

Installation Instructions


M12 plug (housing side)

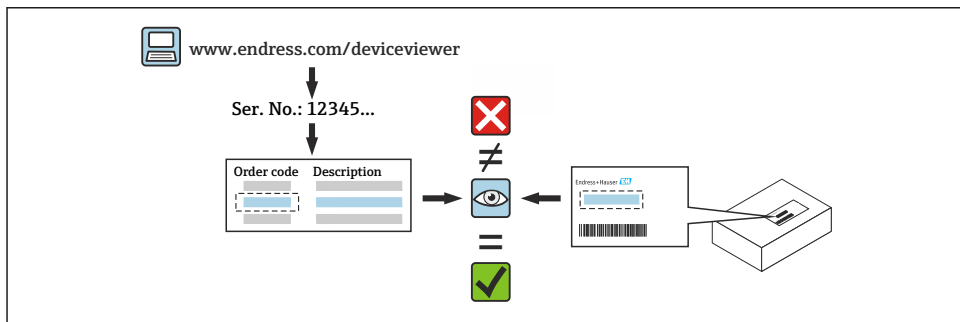
Gammapilot, Liquiphant, Micropilot
Cerabar, Deltabar



1 Intended use

- A defective unit can only be replaced with a functioning unit of the same type.
- Use only original parts from Endress+Hauser.
- Check in the W@M Device Viewer if the spare part is suitable for the existing measuring device.


 In some measuring devices, an overview of spare parts is provided inside the device. If the spare part set is listed in the overview, it is not necessary to check the Device Viewer.



2 Personnel authorized to carry out repairs

Technical staff must comply with the following requirements for repair, mounting, electrical installation and commissioning of the measuring devices:

- Specialized technical staff must be trained in instrument safety.
- They must be familiar with the individual operating conditions of the devices.
- In the case of Ex-certified measuring devices, they must also be trained in explosion protection.

 Technical staff carrying out work are responsible for ensuring that the work is carried out safely and to the required quality standard. They must also guarantee the safety of the device following repair.

3 Safety instructions

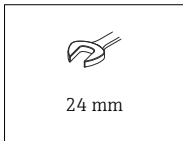
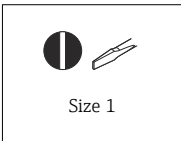
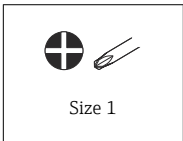
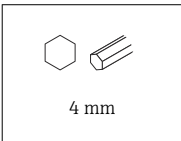
- Comply with national regulations governing mounting, electrical installation, commissioning, maintenance and repair procedures.
- Device is live! Risk of fatal injury from electric shock. Open the device only when the device is deenergized.
- For devices intended for use in hazardous locations, please observe the instructions in the Ex documentation (XA).
- In the case of devices in safety-related applications in accordance with IEC 61508 or IEC 61511: Commission in accordance with Operating Instructions after repair.

- Before removing the device: set the process to a safe state and purge the pipe of dangerous process substances.
- Risk of burns from hot surfaces! Before commencing work: allow the system and device to cool down to a touchable temperature.
- In the case of devices in custody transfer, the custody transfer status no longer applies once the seal has been removed.
- Observe the Operating Instructions for the device.
- Risk of damage to electronic components! Ensure you have a working environment protected from electrostatic discharge.
- After removing the electronics compartment cover: risk of electrical shock due to missing touch protection!
Switch the device off before removing internal covers.
- Modifications to the device are not permitted.
- Only open the housing for short periods. Avoid ingress of foreign bodies, moisture or contaminants.
- Replace defective seals only with original seals from Endress+Hauser.
- If threads are damaged or defective, the device must be repaired.
- Do not lubricate threads (e.g. of electronics compartment cover or connection compartment cover).
- If spacing is reduced or the dielectric strength of the device is not guaranteed during repair work, perform a test on completion of the work (e.g. high-voltage test in accordance with the manufacturer's instructions).
- Service connector:
 - Do not connect in potentially explosive atmospheres.
 - Only connect to Endress+Hauser service devices.
- Observe the instructions for transporting and returning the device outlined in the Operating Instructions.

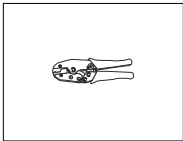
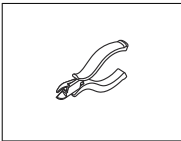


Contact Endress+Hauser Service if you have questions: www.addresses.endress.com

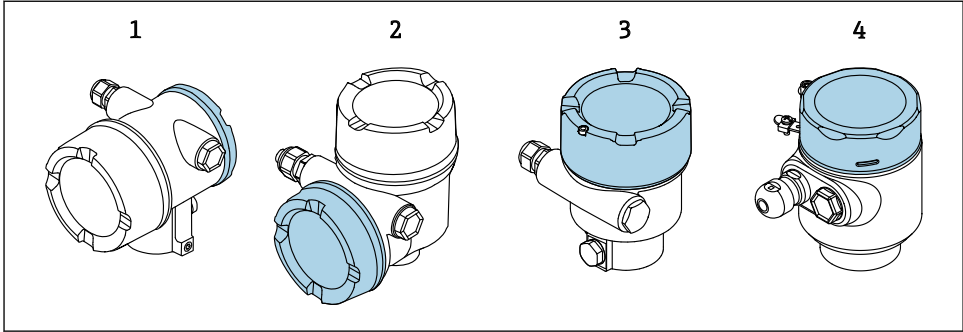
4 Tool list



Only for FTL51B with LED module:



5 Housing version



- 1 Dual-compartment housing
- 2 Dual-compartment housing, L-form
- 3 Single-compartment housing
- 4 Single-compartment housing, 316L stainless steel, hygienic

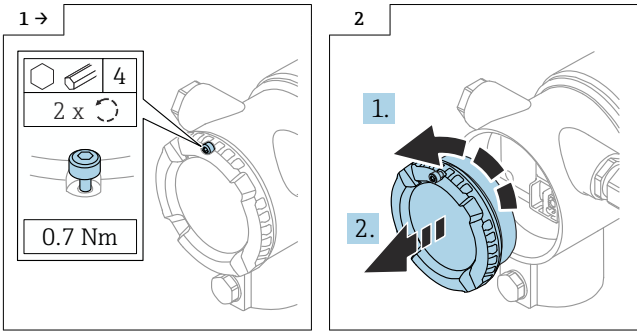
6 Removal

Removal of the M12 plug is the same for all devices and housing types.

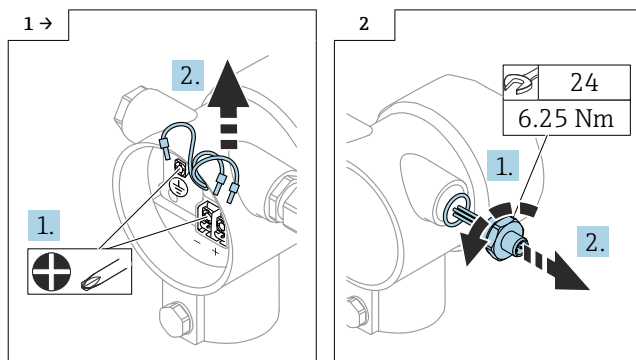
- Optional: cover lock, display
- For Liquiphant with single-compartment housing and Bluetooth module or LED module:
Removal of the Bluetooth module or LED module is described separately.

6.1 Dual-compartment housing (not L-form)

6.1.1 Removing the cover

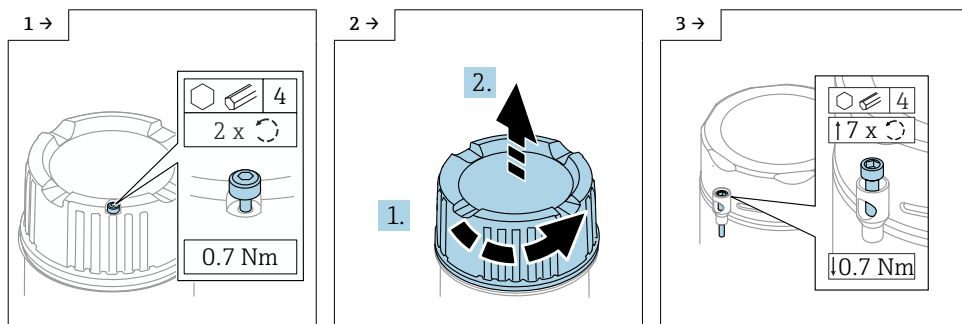


6.1.2 Removing the M12 plug



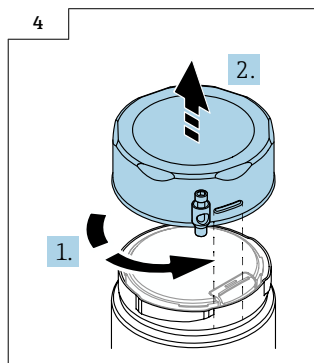
6.2 Single-compartment housing and dual-compartment housing, L-form

6.2.1 Removing the cover

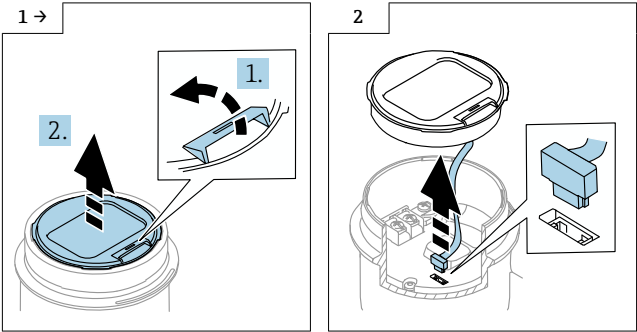


► Optional: cover lock

► Optional: cover lock on single-compartment housing, 316L hygienic

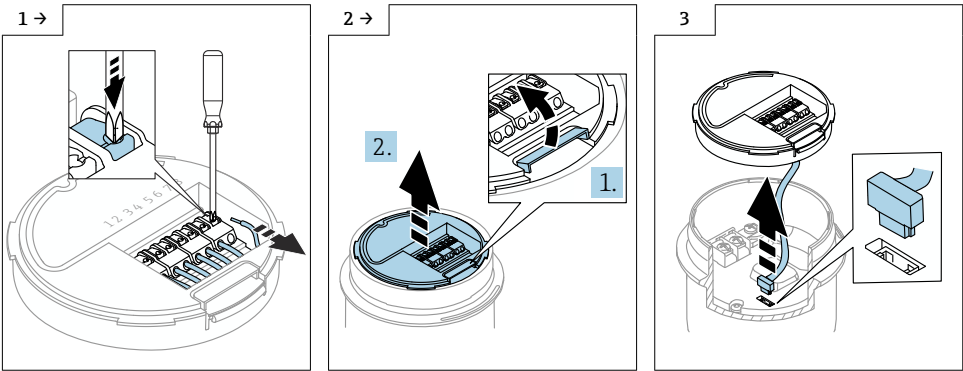


6.2.2 Optional: Removing the display

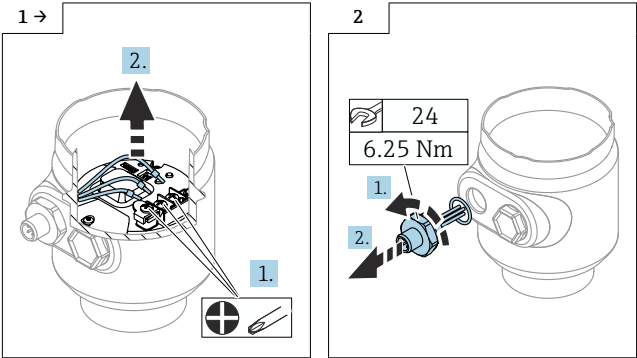


6.2.3 Optional: Removing the VU140 transmitter

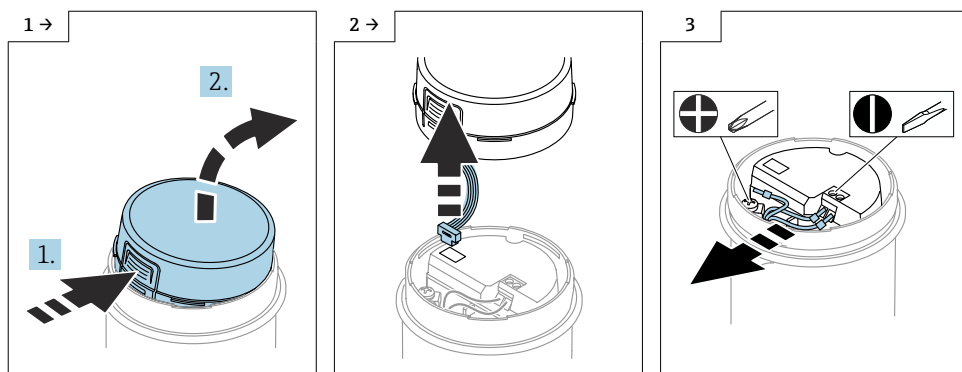
- For customer wiring: step 1, 2, 3
- For M12: step 2, 3



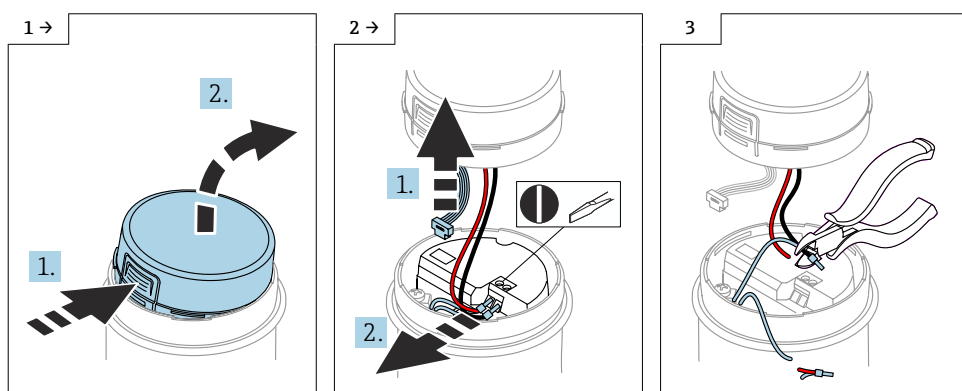
6.2.4 Removing the M12 plug



6.3 Optional: Removing the Bluetooth module



6.4 Optional: Removing the LED module



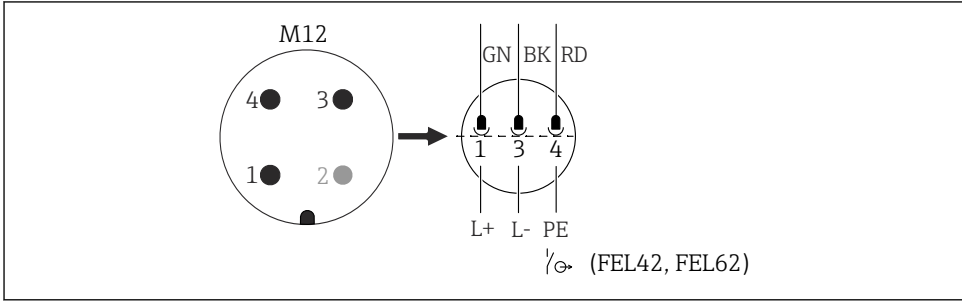
7 Installation

7.1 General installation instructions

Installation is performed by following the removal procedure in reverse order.

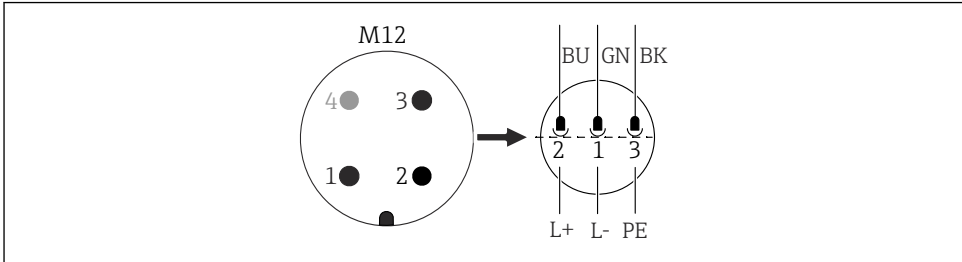
7.2 Special installation instructions

7.2.1 Pin assignment of M12 plug



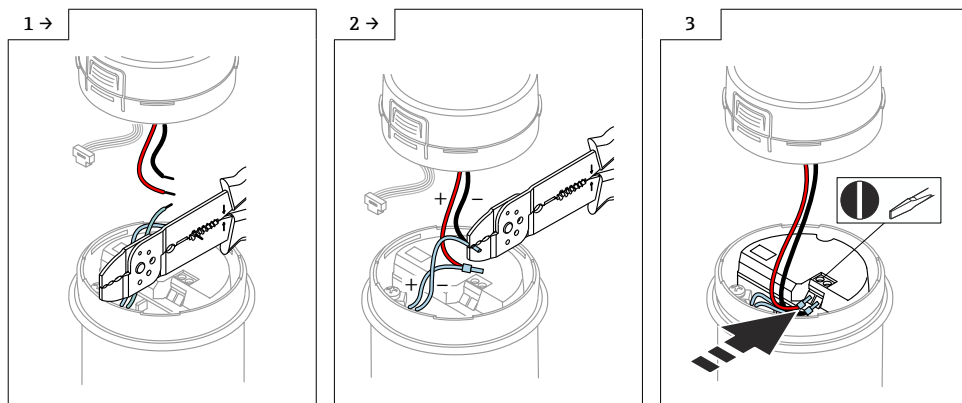
Pin 1: (GN) green = Signal +
 Pin 2: (BU) blue = Not used
 Pin 3: (BK) black = Signal -
 Pin 4: (RD) red = Earth

7.2.2 Pin assignment of M12 plug with Ethernet-APL

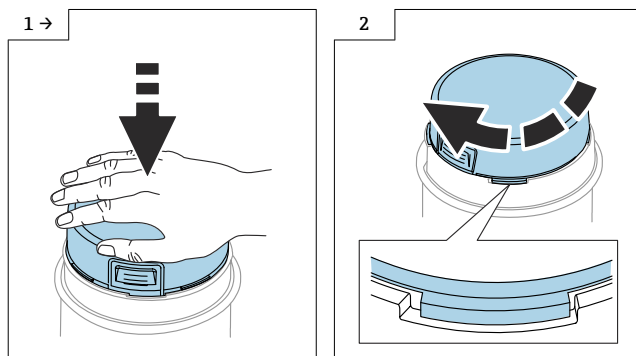


Pin 1: (GN) green = APL signal -
 Pin 2: (BU) blue = APL signal +
 Pin 3: (BK) black = Shield
 Pin 4: (RD) red = Not used

7.2.3 Note the following in the case of the single-compartment housing with LED module:



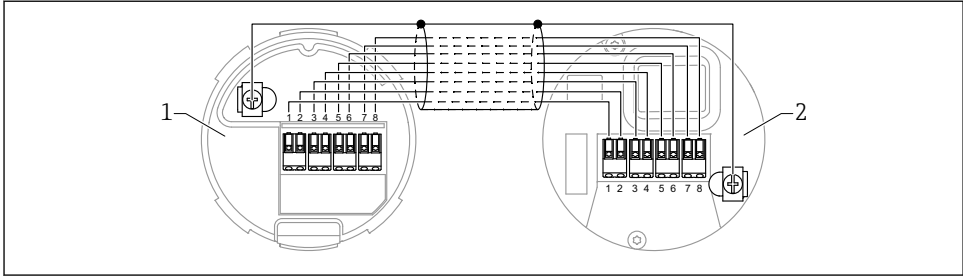
7.2.4 Note the following when installing the LED module or Bluetooth module:



7.2.5 For remote display FHX50B: pay attention to terminal assignment



The terminal assignments on the VU140 transmitter and VU141 receiver must match (all terminals (1 to 8)). Connect the cable shield to the ground terminals on both sides.



- 1 Transmitter VU140
- 2 Receiver VU141

7.3 Cover lock

In the case of devices with a cover lock, the securing screw must not protrude over the lower edge of the cover. Note the position of the securing screw before and while screwing the cover on.



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