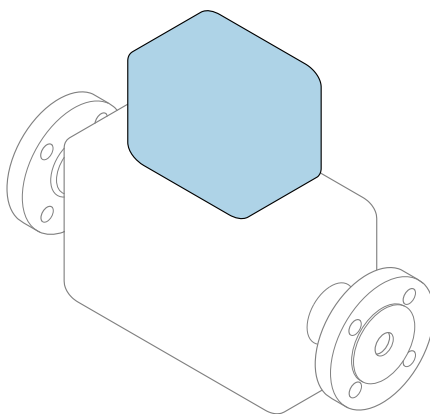


Brief Operating Instructions

Proline 200

PROFIBUS PA


Transmitter with Coriolis sensor

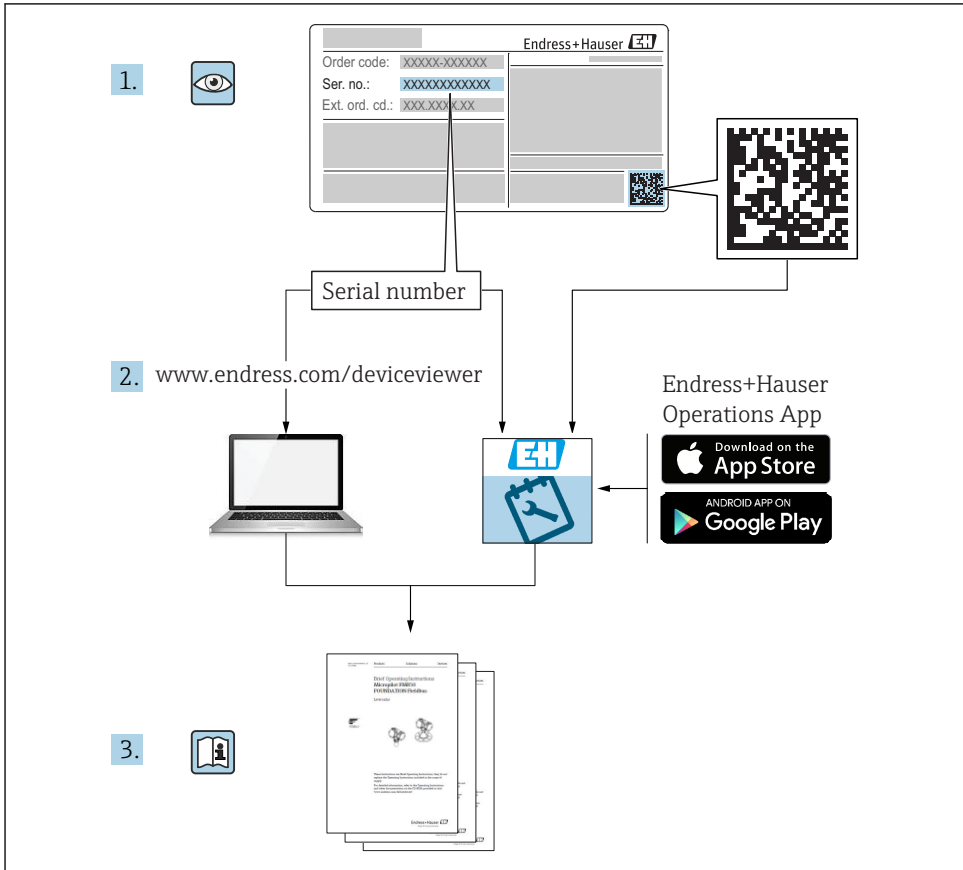


These instructions are Brief Operating Instructions; they are **not** a substitute for the Operating Instructions pertaining to the device.

Transmitter Brief Operating Instructions

Contain information about the transmitter.

Sensor Brief Operating Instructions →  3



A0023555

Brief Operating Instructions for the device

The device consists of a transmitter and a sensor.

The process of commissioning these two components is described in two separate manuals:

- Sensor Brief Operating Instructions
- Transmitter Brief Operating Instructions

Please refer to both Brief Operating Instructions when commissioning the device as the contents of the manuals complement one another:

Sensor Brief Operating Instructions

The Sensor Brief Operating Instructions are aimed at specialists with responsibility for installing the measuring device.

- Incoming acceptance and product identification
- Storage and transport
- Installation

Transmitter Brief Operating Instructions

The Transmitter Brief Operating Instructions are aimed at specialists with responsibility for commissioning, configuring and parameterizing the measuring device (until the first measured value).

- Product description
- Installation
- Electrical connection
- Operation options
- System integration
- Commissioning
- Diagnostic information

Additional device documentation



These Brief Operating Instructions are the **Transmitter Brief Operating Instructions**.

The "Sensor Brief Operating Instructions" are available via:

- Internet: www.endress.com/deviceviewer
- Smart phone/tablet: *Endress+Hauser Operations App*

Detailed information about the device can be found in the Operating Instructions and the other documentation:

- Internet: www.endress.com/deviceviewer
- Smart phone/tablet: *Endress+Hauser Operations App*





Table of contents

- 1 Document information 5**
 - 1.1 Symbols used 5
- 2 Basic safety instructions 7**
 - 2.1 Requirements for the personnel 7
 - 2.2 Designated use 7
 - 2.3 Workplace safety 8
 - 2.4 Operational safety 8
 - 2.5 Product safety 9
 - 2.6 IT security 9
 - 2.7 Device-specific IT security 9
- 3 Product description 9**
- 4 Installation 9**
 - 4.1 Turning the transmitter housing 9
 - 4.2 Turning the display module 10
 - 4.3 Transmitter post-installation check 11
- 5 Electrical connection 12**
 - 5.1 Connection conditions 12
 - 5.2 Connecting the measuring device 18
 - 5.3 Ensuring the degree of protection 21
 - 5.4 Post-connection check 21
- 6 Operation options 22**
 - 6.1 Overview of operation options 22
 - 6.2 Structure and function of the operating menu 23
 - 6.3 Access to the operating menu via the local display 24
 - 6.4 Access to the operating menu via the operating tool 27
- 7 System integration 27**
- 8 Commissioning 28**
 - 8.1 Function check 28
 - 8.2 Switching on the measuring device 28
 - 8.3 Setting the operating language 28
 - 8.4 Configuring the measuring device 29
 - 8.5 Defining the tag name 30
 - 8.6 Protecting settings from unauthorized access 30
- 9 Diagnostic information 31**











1 Document information

1.1 Symbols used





1.1.1 Safety symbols


Symbol	Meaning
	DANGER! This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
	WARNING! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
	CAUTION! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
	NOTE! This symbol contains information on procedures and other facts which do not result in personal injury.

1.1.2 Symbols for certain types of information





Symbol	Meaning	Symbol	Meaning
	Permitted Procedures, processes or actions that are permitted.		Preferred Procedures, processes or actions that are preferred.
	Forbidden Procedures, processes or actions that are forbidden.		Tip Indicates additional information.
	Reference to documentation		Reference to page
	Reference to graphic		Series of steps
	Result of a step		Visual inspection

1.1.3 Electrical symbols






Symbol	Meaning	Symbol	Meaning
	Direct current		Alternating current
	Direct current and alternating current		Ground connection A grounded terminal which, as far as the operator is concerned, is grounded via a grounding system.

Symbol	Meaning
	Protective Earth (PE) A terminal which must be connected to ground prior to establishing any other connections. The ground terminals are situated inside and outside the device: <ul style="list-style-type: none">■ Inner ground terminal: Connects the protective earth to the mains supply.■ Outer ground terminal: Connects the device to the plant grounding system.





1.1.4 Communication symbols

Symbol	Meaning	Symbol	Meaning
	Wireless Local Area Network (WLAN) Communication via a wireless, local network.		LED Light emitting diode is off.
	LED Light emitting diode is on.		LED Light emitting diode is flashing.

1.1.5 Tool symbols

Symbol	Meaning	Symbol	Meaning
	Torx screwdriver		Flat blade screwdriver
	Cross-head screwdriver		Allen key
	Open-ended wrench		

1.1.6 Symbols in graphics

Symbol	Meaning	Symbol	Meaning
1, 2, 3,...	Item numbers		Series of steps
A, B, C, ...	Views	A-A, B-B, C-C, ...	Sections
	Hazardous area		Safe area (non-hazardous area)
	Flow direction		

2 Basic safety instructions

2.1 Requirements for the personnel

The personnel must fulfill the following requirements for its tasks:

- ▶ Trained, qualified specialists must have a relevant qualification for this specific function and task.
- ▶ Are authorized by the plant owner/operator.
- ▶ Are familiar with federal/national regulations.
- ▶ Before starting work, read and understand the instructions in the manual and supplementary documentation as well as the certificates (depending on the application).
- ▶ Follow instructions and comply with basic conditions.

2.2 Designated use

Application and media

The measuring device described in these Brief Operating Instructions is intended only for flow measurement of liquids and gases.

Depending on the version ordered, the measuring device can also measure potentially explosive, flammable, poisonous and oxidizing media.

Measuring devices for use in hazardous areas, in hygienic applications or where there is an increased risk due to process pressure, are labeled accordingly on the nameplate.

To ensure that the measuring device remains in proper condition for the operation time:

- ▶ Keep within the specified pressure and temperature range.
- ▶ Only use the measuring device in full compliance with the data on the nameplate and the general conditions listed in the Operating Instructions and supplementary documentation.
- ▶ Based on the nameplate, check whether the ordered device is permitted for the intended use in the hazardous area (e.g. explosion protection, pressure vessel safety).
- ▶ Use the measuring device only for media to which the process-wetted materials are sufficiently resistant.
- ▶ If the ambient temperature of the measuring device is outside the atmospheric temperature, it is absolutely essential to comply with the relevant basic conditions as specified in the device documentation.
- ▶ Protect the measuring device permanently against corrosion from environmental influences.

Incorrect use

Non-designated use can compromise safety. The manufacturer is not liable for damage caused by improper or non-designated use.



Danger of breakage due to corrosive or abrasive fluids and ambient conditions!

- ▶ Verify the compatibility of the process fluid with the sensor material.
- ▶ Ensure the resistance of all fluid-wetted materials in the process.
- ▶ Keep within the specified pressure and temperature range.

NOTICE**Verification for borderline cases:**

- ▶ For special fluids and fluids for cleaning, Endress+Hauser is glad to provide assistance in verifying the corrosion resistance of fluid-wetted materials, but does not accept any warranty or liability as minute changes in the temperature, concentration or level of contamination in the process can alter the corrosion resistance properties.

Residual risks**⚠ WARNING**

The electronics and the medium may cause the surfaces to heat up. This presents a burn hazard!

- ▶ For elevated fluid temperatures, ensure protection against contact to prevent burns.

Only applies for Proline Promass A, E, F, O, X and Cubemass C

⚠ WARNING**Danger of housing breaking due to measuring tube breakage!**

If a measuring tube ruptures, the pressure inside the sensor housing will rise according to the operating process pressure.

- ▶ Use a rupture disk.

⚠ WARNING**Danger from medium escaping!**

For device versions with a rupture disk: medium escaping under pressure can cause injury or material damage.

- ▶ Take precautions to prevent injury and material damage if the rupture disk is actuated.

2.3 Workplace safety

For work on and with the device:

- ▶ Wear the required personal protective equipment according to federal/national regulations.

For welding work on the piping:

- ▶ Do not ground the welding unit via the measuring device.

If working on and with the device with wet hands:

- ▶ Due to the increased risk of electric shock, gloves must be worn.

2.4 Operational safety

Risk of injury.

- ▶ Operate the device in proper technical condition and fail-safe condition only.
- ▶ The operator is responsible for interference-free operation of the device.

2.5 Product safety

This measuring device is designed in accordance with good engineering practice to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate.

It meets general safety standards and legal requirements. It also complies with the EU directives listed in the device-specific EU Declaration of Conformity. Endress+Hauser confirms this by affixing the CE mark to the device.

2.6 IT security

Our warranty is valid only if the device is installed and used as described in the Operating Instructions. The device is equipped with security mechanisms to protect it against any inadvertent changes to the settings.

IT security measures, which provide additional protection for the device and associated data transfer, must be implemented by the operators themselves in line with their security standards.

2.7 Device-specific IT security

The device offers a range of specific functions to support protective measures on the operator's side. These functions can be configured by the user and guarantee greater in-operation safety if used correctly.



For detailed information on device-specific IT security, see the Operating Instructions for the device.

3 Product description

The device consists of a transmitter and a sensor.

The device is available as a compact version:


The transmitter and sensor form a mechanical unit.



For detailed information on the product description, see the Operating Instructions for the device

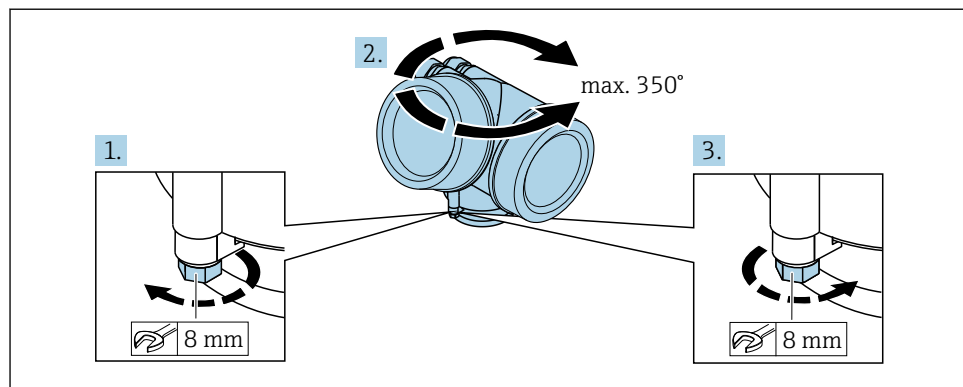
4 Installation



For detailed information about mounting the sensor, see the Sensor Brief Operating Instructions →  3

4.1 Turning the transmitter housing

To provide easier access to the connection compartment or display module, the transmitter housing can be turned.

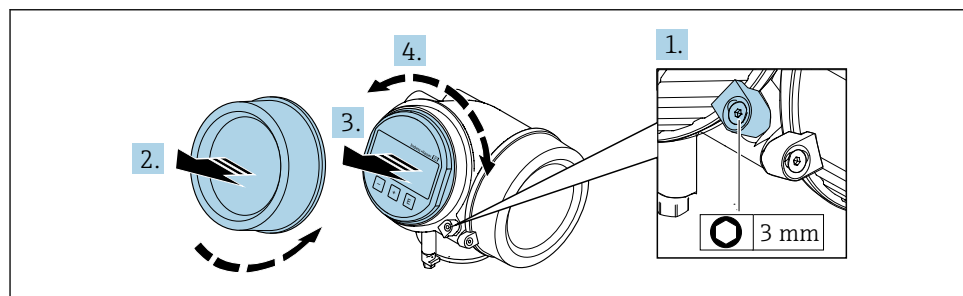


A0032242

1. Release the fixing screw.
2. Turn the housing to the desired position.
3. Firmly tighten the securing screw.

4.2 Turning the display module

The display module can be turned to optimize display readability and operability.



A0032238

1. Loosen the securing clamp of the electronics compartment cover using an Allen key.
2. Unscrew cover of the electronics compartment from the transmitter housing.
3. Optional: pull out the display module with a gentle rotational movement.
4. Turn the display module to the desired position: max. $8 \times 45^\circ$ in every direction.
5. Without display module pulled out:
Allow display module to engage at desired position.
6. With display module pulled out:
Feed the cable into the gap between the housing and main electronics module and plug the display module into the electronics compartment until it engages.
7. Reverse the removal procedure to reassemble the transmitter.

4.3 Transmitter post-installation check

The post-installation check must always be performed after the following tasks:

- Turning the transmitter housing
- Turning the display module

Is the device undamaged (visual inspection)?	<input type="checkbox"/>
Are the securing screw and securing clamp tightened securely?	<input type="checkbox"/>

5 Electrical connection

5.1 Connection conditions

5.1.1 Required tools

- For cable entries: Use corresponding tools
- For securing clamp: Allen key 3 mm
- Wire stripper
- When using stranded cables: Crimper for wire end ferrule
- For removing cables from terminal: Flat blade screwdriver ≤ 3 mm (0.12 in)

5.1.2 Connecting cable requirements

The connecting cables provided by the customer must fulfill the following requirements.

Electrical safety

In accordance with applicable federal/national regulations.

Permitted temperature range

- The installation guidelines that apply in the country of installation must be observed.
- The cables must be suitable for the minimum and maximum temperatures to be expected.

Signal cable

Pulse/frequency/switch output

Standard installation cable is sufficient.

PROFIBUS PA

Twisted, shielded two-wire cable. Cable type A is recommended →  13.



For further information on planning and installing PROFIBUS networks see:

- Operating Instructions "PROFIBUS DP/PA: Guidelines for planning and commissioning" (BA00034S)
- PNO Directive 2.092 "PROFIBUS PA User and Installation Guideline"
- IEC 61158-2 (MBP)

Cable diameter

- Cable glands supplied:
M20 \times 1.5 with cable ϕ 6 to 12 mm (0.24 to 0.47 in)
- Plug-in spring terminals for device version without integrated overvoltage protection: wire cross-sections 0.5 to 2.5 mm² (20 to 14 AWG)
- Screw terminals for device version with integrated overvoltage protection: wire cross-sections 0.2 to 2.5 mm² (24 to 14 AWG)

5.1.3 Fieldbus cable specification

Cable type

In accordance with IEC 61158-2 (MBP), cable type A is recommended. Cable type A has a cable shielding that guarantees adequate protection from electromagnetic interference and thus the most reliable data transfer.

The electrical data of the fieldbus cable have not been specified, but determine important characteristics of the design of the fieldbus, such as distances bridged, number of users, electromagnetic compatibility, etc.

Cable type	A
Cable structure	Twisted, shielded twin-core cable
Wire cross-section	0.8 mm ² (AWG 18)
Loop resistance (direct current)	44 Ω/km
Characteristic impedance at 31.25 kHz	100 Ω ±20%
Attenuation constant at 39.0 kHz	3 dB/km
Capacitive asymmetry	2 nF/km
Envelope delay distortion (7.9 to 39 kHz)	1.7 ms/km
Shield coverage	90 %

The following cable types are suitable for non-hazardous areas, for example:

- Siemens 6XV1 830-5BH10
- Belden 3076F
- Kerpen CEL-PE/OSCR/PVC/FRLA FB-02YS(ST)YFL

Maximum overall cable length

The maximum network expansion depends on the type of protection and the cable specifications. The overall cable length comprises the length of the main cable and the length of all spurs >1 m (3.28 ft).

The maximum overall cable length for cable type A: 1 900 m (6 200 ft)

If repeaters are used, the maximum permitted overall cable length is doubled. A maximum of three repeaters are permitted between the user and master.

Maximum spur length

The line between the distribution box and field device is described as a spur. In the case of applications in non-hazardous areas, the max. length of a spur depends on the number of spurs >1 m (3.28 ft):

Number of spurs	Max. length per spur
1...12	120 m (400 ft)
13...14	90 m (300 ft)
15...18	60 m (200 ft)
19...24	30 m (100 ft)
25...32	1 m (3 ft)

Number of field devices

For systems designed in accordance with the Fieldbus Intrinsically Safe Concept (FISCO) with EEx ia types of protection, the cable length is limited to a maximum of 1 000 m (3 300 ft). A maximum of 32 users per segment in non-hazardous areas or a maximum of 10 users in hazardous areas (EEx ia IIC) is possible. The actual number of users must be determined during the planning stage.

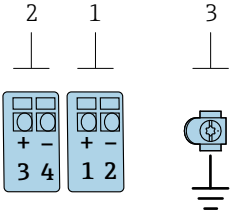
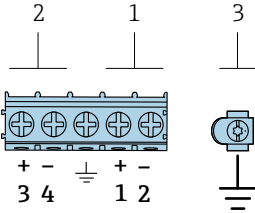
Bus termination

1. Always terminate the start and end of each fieldbus segment with a bus terminator.
2. For different connection boxes (non-hazardous area):
Bus terminator can be activated via a switch.
3. In all other cases:
Install a separate bus terminator.
4. For a branched bus segment:
The device furthest from the segment coupler represents the end of the bus.
5. If the fieldbus is extended with a repeater,
terminate the extension at both ends.

5.1.4 Terminal assignment

Transmitter

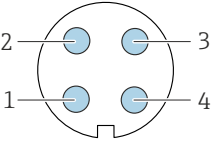
Connection version for PROFIBUS PA, pulse/frequency/switch output

 <div>A0013570</div>	 <div>A0018161</div>
Maximum number of terminals	Maximum number of terminals for order code for "Accessory mounted", option NA "Overvoltage protection"
<div>1 Output 1: PROFIBUS PA</div> <div>2 Output 2 (passive): pulse/frequency/switch output</div> <div>3 Ground terminal for cable shield</div>	

Order code for "Output"	Terminal numbers			
	Output 1		Output 2	
	1 (+)	2 (-)	3 (+)	4 (-)
Option G ^{1) 2)}	PROFIBUS PA		Pulse/frequency/switch output (passive)	

- 1) Output 1 must always be used; output 2 is optional.
- 2) PROFIBUS PA with integrated reverse polarity protection.

5.1.5 Pin assignment of device plug

	Pin	Assignment		Coding	Plug/socket
	1	+	PROFIBUS PA +	A	Plug
	2		Grounding		
	3	-	PROFIBUS PA -		
	4		Not assigned		

5.1.6 Shielding and grounding

Optimal electromagnetic compatibility (EMC) of the fieldbus system can be guaranteed only if the system components and, in particular, the lines are shielded and the shield forms as complete a cover as possible. A shield coverage of 90 %is ideal.

1. To ensure optimal EMC protection, connect the shield to the reference ground as often as possible.

2. For reasons concerning explosion protection, it is recommended that grounding be dispensed with.

To comply with both requirements, there are basically three different types of shielding in the fieldbus system:

- Shielding at both ends
- Shielding at one end on the feed side with capacitance termination at the field device
- Shielding at one end on the feed side

Experience shows that the best results with regard to EMC are achieved in most cases in installations with one-sided shielding on the feed side (without capacitance termination at the field device). Appropriate measures with regard to input wiring must be taken to allow unrestricted operation when EMC interference is present. These measures have been taken into account for this device. Operation in the event of disturbance variables as per NAMUR NE21 is thus guaranteed.

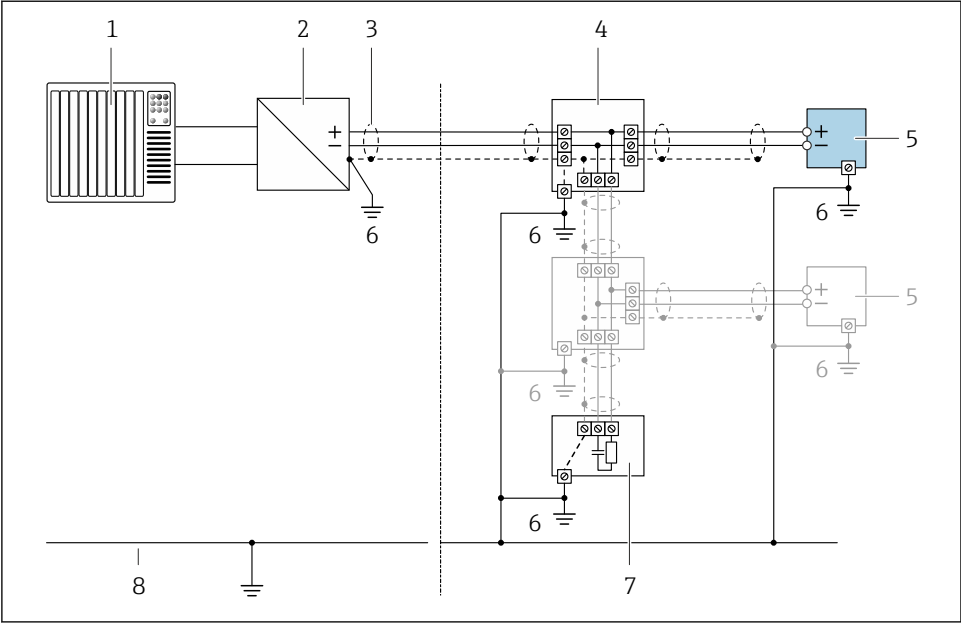
1. Observe national installation requirements and guidelines during installation.
2. Where there are large differences in potential between the individual grounding points, connect only one point of the shielding directly to the reference ground.
3. In systems without potential equalization, the cable shielding of fieldbus systems should be grounded on one side only, for example at the fieldbus supply unit or at safety barriers.

NOTICE

In systems without potential matching, the multiple grounding of the cable shield causes mains frequency equalizing currents!

Damage to the bus cable shield.

- Only ground the bus cable shield to either the local ground or the protective ground at one end.
- Insulate the shield that is not connected.



1 Connection example for PROFIBUS PA

- 1 Control system (e.g. PLC)
- 2 PROFIBUS PA segment coupler
- 3 Cable shield: the cable shield must be grounded at both ends to comply with EMC requirements; observe cable specifications
- 4 T-box
- 5 Measuring device
- 6 Local grounding
- 7 Bus terminator
- 8 Potential equalization conductor

5.1.7 Requirements for the supply unit

Supply voltage

Transmitter

An external power supply is required for each output.

Order code for "Output"	Minimum terminal voltage	Maximum terminal voltage
Option G: PROFIBUS PA, pulse/frequency/switch output	≥ DC 9 V	DC 32 V


5.1.8 Preparing the measuring device

NOTICE

Insufficient sealing of the housing!

Operational reliability of the measuring device could be compromised.


- Use suitable cable glands corresponding to the degree of protection.

1. Remove dummy plug if present.
2. If the measuring device is supplied without cable glands:
Provide suitable cable gland for corresponding connecting cable.
3. If the measuring device is supplied with cable glands:
Observe requirements for connecting cables →  12.

5.2 Connecting the measuring device

NOTICE

Limitation of electrical safety due to incorrect connection!

- Have electrical connection work carried out by appropriately trained specialists only.
- Observe applicable federal/national installation codes and regulations.
- Comply with local workplace safety regulations.
- Always connect the protective ground cable  before connecting additional cables.
- For use in potentially explosive atmospheres, observe the information in the device-specific Ex documentation.

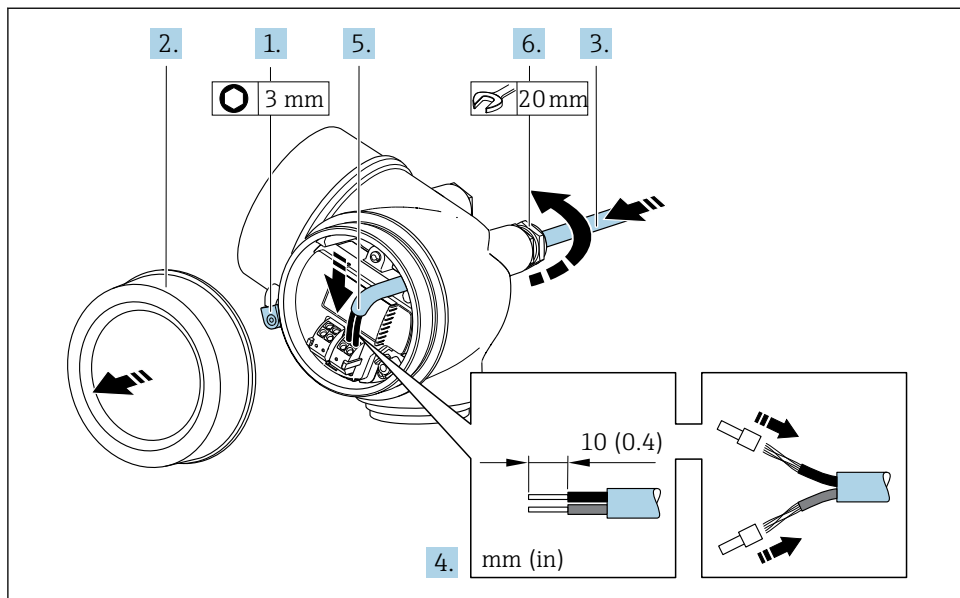
5.2.1 Connecting the transmitter

The connection of the transmitter depends on the following order code:

"Electrical connection":

- Option A, B, C, D: terminals
- Option I, M: device plug

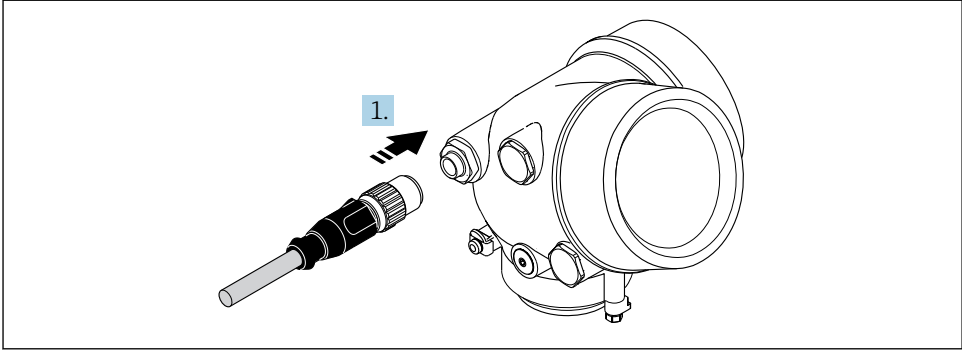
Connection via terminals



A0032239

1. Loosen the securing clamp of the connection compartment cover.
 2. Unscrew the connection compartment cover.
 3. Push the cable through the cable entry . To ensure tight sealing, do not remove the sealing ring from the cable entry.
 4. Strip the cable and cable ends. In the case of stranded cables, also fit ferrules.
 5. Connect cable in accordance with terminal assignment → 15.
 6. **⚠ WARNING**
Housing degree of protection may be voided due to insufficient sealing of the housing.
 - Screw in the screw without using any lubricant. The threads on the cover are coated with a dry lubricant.
- Firmly tighten the cable glands.
7. Reverse the removal procedure to reassemble the transmitter.

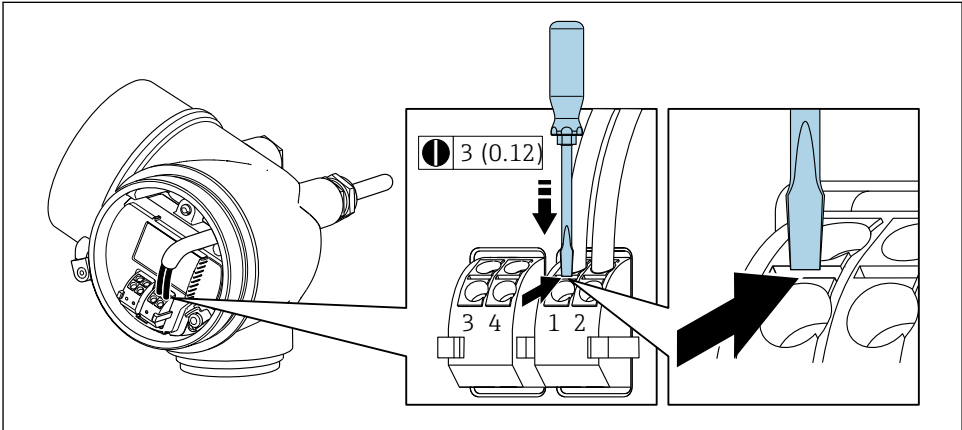
Connection via device plug



A0032229

- Plug in the device plug and tighten firmly.

Removing a cable



A0032240

- To remove a cable from the terminal, use a flat-blade screwdriver to push the slot between the two terminal holes while simultaneously pulling the cable end out of the terminal.

5.2.2 Ensuring potential equalization

Requirements

No special measures for potential equalization are required.



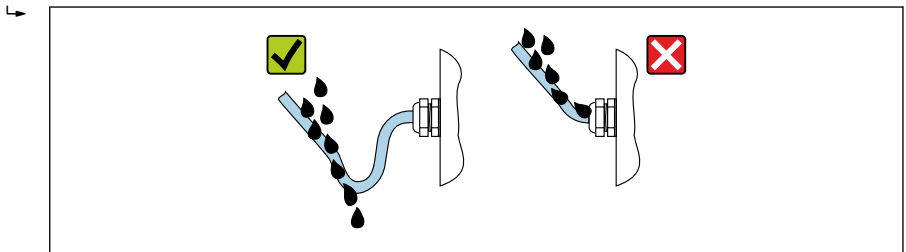
For devices intended for use in hazardous locations, please observe the guidelines in the Ex documentation (XA).

5.3 Ensuring the degree of protection

The measuring device fulfills all the requirements for the IP66/67 degree of protection, Type 4X enclosure.

To guarantee IP66/67 degree of protection, Type 4X enclosure, carry out the following steps after the electrical connection:

1. Check that the housing seals are clean and fitted correctly.
2. Dry, clean or replace the seals if necessary.
3. Tighten all housing screws and screw covers.
4. Firmly tighten the cable glands.
5. To ensure that moisture does not enter the cable entry:
Route the cable so that it loops down before the cable entry ("water trap").



A0029278

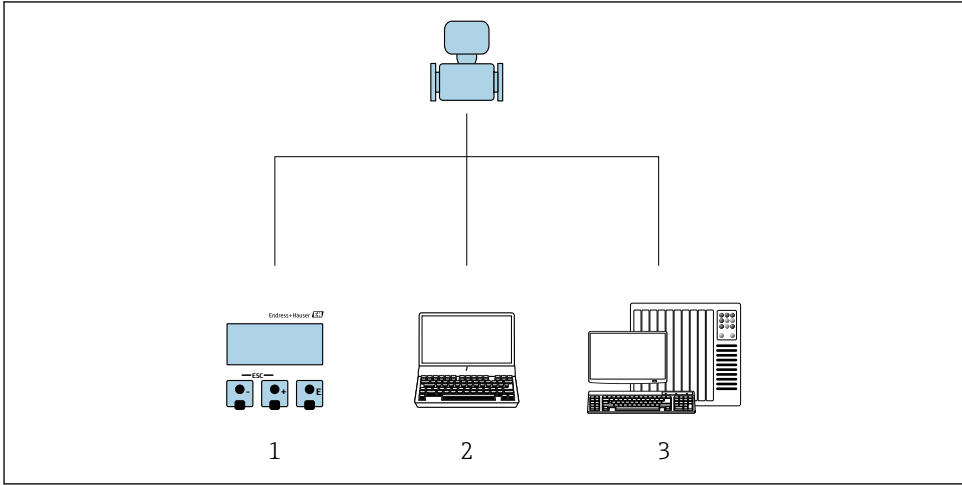
6. Insert dummy plugs into unused cable entries.

5.4 Post-connection check

Are cables or the device undamaged (visual inspection)?	<input type="checkbox"/>
Do the cables used meet the requirements → 12?	<input type="checkbox"/>
Do the cables have adequate strain relief?	<input type="checkbox"/>
Are all the cable glands installed, firmly tightened and leak-tight? Cable run with "water trap" → 21?	<input type="checkbox"/>
Depending on the device version: are all the device plugs firmly tightened → 18?	<input type="checkbox"/>
Does the supply voltage match the specifications on the transmitter nameplate → 17?	<input type="checkbox"/>
Is the terminal assignment correct?	<input type="checkbox"/>
Is the terminal assignment or pin assignment of the connector correct?	<input type="checkbox"/>
If supply voltage is present, do values appear on the display module?	<input type="checkbox"/>
Are all housing covers installed and firmly tightened?	<input type="checkbox"/>
Is the securing clamp tightened correctly?	<input type="checkbox"/>

6 Operation options

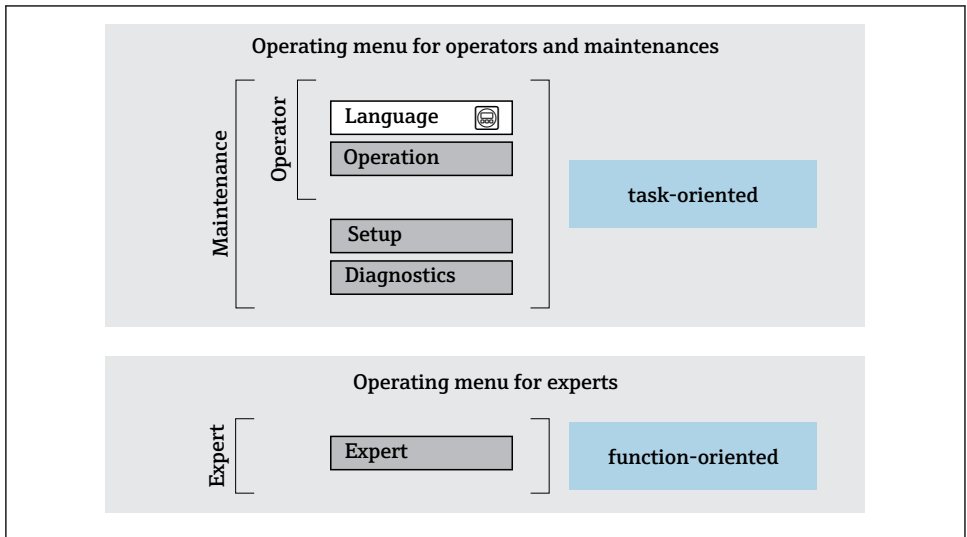
6.1 Overview of operation options




- 1 Local operation via display module
- 2 Computer with operating tool (e.g. FieldCare, SIMATIC PDM)
- 3 Control system (e.g. PLC)

6.2 Structure and function of the operating menu

6.2.1 Structure of the operating menu



A0014058-EN

 2 Schematic structure of the operating menu

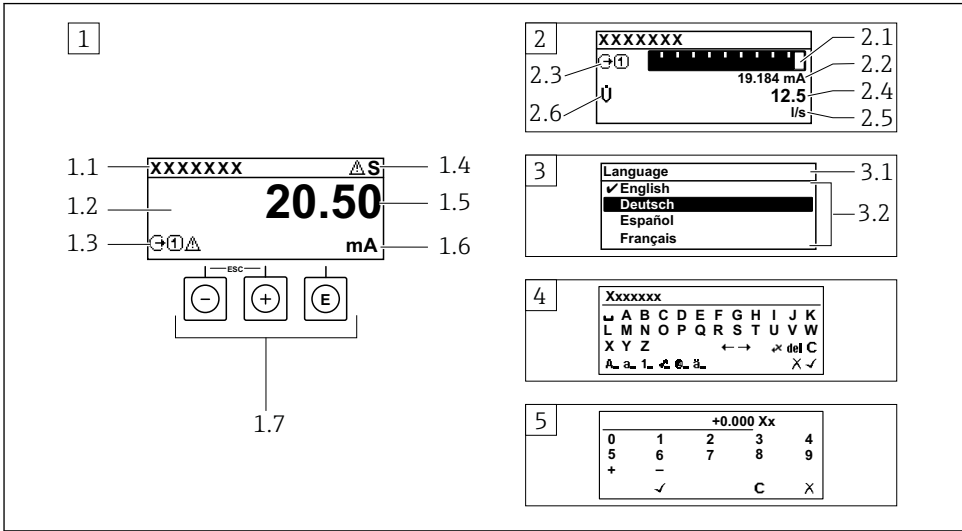
6.2.2 Operating philosophy

The individual parts of the operating menu are assigned to certain user roles (operator, maintenance etc.). Each user role contains typical tasks within the device lifecycle.



For detailed information on the operating philosophy, see the Operating Instructions for the device.

6.3 Access to the operating menu via the local display



A0014013

- 1 Operational display with measured value shown as "1 value, max." (example)
 - 1.1 Device tag
 - 1.2 Display area for measured values (4-line)
 - 1.3 Explanatory symbols for measured value: Measured value type, measuring channel number, symbol for diagnostic behavior
 - 1.4 Status area
 - 1.5 Measured value
 - 1.6 Unit for the measured value
 - 1.7 Operating elements
- 2 Operational display with measured value shown as "1 bar graph + 1 value" (example)
 - 2.1 Bar graph display for measured value 1
 - 2.2 Measured value 1 with unit
 - 2.3 Explanatory symbols for measured value 1: measured value type, measuring channel number
 - 2.4 Measured value 2
 - 2.5 Unit for measured value 2
 - 2.6 Explanatory symbols for measured value 2: measured value type, measuring channel number
- 3 Navigation view: picklist of a parameter
 - 3.1 Navigation path and status area
 - 3.2 Display area for navigation: ✓ designates the current parameter value
- 4 Editing view: text editor with input mask
- 5 Editing view: numeric editor with input mask

6.3.1 Operational display

Explanatory symbols for the measured value	Status area
<ul style="list-style-type: none"> ■ Depends on the device version, e.g.: <ul style="list-style-type: none"> – : Volume flow – : Mass flow – : Density – : Conductivity – : Temperature ■ : Totalizer ■ : Output ■ : Input ■ : Measurement channel number ¹⁾ ■ Diagnostic behavior ²⁾ <ul style="list-style-type: none"> – : Alarm – : Warning 	<p>The following symbols appear in the status area of the operational display at the top right:</p> <ul style="list-style-type: none"> ■ Status signals <ul style="list-style-type: none"> – F: Failure – C: Function check – S: Out of specification – M: Maintenance required ■ Diagnostic behavior <ul style="list-style-type: none"> – : Alarm – : Warning ■ : Locking (locked via hardware)) ■ : Communication via remote operation is active.







- 1) If there is more than one channel for the same measured variable type (totalizer, output etc.).
 2) For a diagnostic event that concerns the displayed measured variable.

6.3.2 Navigation view






Status area	Display area
<p>The following appears in the status area of the navigation view in the top right corner:</p> <ul style="list-style-type: none"> ■ In the submenu <ul style="list-style-type: none"> – The direct access code for the parameter you are navigating to (e.g. 0022-1) – If a diagnostic event is present, the diagnostic behavior and status signal ■ In the wizard <ul style="list-style-type: none"> – If a diagnostic event is present, the diagnostic behavior and status signal 	<ul style="list-style-type: none"> ■ Icons for menus <ul style="list-style-type: none"> – : Operation – : Setup – : Diagnostics – : Expert ■ : Submenus ■ : Wizards ■ : Parameters within a wizard ■ : Parameter locked






6.3.3 Editing view

Text editor	Correction symbols under
Confirms selection.	Clears all entered characters.
Exits the input without applying the changes.	Moves the input position one position to the right.
Clears all entered characters.	Moves the input position one position to the left.
Switches to the selection of the correction tools.	Deletes one character immediately to the left of the input position.
Toggle <ul style="list-style-type: none"> ■ Between upper-case and lower-case letters ■ For entering numbers ■ For entering special characters 	

Numeric editor	
 Confirms selection.	 Moves the input position one position to the left.
 Exits the input without applying the changes.	 Inserts decimal separator at the input position.
 Inserts minus sign at the input position.	 Clears all entered characters.

6.3.4 **Operating elements**

Keys and meaning
<p> Enter key</p> <p><i>For operational display</i></p> <ul style="list-style-type: none">■ Pressing the key briefly opens the operating menu.■ Pressing the key for 2 s opens the context menu. <p><i>In a menu, submenu</i></p> <ul style="list-style-type: none">■ Pressing the key briefly<ul style="list-style-type: none">– Opens the selected menu, submenu or parameter.– Starts the wizard.– If help text is open: Closes the help text of the parameter.■ Pressing the key for 2 s for parameter: If present, opens the help text for the function of the parameter. <p><i>With a wizard:</i> Opens the editing view of the parameter.</p> <p><i>With a text and numeric editor:</i></p> <ul style="list-style-type: none">■ Pressing the key briefly<ul style="list-style-type: none">– Opens the selected group.– Carries out the selected action.■ Pressing the key for 2 s: Confirms the edited parameter value.
<p> Minus key</p> <ul style="list-style-type: none">■ <i>In a menu, submenu:</i> Moves the selection bar upwards in a choose list.■ <i>With a wizard:</i> Confirms the parameter value and goes to the previous parameter.■ <i>With a text and numeric editor:</i> Moves the selection bar to the left (backwards) in an input screen.
<p> Plus key</p> <ul style="list-style-type: none">■ <i>In a menu, submenu:</i> Moves the selection bar downwards in a choose list.■ <i>With a wizard:</i> Confirms the parameter value and goes to the next parameter.■ <i>With a text and numeric editor:</i> Moves the selection bar to the right (forwards) in an input screen.
<p> Escape key combination (press keys simultaneously)</p> <p><i>In a menu, submenu</i></p> <ul style="list-style-type: none">■ Pressing the key briefly<ul style="list-style-type: none">– Exits the current menu level and takes you to the next higher level.– If help text is open, closes the help text of the parameter.■ Pressing the key for 2 s for the parameter: Returns you to the operational display ("home position"). <p><i>With a wizard:</i> Exits the wizard and takes you to the next higher level.</p> <p><i>With a text and numeric editor:</i> Closes the text or numeric editor without applying changes.</p>
<p> Minus/Enter key combination (press the keys simultaneously)</p>

Keys and meaning	
	Reduces the contrast (brighter setting).
 	Plus/Enter key combination (press and hold down the keys simultaneously)
	Increases the contrast (darker setting).
 +  	Minus/Plus/Enter key combination (press the keys simultaneously)
<i>For operational display:</i> Enables or disables the keypad lock.	

6.3.5 Further information



For further information on the following topics, see the Operating Instructions for the device

- Calling up help text
- User roles and related access authorization
- Disabling write protection via access code
- Enabling and disabling the keypad lock

6.4 Access to the operating menu via the operating tool



The operating menu can also be accessed via the FieldCare and DeviceCare operating tools. See the Operating Instructions for the device.

7 System integration





For detailed information on system integration, see the Operating Instructions for the device.

- Overview of device description files:
 - Current version data for the device
 - Operating tools
- Device master file (GSD)
 - Manufacturer-specific GSD
 - Profile GSD
- Compatibility with previous model
- Using the GSD modules of the previous model
- Cyclic data transmission
 - Block model
 - Description of the modules

8 Commissioning

8.1 Function check


Before commissioning the measuring device:

- ▶ Make sure that the post-installation and post-connection checks have been performed.
- "Post-installation check" checklist →  11
- "Post-connection check" checklist →  21

8.2 Switching on the measuring device

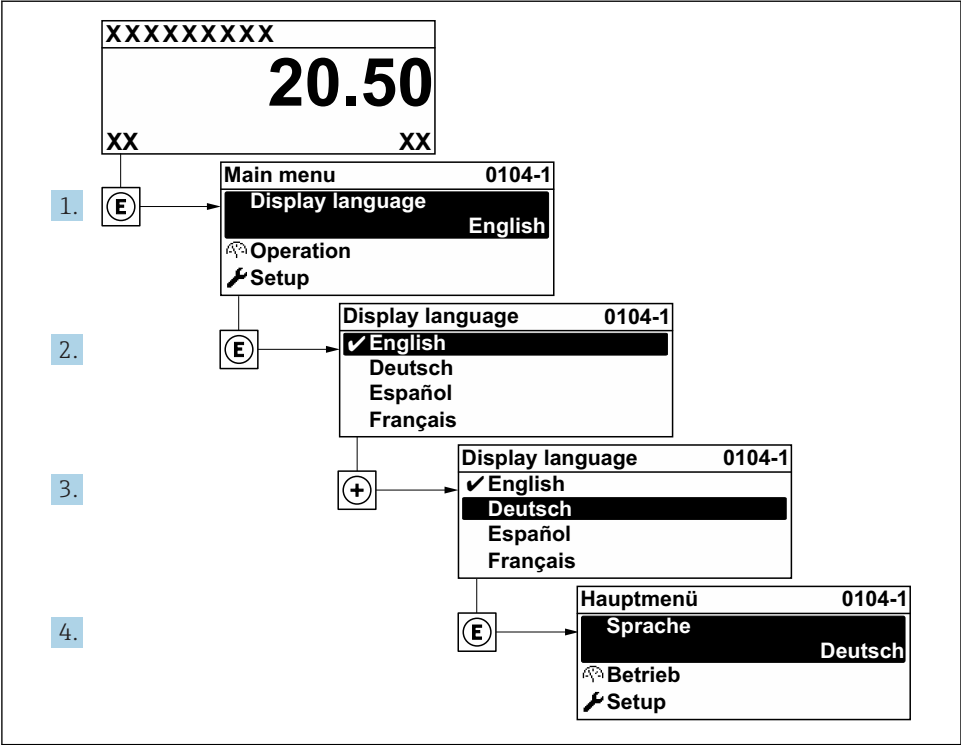
- ▶ After a successful function check, switch on the measuring device.
 - ↳ After a successful startup, the local display switches automatically from the startup display to the operational display.




If nothing appears on the local display or a diagnostic message is displayed, refer to the Operating Instructions for the device →  2

8.3 Setting the operating language

Factory setting: English or ordered local language



A0029420

 3 Taking the example of the local display

8.4 Configuring the measuring device

The **Setup** menu with its **System units** submenu and various guided wizards enable fast commissioning of the measuring device.

The desired units can be selected in the **System units** submenu. The wizards systematically guide the user through all the parameters required for configuration, such as parameters for measurement or outputs.

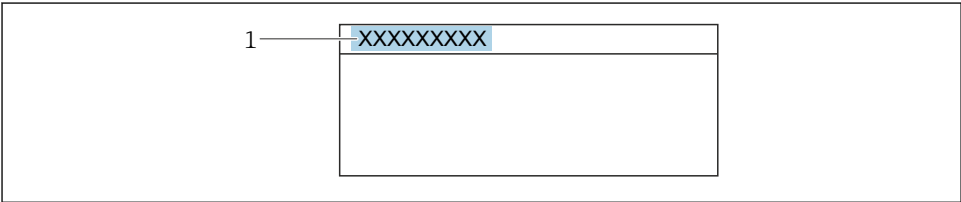
 The wizards available in the particular device can vary on account of the device version (e.g. sensor).

Wizard	Meaning
Select medium	Define the medium
Pulse/frequency/switch output	Configure the selected output type
Analog inputs	Configure the analog inputs
Display	Configure the measured value display


Wizard	Meaning
Low flow cut off	Set the low flow cut off
Partially filled pipe detection	Configure partial and empty pipe detection
Current input	Configure the current input

8.5 Defining the tag name

To enable fast identification of the measuring point within the system, you can enter a unique designation using the **Device tag** parameter and thus change the factory setting.



A002942Z

 4 Header of the operational display with tag name
1 Tag name

Navigation

"Setup" menu → Device tag


Parameter overview with brief description

Parameter	Description	User entry	Factory setting
Device tag	Enter the name for the measuring point.	Max. 32 characters, such as letters, numbers or special characters (e.g. @, %, /).	Promass 200

8.6 Protecting settings from unauthorized access

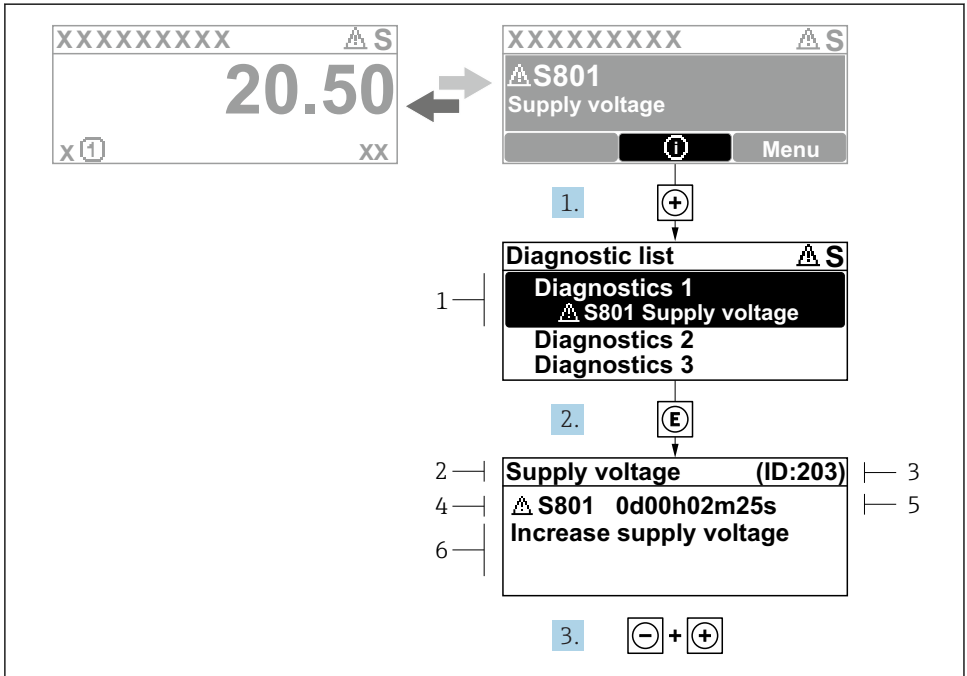
The following write protection options exist in order to protect the configuration of the measuring device from unintentional modification:

- Protect access to parameters via access code
- Protect access to local operation via key locking
- Protect access to measuring device via write protection switch

 For detailed information on protecting the settings against unauthorized access, see the Operating Instructions for the device.

9 Diagnostic information

Faults detected by the self-monitoring system of the measuring device are displayed as a diagnostic message in alternation with the operational display. The message about remedial measures can be called up from the diagnostic message, and contains important information on the fault.



A0029431-EN

5 Message about remedial measures

- 1 Diagnostic information
- 2 Short text
- 3 Service ID
- 4 Diagnostic behavior with diagnostic code
- 5 Operation time of occurrence
- 6 Remedial measures

1. The user is in the diagnostic message.
Press **+** (Ⓢ symbol).
↳ The **Diagnostic list** submenu opens.
2. Select the desired diagnostic event with **+** or **-** and press **E**.
↳ The message about the remedial measures opens.
3. Press **-** + **+** simultaneously.
↳ The message about the remedial measures closes.

www.addresses.endress.com
