

# Installation Instructions


## Sensor

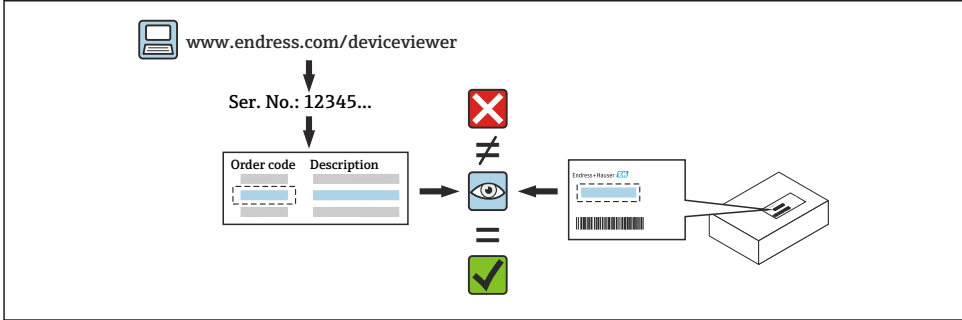
Micropilot



# 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

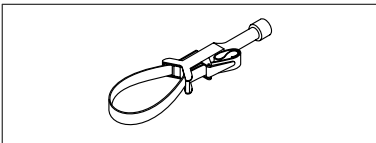
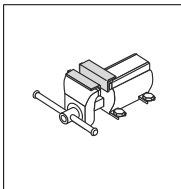
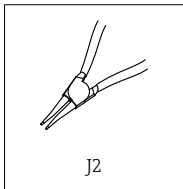
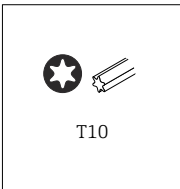
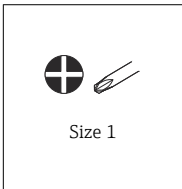
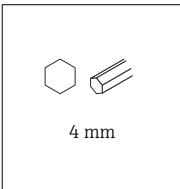
- Comply with national regulations governing mounting, electrical installation, commissioning, maintenance and repair procedures.
- Device is live! Risk of fatal injury from electric shock. Open the device only when the device is deenergized.
- For devices intended for use in hazardous locations, please 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.

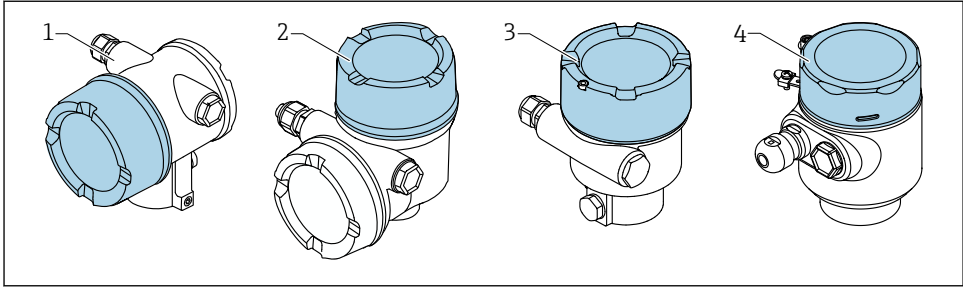


Contact Endress+Hauser Service if you have questions: [www.addresses.endress.com](http://www.addresses.endress.com)

## 4 Tools list



## 5 Housing version

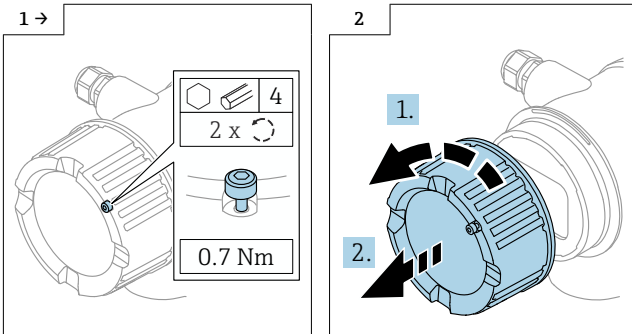


- 1 Dual compartment housing
- 2 Dual compartment housing, L-form
- 3 Single-compartment housing
- 4 Single-compartment housing, 316L hygiene

## 6 Removal

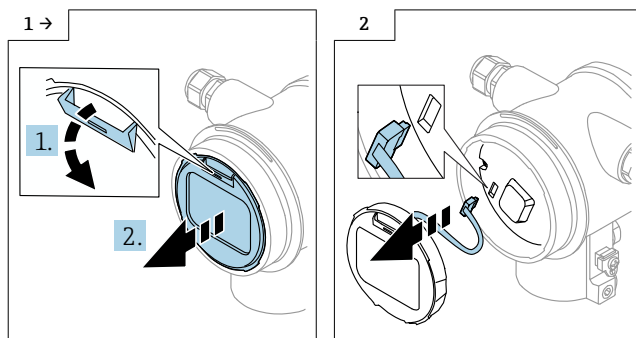
### 6.1 Dual compartment housing, (not L-form)

#### 6.1.1 Removing the cover

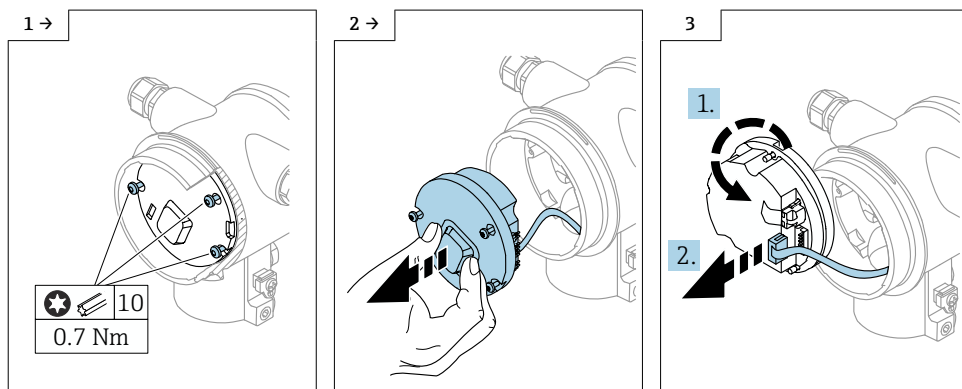


► Optional: cover lock

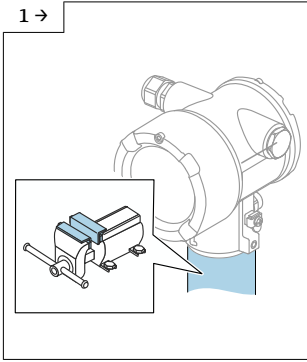
### 6.1.2 Optional: removing the display



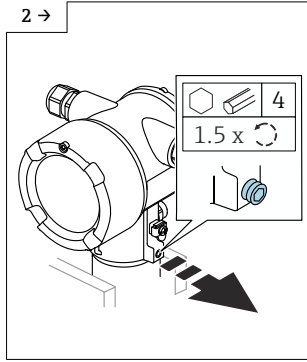
### 6.1.3 Removing the electronics



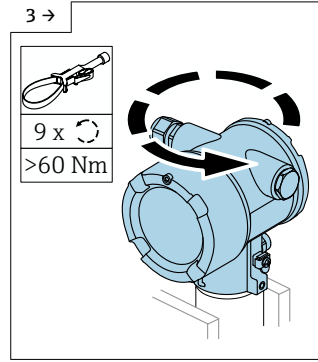
## 6.1.4 Separating the housing from the sensor assembly



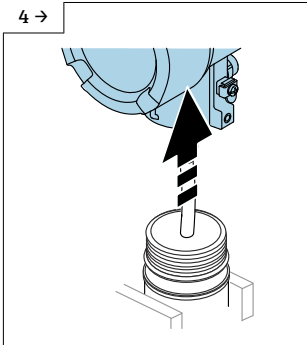
- Protect the sensor assembly and housing from damage. Use a bench vise with braces.



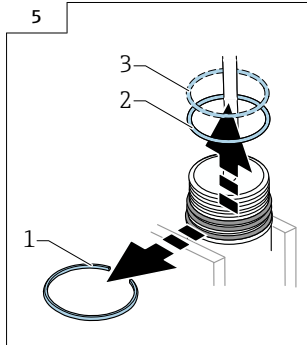
- Housing lock for aluminum and stainless steel housing only. Not for plastic and hygienic housing.



- Using a suitable tool, unscrew the housing by applying significant force (> 60 Nm). This involves applying force several times in and against the screw direction; the snap ring is intentionally destroyed in the process. Do not damage the coating of the housing.

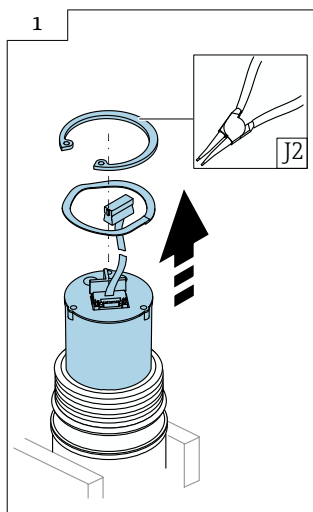


- Carefully remove the housing from the sensor assembly, taking care not to damage the sensor cable.



- Replace the O-ring (2) and snap ring (1). In addition, replace the circlip (3) for the plastic and hygienic housing.

### 6.1.5 Removing the sensor electronics

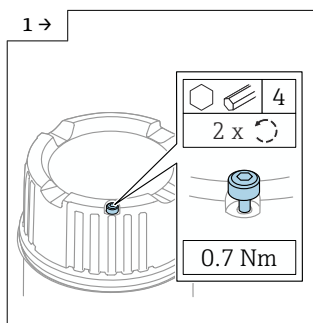


## 6.2 Plastic housing

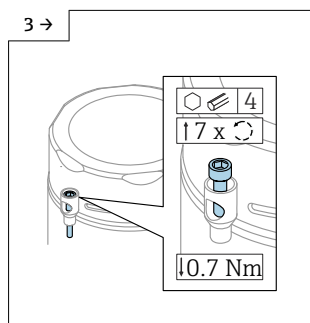
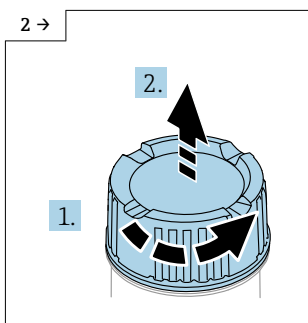
Contact the Service Department: [www.addresses.endress.com](http://www.addresses.endress.com)

## 6.3 Metal single-compartment housing and dual compartment housing, L-form

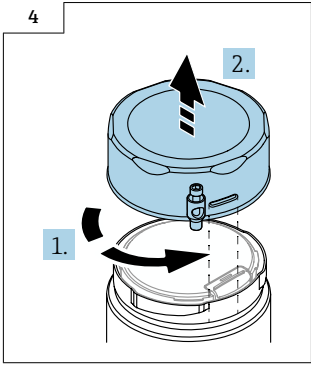
### 6.3.1 Removing the cover



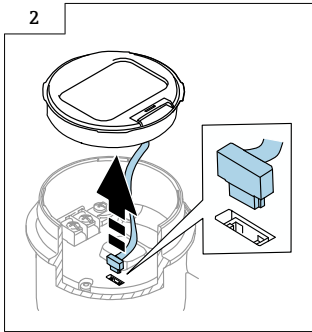
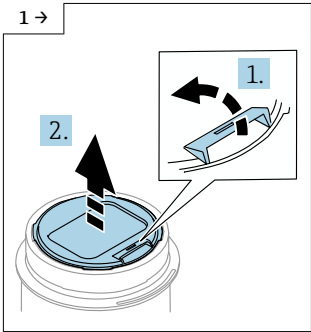
► Optional: cover lock



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

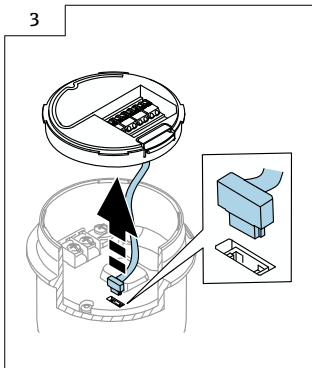
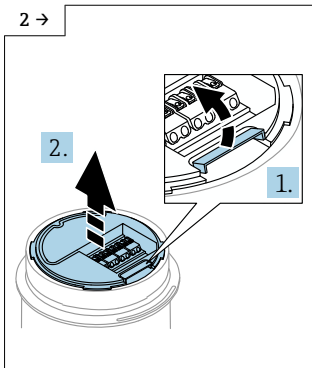
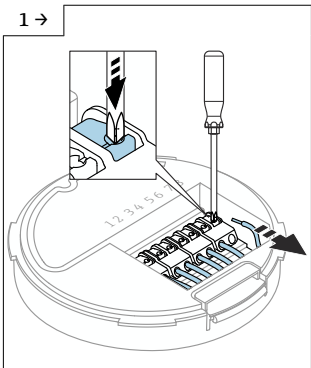


### 6.3.2 Optional: removing the display



### 6.3.3 Optional: removing the transmitter VU140

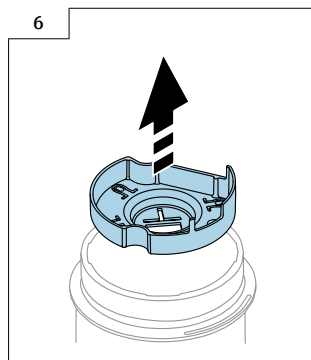
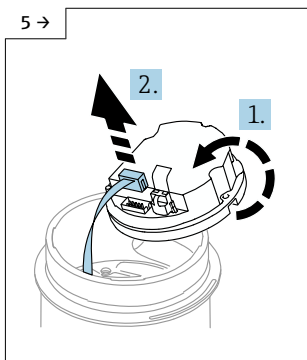
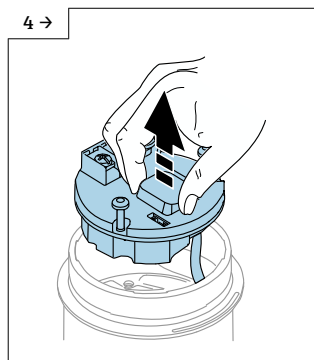
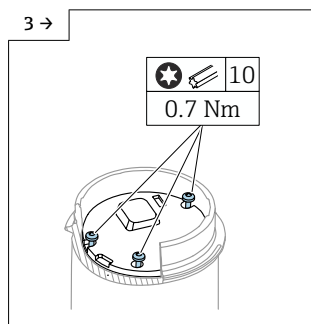
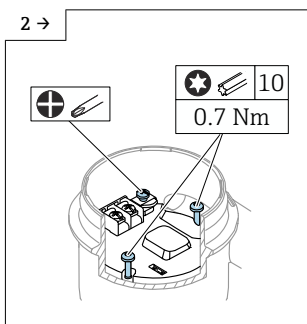
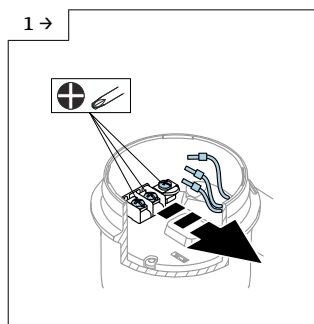
- For customer wiring: step 1, 2, 3
- For M12: step 2, 3



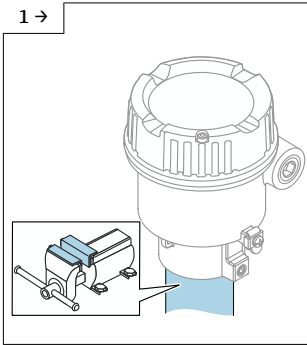


### 6.3.4 Removing the main electronics

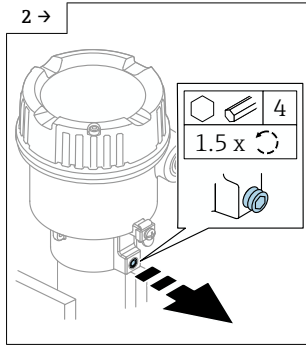
- Single compartment housing: Steps 1, 2, 4, 5, 6
- Dual compartment housing, L-form: Steps 3, 4, 5, 6



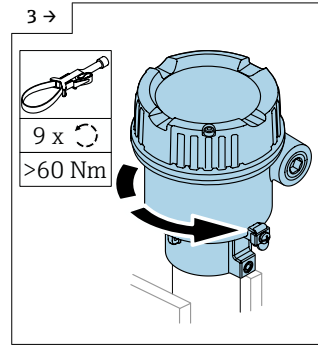
### 6.3.5 Separating the housing from the sensor assembly



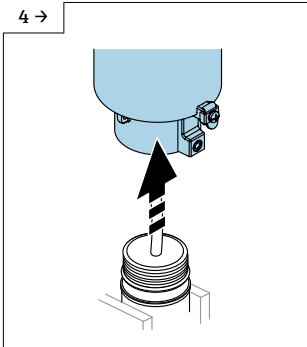
- Protect the sensor assembly and housing from damage. Use a bench vise with braces.



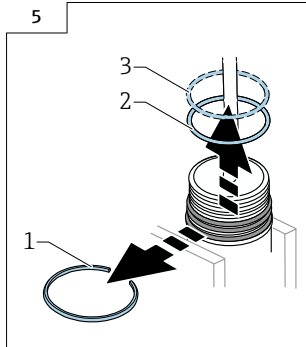
- Housing lock for aluminum and stainless steel housing only. Not for plastic and hygienic housing.



- Using a suitable tool, unscrew the housing by applying significant force (> 60 Nm). This involves applying force several times in and against the screw direction; the snap ring is intentionally destroyed in the process. Do not damage the coating of the housing.

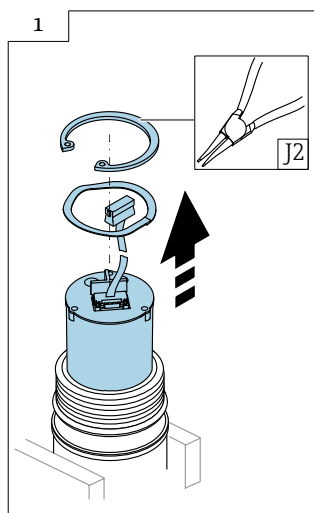


- Carefully remove the housing from the sensor assembly, taking care not to damage the sensor cable.



- Replace the O-ring (2) and snap ring (1). In addition, replace the circlip (3) for the plastic and hygienic housing.

### 6.3.6 Removing the sensor electronics



## 7 Installation

### 7.1 General installation instructions

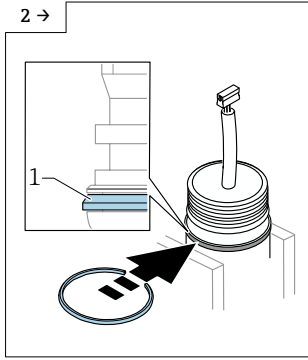
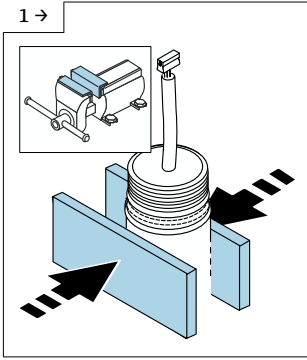
Installation is performed by following the removal procedure in reverse order.

### 7.2 Special installation instructions

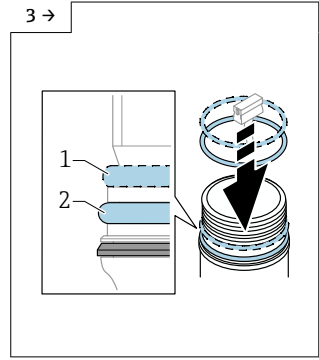
#### 7.2.1 Mounting the new sensor assembly

The procedure is the same for all housing and sensor types.

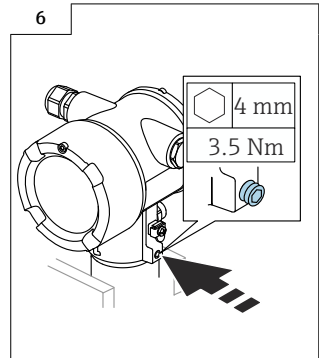
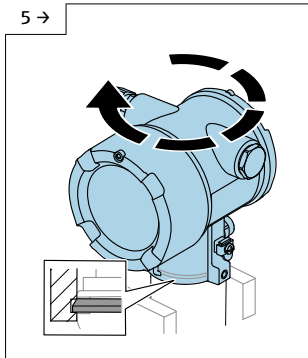
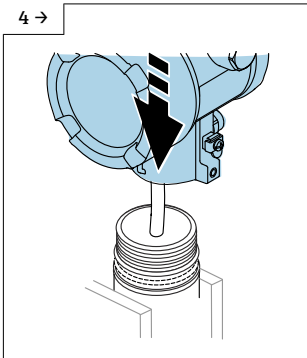
# Example: dual compartment housing



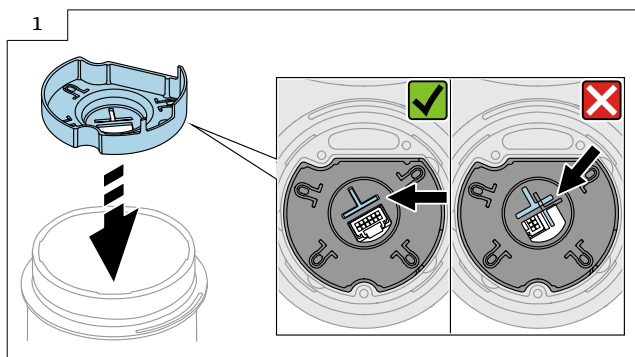
► Retaining ring (1)



► Plastic and hygiene housing:  
mount the annular spring (1)  
above the O-ring (2) in the  
groove towards the transmitter.



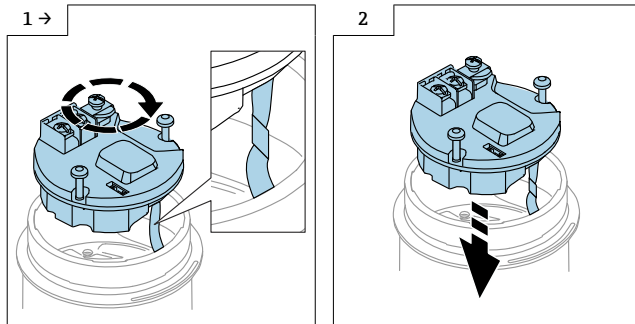
### 7.2.2 Single and dual compartment housing, L-form: Align plastic insulation



- Attach the connecting cable to the sensor. Slide the plastic insulation over the connecting cable. Turn the housing carefully until the profile is positioned in the groove. Then carefully continue to turn the housing until the sensor assembly comes to a stop.

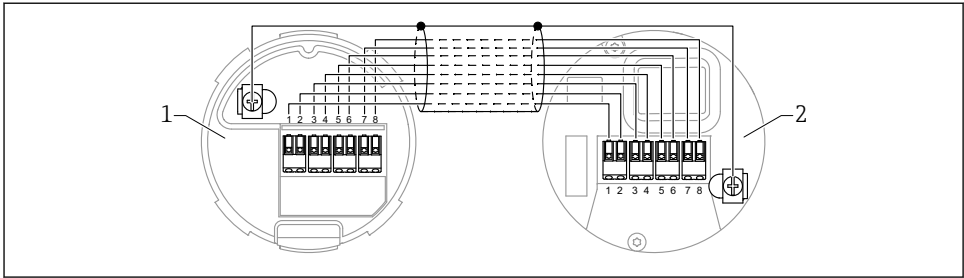
### 7.2.3 Aligning the connecting cable

Rotate the electronics once around its own axis so that the cable is shortened and can be better installed.



### 7.2.4 For remote display FHX50B: pay attention to terminal assignment

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



- 1 Transmitter VU140
- 2 Receiver VU141

7.2.5 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.

8 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 the manufacturer for disposal under the applicable conditions.

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