ground terminal; A2, A4, 304 (1.4301) and 301 (1.4301)
- 6 Cable gland; nickel-plated brass (CuZn)
- 7 M12 plug; zinc (Zn)

6 Tools




⚠ CAUTION

Guarantee electrical safety:

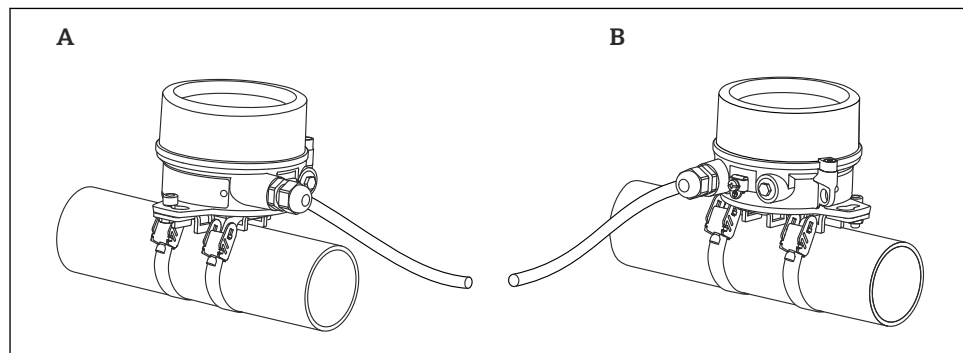
- Before disassembly, ensure that the supply voltage for the device is switched off.

7 Installation


7.1 Wall mounting

Dimensions for wall-mounting  Technical Data dimensions

7.2 Mounting on a 1"/2" pipe



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 6 FHX50 mounting options

A Cable entry parallel to pipe

B Cable entry perpendicular to pipe

 Mounting instructions: SD00334F

 The mounting bracket can be ordered directly with the FHX50 (feature 620 for "Accessory enclosed", option AA "Mounting bracket, 1"/2" pipe").

The mounting bracket is also available as an accessory. Order number: 71132890

8 Electrical connection

Housing thread

The thread of the electronics and connection compartment is coated with lubricant varnish.

 Avoid additional lubrication.

Potential equalization

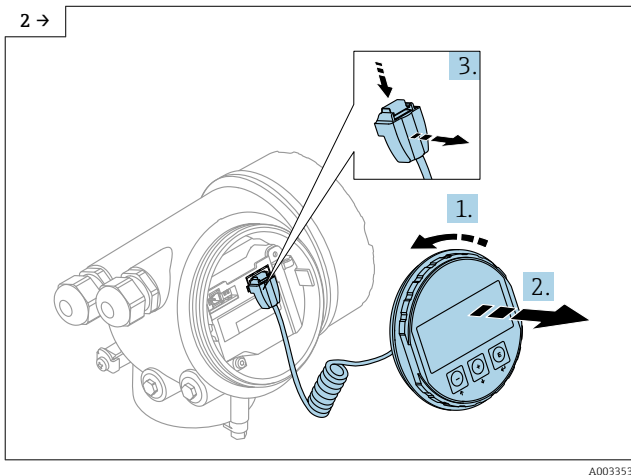
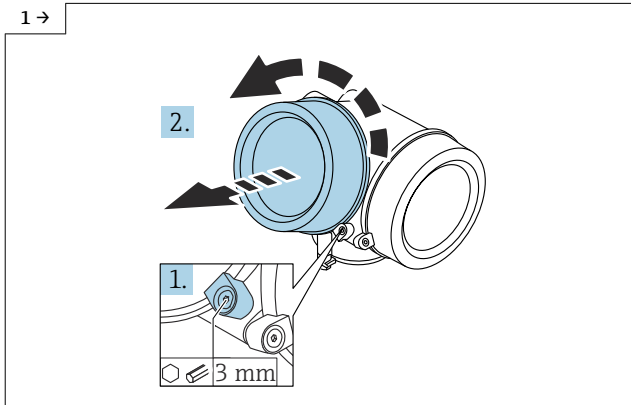
The potential equalization line must be connected at both the transmitter and the FHX50. If potential differences are anticipated, lay the potential equalization conduction between the FHX50 and the transmitter, if necessary.

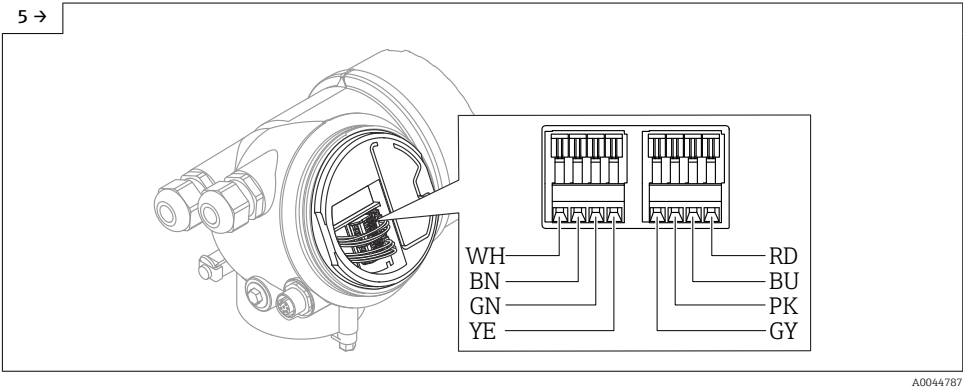
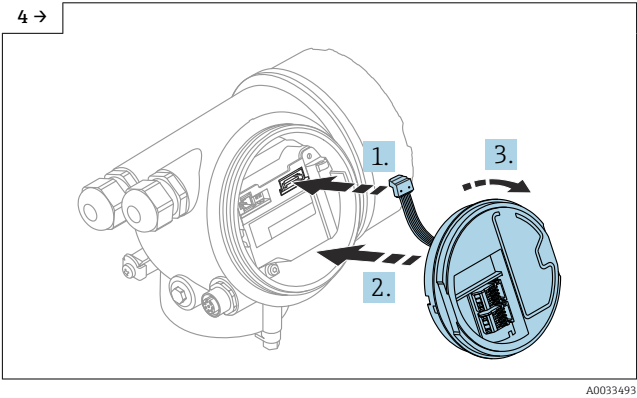
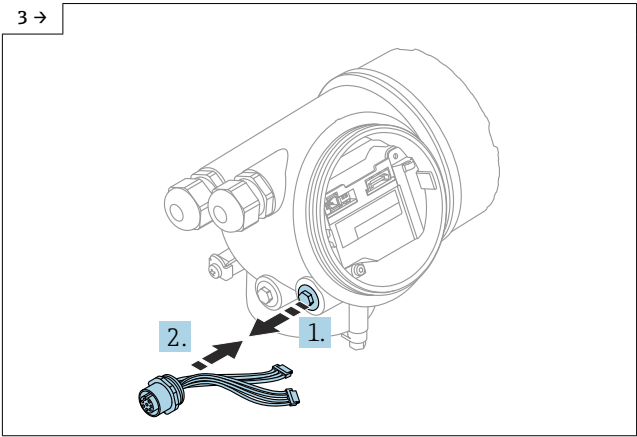
8.1 Connection with M12 plug

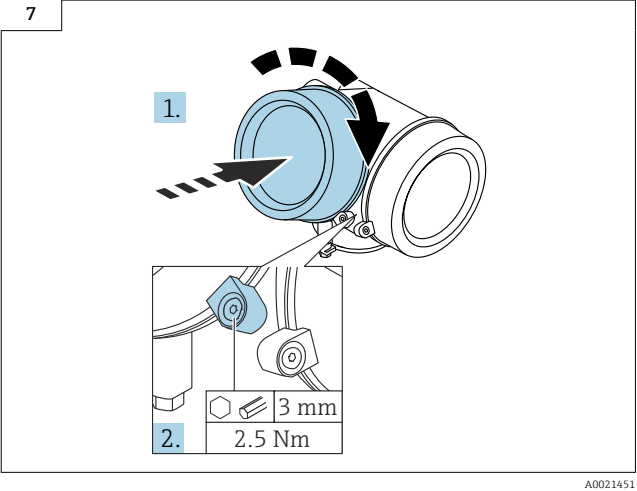
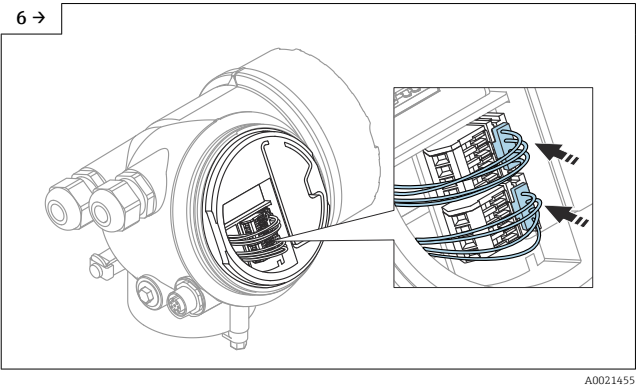
8.1.1 Preparing the transmitter



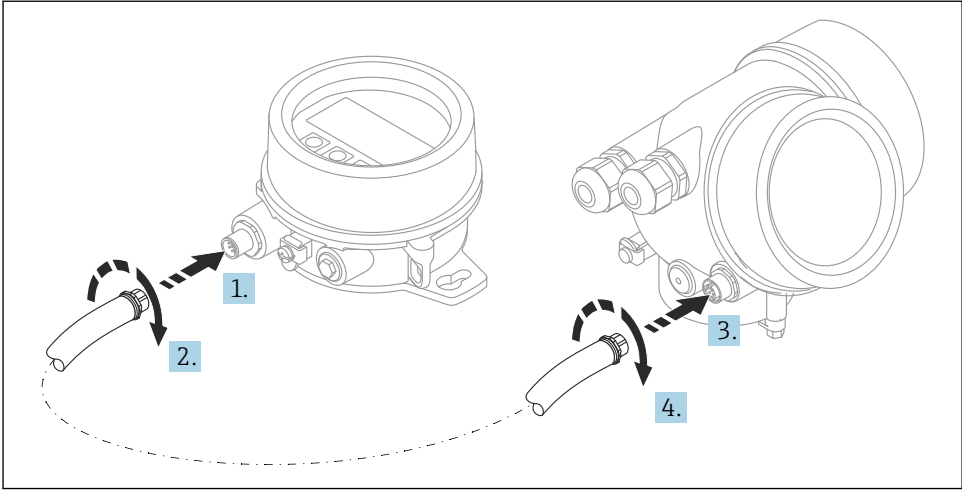
This section does not apply if the transmitter is already prepared for the FHX50 display (feature 030: "Display", option L, M or N). In this case, the FHX50 can be connected directly to the transmitter.







8.1.2 Connecting the FHX50 to the transmitter



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i Tightening torque: 0.4 Nm (0.3 lbf ft)

i If the transmitter has a plastic housing (GT19), the metallic part of the plug or cable gland must be covered by a non-metallic cover (e.g. insulating adhesive tape) to protect against electrostatic discharge.

8.2 Connection with customer-supplied cable

i Potential equalization

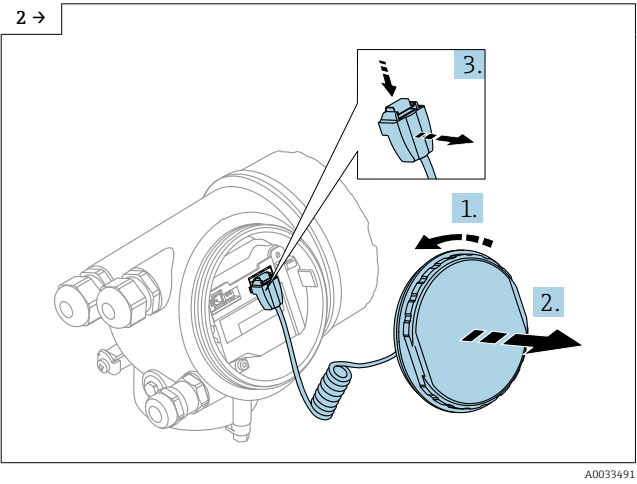
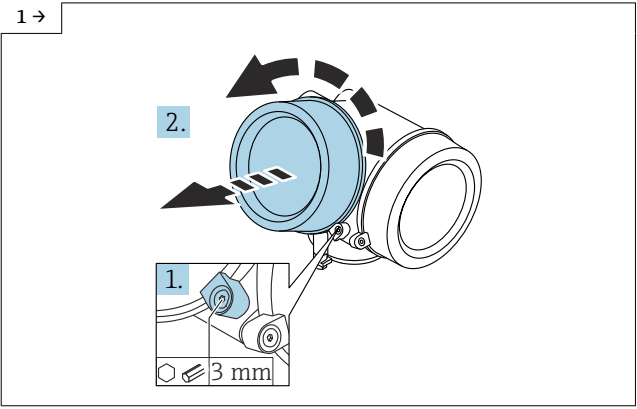
The potential equalization line must be connected at both the transmitter and the FHX50. If potential differences are anticipated, lay the potential equalization conduction between the FHX50 and the transmitter, if necessary.

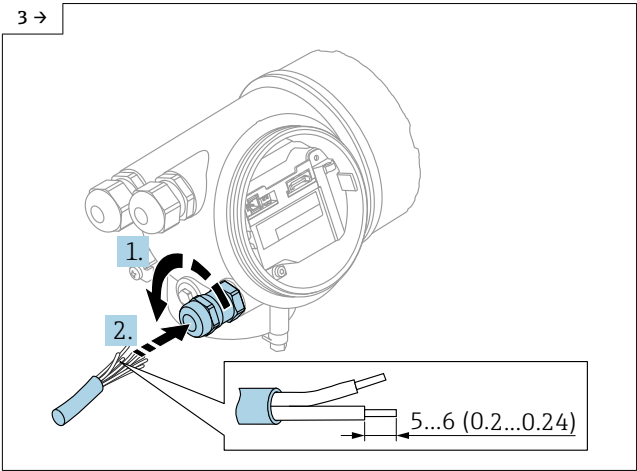
8.2.1 Cable specification

- Conductor cross-section: 0.08 to 0.5 mm² (28 to 20 AWG)
- Outer diameter: 6 to 10 mm (0.24 to 0.4 in)
- Maximum cable length: 60 m (197 ft)
- Stripping length: 5 to 6 mm (0.2 to 0.24 in)

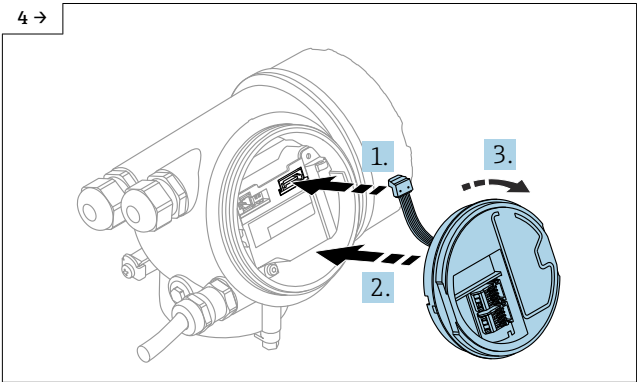
Recommended: EtherLine® P CAT.5e from LAPP.

8.2.2 Connecting the transmitter

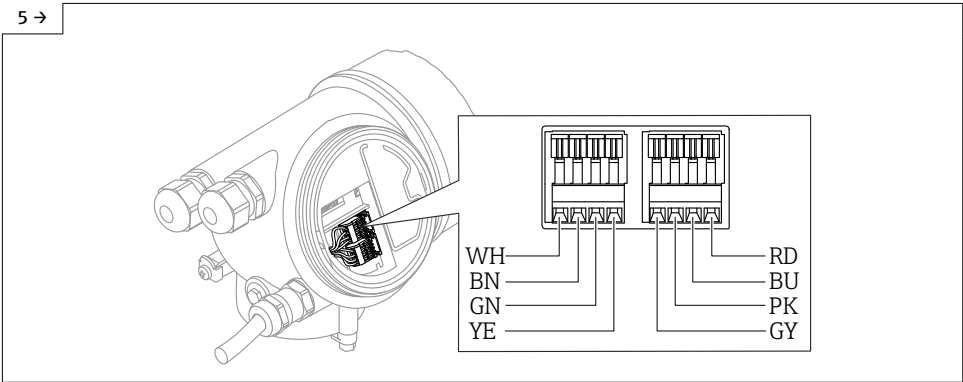




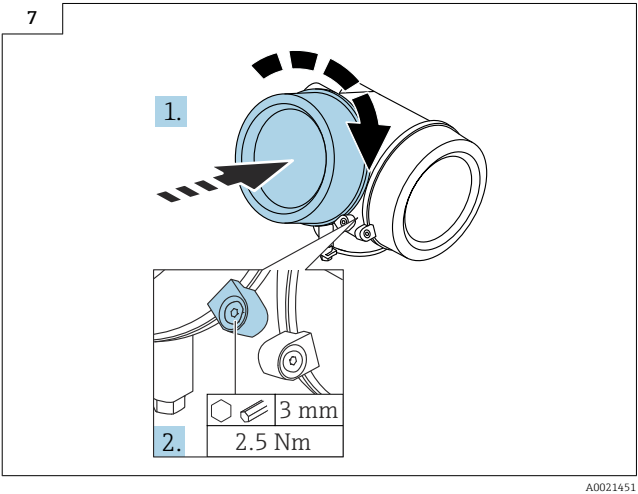
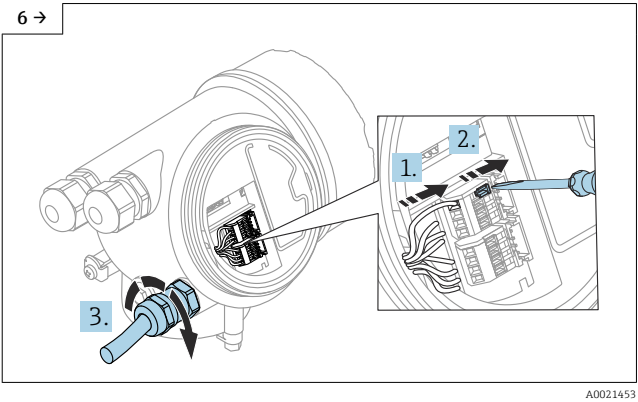
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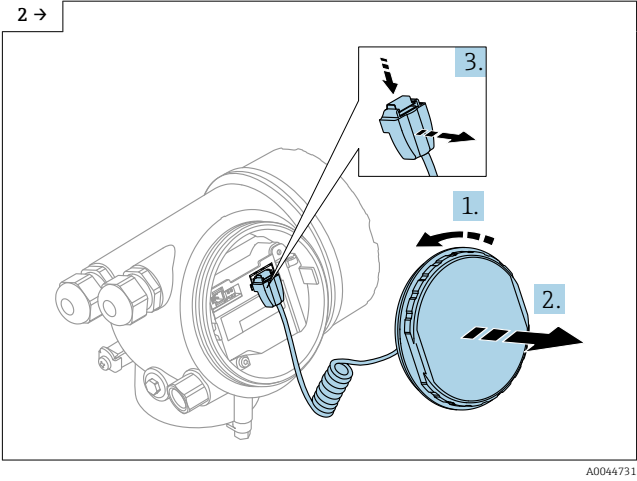
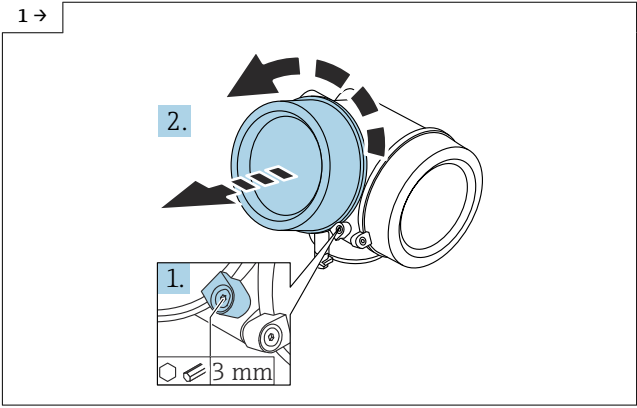
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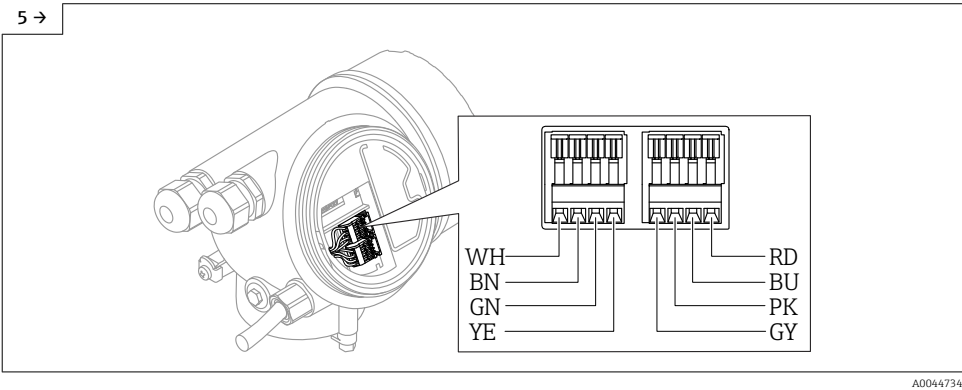
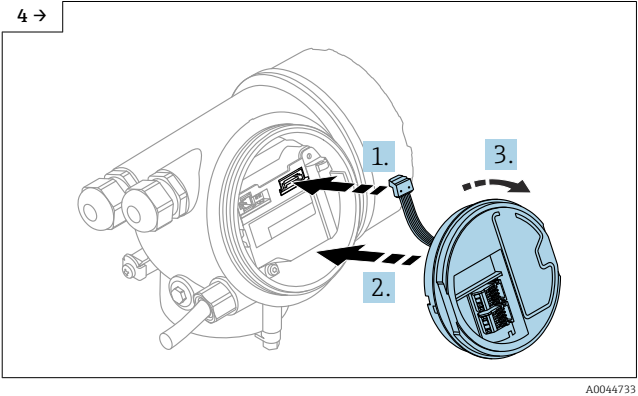
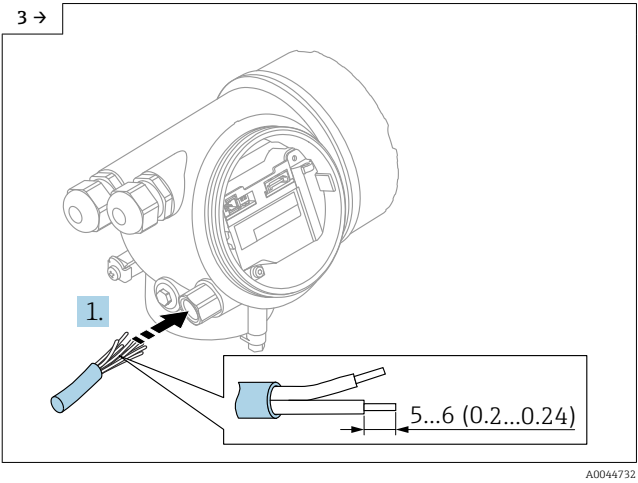


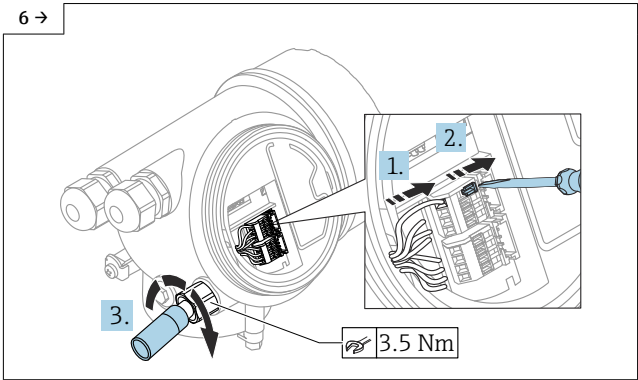
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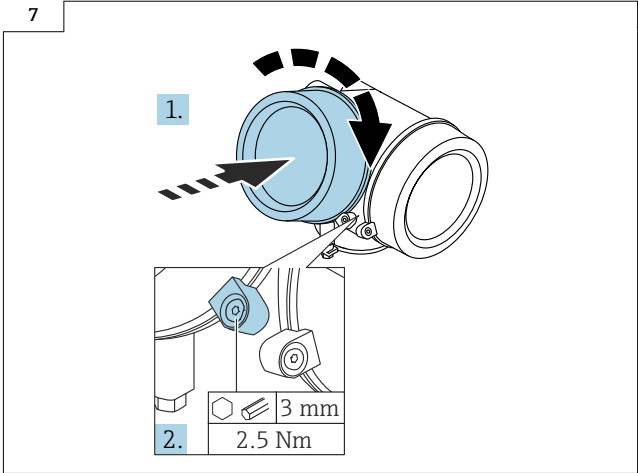
8.3 Connection with NPT 1/2" thread





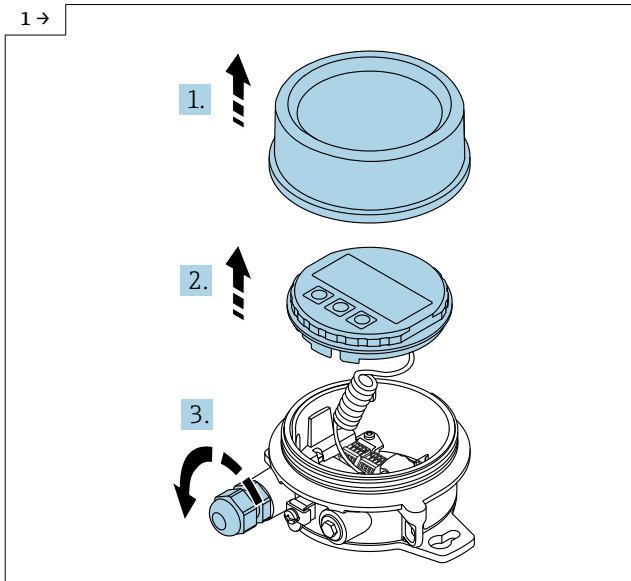


► When mounting on a pipe, hold the gland of the NPT connection steady.

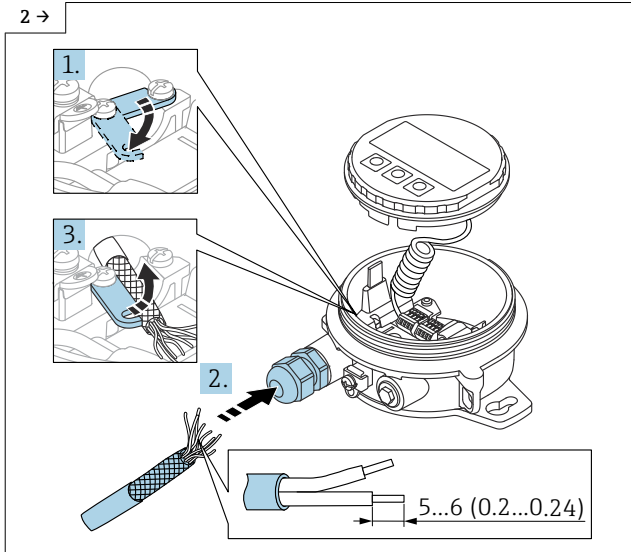


8.4 Connecting the FHX50

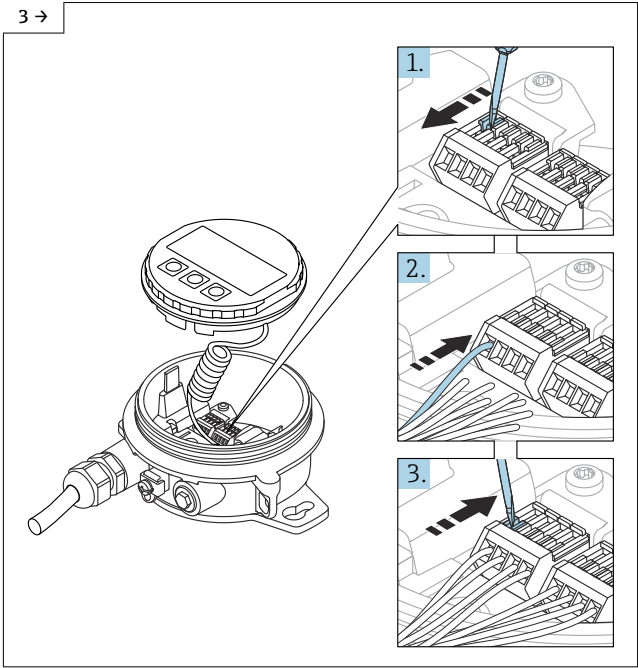
The example shows a M20 cable gland. The instructions also apply to an M12 plug and NPT gland.



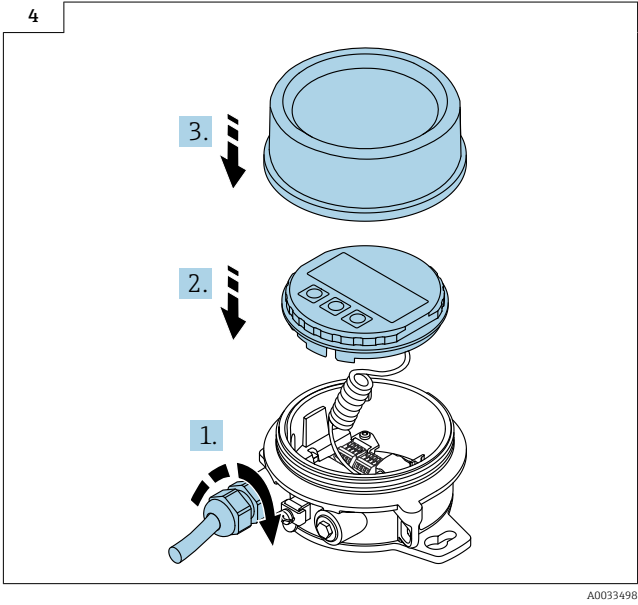
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► **i** The terminal assignment at the transmitter and at the FHX50 must match.



9 Disposal



If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to Endress+Hauser for disposal under the applicable conditions.



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