

# Operating Instructions

## FieldPort SWA50

Intelligent WirelessHART adapter for HART measuring devices



## Change history

Product version	Operating Instructions	Changes	Comments
1.00.XX	BA02046S/04/EN/01.20	–	Initial version
1.00.XX	BA02046S/04/EN/02.21	Supply voltage Burst	Corrections

# Table of contents

<b>1</b>	<b>About this document</b>	<b>5</b>	<b>5.6</b>	Post-installation check	28
1.1	Document function	5	<b>6</b>	<b>Electrical connection</b>	<b>29</b>
1.2	Symbols	5	6.1	Supply voltage	29
1.2.1	Safety symbols	5	6.2	Cable specification	29
1.2.2	Symbols for certain types of information	5	6.3	Terminal assignment	29
1.2.3	Symbols in graphics	6	6.4	Stripping in the case of a cable gland for shielded cable	30
1.2.4	Electrical symbols	6	6.5	2-wire HART field device with passive current output	30
1.2.5	SmartBlue app icons	6	6.6	4-wire HART field device with passive current output	31
1.3	Terms and abbreviations	7	6.7	4-wire HART field device with active current output	31
1.4	Valid versions	7	6.8	FieldPort SWA50 without HART field device	32
1.5	Documentation	7	6.9	FieldPort SWA50 grounding	33
1.5.1	Safety Instructions (XA)	7	6.9.1	"Direct mounting" version	33
1.6	Registered trademarks	7	6.9.2	"Remote mounting" version	33
<b>2</b>	<b>Basic safety instructions</b>	<b>8</b>	6.10	Post-connection check	34
2.1	Requirements for personnel	8	<b>7</b>	<b>Operating options</b>	<b>35</b>
2.2	Designated use	8	7.1	Overview of operating options	35
2.3	Workplace safety	8	7.2	SmartBlue App	35
2.4	Operational safety	8	7.3	Field Xpert SMTxx	35
2.5	Product safety	9	<b>8</b>	<b>Commissioning</b>	<b>36</b>
2.6	IT security	9	8.1	Requirements	36
2.7	Device-specific IT security	9	8.1.1	Requirements of the FieldPort SWA50	36
2.7.1	Access via Bluetooth® wireless technology	9	8.1.2	Information required for commissioning	36
<b>3</b>	<b>Product description</b>	<b>10</b>	8.1.3	Initial password	36
3.1	Function	10	8.2	Putting the FieldPort SWA50 into operation	36
3.2	System architecture of the FieldPort SWA50 WirelessHART version	11	8.2.1	Commissioning via SmartBlue App	37
<b>4</b>	<b>Incoming acceptance and product identification</b>	<b>12</b>	8.2.2	Commissioning via Field Xpert	40
4.1	Incoming acceptance	12	<b>9</b>	<b>Operation</b>	<b>43</b>
4.2	Product identification	12	9.1	Hardware locking	43
4.2.1	Nameplate	12	9.2	LED	43
4.2.2	Manufacturer's address	12	<b>10</b>	<b>Description of SmartBlue app for SWA50</b>	<b>44</b>
4.3	Storage and transport	12	10.1	Menu overview (Navigation)	44
<b>5</b>	<b>Installation</b>	<b>13</b>	10.2	"Device information" page	44
5.1	Installation instructions	13	10.3	"Application" menu	45
5.2	Mounting methods	13	10.3.1	"Measured values" page	45
5.2.1	"Direct mounting" version	13	10.3.2	"HART info" page for HART field device	46
5.2.2	"Remote mounting" version	14	10.4	"System" menu	46
5.3	Mounting the "direct mounting" version	14	10.4.1	"Device management" page ("FieldPort SWA50" menu)	46
5.4	Mounting the "remote mounting" version	21			
5.5	Installing the FieldPort SWA50 with mounting bracket	25			
5.5.1	Mounting and alignment options	25			
5.5.2	Dimensions	26			
5.5.3	Installing the mounting bracket and FieldPort SWA50	27			

10.4.2	"Connectivity" page ("FieldPort SWA50" menu) .....	46
10.4.3	"Information" page ("FieldPort SWA50" menu) .....	49
10.5	"Field device" menu ("System" menu) .....	49
10.5.1	"Device management" page ("Field device" menu) .....	49
10.5.2	"Information" page ("Field device" menu) .....	49
<b>11</b>	<b>Configuration and online parameterization .....</b>	<b>50</b>
11.1	Access options and prerequisites .....	50
11.1.1	Access options .....	50
11.1.2	Required settings in FieldCare .....	50
11.2	Identification .....	50
11.3	Wireless Communication .....	52
11.4	Wired Communication .....	54
11.5	Device Variable Mapping .....	56
11.6	Burst Mode .....	57
11.7	Event Notification .....	61
<b>12</b>	<b>Additional DTM functions .....</b>	<b>67</b>
12.1	Lock / Unlock .....	67
<b>13</b>	<b>Diagnosis and troubleshooting .....</b>	<b>68</b>
13.1	Diagnosis .....	68
13.2	Troubleshooting .....	68
<b>14</b>	<b>Maintenance .....</b>	<b>69</b>
14.1	General maintenance .....	69
14.2	Updating the firmware .....	69
<b>15</b>	<b>Repair .....</b>	<b>71</b>
15.1	General notes .....	71
15.2	Disposal .....	71
<b>16</b>	<b>Accessories .....</b>	<b>72</b>
<b>17</b>	<b>Technical data .....</b>	<b>73</b>
<b>18</b>	<b>Appendix .....</b>	<b>74</b>
18.1	Menu overview (Navigation) .....	74

# 1 About this document

## 1.1 Document function

These Operating Instructions provide all of the information that is required in various phases of the life cycle of the device including:

- Product identification
- Incoming acceptance
- Storage
- Installation
- Connection
- Operation
- Commissioning
- Troubleshooting
- Maintenance
- Disposal

## 1.2 Symbols

### 1.2.1 Safety symbols

#### **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.

#### **NOTICE**




This symbol contains information on procedures and other facts which do not result in personal injury.

### 1.2.2 Symbols for certain types of information







Symbol	Meaning
	<b>Permitted</b> Procedures, processes or actions that are permitted.
	<b>Preferred</b> Procedures, processes or actions that are preferred.
	<b>Forbidden</b> Procedures, processes or actions that are forbidden.
	<b>Tip</b> Indicates additional information.
	Reference to documentation.
	Reference to page.
	Reference to graphic.
	Notice or individual step to be observed.

Symbol	Meaning
	Series of steps.
	Result of a step.
	Help in the event of a problem.
	Visual inspection.






### 1.2.3 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)

### 1.2.4 Electrical symbols

Symbol	Meaning	Symbol	Meaning
	Direct current		Alternating current
	Direct current and alternating current		<b>Ground connection</b> A grounded terminal which, as far as the operator is concerned, is grounded via a grounding system.
	<b>Protective ground connection</b> A terminal which must be connected to ground prior to establishing any other connections.		<b>Equipotential connection</b> A connection that has to be connected to the plant grounding system: This may be a potential equalization line or a star grounding system depending on national or company codes of practice.

### 1.2.5 SmartBlue app icons

Icon	Meaning
	SmartBlue
	Accessible field devices
	Home
	Menu
	Settings

## 1.3 Terms and abbreviations

Term	Description
DeviceCare	Universal configuration software for Endress+Hauser HART, PROFIBUS, FOUNDATION Fieldbus and Ethernet field devices
DTM	Device Type Manager
FieldCare	Scalable software tool for device configuration and integrated plant asset management solutions
Loop-powered adapter	Loop-powered adapter

## 1.4 Valid versions

Component	Version
Software	V1.00.xx
Hardware	V1.00.xx

## 1.5 Documentation

### FieldPort SWA50

Technical Information TI01468S

### 1.5.1 Safety Instructions (XA)

Depending on the approval, the following Safety Instructions (XA) are supplied with the device. They are an integral part of the Operating Instructions.



The nameplate indicates the Safety Instructions (XA) that are relevant to the device.

## 1.6 Registered trademarks

### HART®

Registered trademark of the FieldComm Group, Austin, Texas, USA

### Bluetooth®

The *Bluetooth*® word mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by Endress+Hauser is under license. Other trademarks and trade names are those of their respective owners.

### Apple®

Apple, the Apple logo, iPhone, and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc.

### Android®

Android, Google Play and the Google Play logo are trademarks of Google Inc.

## 2 Basic safety instructions

### 2.1 Requirements for personnel

The personnel for installation, commissioning, diagnostics and maintenance must meet the following requirements:

- ▶ Trained, qualified specialists: must have a relevant qualification for this specific role and task and have been trained by Endress+Hauser. Experts at the Endress+Hauser service organization.
- ▶ Personnel must be authorized by the plant owner/operator.
- ▶ Personnel must be familiar with regional and national regulations.
- ▶ Before starting work: personnel must read and understand the instructions in the manual and supplementary documentation as well as the certificates (depending on the application).
- ▶ Personnel must follow instructions and comply with general policies.

Operating personnel must meet the following requirements:

- ▶ Personnel are instructed and authorized according to the requirements of the task by the facility's owner-operator.
- ▶ Personnel follow the instructions in this manual.

### 2.2 Designated use

The FieldPort SWA50 is a loop-powered adapter that converts the HART signal of the connected HART field device into a reliable and encrypted WirelessHART signal. The FieldPort SWA50 can be retrofitted to all 2-wire or 4-wire HART field devices.

The Bluetooth signal may not be used to replace the wiring in the case of safety applications with a control function.

#### **Incorrect use**

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

### 2.3 Workplace safety

For work on and with the device:

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

### 2.4 Operational safety

Risk of injury!

- ▶ Operate the device only if it is in proper technical condition, free from errors and faults.
- ▶ The operator is responsible for interference-free operation of the device.

#### **Modifications to the device**

Unauthorized modifications to the device are not permitted and can lead to unforeseeable dangers:

- ▶ If modifications are nevertheless required, consult with Endress+Hauser.



## 2.5 Product safety

This 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.

The device fulfills general safety requirements and legal requirements. It also complies with the EU/EC 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


We only provide a warranty 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 device settings.

IT security measures in line with operators' security standards and designed to provide additional protection for the device and device data transfer must be implemented by the operators themselves.

## 2.7 Device-specific IT security

### 2.7.1 Access via Bluetooth® wireless technology

**Signal transmission via Bluetooth® wireless technology uses a cryptographic technique tested by Fraunhofer AISEC.**

- Connection via Bluetooth® is not possible without specific Endress+Hauser devices or the *SmartBlue app*.
- Only one point-to-point connection between **one** FieldPort SWA50 device and **one** smartphone or tablet is established.
- The *Bluetooth®* wireless technology interface can be protected incrementally by means of hardware locking. →  43
- The hardware locking cannot be disabled or bypassed using operating tools.

## 3 Product description

### 3.1 Function

The FieldPort SWA50 converts the HART signal of the connected HART field device to a reliable and encrypted Bluetooth® or WirelessHART signal. The FieldPort SWA50 can be retrofitted to all 2-wire or 4-wire HART field devices.

The Endress+Hauser SmartBlue app or the Endress+Hauser Field Xpert is used to configure the FieldPort SWA50 and to visualize the measured values and status of the connected HART field device.

HART field devices can be connected to the Netilion Cloud via the FieldPort SWA50 and a FieldEdge device.



For detailed information on the Netilion Cloud, see <https://netilion.endress.com>

The WirelessHART version of the FieldPort SWA50 can be integrated into a WirelessHART network via the Endress+Hauser WirelessHART Fieldgate SWG70 or via any compatible WirelessHART gateway. More information is available from your Endress+Hauser Sales Center: [www.addresses.endress.com](http://www.addresses.endress.com).

In addition, the WirelessHART version can be operated as follows:

- Local configuration with FieldCare SFE500 or DeviceCare via DTM for FieldPort SWA50
- Remote configuration with FieldCare SFE500 via WirelessHART Fieldgate SWG70 and DTM for FieldPort SWA50 and Fieldgate SWG70

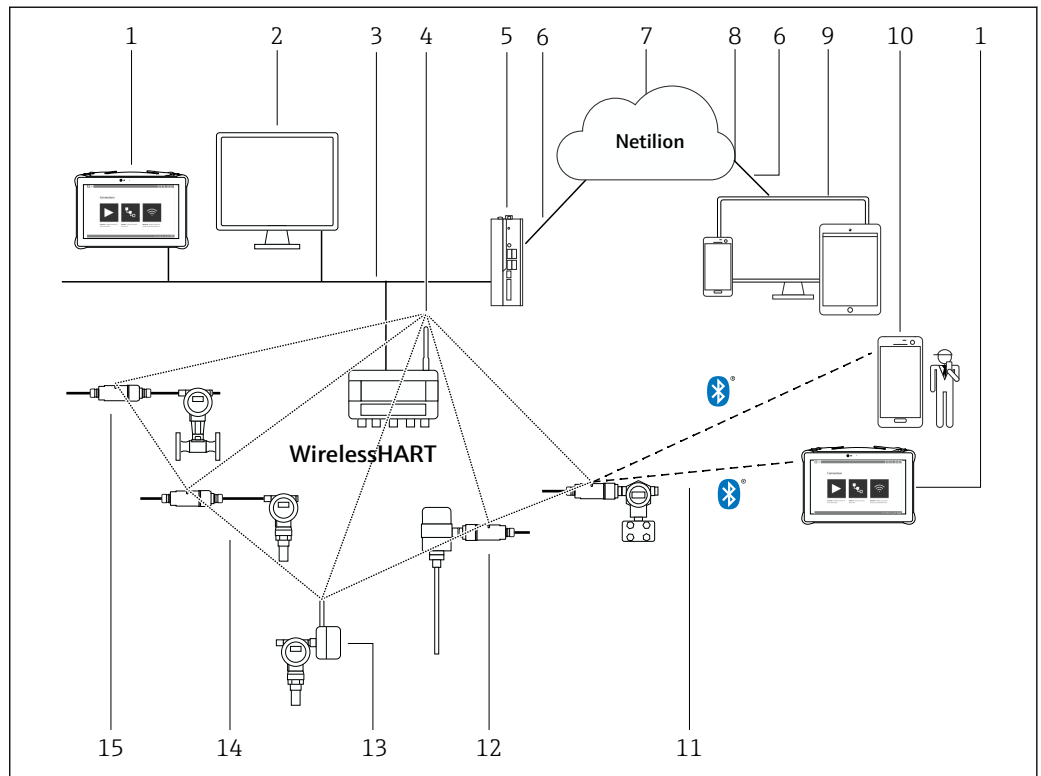
#### NOTICE

##### **Safety applications with control functions via WirelessHART signal**

Undesirable behavior of safety application

- Do not use a wireless signal such as WirelessHART in a safety application with a control function.

### 3.2 System architecture of the FieldPort SWA50 WirelessHART version




1 System architecture of SWA50 WirelessHART version

- 1 Endress+Hauser Field Xpert, e.g. SMTxx
- 2 Host application / FieldCare SFE500
- 3 Ethernet communication
- 4 WirelessHART Fieldgate, e.g. SWG70
- 5 FieldEdge SGC500
- 6 https Internet connection
- 7 Netilion Cloud
- 8 Application Programming Interface (API)
- 9 Internet browser-based Netilion Service app or user application
- 10 Endress+Hauser SmartBlue app
- 11 Encrypted wireless connection via Bluetooth®
- 12 HART field device with FieldPort SWA50, direct mounting
- 13 HART field device with WirelessHART adapter, e.g. SWA70
- 14 Encrypted wireless connection via WirelessHART
- 15 HART field device with FieldPort SWA50, remote mounting

## 4 Incoming acceptance and product identification

### 4.1 Incoming acceptance

- Check the packaging for visible damage arising from transportation
- Open the packaging carefully
- Check the contents for visible damage
- Check that the delivery is complete and nothing is missing
- Retain all the accompanying documents

 The device may not be put into operation if the contents are found to be damaged beforehand. In this case, please contact your Endress+Hauser Sales Center:  
[www.addresses.endress.com](http://www.addresses.endress.com)

Return the device to Endress+Hauser in the original packaging where possible.

Scope of delivery

- FieldPort SWA50
- Cable glands as per ordered version
- Optional: mounting bracket

Documentation included in delivery

- Brief Operating Instructions
- Depends on the version ordered: Safety Instructions

### 4.2 Product identification

#### 4.2.1 Nameplate

The nameplate of the device is lasered onto the housing.

Additional information about the device is available as follows:

- Enter the serial number specified on the nameplate into the Device Viewer ([www.endress.com](http://www.endress.com) → Product tools → Access device specific information → Device Viewer (from the serial number to device information and documentation) → Select option → Enter serial number): All information relating to the device is then displayed.
- Enter the serial number specified on the nameplate into the Endress+Hauser Operations App: All information relating to the device is then displayed.

#### 4.2.2 Manufacturer's address

Endress+Hauser SE+Co. KG

Hauptstraße 1

79689 Maulburg

Germany

[www.endress.com](http://www.endress.com)



### 4.3 Storage and transport


- The components are packed in such a way that they are fully protected against shock when in storage and during transportation.
- The permitted storage temperature is -40 to +85 °C (-40 to 185 °F).
- Store the components in the original packaging in a dry place.
- Where possible, only transport the components in the original packaging.

## 5 Installation

### 5.1 Installation instructions

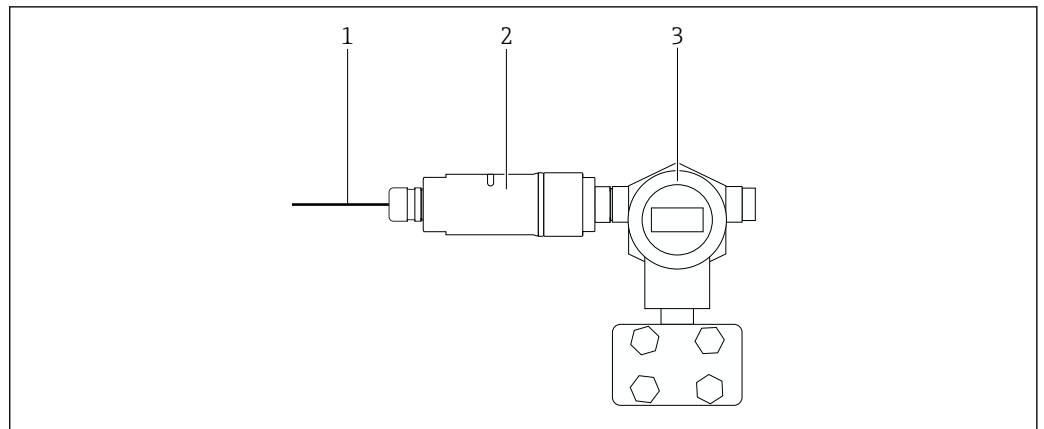
- Pay attention to the range.
- Observe a distance of at least 6 cm from walls and pipes. Pay attention to the expansion of the Fresnel zone.
- Avoid mounting in close proximity to high-voltage devices.
- For a better connection, mount the FieldPort SWA50 in sight of a WirelessHART FieldPort, such as the SWA50, SWA70, or a WirelessHART gateway, such as the Fieldgate SWG70.
- Pay attention to the effect of vibrations at the mounting location.

 For detailed information on the range and vibration resistance, see the Technical Information for the FieldPort SWA50. →  7


 We recommend that you protect the FieldPort SWA50 against precipitation and direct sunlight. In order not to reduce signal quality, do not use a metal cover.

### 5.2 Mounting methods



#### 5.2.1 "Direct mounting" version



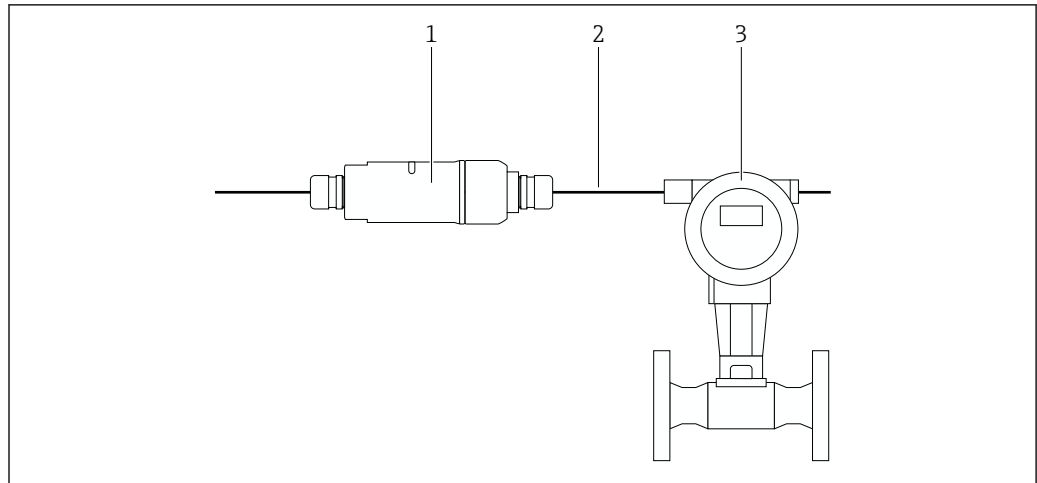
A0043241

 2 Example of direct mounting


- 1 Cable
- 2 FieldPort SWA50 "direct mounting" version
- 3 HART field device

 "Direct mounting" version of installation process: →  14

### 5.2.2 "Remote mounting" version




A0043240



 3 Example of remote mounting

1 FieldPort SWA50 "remote mounting" version

2 Cable

3 HART field device

 For remote mounting, we recommend the optional mounting bracket. Alternatively, you can secure the remote version using pipe clips.

 "Remote mounting" version of installation process: →  21

## 5.3 Mounting the "direct mounting" version

### NOTICE

#### Damaged seals.

IP degree of protection is no longer guaranteed.

- ▶ Do not damage seals.

### NOTICE

#### Supply voltage is present during installation.

Possible damage to the device.

- ▶ Switch off supply voltage prior to installation.
- ▶ Make sure the device is de-energized.
- ▶ Secure it against being switched back on.

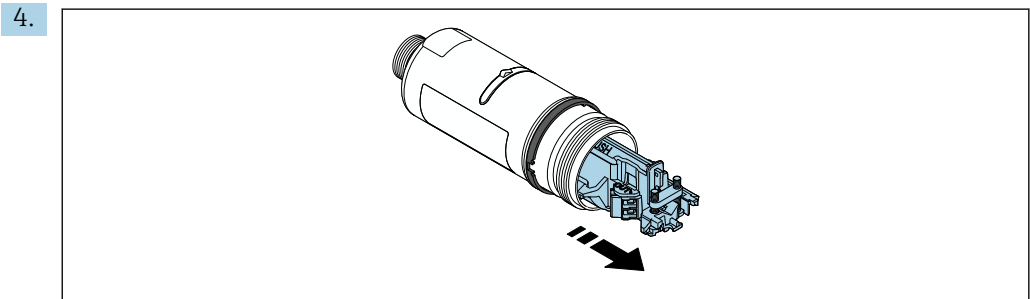
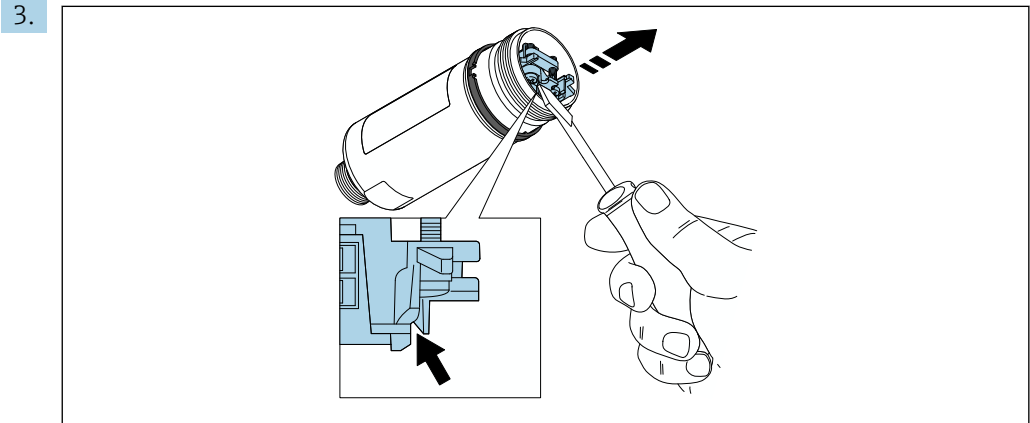
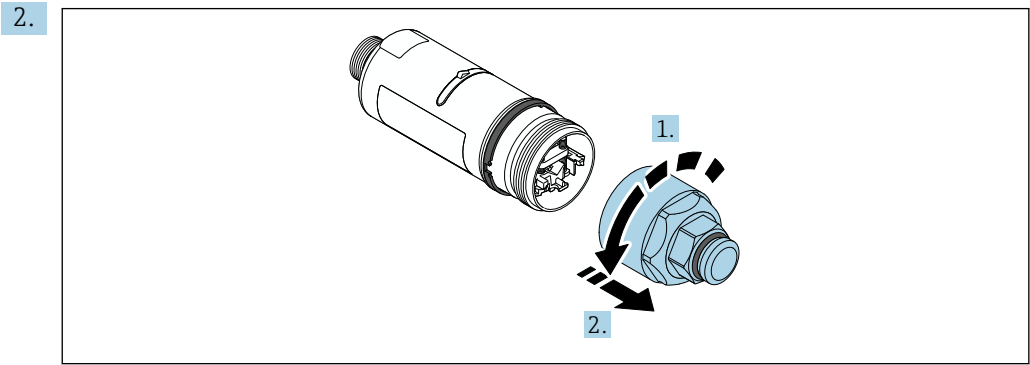
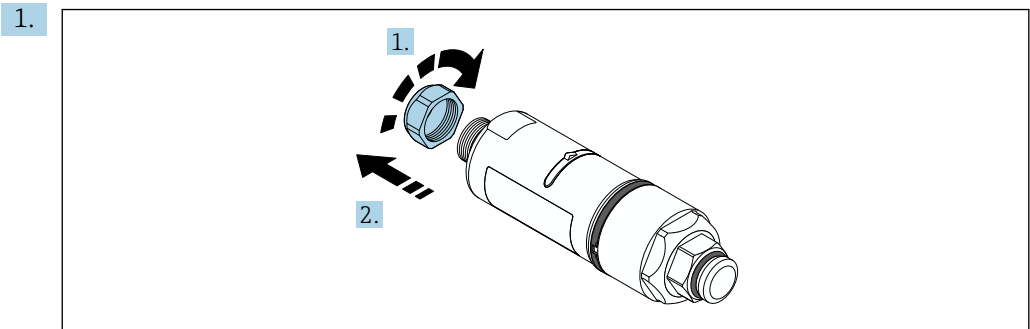
 "Direct mounting" overview: →  13

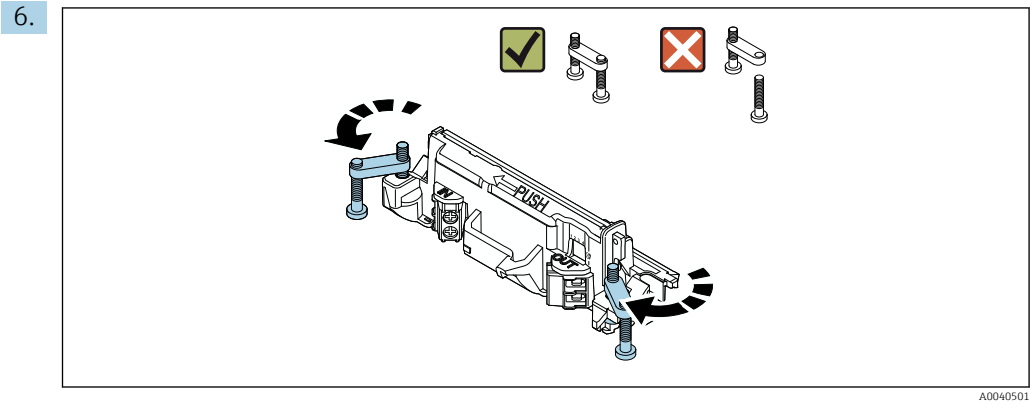
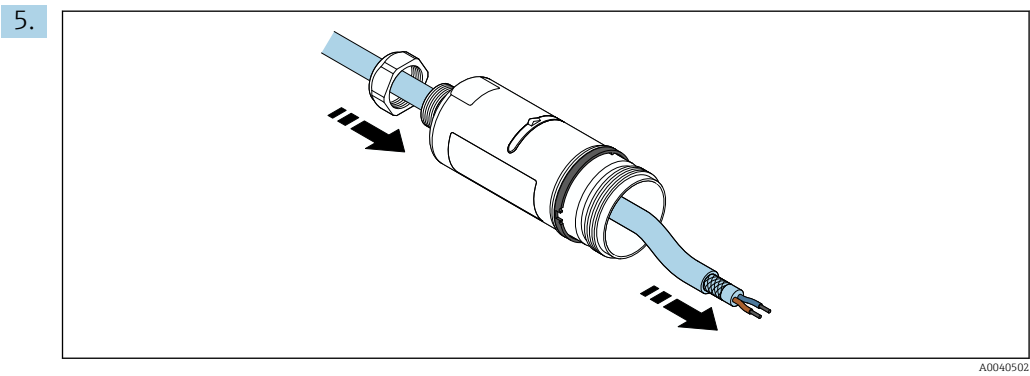
 Electrical connection: →  29

#### Tools required

- Wrench AF24
- Wrench AF36

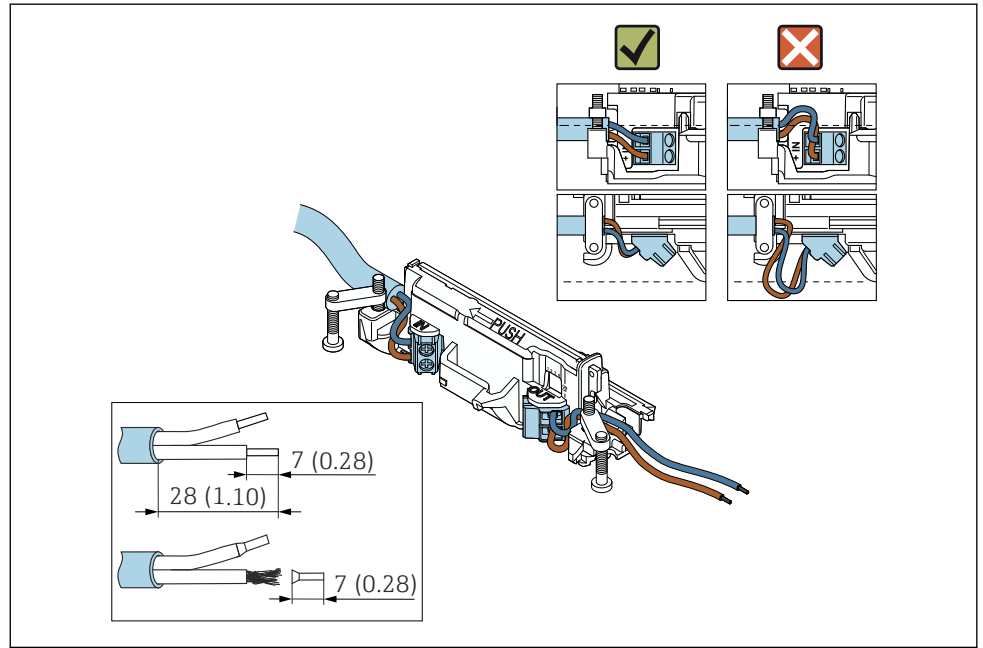
Mounting the FieldPort SWA50







7.



A0041551

Ensure that the cores are of sufficient length to be connected in the field device. Do not shorten the cores to the required length until you are connecting them in the field device.

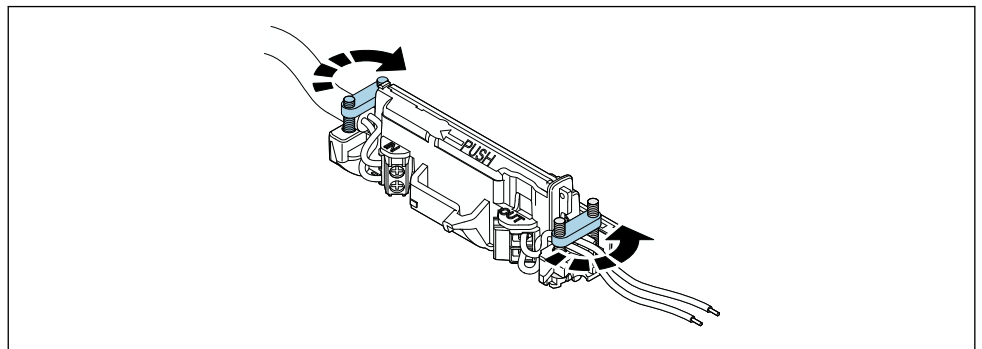


If using a cable gland for shielded cable, follow the instructions for stripping  
→ 30.



- Electrical connection for 2-wire HART field devices with passive current output:  
→ 30
- Electrical connection for 4-wire HART field devices with passive current output:  
→ 31
- Electrical connection for 4-wire HART field devices with active current output:  
→ 31
- Electrical connection for FieldPort SWA50 without HART field device: → 32

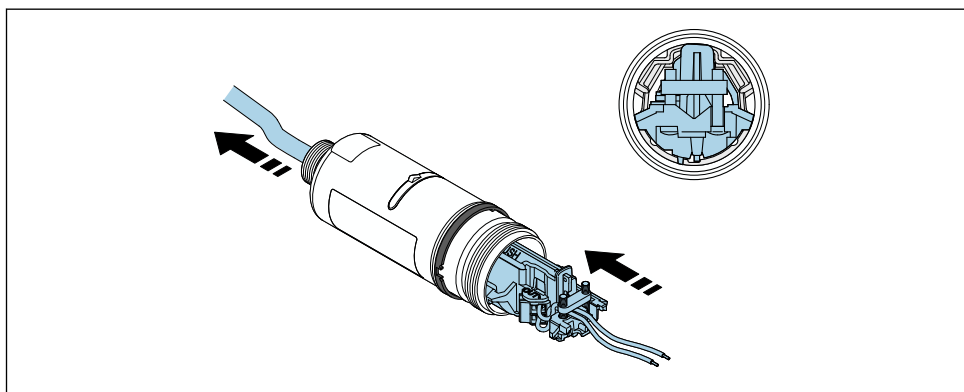
8.



A0041552

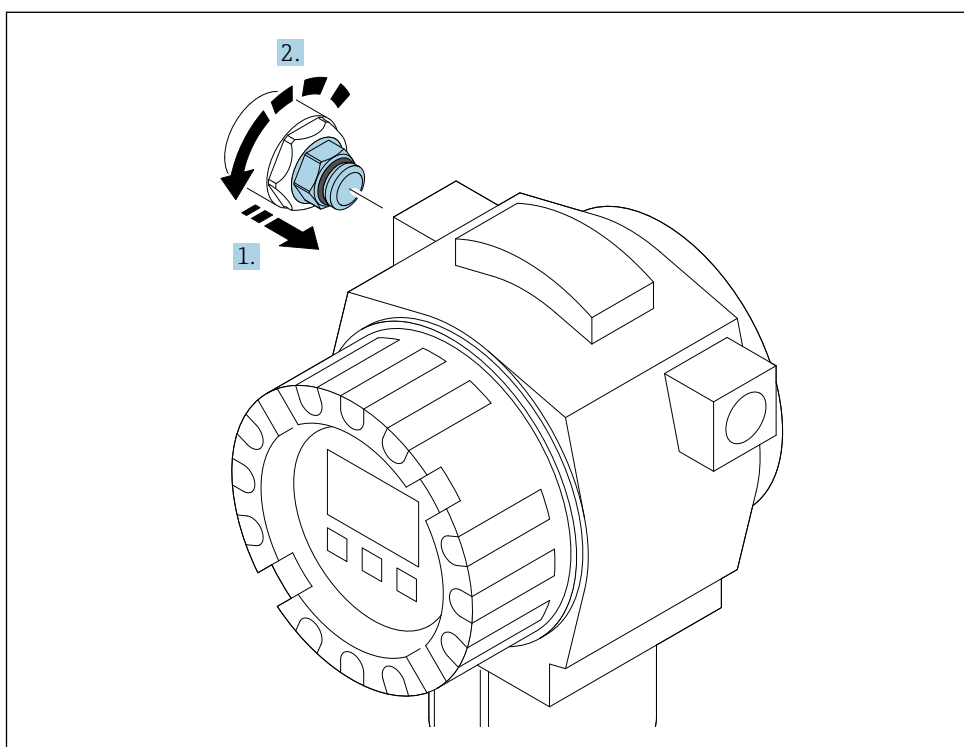
Tighten screws for strain relief. Torque:  $0.4 \text{ Nm} \pm 0.04 \text{ Nm}$

9.



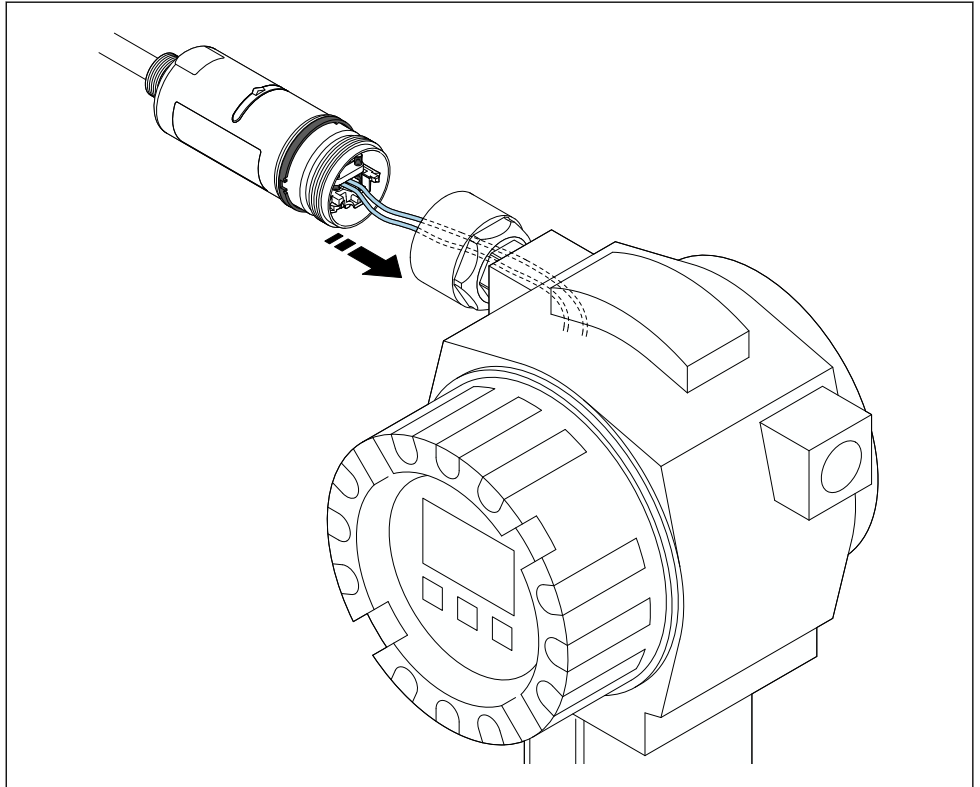
Slide the electronic insert into the guide inside the housing.

10.



For information regarding torque, see the field device documentation.

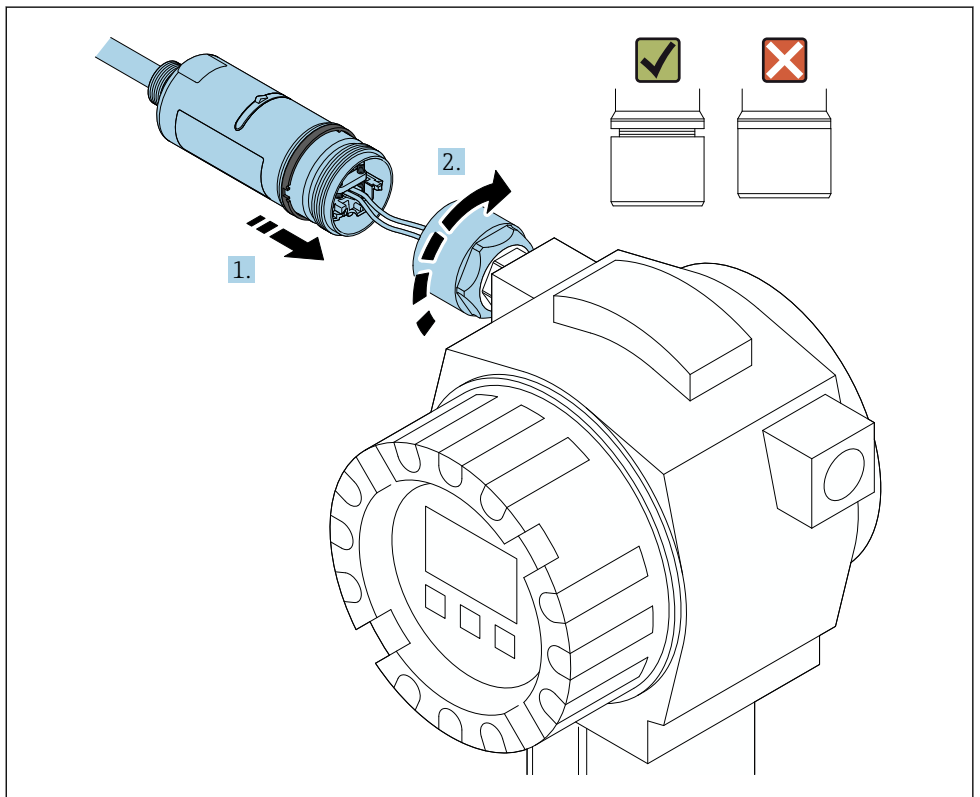
11.



A0041554

Ensure that the cores are of sufficient length to be connected in the field device. Shorten the cores in the field device to the required length.

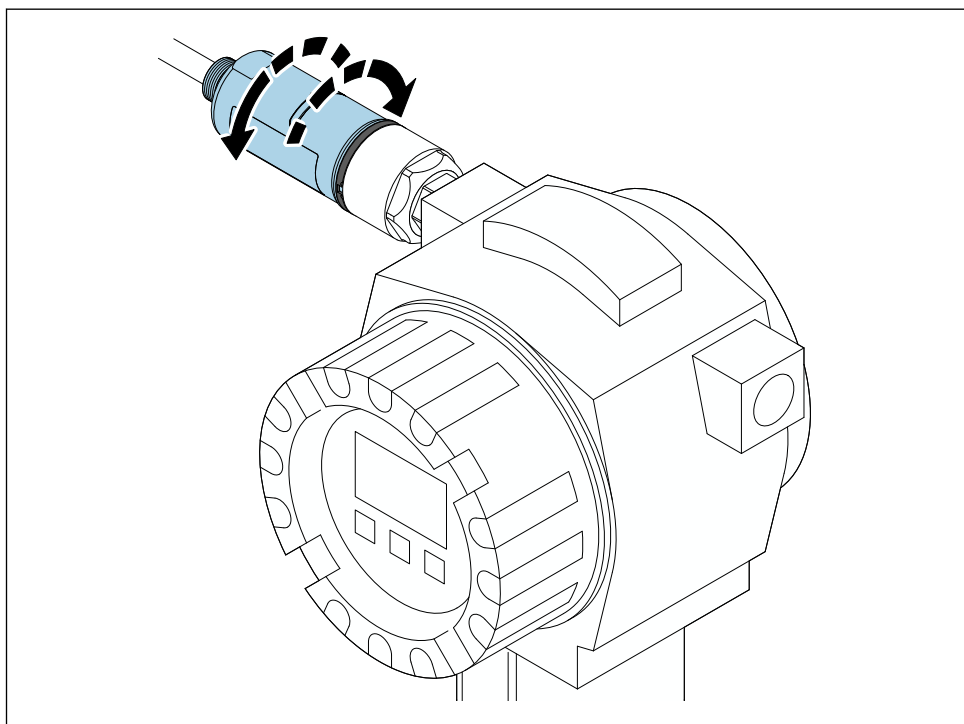
12.



A0040566

Do not tighten the top housing section yet, so that you are still able to rotate the bottom housing section.

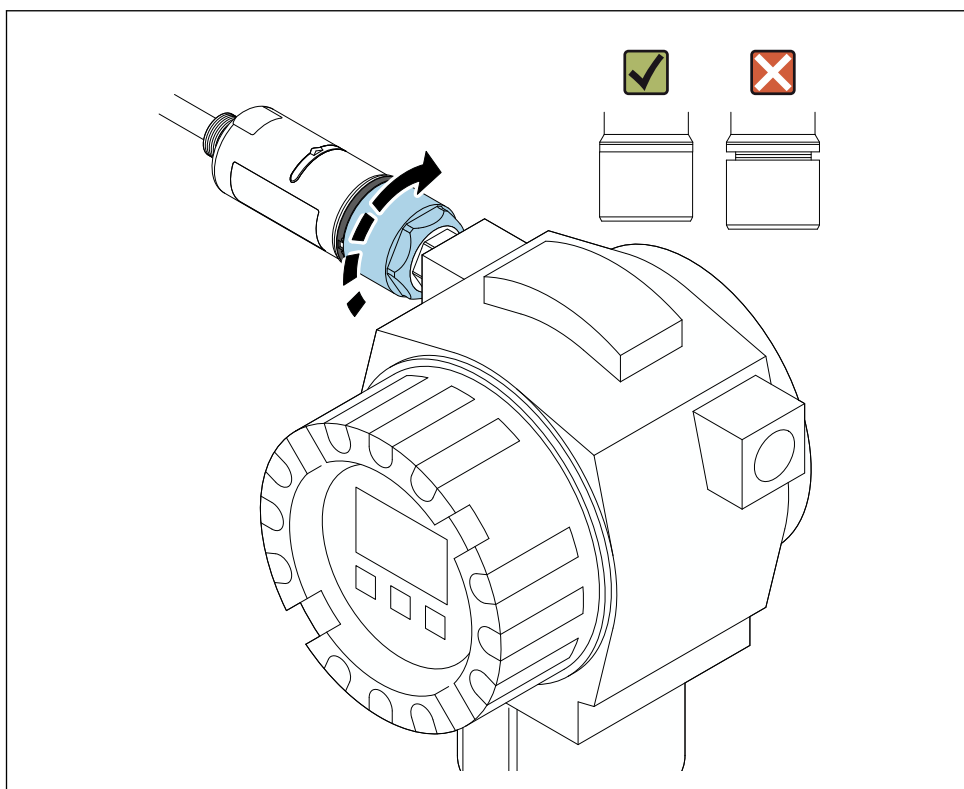
13.



A0040568

To avoid wire breaks, rotate the bottom housing section by a maximum of  $\pm 180^\circ$ .

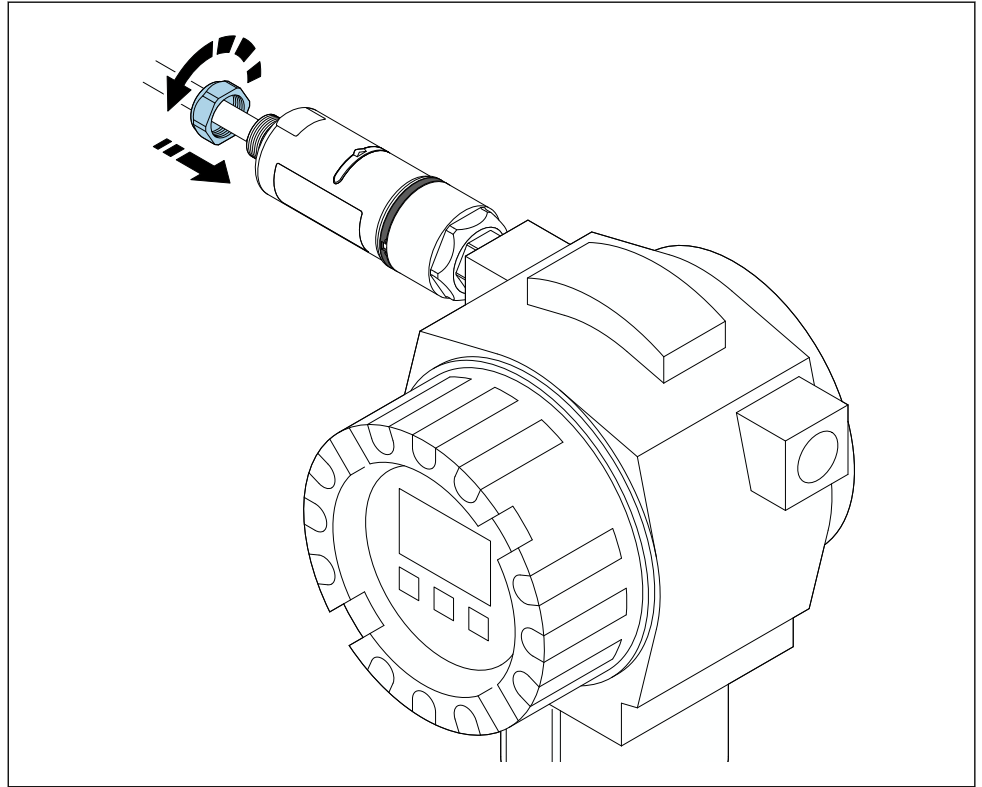
14.



A0040569

Tighten the top housing section in such a way that it is still possible to turn the design ring. Torque:  $5 \text{ Nm} \pm 0.05 \text{ Nm}$

15.



A0040567

## 5.4 Mounting the "remote mounting" version

### NOTICE

#### Damaged seal.

IP degree of protection is no longer guaranteed.

- ▶ Do not damage seal.

### NOTICE

#### Supply voltage is present during installation.

Possible damage to the device.

- ▶ Switch off supply voltage prior to installation.
- ▶ Make sure the device is de-energized.
- ▶ Secure it against being switched back on.



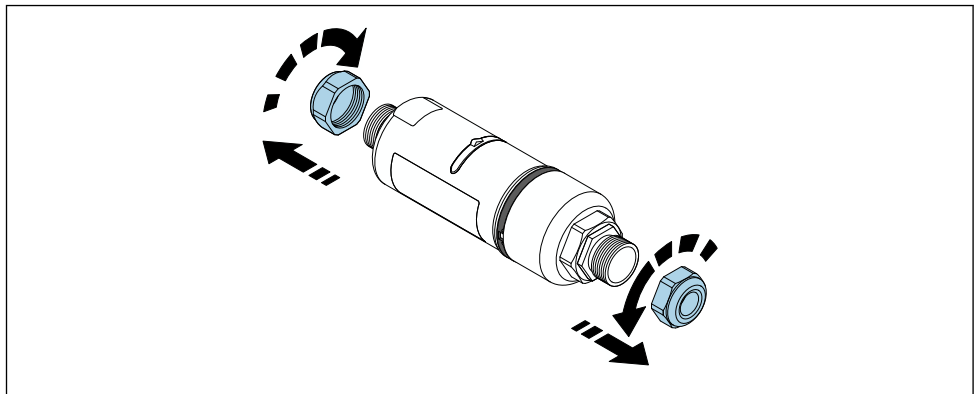
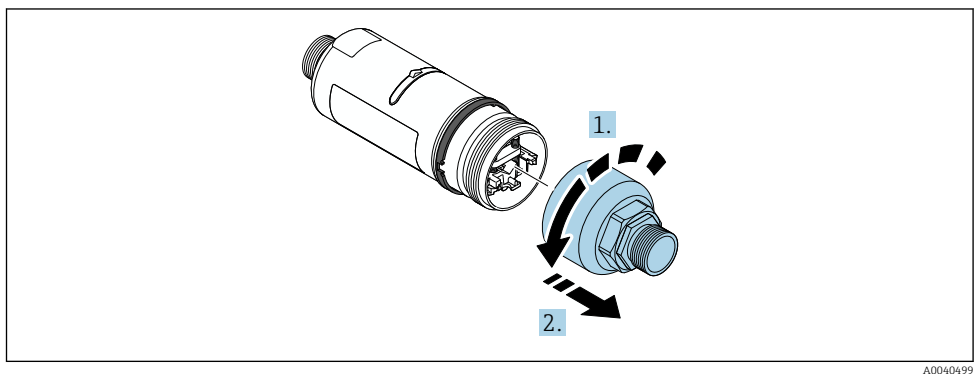
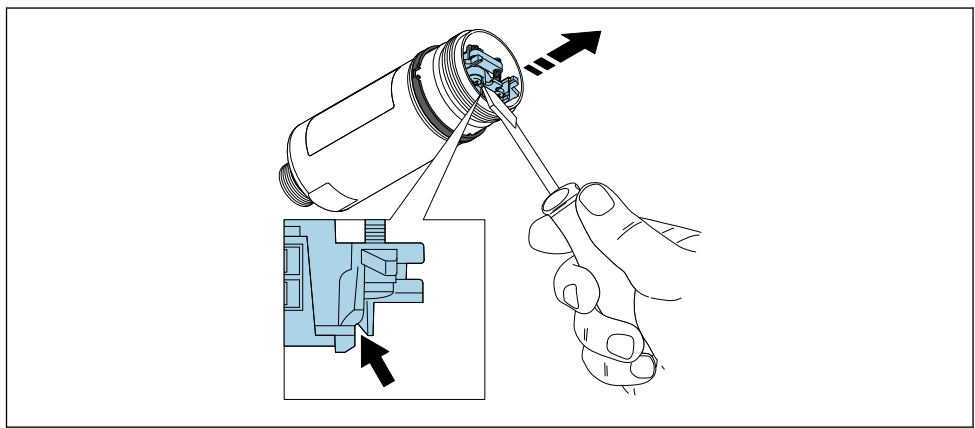
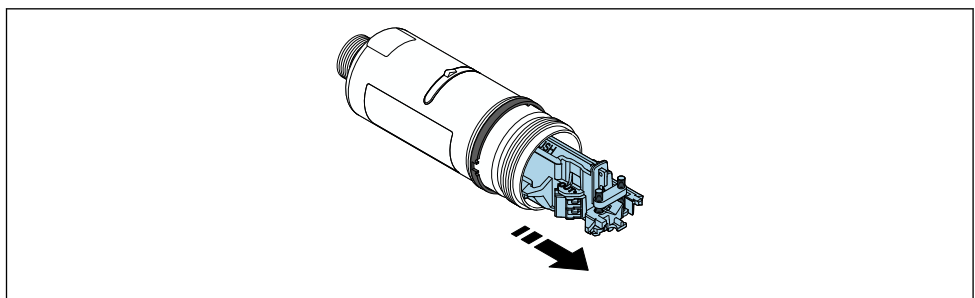
"Remote mounting" overview: → 13




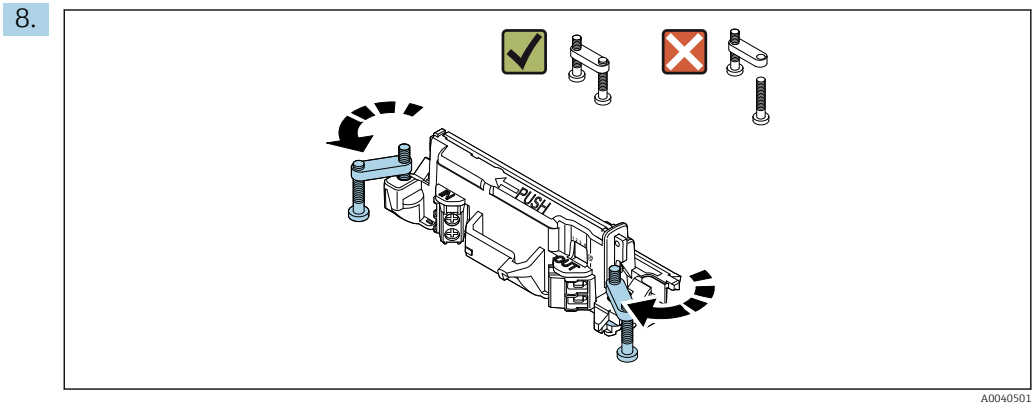
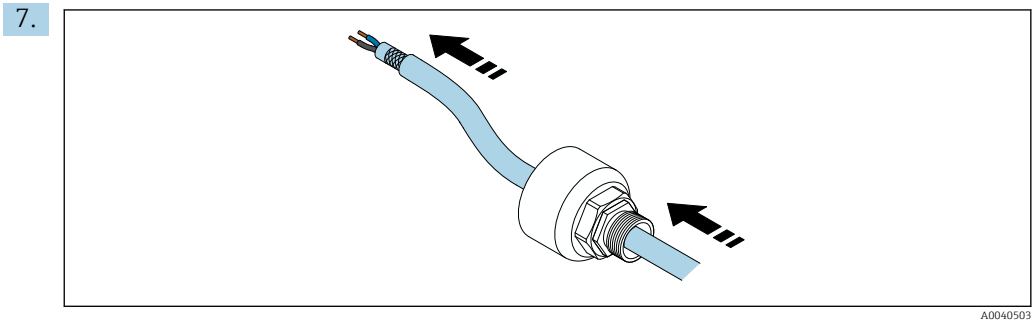
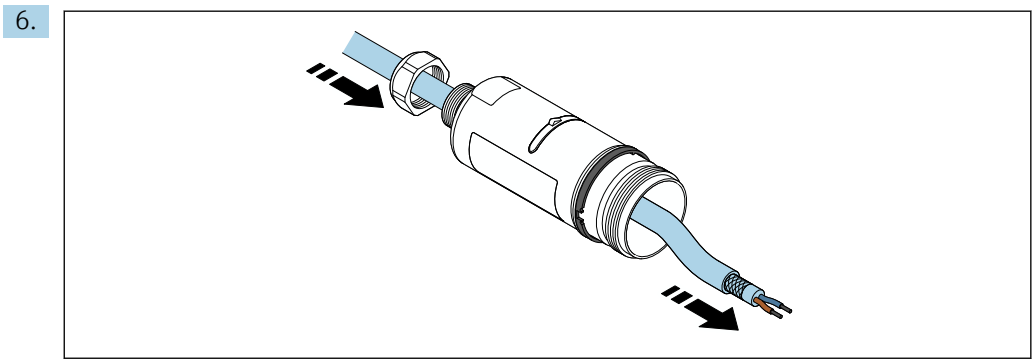
Electrical connection: → 29

#### Tools required

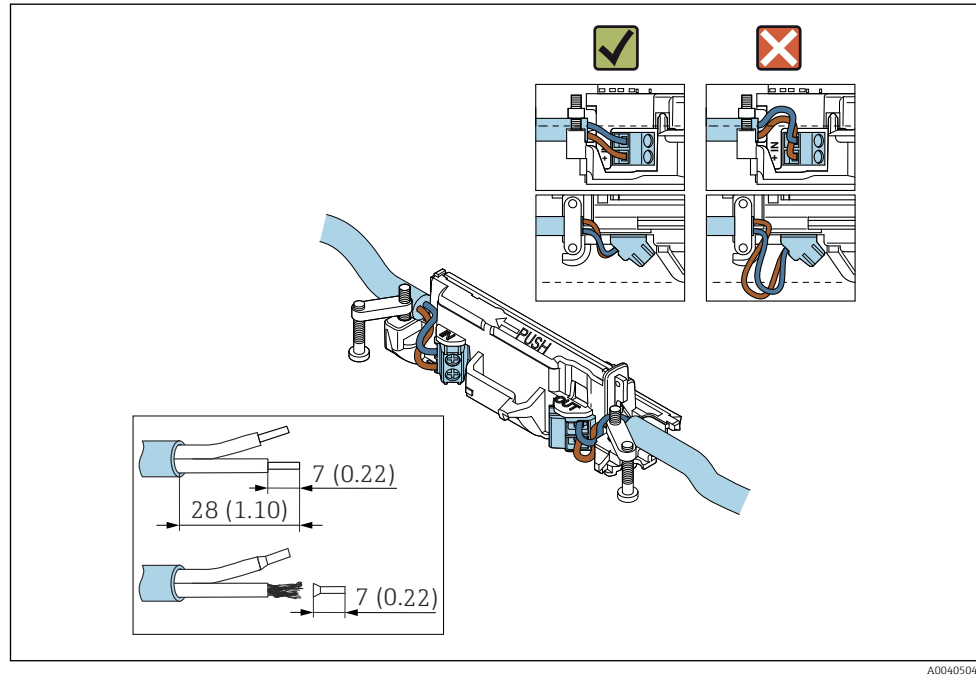
- Wrench AF27
- Wrench AF36

**Mounting the FieldPort SWA50****1.****2.****3.****4.**

- 5.** If you mount the FieldPort SWA50 using the optional mounting bracket, follow the instructions in the "Mounting bracket and FieldPort SWA50" section. →  27



9.

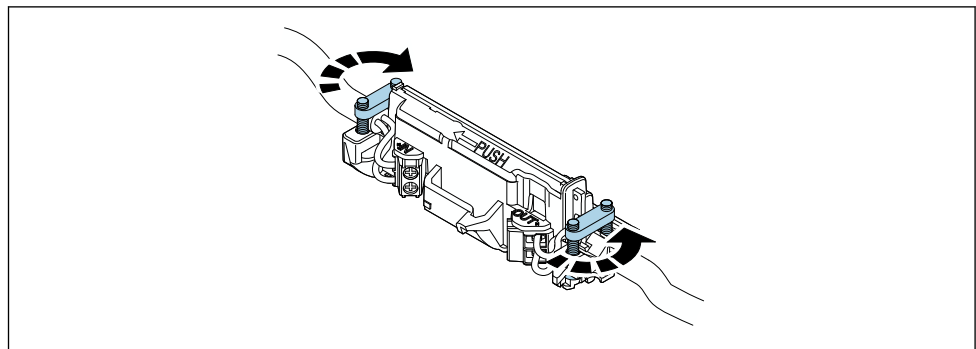


A0040504

**i** If using a cable gland for shielded cable, follow the instructions for stripping  
→ 30.

- i** ■ Electrical connection for 2-wire HART field devices with passive current output:  
→ 30
- Electrical connection for 4-wire HART field devices with passive current output:  
→ 31
- Electrical connection for 4-wire HART field devices with active current output:  
→ 31
- Electrical connection for FieldPort SWA50 without HART field device: → 32

10.

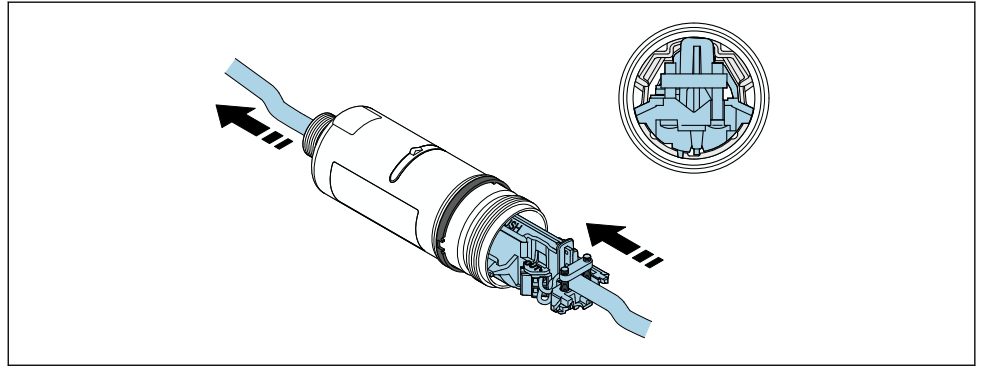


A0040507

Tighten screws for strain relief. Torque:  $0.4 \text{ Nm} \pm 0.04 \text{ Nm}$

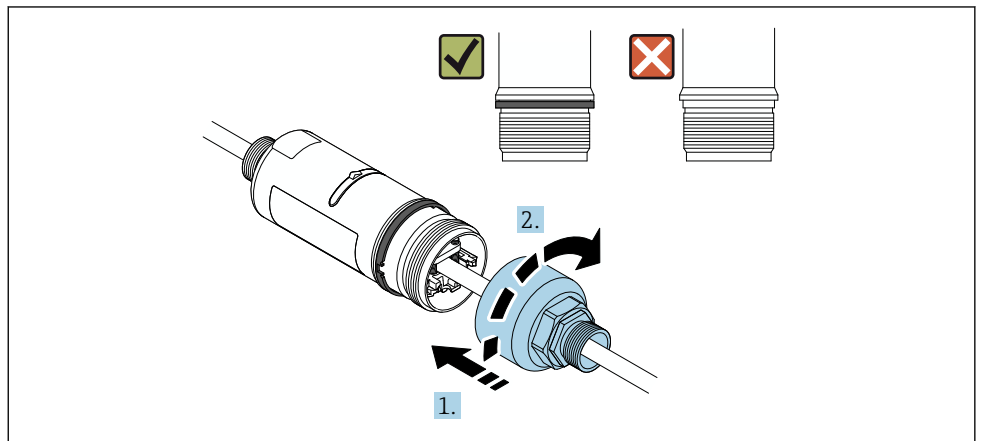


11.



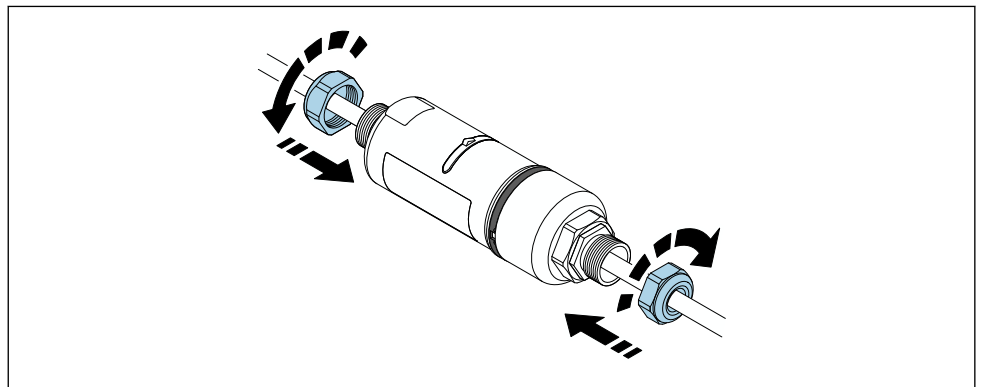
Slide the electronic insert into the guide inside the housing.

12.



Tighten the top housing section in such a way that it is still possible to turn the design ring. Torque:  $5 \text{ Nm} \pm 0.05 \text{ Nm}$

13.



## 5.5 Installing the FieldPort SWA50 with mounting bracket

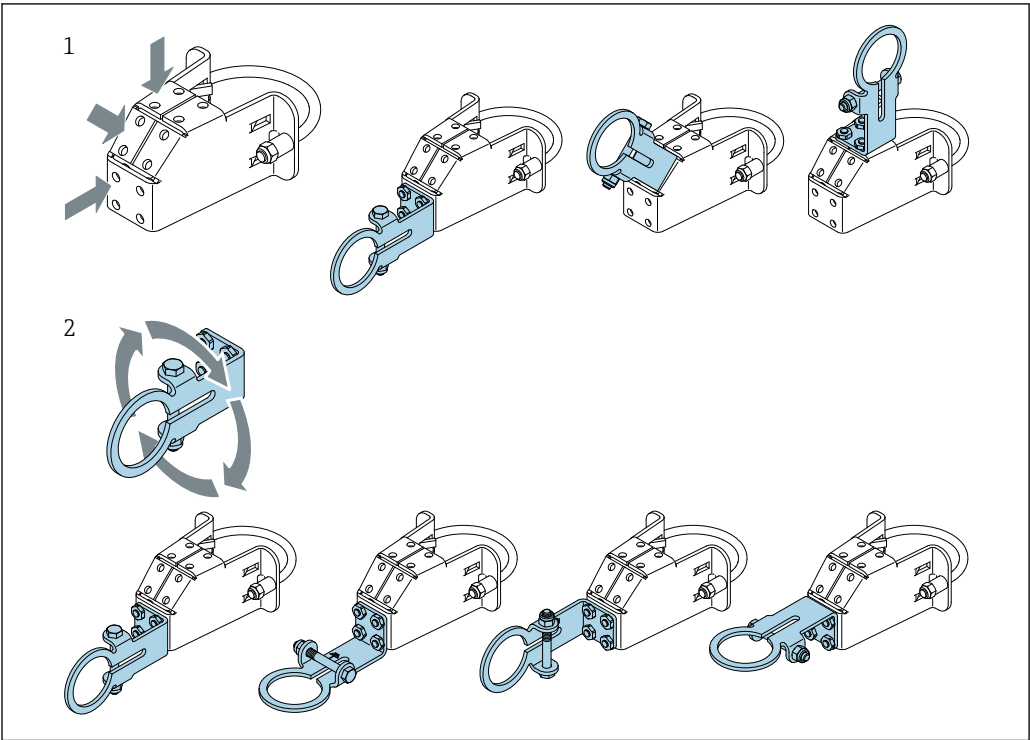
### 5.5.1 Mounting and alignment options

The mounting bracket can be mounted as follows:

- On pipes with a maximum diameter of 65 mm
- On walls

The FieldPort can be aligned as follows using the support bracket:

- Via the various mounting positions on the mounting bracket
- By rotating the support bracket

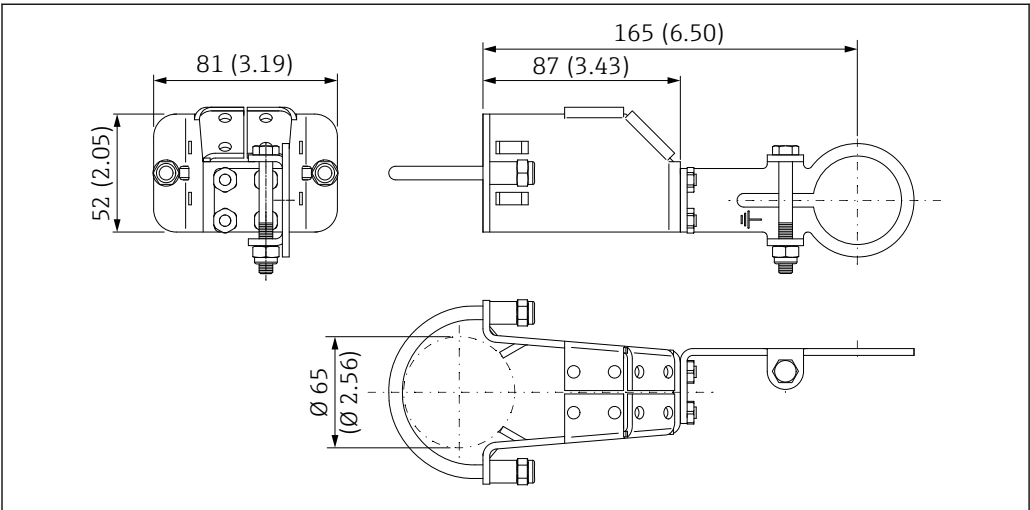


A0043411

4 Alignment options via support bracket

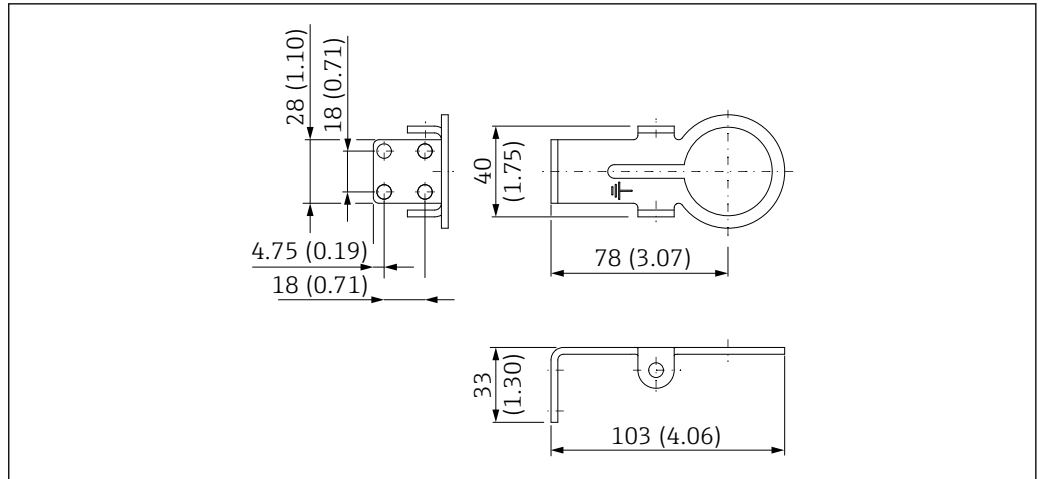
- 1 Various mounting positions on support bracket
- 2 By rotating the support bracket

5.5.2 Dimensions



A0043313

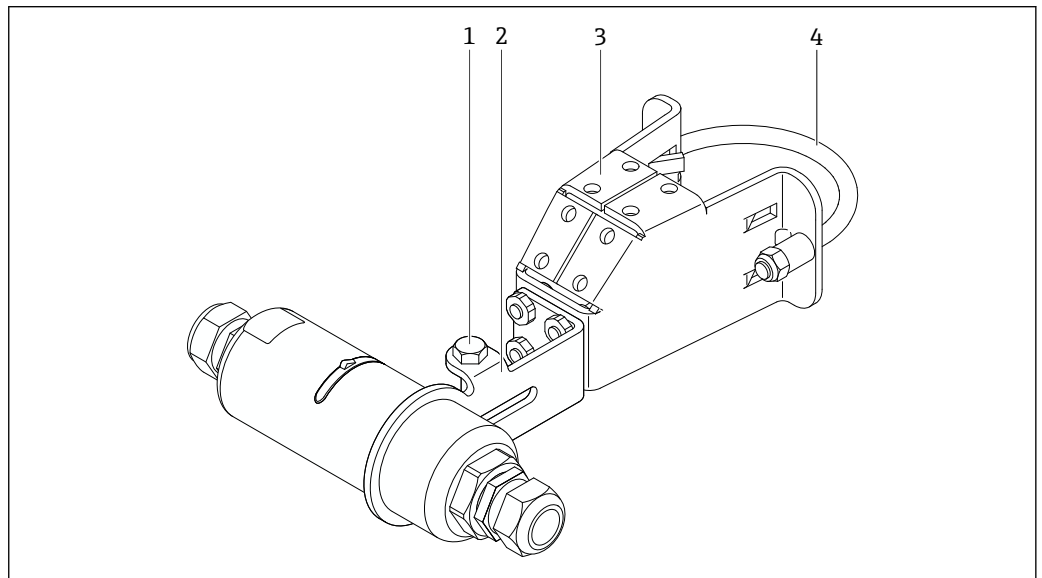
5 Dimensions of mounting bracket – pipe mounting



A0043410

6 Dimensions of retaining bracket – wall mounting

### 5.5.3 Installing the mounting bracket and FieldPort SWA50



A0043312

7 FieldPort SWA50 mounted via optional mounting bracket

- 1 Hexagonal-headed bolt for securing and grounding
- 2 Support bracket
- 3 Mounting bracket
- 4 Round bracket


**i** If you are installing the FieldPort SWA50 using the mounting bracket, you must remove the design ring between the top housing section and the bottom housing section.

#### Tools required

- Wrench AF10
- Allen key size 4

### Installing the mounting bracket on a pipe

- Secure the mounting bracket to the pipe at the desired location. Torque: minimum 5 Nm

 If you change the position of the support bracket on the mounting bracket, tighten the four hexagonal-headed bolts with a torque of 4 Nm to 5 Nm.

### Installing the mounting bracket on a wall

- Secure the support bracket to the wall at the desired location. The screws must be suitable for the wall.

### Mounting the FieldPort SWA50

 Follow the instructions in the "Remote mounting version" section →  21.

1. Unscrew the cable glands of the FieldPort SWA50.
2. Unscrew the top housing section.
3. Remove the electronic insert from the housing.
4. Remove the design ring from the bottom housing section.
5. Slide the bottom housing section into the eyelet of the support bracket.
6. Carry out electrical connection for the FieldPort SWA50.
7. Slide the electronic insert into the bottom housing section.
8. Loosely screw on the top housing section.
9. Align the transmission window of the FieldPort SWA50.
10. Tighten the top housing section. Torque: 5 Nm ± 0.05 Nm
11. Connect the protective ground to the hexagonal-headed bolt.
12. Tighten the hexagonal-headed bolt so that the FieldPort SWA50 is secured in the mounting bracket.

## 5.6 Post-installation check

Is the device undamaged (visual inspection)?	<input type="checkbox"/>
Does the device comply with the required specifications? For example: <ul style="list-style-type: none"> <li>■ Ambient temperature</li> <li>■ Humidity</li> <li>■ Explosion protection</li> </ul>	<input type="checkbox"/>
Are the screws that provide strain relief for the electronic insert tightened with the correct torque?	<input type="checkbox"/>
Is the top housing section tightened with the correct torque?	<input type="checkbox"/>
Are all securing screws, such as those for the optional mounting bracket, firmly tightened?	<input type="checkbox"/>
Are the measuring point identification and labeling correct (visual inspection)?	<input type="checkbox"/>

## 6 Electrical connection

### 6.1 Supply voltage

- Loop-powered 4 to 20 mA
- 24 V DC (min. 4 V DC, max. 30 V DC): min. 3.6 mA loop current required for start-up
- The supply voltage or the power unit must be tested to ensure it meets safety requirements and the requirements for SELV, PELV or Class 2

Voltage drop

- If internal HART communication resistor is deactivated
  - 3.2 V in operation
  - < 3.8 V at start-up
- If internal HART communication resistor is activated (270 Ohm)
  - < 4.2 V at 3.6 mA loop current
  - < 9.3 V at 22.5 mA loop current

**i** To select the supply voltage, pay attention to the voltage drop via the FieldPort SWA50. The remaining voltage must be high enough to enable the start-up and operation of the HART field device.

### 6.2 Cable specification

Use cables that are suitable for the anticipated minimum and maximum temperatures.

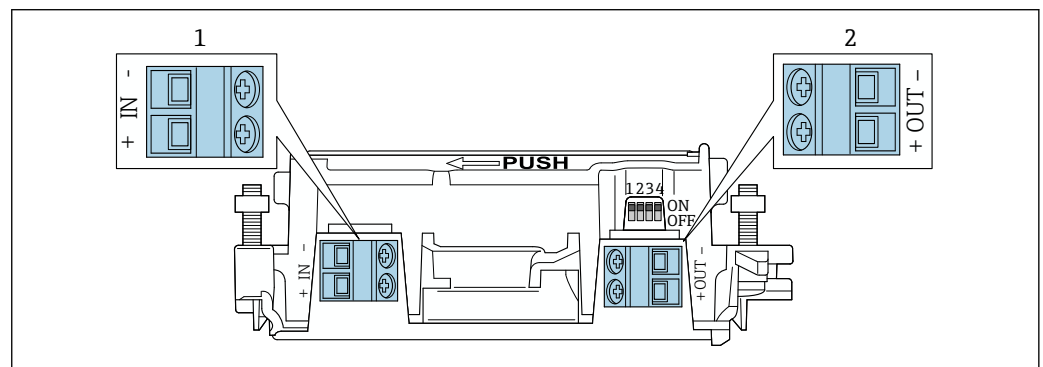
Observe grounding concept of the plant.

2 x 0.25 mm<sup>2</sup> to 2 x 1.5 mm<sup>2</sup>

You can use unshielded cable with or without ferrules and shielded cable with or without ferrules.








**i** If you select the "direct mounting" version and the "4-wire HART field device with active current output and PLC or transmitter" electrical connection version, you can use core cross-sections of 0.75 mm<sup>2</sup> at maximum. If larger core cross-sections are required, we recommend remote mounting.

### 6.3 Terminal assignment



**8** FieldPort SWA50 terminal assignment

- 1 Input terminal IN
- 2 Output terminal OUT

Application	Input terminal IN	Output terminal OUT
2-wire HART field device →  10,  31	Cable from supply voltage, PLC with active current output or transmitter with active current output	Cable to 2-wire HART field device
4-wire HART field device with passive current output →  11,  31	Cable from supply voltage, PLC with active current output or transmitter with active current output	Cable to 4-wire HART field device
4-wire HART field device with active current output →  31	Cable from 4-wire field device with active 4 to 20 mA HART output	PLC or transmitter with passive current output (optional), alternatively wire bridge between terminals OUT+ and OUT–
FieldPort SWA50 without field device →  14,  32	Cable from supply voltage for FieldPort SWA50	Resistor between terminals OUT+ and OUT–

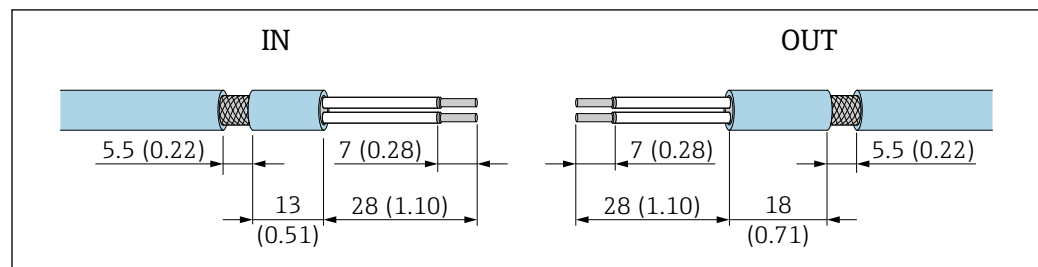
## 6.4 Stripping in the case of a cable gland for shielded cable


If you are using shielded cables and wish to connect the cable shield to the FieldPort SWA50, you must use cable glands for shielded cable.

If you have ordered the "Brass M20 for shielded cable" option for the cable glands, you will receive the following cable glands:

- "Direct mounting" version: 1 cable gland for shielded cable
- "Remote mounting" version: 2 cable glands for shielded cable


When mounting a cable gland for shielded cable, we recommend the following dimensions for stripping. The dimensions for input terminal IN and output terminal OUT are different.

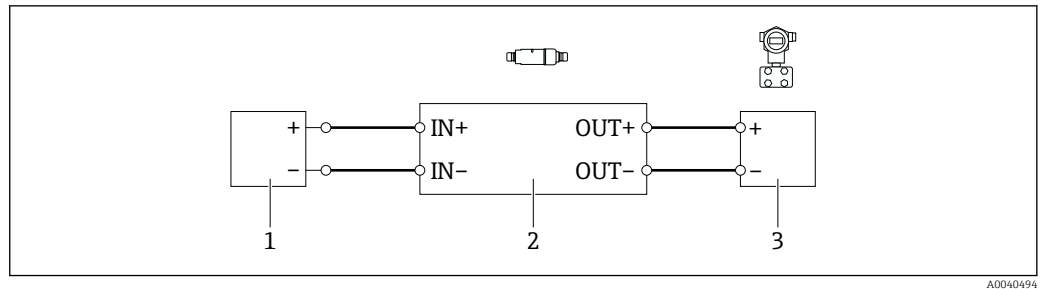


 9 Recommended dimensions for stripping in the case of cable glands for shielded cable for input terminal IN and output terminal OUT

- Sealing area (jacket):  $\varnothing$  4 to 6.5 mm (0.16 to 0.25 in)
- Shielding:  $\varnothing$  2.5 to 6 mm (0.1 to 0.23 in)

## 6.5 2-wire HART field device with passive current output

 Some grounding concepts require shielded cables. If connecting the cable shield to the FieldPort SWA50, you must use a cable gland for shielded cable. See ordering information.

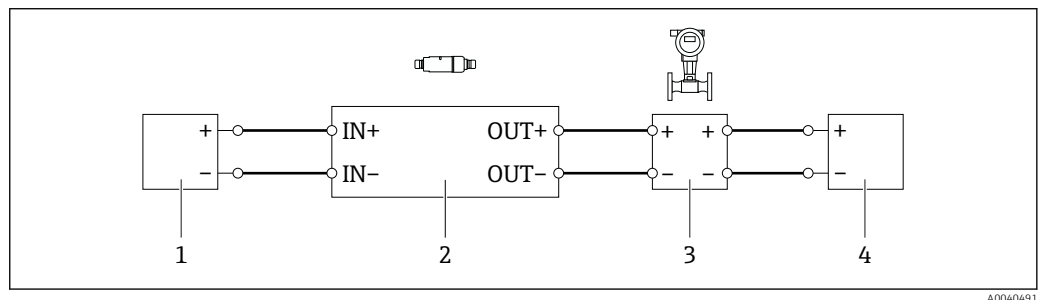


**10** Electrical connection for 2-wire HART field devices with passive current output (optional grounding not shown)

- 1 Supply voltage (SELV, PELV or Class 2) or PLC with active current input or transmitter with active current input
- 2 Electronic insert SWA50
- 3 2-wire field device 4 to 20 mA-HART

## 6.6 4-wire HART field device with passive current output

**i** Some grounding concepts require shielded cables. If connecting the cable shield to the FieldPort SWA50, you must use a cable gland for shielded cable. See ordering information.

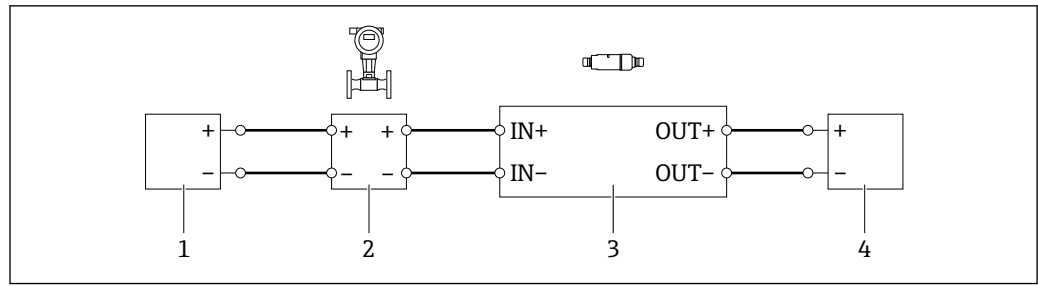


**11** Electrical connection for 4-wire HART field devices with passive current output (optional grounding not shown)

- 1 Supply voltage (SELV, PELV or Class 2) or PLC with active current input or transmitter with active current input
- 2 Electronic insert SWA50
- 3 4-wire field device with passive 4 to 20 mA-HART output
- 4 Supply voltage for 4-wire field device

## 6.7 4-wire HART field device with active current output

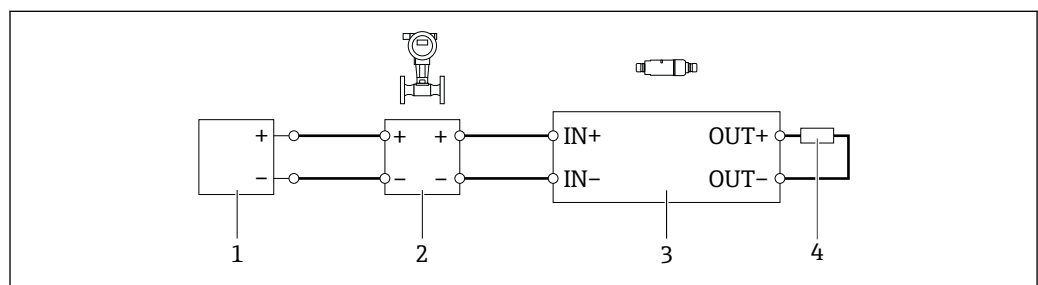
**i** Some grounding concepts require shielded cables. If connecting the cable shield to the FieldPort SWA50, you must use a cable gland for shielded cable. See ordering information.



A0040492

**12** Electrical connection for 4-wire HART field devices with active current output (optionally required grounding not shown) – PLC or transmitter at OUT terminals

- 1 Supply voltage (SELV, PELV or Class 2) for 4-wire HART field device
- 2 4-wire field device with active 4 to 20 mA-HART output
- 3 Electronic insert SWA50
- 4 PLC or transmitter with passive current input



A0045101

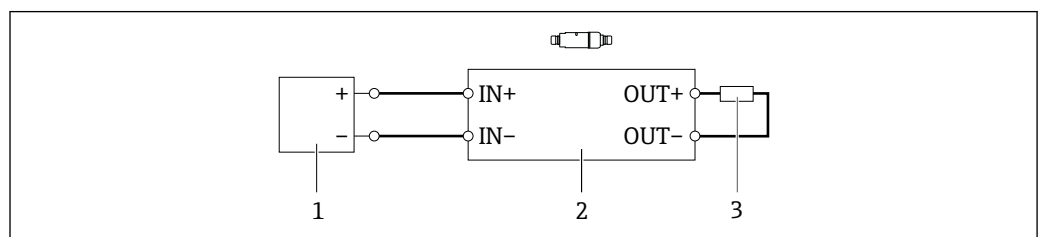
**13** Electrical connection for 4-wire HART field devices with active current output (optionally required grounding not shown) – resistor at OUT terminals

- 1 Supply voltage (SELV, PELV or Class 2) for 4-wire HART field device
- 2 4-wire field device with active 4 to 20 mA-HART output
- 3 Electronic insert SWA50
- 4 Resistor 250 to 500 Ohm min. 250 mW between terminals OUT+ and OUT-

**i** If you select the "direct mounting" version and the "4-wire HART field device with active current output and PLC or transmitter" electrical connection version, you can use core cross-sections of 0.75 mm<sup>2</sup> at maximum. The wires that you insert into the shorter top housing section connect to the opposite terminals IN, and the wires that you insert into the longer bottom housing section connect to the opposite terminals OUT. If larger core cross-sections are required, we recommend remote mounting.

## 6.8 FieldPort SWA50 without HART field device

**i** With this connection version, you can preconfigure the FieldPort SWA50.



A0040493

**14** FieldPort SWA50 without HART field device (optional grounding not showing)

- 1 Supply voltage of FieldPort SWA50, 10 to 30 VDC (SELV, PELV or Class 2)
- 2 Electronic insert SWA50
- 3 Resistor 1.5 kOhm and min. 0.5 W between terminals OUT+ and OUT-



## 6.9 FieldPort SWA50 grounding

### 6.9.1 "Direct mounting" version

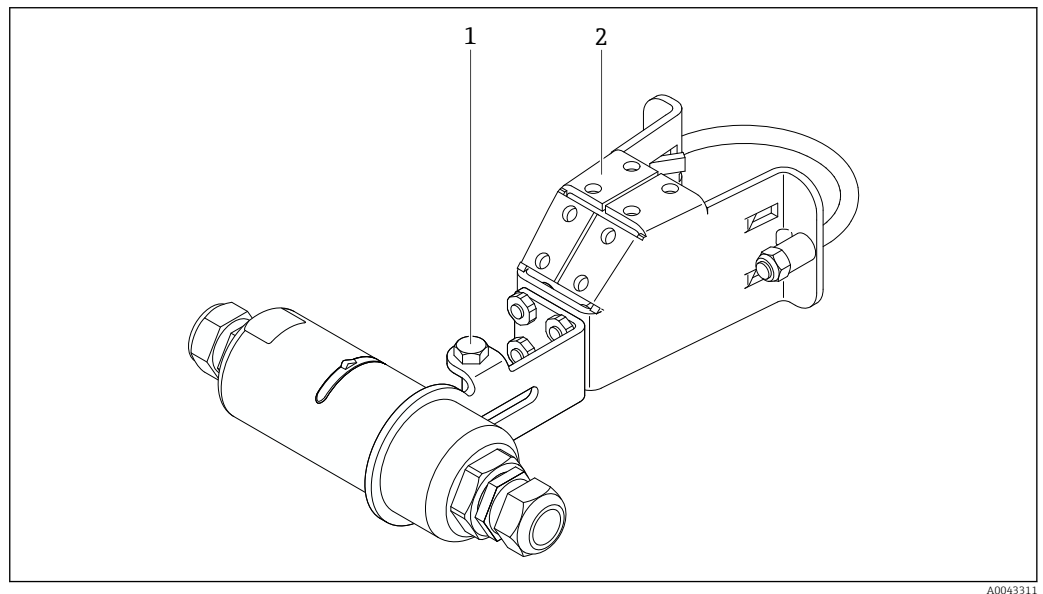
With the "direct mounting" version, the FieldPort SWA50 is grounded via the field device or the metal conduit.

### 6.9.2 "Remote mounting" version

With the "remote mounting" version, ground the FieldPort SWA50 via the optional mounting bracket or a grounding clamp provided by the customer.

#### Optional mounting bracket

If using the mounting bracket, ground the FieldPort SWA50 via the grounding screw.



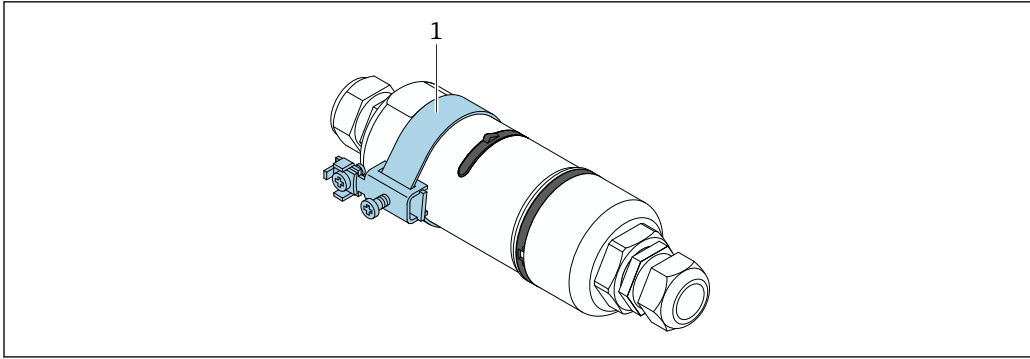
15 Optional mounting bracket

- 1 Hexagonal-headed bolt for securing and grounding
- 2 Optional mounting bracket


#### Grounding clamp provided by customer

The grounding clamp provided by the customer must meet the following requirements:

- Diameter: approx. 40 mm
- Stainless steel
- If the FieldPort SWA50 is used in a hazardous area: suitable for hazardous areas as per DIN EN 62305, Sheet 3 and DIN EN 62561-1



A0041808

 16    *Grounding via grounding clamp*  
1    *Example of grounding clamp provided by customer*

6.10    **Post-connection check**

Are the device and cable undamaged (visual check)?	<input type="checkbox"/>
Do the cables comply with the requirements?	<input type="checkbox"/>
Is the terminal assignment correct?	<input type="checkbox"/>
Have the cables been connected in such a way that no wires, insulation and / or cable shields are jammed?	<input type="checkbox"/>
Is the supply voltage correct?	<input type="checkbox"/>
Is the FieldPort SWA50 grounded, if necessary?	<input type="checkbox"/>

## 7 Operating options

### 7.1 Overview of operating options

The FieldPort SWA50 can be operated as follows via Bluetooth:

- Via smartphone or tablet with the Endress+Hauser SmartBlue app
- Via Endress+Hauser Field Xpert SMTxx tablet PC

The WirelessHART version of the FieldPort SWA50 can be integrated into a WirelessHART network via the Endress+Hauser WirelessHART-Fieldgate SWG70 or via any compatible WirelessHART Fieldgate. More information is available from your Endress+Hauser Sales Center: [www.addresses.endress.com](http://www.addresses.endress.com).

In addition, the WirelessHART version can be operated as follows:

- Local configuration with FieldCare SFE500 or DeviceCare via DTM for FieldPort SWA50
- Remote configuration with FieldCare SFE500 via WirelessHART Fieldgate SWG70 and DTM for FieldPort SWA50 and Fieldgate SWG70

In addition, you can connect the FieldPort SWA50 with the connected HART field device to the Netilion Cloud via the FieldEdge SGC500.



- For detailed information on the Netilion Cloud, see <https://netilion.endress.com>
- For detailed information on the FieldEdge SGC500, see TI01525S.

### 7.2 SmartBlue App

Without the SmartBlue app, the FieldPort SWA50 and the connected HART field device are not visible via Bluetooth. One point-to-point connection is established between the FieldPort SWA50 and one smartphone or tablet.

The SmartBlue app is available to download from the Google Play Store for mobile terminals with Android and from the Apple App Store for iOS devices.



Scan the QR code.

- ↳ The Google Play Store page or the App Store page for downloading the SmartBlue app appears.

#### System requirements



- For the system requirements of the SmartBlue app, see either the Google Play page or the App Store page.

### 7.3 Field Xpert SMTxx




- For detailed information on operating with the Field Xpert SMT70, see BA01709S.
- For detailed information on operating with the Field Xpert SMT77, see BA01923S.

## 8 Commissioning

### 8.1 Requirements

#### 8.1.1 Requirements of the FieldPort SWA50

- The FieldPort SWA50 is electrically connected.
- DIP switch 1 for Bluetooth communication must be set to ON →  43.

#### 8.1.2 Information required for commissioning

You will need the following information for commissioning:

- HART device address of HART field device
- Device tag of HART field device
  - Long tag for HART-6 and HART-7 field devices
  - Short tag for HART-5 field devices
- Device tag of HART field device in WirelessHART network
  - Long tag for HART-6 and HART-7 field devices
  - Device tag for HART-5 field devices



Each device tag in the WirelessHART network must be unique.

You must check the following before commissioning:

- Is there another HART master in the HART loop of the FieldPort SWA50?  
If yes, is it a primary or secondary HART master?
- Is there a HART communication resistor  $\geq 250$  Ohm outside of the FieldPort SWA50 in the 4 to 20 mA loop?  
If yes, is the HART communication resistor connected in series between the "IN+" terminal of the FieldPort SWA50 and the supply voltage, e.g. PLC or active barrier?



In addition to the FieldPort SWA50, only one other HART master is permitted in the HART loop. This other HART master and the FieldPort SWA50 must not be of the same master type.

#### 8.1.3 Initial password

The initial password can be found on the nameplate.

### 8.2 Putting the FieldPort SWA50 into operation

The FieldPort SWA50 can be operated as follows via Bluetooth:

- Via smartphone or tablet with the Endress+Hauser SmartBlue App
- Via Endress+Hauser Field Xpert SMTxx tablet PC

In addition, the WirelessHART version of the FieldPort SWA50 can be operated via FieldCare SFE500.



Operating Instructions for FieldPort SWA50 WirelessHART: BA02046S

## 8.2.1 Commissioning via SmartBlue App

### Burst messages

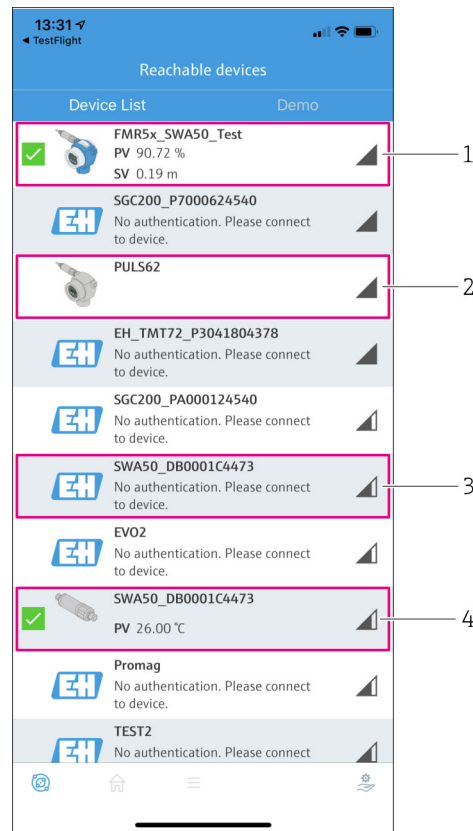
You can change the burst messages via WirelessHART, locally via a Commubox FXA195 using FieldCare SFE500 or via Field Xpert. You cannot change burst messages via the SmartBlue App.

Burst message	Factory configuration
1	Every 5 minutes, the FieldPort SWA50 transmits the process values of the field device in accordance with HART command 3.
2	Every 5 minutes, the FieldPort SWA50 transmits the diagnostic data of the field device in accordance with HART command 48.
3	Not configured
4	Every 5 minutes, the FieldPort SWA50 transmits its own process values in accordance with HART command 3.
5	Every 5 minutes, the FieldPort SWA50 transmits its own diagnostic data in accordance with HART command 48.

### Starting the SmartBlue App and logging in

1. Switch on the supply voltage for the FieldPort SWA50.

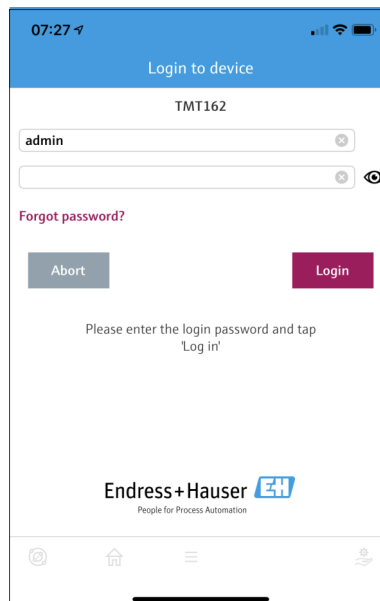
2. Start the SmartBlue App on the smartphone or tablet.
  - ↳ An overview of accessible devices is displayed.



17 Reachable devices (live list)

- 1 Example of FieldPort SWA50 with Endress+Hauser HART field device, already connected to SmartBlue App
- 2 Example of FieldPort SWA50 with HART field device of another manufacturer, already connected to SmartBlue App
- 3 Example of FieldPort SWA50, not yet connected to SmartBlue App
- 4 Example of FieldPort SWA50 without HART field device, already connected to SmartBlue App

3. Select device from list.
  - ↳ The "Device login" page is displayed.



18 Login

- You can establish only **one** point-to-point connection between **one** FieldPort SWA50 and **one** smartphone or tablet.
- ▶ Log in. Enter **admin** as the user name and enter the initial password. The password can be found on the nameplate.
  - ↳ Once the connection has been established successfully, the "Device information" page for the selected device is displayed. → 44
- Change the password after logging in for the first time. → 47


### Checking and adjusting the HART configuration


Perform the following steps to ensure good communication between the FieldPort SWA50 and the connected HART field device.


- The parameters listed in this section can be found in the "HART Configuration" menu.
  - Navigation: Root menu > System > FieldPort SWA50 > Connectivity > HART configuration
  - Menu overview: → 74
- 1. Use the "HART address field device" parameter to check the HART address of the HART field device and adjust it if necessary. In the HART field device and in the FieldPort SWA50, the same HART address must be used for the HART field device. → 47
- 2. Use the "Communication resistor" parameter to check the setting for the HART communication resistor. If there is no HART communication resistor outside of the FieldPort SWA50 in the 4 to 20 mA loop, you must activate the internal HART communication resistor. → 47
- 3. Use the "HART master type" parameter to check the setting for another HART master in the HART loop. In addition to the FieldPort SWA50, only one other HART master is permitted in the HART loop. This other HART master and the FieldPort SWA50 must not be of the same master type. → 47


WirelessHART configuration

Perform the following steps to ensure good communication between the FieldPort SWA50 and the WirelessHART network.

-  The parameters listed in this section can be found in the "HART Configuration" menu.
- Navigation: Root menu > System > FieldPort SWA50 > Connectivity > WirelessHART configuration
1.

 Use the "Network ID" parameter to enter the identification number for the network.  
→  48
2.

 Use the "Join Key" parameter to enter the network password. →  48
3.

 Use the "Connection mode" parameter to establish the connection to the network.  
→  48

8.2.2 Commissioning via Field Xpert

Burst messages

Burst messages for the FieldPort SWA50 are configured in the factory. You can change the burst messages via WirelessHART, locally via a Commubox FXA195 using FieldCare SFE500 or via Field Xpert.

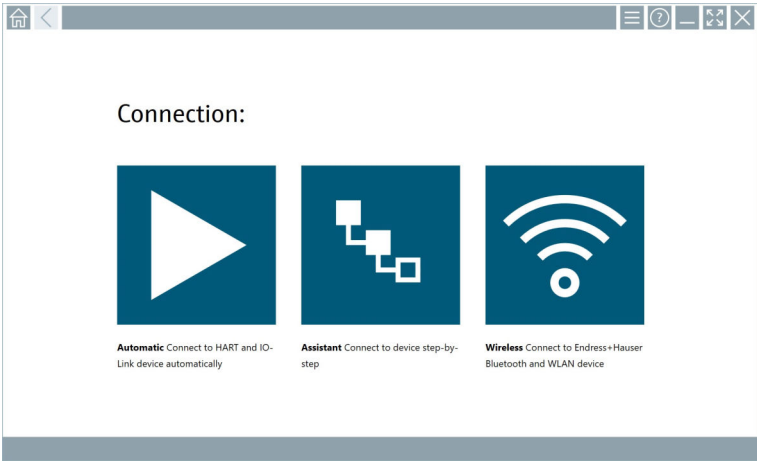
Burst message	Factory configuration
1	Every 5 minutes, the FieldPort SWA50 transmits the process values of the field device in accordance with HART command 3.
2	Every 5 minutes, the FieldPort SWA50 transmits the diagnostic data of the field device in accordance with HART command 48.
3	Not configured
4	Every 5 minutes, the FieldPort SWA50 transmits its own process values in accordance with HART command 3.
5	Every 5 minutes, the FieldPort SWA50 transmits its own diagnostic data in accordance with HART command 48.

Starting the Field Xpert and logging in



1.

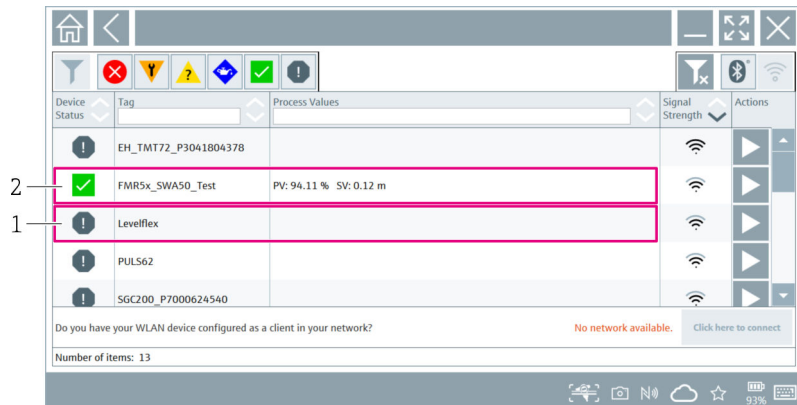
 Switch on the supply voltage for the FieldPort SWA50.
2.


 Start the Field Xpert tablet PC. To do so, double-click Field Xpert on the start screen.  
↳ The following view is displayed:






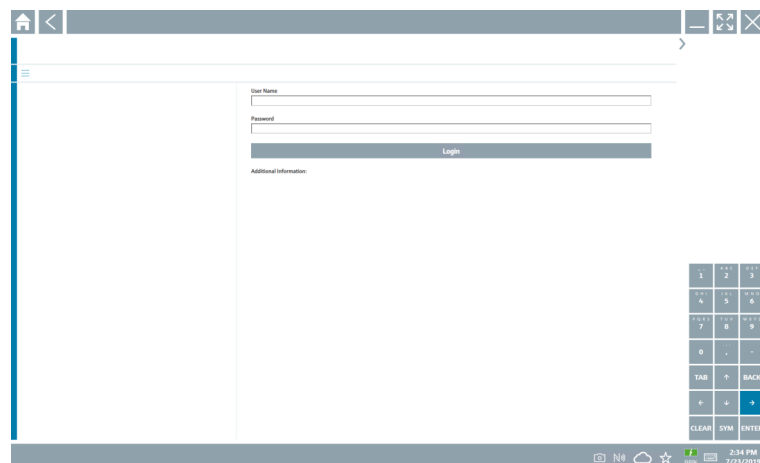
3. Tap the  icon.  
↳ A list of all available Wi-Fi and Bluetooth devices appears.
4. Click the  icon to filter for Bluetooth devices.  
↳ A list of all available Bluetooth devices appears.



 19 Reachable devices (live list)

- 1 Example of FieldPort SWA50 with HART field device, never connected to Field Xpert before
- 2 Example of FieldPort SWA50 with or without HART field device, already connected to Field Xpert

5. Tap the  icon next to the device to be configured.  
↳ The Login dialog box appears.








6. Log in. Enter **admin** as the user name and enter the initial password. The initial password can be found on the nameplate.  
↳ The dialog box for initial commissioning opens.

 Change the password after logging in for the first time. →  47

### Checking and adjusting the HART configuration





Perform the following steps to ensure good communication between the FieldPort SWA50 and the connected HART field device.

-  The parameters listed in this section can be found in the "HART Configuration" menu.
  - Navigation: Root menu > System > FieldPort SWA50 > Connectivity > HART configuration
  - Menu overview: →  74

1. Use the "HART address field device" parameter to check the HART address of the HART field device and adjust it if necessary. In the HART field device and in the FieldPort SWA50, the same HART address must be used for the HART field device.  
→  47
2. Use the "Communication resistor" parameter to check the setting for the HART communication resistor. If there is no HART communication resistor outside of the FieldPort SWA50 in the 4 to 20 mA loop, you must activate the internal HART communication resistor. →  47
3. Use the "HART master type" parameter to check the setting for another HART master in the HART loop. In addition to the FieldPort SWA50, only one other HART master is permitted in the HART loop. This other HART master and the FieldPort SWA50 must not be of the same master type. →  47

### WirelessHART configuration

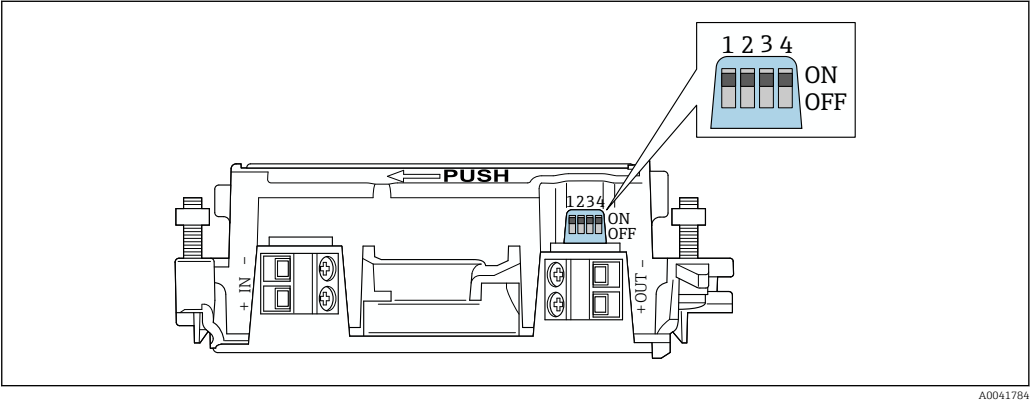
Perform the following steps to ensure good communication between the FieldPort SWA50 and the WirelessHART network.

-  ■ The parameters listed in this section can be found in the "HART Configuration" menu.
  - Navigation: Root menu > System > FieldPort SWA50 > Connectivity > WirelessHART configuration
- 1. Use the "Network ID" parameter to enter the identification number for the network.  
→  48
- 2. Use the "Join Key" parameter to enter the network password. →  48
- 3. Use the "Connection mode" parameter to establish the connection to the network.  
→  48

# 9      Operation

## 9.1      Hardware locking

The DIP switches for hardware-locking are located on the electronic insert.



20      DIP switches for hardware-locking of functions

DIP switch	Function	Description	Factory setting
1	Bluetooth communication	<ul style="list-style-type: none"><li>■ ON: Communication via Bluetooth is possible, e.g. via SmartBlue App and Field Xpert.</li><li>■ OFF: Communication via Bluetooth is not possible.</li></ul>	ON
2	Firmware update	<ul style="list-style-type: none"><li>■ ON: You can carry out firmware updates.</li><li>■ OFF: You cannot carry out firmware updates.</li></ul>	ON
3	Configuration via Bluetooth	<ul style="list-style-type: none"><li>■ ON: Configuration via Bluetooth is possible, e.g. via SmartBlue App and Field Xpert.</li><li>■ OFF: Configuration via Bluetooth is not possible.</li></ul>	ON
4	Reserve	–	–

## 9.2      LED

1 LED

Green: Flashes four times at start-up to indicate that the device is operational

The LED is located on the electronic insert and is not visible from the outside.

# 10 Description of SmartBlue app for SWA50

## 10.1 Menu overview (Navigation)

Menu overview (Navigation): → 74

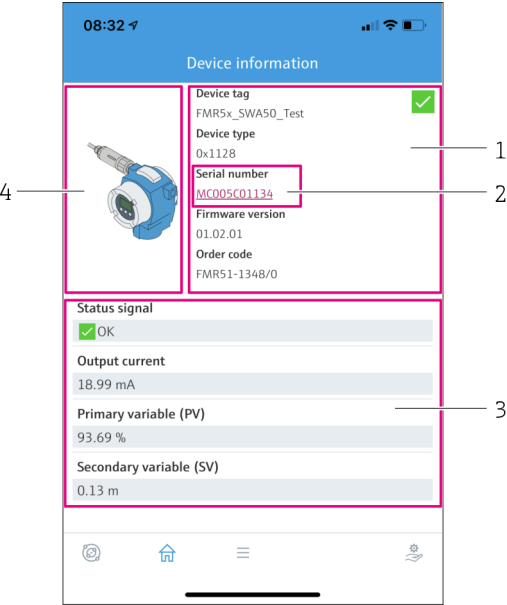
## 10.2 "Device information" page

The following display options are possible for the "Device information" page:

- FieldPort SWA50 with HART field device from Endress+Hauser
- FieldPort SWA50 with HART field device from another manufacturer
- FieldPort SWA50 without connected or accessible HART field device

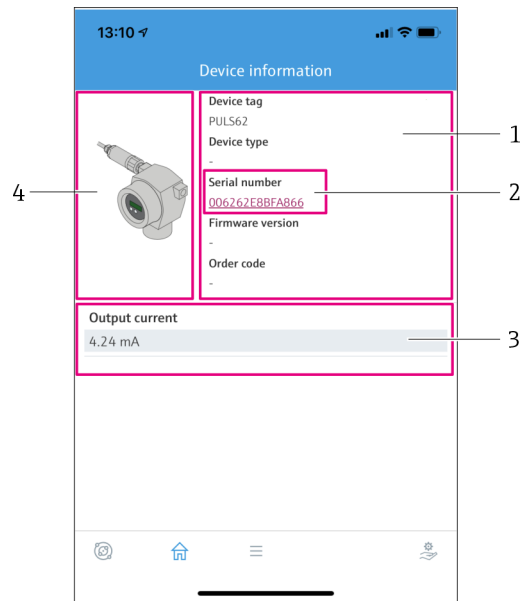
### Information about the serial number shown

For Endress+Hauser field devices with HART 6 and HART 7, the actual serial number is displayed. For field devices from other manufacturers and for Endress+Hauser field devices with HART 5, a unique serial number is calculated. The calculated serial number does not correspond to the actual serial number of the field device.



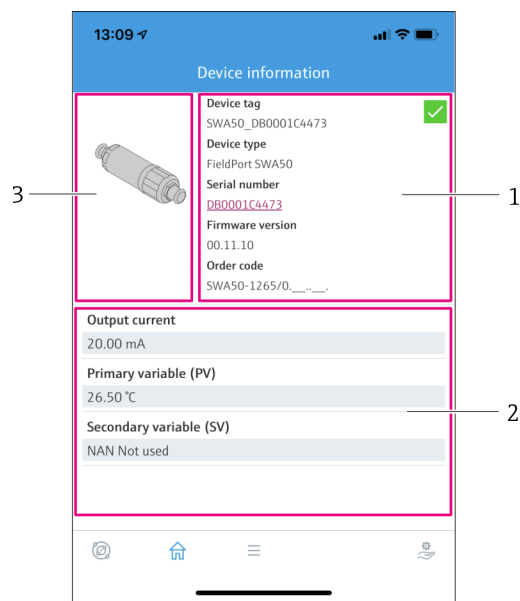
 21 "Device information" view – Example of SWA50 with Endress+Hauser HART field device

- 1 Information about the HART field device connected to the SWA50. Firmware version, order code, device type and status are displayed only for Endress+Hauser field devices with HART 6 and HART 7.
- 2 Serial number
- 3 Status signal and process values of HART field device
- 4 Product image of Endress+Hauser HART field device with SWA50



22 "Device information" view – Example of SWA50 with HART field device from another manufacturer

- 1 Information about the HART field device connected to the SWA50. Firmware version, order code, device type and status are displayed only for Endress+Hauser field devices with HART 6 and HART 7.
- 2 Serial number
- 3 Output current of HART field device
- 4 Product image of HART field device from another manufacturer with SWA50



23 "Device information" view – Example of SWA50 without connected or accessible HART field device

- 1 Information about the SWA50
- 2 Measured values of the SWA50, 20 mA is always displayed as the output current in this case
- 3 Product image of SWA50, since HART field device is either not connected or not accessible

## 10.3 "Application" menu

### 10.3.1 "Measured values" page

Navigation: Root menu > Application > Measured values

The "Measured values" page shows the measured values of the HART field device connected to the FieldPort SWA50. If no HART field device is connected or the HART field device is not accessible, this page shows the measured values of the FieldPort SWA50.

The measured values PV, SV, TV and QV are displayed only for Endress+Hauser devices.

Parameter	Description
Output current	Shows the output current of the HART field device
Primary variable (PV))	Shows the primary variable of the Endress+Hauser HART field device
Secondary variable (SV)	Shows the secondary variable of the Endress+Hauser HART field device
Tertiary variable (TV)	Shows the tertiary variable of the Endress+Hauser HART field device
Quaternary variable (QV)	Shows the quaternary variable of the Endress+Hauser HART field device

### 10.3.2 "HART info" page for HART field device

Navigation: Root menu > Application > HART info)

This page shows the HART information of the HART field device connected to the FieldPort SWA50. The HART information is displayed only for Endress+Hauser devices.

Parameter	Description
Device type	Shows the device type of the HART field device in HEX format, e.g. 0x1128
Manufacturer ID	Shows the manufacturer ID of the HART field device in HEX format, e.g. 0x11 for Endress+Hauser
HART revision	Shows the HART version of the HART field device, e.g. 7
HART descriptor	Shows the description that was entered for the HART field device.
HART message	Shows the message that was entered for the HART field device. The message is transmitted via the HART protocol at the request of the master.
Device ID	Shows the device ID of the HART field device, e.g. 0x7A2F51
No. of preambles	Shows the number of preambles entered.
HART data code	Shows the date that was entered for the HART field devices, e.g. 2020-03-31. The date provides information about a specific event, for example, such as the last configuration change.
Device revision	Shows the hardware revision of the HART field device

## 10.4 "System" menu

### 10.4.1 "Device management" page ("FieldPort SWA50" menu)

Navigation: Root menu > System > FieldPort SWA50 > Device management

Parameter	Description
Device tag	Enter device tag for SWA50.

### 10.4.2 "Connectivity" page ("FieldPort SWA50" menu)

Navigation: Root menu > System > FieldPort SWA50 > Connectivity

**"Bluetooth configuration" page**

Navigation: Root menu > System > FieldPort SWA50 > Connectivity > Bluetooth configuration

This page is used to configure the Bluetooth connection and to carry out firmware updates for the FieldPort SWA50.

Page	Description
Reduce radio transmit power	<p>Enable and disable a reduction in the transmission power of the SWA50.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>■ Yes: The transmission power of the SWA50 is reduced.</li> <li>■ No: The transmission power of the SWA50 is not reduced.</li> </ul> <p><b>Factory setting</b> No</p>
Change Bluetooth password	<p>Change password. To change it, you must enter the user name, the current password and the new password.</p> <p><b>Factory setting</b></p> <ul style="list-style-type: none"> <li>■ User name: admin</li> <li>■ The password can be found on the nameplate.</li> </ul>
Firmware update	→ ⓘ 69

**"HART configuration" page**

Navigation: Root menu > System > FieldPort SWA50 > Connectivity > HART configuration

This page is used to configure the HART parameters for the FieldPort SWA50. In addition, you can configure the HART address of the connected HART field device.

Parameter	Description
HART address field device	<p>Configure the HART address of the HART field device.</p> <p><b>User entry</b> 0 to 63</p> <p><b>Factory setting</b> 0</p>
HART master type	<p>Select HART master type.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>■ Primary master</li> <li>■ Secondary master</li> </ul> <p><b>Factory setting</b> Secondary master</p>
Communication resistor	<p>Select installation site of HART communication resistor.</p> <p><b>Options</b></p> <ul style="list-style-type: none"> <li>■ External: Use external communication resistor provided by customer between IN+ terminal and supply voltage.</li> <li>■ Internal: Use internal communication resistor of SWA50.</li> </ul> <p><b>Factory setting</b> External</p>
HART address SWA50	<p>Configure the HART address of the SWA50 for slave access to SWA50.</p> <p><b>User entry</b> 0 to 63</p> <p><b>Factory setting</b> 15</p>

**"HART Info" page**

Navigation: Root menu > System > FieldPort SWA50 > Connectivity > HART info

This page shows the HART information of the FieldPort SWA50.

Parameter	Description
Device type	Shows the device type of the SWA50 in HEX format (0x11F3)
Manufacturer ID	Shows the manufacturer ID of the SWA50, 0x11 for Endress+Hauser
HART revision	Shows the HART version of the SWA50, e.g. 7
HART descriptor	Shows the description that was entered for the SWA50.
HART message	Shows the message that was entered for the SWA50. The message is transmitted via the HART protocol at the request of the master.
Device ID	Shows the device ID of the SWA50, e.g. 0x7A2F51
No. of preambles	Shows the number of preambles entered.
HART data code	Shows the date that was entered for the SWA50, e.g. 2020-03-31. The date provides information about a specific event, for example, such as the last configuration change.
Device revision	Shows the hardware revision of the SWA50

### "WirelessHART configuration" page

Navigation: Root menu > System > FieldPort SWA50 > Connectivity > WirelessHART configuration

This page is used to configure the WirelessHART connection.

Parameter	Description
Network ID	Enter the identification number of the network to which the FieldPort connects. <b>User entry</b> 0 to 65535
Join Key	Enter the network password. <b>User entry</b> 32 hexadecimal numbers
Join mode	Shows the status of the FieldPort connection process <b>Possible notifications</b> <ul style="list-style-type: none"> <li>Do not attempt to join</li> <li>Join now</li> <li>Attempt to join on powerup or restart</li> </ul>
Join status	Displays the current status while attempting to join. <b>Possible notifications</b> <ul style="list-style-type: none"> <li>Network packets heard</li> <li>ASN Acquired</li> <li>Synchronized to slot time: synchronized with the network.</li> <li>Advertisement heard: request package received for transmission.</li> <li>Join requested</li> <li>Retrying join</li> <li>Join failed</li> <li>Authenticated</li> <li>Network joined</li> <li>Negotiating network properties</li> <li>Normal operation commencing: fully connected</li> </ul>
Radio transmit power	Enter strength of radio signal. <b>User entry</b> 0 or 10 dBm <b>Factory setting</b> 10 dBm <b>Additional information</b> National restriction to 0 dBm is possible, as in Japan for example



### 10.4.3 "Information" page ("FieldPort SWA50" menu)


Navigation: Root menu > System > FieldPort SWA50 > Information

This page shows information about the FieldPort SWA50.

Parameter	Description
Wireless communication	Shows the connection type, such as "Bluetooth" or "WirelessHART"
Device name	Shows the device name for the SWA50
Manufacturer	Shows the manufacturer, "Endress+Hauser" in this case
Serial number	Shows the serial number of the SWA50
Order code	Shows the order code
Extended order code 1	Shows the extended order code 1
Extended order code 2	Shows the extended order code 2
Extended order code 3	Shows the extended order code 3
Firmware version	Shows the active firmware version
Hardware version	Shows the active hardware version

## 10.5 "Field device" menu ("System" menu)

Navigation: Root menu > System > Field device

 The "Field device" menu is available only for Endress+Hauser devices.

### 10.5.1 "Device management" page ("Field device" menu)

Navigation: Root menu > System > Field device > Device management

Parameter	Description
Device tag	Shows the device tag of the HART field device

### 10.5.2 "Information" page ("Field device" menu)

Navigation: Root menu > System > Field device > Information

This page shows information about the HART field device connected to the FieldPort SWA50. This information is displayed for Endress+Hauser field devices with HART 6 and higher.

Parameter	Description
Device name	Shows the device name of the HART field device
Manufacturer	Shows the manufacturer of the HART field device
Serial number	Shows the serial number of the HART field device
Order code	Displays the order code of the HART field device
Extended order code 1	Shows the first part of the extended order code of the HART field device
Extended order code 2	Shows the second part of the extended order code of the HART field device
Extended order code 3	Shows the third part of the extended order code of the HART field device
Firmware version	Shows the active firmware revision of the HART field device

## 11 Configuration and online parameterization

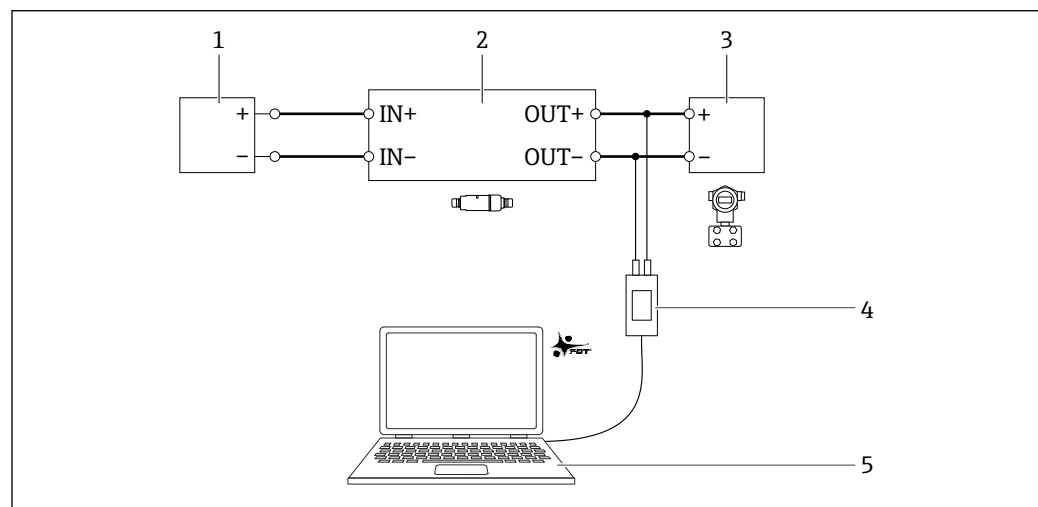
### 11.1 Access options and prerequisites

#### 11.1.1 Access options

The configuration and parameterization procedures are described based on the example of the Endress+Hauser Asset Management Tool FieldCare SFE500.

You can access the FieldPort using FieldCare SFE500 as follows:

- Local configuration using the PC and the Endress+Hauser Commubox FXA195 USB/HART modem
- Remote configuration using the PC and the Endress+Hauser WirelessHART Fieldgate SWG70



24 Example: connection of the PC with FieldCare SFE500 via the Endress+Hauser Commubox FXA195 USB/HART modem for the electrical connection version "Electrical connection for 2-wire HART field devices with passive current output"

- 1 Supply voltage or PLC with active current input or transmitter with active current input
- 2 Electronic insert SWA50 (internal communication resistor enabled)
- 3 2-wire field device 4 to 20 mA-HART
- 4 Endress+Hauser Commubox FXA195 USB/HART modem
- 5 PC with FieldCare SFE500

#### 11.1.2 Required settings in FieldCare

In FieldCare, activate the "Prefer FDT 1.2.1 scanning" option.

Path: FieldCare > Extras > Options > "Scanning" tab > "Scan Result" section

### 11.2 Identification

This page allows you to configure the parameters that are required to identify the FieldPort. The factory settings are displayed in the individual fields.

#### Navigation

Online parameterization > Identification

Device Name: WirelessHART FieldPort / SWA50 / V1.xx      Device Revision: 0

Long Tag: SWA50\_EABC89      Descriptor: SWA50

NE107 Status: ● Good      Timestamp of Status: 12:32:18

Endress+Hauser

Online parameterization

- Identification
- Wireless Communication
- Wired Communication
- Device Variable Mapping
- Application Settings

Long Tag:

Device Tag:

Descriptor:

Date Code:

Message:

Polling Address:

Serial Number:

Ext. Order Code:

Order Code:


Country Code:

Connected      Device

### Description of parameters on "Identification" page

Parameter	Description
Long Tag	<p><b>Prerequisite</b> Devices from HART version 6.0</p> <p><b>Description</b> Enter the name for the FieldPort. This parameter is used for the unique identification of the FieldPort in the network and in the plant. The parameter is used to set the burst mode and for event notification.</p> <p><b>User entry</b> Max. 32 characters from the ISO-Latin-1 character set</p> <p><b>Factory setting</b> SWA50_"Serial Number"</p> <p> The name must be unique in the WirelessHART network.</p>
Device Tag	<p><b>Description</b> Enter the name for the FieldPort.</p> <p><b>User entry</b> Max. 8 characters from the Packed-ASCII character set</p> <p><b>Factory setting</b> -</p>
Descriptor	<p><b>Description</b> Enter a description of the FieldPort such as the function or location, for example.</p> <p><b>User entry</b> Max. 16 characters from the Packed-ASCII character set</p> <p><b>Factory setting</b> SWA50</p>
Date Code	<p><b>Description</b> Enter the date of a specific event, such as the date of the last change.</p> <p><b>User entry</b> dd.mm.yyyy</p>
Message	<p><b>Description</b> Enter a message that can be used as required.</p> <p><b>User entry</b> Max. 32 characters from the Packed-ASCII character set</p> <p><b>Factory setting</b> SWA50</p>

Parameter	Description
<b>Polling Address</b>	<p><b>Description</b> Enter the HART address of the FieldPort on the wired interface.</p> <p><b>User entry</b> 0 to 63</p> <p><b>Factory setting</b> 15</p> <p><b>Additional information</b> As the "Long Tag" and the "MAC Address" are used to identify the FieldPort in the wireless network, you can assign the same device address to different FieldPorts.</p>
Serial Number	<p><b>Description</b> Displays the serial number of the FieldPort.</p>
Extended Order Code	<p><b>Description</b> Displays the extended order code of the FieldPort.</p>
Order Code	<p><b>Description</b> Displays the order code of the FieldPort.</p>
<b>Country Code</b>	<p><b>Description</b> Select the country in which the FieldPort is operated.</p> <p><b>Factory setting</b> Germany</p> <p><b>Additional information</b> The selected country controls the signal strength according to national restrictions and therefore the possible settings for the "Radio Power" parameter.</p>

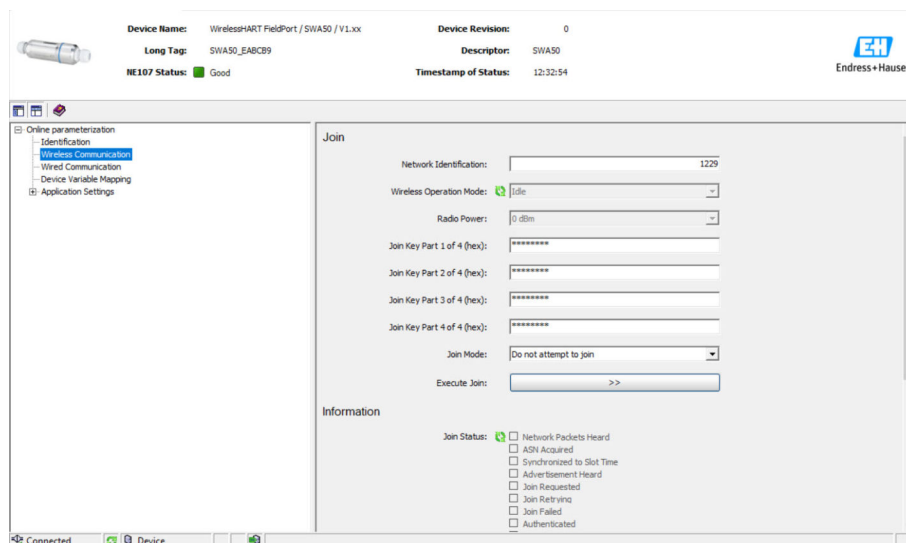
 You can use the following characters for parameters for which you should enter characters from the Packed-ASCII character set: @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ \_ SP ! " # \$ % & ' ( ) \* + , - . / 0 1 2 3 4 5 6 7 8 9 ; ; < = > ?

## 11.3 Wireless Communication

This page is used to configure the parameters that are required to integrate the FieldPort into a wireless network.

### Navigation

Online parameterization > Wireless communication



### Configuring wireless communication and joining the network

1. Configure the parameters in the **Join** section.

2. Click the >> button (Execute Join).

↳ The settings are downloaded to the FieldPort and saved.



You can track the joining status in the "Join Status" parameter.

*Description of parameters on the "Wireless Communication" page*

Parameter	Description
Network Identification	<b>Description</b> Enter the identification number of the network to which the FieldPort should connect.  <b>User entry</b> 0 to 65535  <b>Factory setting</b> 1447
Wireless Operation Mode	<b>Description</b> Displays the status of the joining process, or of an existing FieldPort connection to the network.  <b>Possible display</b> <ul style="list-style-type: none"> <li>▪ Idle: waiting</li> <li>▪ Active search: actively searching for neighbors</li> <li>▪ Negotiation: negotiating connection parameters with the network manager</li> <li>▪ Quarantined: connection denied by the network manager; temporarily excluded from the network</li> <li>▪ Operational: connected</li> <li>▪ Suspended: permanently excluded</li> <li>▪ Deep Sleep/Ultra-Low Power/Passive Search: inactive</li> </ul>
Radio Power	<b>Description</b> Select the strength of the radio signal.  <b>Selection</b> <ul style="list-style-type: none"> <li>▪ 0 dBm</li> <li>▪ 10 dBm</li> </ul> <b>Factory setting</b> 10 dBm
Join Key Part 1 of 4	<b>Description</b> Enter the join key, part 1 of 4.  <b>User entry</b> 8 hexadecimal numbers  <b>Factory setting</b> 456E6472
Join Key Part 2 of 4	<b>Description</b> Enter the join key, part 2 of 4.  <b>User entry</b> 8 hexadecimal numbers  <b>Factory setting</b> 65737320
Join Key Part 3 of 4	<b>Description</b> Enter the join key, part 3 of 4.  <b>User entry</b> 8 hexadecimal numbers  <b>Factory setting</b> 2B204861
Join Key Part 4 of 4	<b>Description</b> Enter the join key, part 4 of 4.  <b>User entry</b> 8 hexadecimal numbers  <b>Factory setting</b> 75736572

Parameter	Description
Join Mode	<p><b>Description</b> Select the event with which the FieldPort joins the network.</p> <p><b>Selection</b></p> <ul style="list-style-type: none"> <li>Do not attempt to join: do not try to join the network.</li> <li>Join now: the device joins the network once you click the "&gt;&gt; (Execute Join)" button.</li> <li>Attempt to join immediately on power-up or reset: join as soon as the device is restarted.</li> </ul> <p><b>Factory setting</b> Do not attempt to join</p>
Execute Join	<p><b>Description</b> Click this button to write the configured parameters to the FieldPort and use them.</p> <p><b>Additional information</b> If the "Join Mode" parameter is set to "Join now", the FieldPort attempts to join the network.</p>
Join Status	<p><b>Description</b> Displays the current status when the device is attempting to join the network.</p> <p><b>Possible display</b></p> <ul style="list-style-type: none"> <li>Network Packets Heard</li> <li>ASN Acquired: "Absolute Slot Number (ASN)" has been received</li> <li>Synchronized to Slot Time: synchronized with the network</li> <li>Advertisement Heard: received advertising packet to send data</li> <li>Join Requested</li> <li>Join Retrying</li> <li>Join Failed</li> <li>Authenticated</li> <li>Network Joined</li> <li>Negotiating Network Properties</li> <li>Normal Operation Commencing: the FieldPort is fully connected</li> </ul>
Total Number of Neighbors	<p><b>Description</b> Displays the number of neighboring WirelessHART devices to which a connection has been made.</p>
Number of Advertising Packets Received	<p><b>Description</b> When the device joins the network, indicates the number of advertising packets which were sent by the neighboring devices or WirelessHART gateways and received by the FieldPort.</p>
Number of Join Attempts	<p><b>Description</b> Displays the number of join attempts the FieldPort made before it joined the network.</p>
Active Advertising Shed Time [hh:mm:ss]	<p><b>Description</b> Enter the time for active advertising to join the network. During this time, the FieldPort attempts to allow other FieldPorts to join the network more quickly. The "Request Active Advertising" button must be pressed.</p> <p><b>User entry</b> hh:mm:ss</p> <p><b>Factory setting</b> 00:40:00</p>
Request Active Advertising	<p><b>Description</b> Click the button to activate the "Active Advertising Shed Time" parameter in the FieldPort.</p>
Number of Neighbors Advertising	<p><b>Description</b> Displays the number of neighbors that transmit advertising packets to send data.</p>


## 11.4 Wired Communication

This page is used to configure the parameters that are required for HART communication between the FieldPort and the connected HART field device.

## Navigation

Online parameterization > Wired communication

Description of parameters on the "Wired Communication" page

Parameter	Description
Polling Address	<p><b>Description</b> Displays the HART address of the FieldPort.</p> <p><b>Factory setting</b> 15</p>
Master Type	<p><b>Description</b> Select the HART master type for the FieldPort.</p> <p><b>Selection</b></p> <ul style="list-style-type: none"> <li>Primary Master</li> <li>Secondary Master</li> </ul> <p><b>Factory setting</b> Secondary Master</p> <p><b>Additional information</b></p> <p> In addition to the FieldPort, only one other HART master is permitted in the HART loop. This other HART master and the FieldPort must not be of the same master type.</p>
Preambles	<p><b>Description</b> Enter the number of preambles.</p> <p><b>User entry</b> 5 to 50</p> <p><b>Factory setting</b> 5</p>
Retries	<p><b>Description</b> Enter the number of times an attempt is made to establish communication between the FieldPort and the HART field device.</p> <p><b>User entry</b> 2 to 5</p> <p><b>Factory setting</b> 3</p>
Communication resistor	<p><b>Description</b> Select the installation site of the HART communication resistor.</p> <p><b>Selection</b></p> <ul style="list-style-type: none"> <li>External: use external communication resistor at customer's site. The communication resistor must be <math>\geq 250</math> Ohm and be located in series between the IN+ terminal of the FieldPort and the supply voltage, such as the PLC or active barrier.</li> <li>Internal: use the FieldPort's internal communication resistor.</li> </ul> <p><b>Factory setting</b> External</p>

Parameter	Description
HART Address Field Device	<b>Description</b> Enter the HART address of the HART field device. <b>User entry</b> 0 to 63 <b>Factory setting</b> 0
Field Device Database	<b>Description</b> Displays the HART information of the HART field device connected to the FieldPort.

11.5 Device Variable Mapping

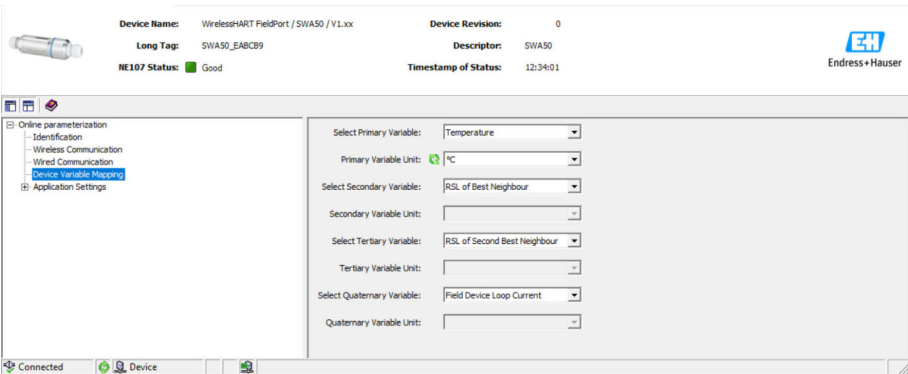
The FieldPort can output the value and the status of different variables. On this page, you can configure up to four variables that are displayed in the network.

You can choose the following variables:

- Temperature: current temperature
- RSL of Best Neighbor
- RSL of Second Best Neighbor
- Field Device Loop Current

Navigation

Online parameterization > Device Variable Mapping



Description of parameters on the "Device Variable Mapping" page

Parameter	Description
Select Primary Variable	<b>Description</b> Select the primary variable. <b>Selection</b> See list. <b>Factory setting</b> Temperature
Primary Variable Unit	<b>Description</b> Select the unit for the primary variable. <b>Selection</b> The options depend on the variable chosen. <b>Factory setting</b> °C



Parameter	Description
Select Secondary Variable	<b>Description</b> Select the secondary variable. <b>Selection</b> See list. <b>Factory setting</b> RSL of Best Neighbor
Secondary Variable Unit	<b>Description</b> Select the unit for the secondary variable. <b>Selection</b> The options depend on the variable chosen. <b>Factory setting</b> dBm
Select Tertiary Variable	<b>Description</b> Select the tertiary variable. <b>Selection</b> See list. <b>Factory setting</b> RSL of Second Best Neighbor
Tertiary Variable Unit	<b>Description</b> Select the unit for the tertiary variable. <b>Selection</b> The options depend on the variable chosen. <b>Factory setting</b> dBm
Select Quaternary Variable	<b>Description</b> Select the fourth (quaternary) variable. <b>Selection</b> See list. <b>Factory setting</b> Field Device Loop Current
Quaternary Variable Unit	<b>Description</b> Select the unit for the quaternary (fourth) variable. <b>Selection</b> The options depend on the variable chosen. <b>Factory setting</b> mA

## 11.6 Burst Mode

### General information

In the burst mode, slave devices can periodically send information, such as process values, without a request from the master.

The FieldPort is responsible for requesting this information from the HART field device connected to the FieldPort and for forwarding this information to the WirelessHART gateway. In addition, the FieldPort can also send its own process values, i.e. the device variables, to the WirelessHART gateway.

In a typical configuration, the four device variables are sent at regular periods from the connected HART field device to the WirelessHART gateway. You can use burst command number 3 and 48 for this purpose. We recommend setting the same period for both commands. The FieldPort wakes the HART field device, accepts the device variables and sends them with the configured period.

We recommend configuring a second burst message for the FieldPort so that the FieldPort information is also available for host applications in the WirelessHART gateway.

Configure the device variables on the "Device Variable Mapping" page → 56.

- If FieldCare or another configuration tool communicates with the FieldPort via a modem, such as FXA 195 for example, the transmission of burst information is interrupted.
- Some HART field devices are also able to send burst information. In this case, we recommend activating the burst mode in the FieldPort only. The burst settings of the FieldPort are not synchronized with the burst settings of the HART field device.

"Burst Mode" page and "Burst Mode 1" to "Burst Mode 5" pages

The "Burst Mode" page provides an overview of which burst modes are configured. You can define up to 5 different burst mode messages in the "Burst Mode 1" to "Burst Mode 5" pages.

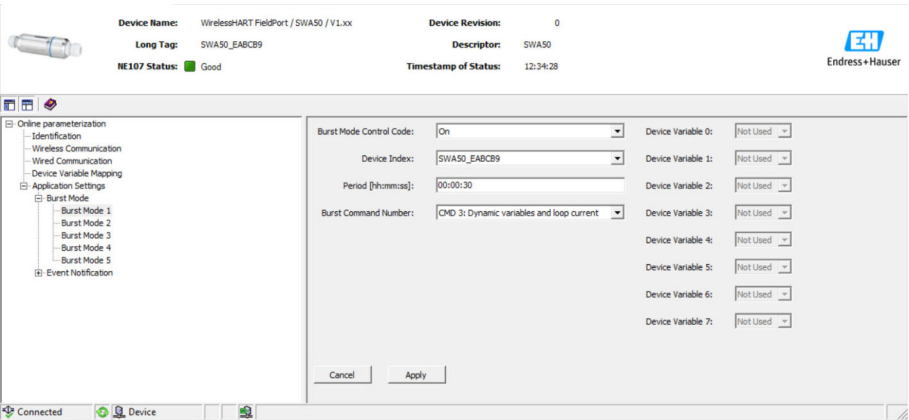
You can also configure the burst mode in the offline mode. The burst mode takes effect as soon as the FieldPort joins the network.

Navigation

- Online parameterization > Application Settings > Burst Mode > Burst Mode 1
- Online parameterization > Application Settings > Burst Mode > Burst Mode 2
- Online parameterization > Application Settings > Burst Mode > Burst Mode 3
- Online parameterization > Application Settings > Burst Mode > Burst Mode 4
- Online parameterization > Application Settings > Burst Mode > Burst Mode 5

Burst messages for the FieldPort SWA50 – factory configuration

Burst message	Factory configuration
1	Every 5 minutes, the FieldPort SWA50 transmits the process values of the field device in accordance with HART command 3.
2	Every 5 minutes, the FieldPort SWA50 transmits the diagnostic data of the field device in accordance with HART command 48.
3	Not configured
4	Every 5 minutes, the FieldPort SWA50 transmits its own process values in accordance with HART command 3.
5	Every 5 minutes, the FieldPort SWA50 transmits its own diagnostic data in accordance with HART command 48.




Configuring the burst mode

1. Open the page for the parameterization of a burst message, e.g. **Burst Mode 1** page.
2. For the **Burst Mode Control Code** parameter, select the **On** option.  
↳ The gray input boxes turn white. Entries are possible.
3. For the **Device Index** parameter, select either the FieldPort SWA50 or the connected HART field device.

4. For the **Period** parameter, enter the period after which the FieldPort should send the device variables.
5. For the **Burst Command Number** parameter, select the number for the burst command.
6. Click the **Apply** button.
  - ↳ The settings are downloaded to the FieldPort and saved.
7. Select **OK** to confirm.
  - ↳ The burst mode takes effect immediately when the FieldPort is connected to the network.  
A message is displayed if the FieldPort is not connected to the network. Press **OK** to confirm the message. The burst mode takes effect as soon as the FieldPort joins the network.

*Parameter description for the "Burst Mode 1" to "Burst Mode 5" pages*

Parameter	Description
<b>Burst Mode Control Code</b>	<b>Description</b> Enable and disable the burst mode.  <b>Selection</b> <ul style="list-style-type: none"> <li>▪ Off: Burst mode is disabled. The input boxes are grayed out and write-protected.</li> <li>▪ On: Burst mode is enabled. The input boxes are white. Entries are possible.</li> </ul> <b>Factory setting</b> <ul style="list-style-type: none"> <li>▪ Burst mode 1, 2, 4 and 5: On →  58</li> <li>▪ Burst mode 3: Off</li> </ul>
<b>Device Index</b>	<b>Prerequisite</b> Burst mode: On  <b>Description</b> Select the device for which the burst mode is effective.  <b>Selection</b> <ul style="list-style-type: none"> <li>▪ SWA50</li> <li>▪ Connected field device</li> </ul> <b>Factory setting</b> SWA50
<b>Period [hh:mm:ss]</b>	<b>Prerequisite</b> Burst mode: On  <b>Description</b> Enter the period after which the FieldPort sends the device variables to the WirelessHART gateway.  <b>User entry</b> <ul style="list-style-type: none"> <li>▪ 00:00:08</li> <li>▪ 00:00:16</li> <li>▪ 00:00:32</li> <li>▪ Any time entry is possible after 00:01:00</li> </ul> <b>Factory setting</b> 05:00:00

Parameter	Description
<b>Burst Command Number</b>	<p><b>Prerequisite</b> Burst mode: On</p> <p><b>Description</b> Select the burst command number. Description of burst command: → ⓘ 60. For additional information, see the HART Specification.</p> <p><b>Selection/user entry</b></p> <ul style="list-style-type: none"> <li>Device Index "SWA50": Select 3, 9 or 48 from a dropdown list</li> <li>Device Index "Connected field device": Enter 1, 2, 3, 9, 33 or 48</li> </ul> <p><b>Factory setting</b> 1</p> <p><b>Additional information</b></p> <ul style="list-style-type: none"> <li>You can configure any commands you wish for connected field devices. Refer to the appropriate Operating Instructions for further details.</li> <li>Use command 3 and 48 if in doubt.</li> </ul>
Device Variable Code 0 to Device Variable Code 7	<p><b>Prerequisite</b></p> <ul style="list-style-type: none"> <li>Burst mode: On</li> <li>Burst command number: 9 or 33</li> </ul> <p><b>Description</b> Select the device variables that are transmitted with the burst message.</p> <p><b>Selection/user entry</b></p> <ul style="list-style-type: none"> <li>Device Index "SWA50": Device variable code from dropdown list</li> <li>Device Index "Connected field device": Enter device variable code</li> </ul> <p><b>Factory setting</b> 250</p> <p><b>Additional information</b> Refer to the documentation of the field device for the device variables of the connected field device.</p>

#### Description of the burst command for the FieldPort SWA50

Burst command	Description
3	Transmits the value of the 4 to 20 mA signal and up to 4 pre-defined device variables and the associated unit. Device variables: First variable, second variable, third variable and fourth variable.
9	The <b>Device Variable Code 0</b> to <b>Device Variable Code 7</b> fields are enabled. Transmits the value, the unit and the status of up to 8 device variables.
48	Transmits the additional device status.

#### Description of the burst command for the field device connected to the FieldPort

Burst command	Description
1	Transmits the value and the unit of the "First Variable".
2	Transmits the value of the 4 to 20 mA signal and the corresponding value as a percentage, e.g. 4 mA and 0 % or 12 mA and 50 %.
3	Transmits the value of the 4 to 20 mA signal and up to 4 pre-defined device variables and the associated unit. Device variables: First variable, second variable, third variable and fourth variable.
9	The <b>Device Variable Code 0</b> to <b>Device Variable Code 7</b> fields are enabled. Transmits the value, the unit and the status of up to 8 device variables.
33	The <b>Device Variable Code 0</b> to <b>Device Variable Code 3</b> fields are enabled. Transmits the value and the unit of up to 4 device variables.
48	Transmits the additional device status.

## 11.7 Event Notification

### General information

Event notification is a special application similar to the burst mode. An event notification is sent as soon as there are changes in the device configuration or device status, regardless of whether data are already being sent by burst mode commands. You can use the status included in the device status byte, the extended device status byte and in command 48 for event notification. You can define a specific number of bits that will trigger event notification.

Event notifications have a lower priority than burst modes. Event notifications are given a time stamp indicating when a notification was triggered for the first time. You can define up to 2 different event notifications.

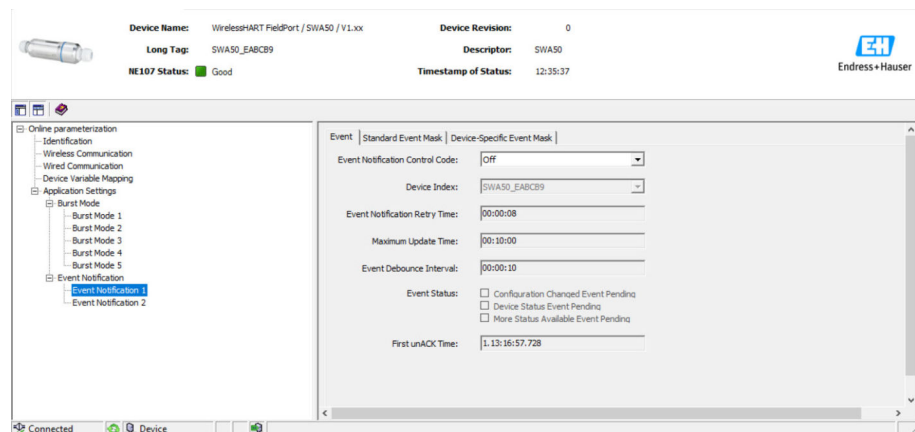
### "Event Notification Control Code" page and "Event Notification Control Code 1" and "Event Notification Control Code 2" pages

The "Event Notification Control Code" page provides an overview of the event notifications that are configured. You can define 2 different event notifications using the "Event Notification Control Code 1" and "Event Notification Control Code 2" pages.

You can also configure event notifications offline. The event notifications take effect as soon as the FieldPort is connected to the network.

### Navigation

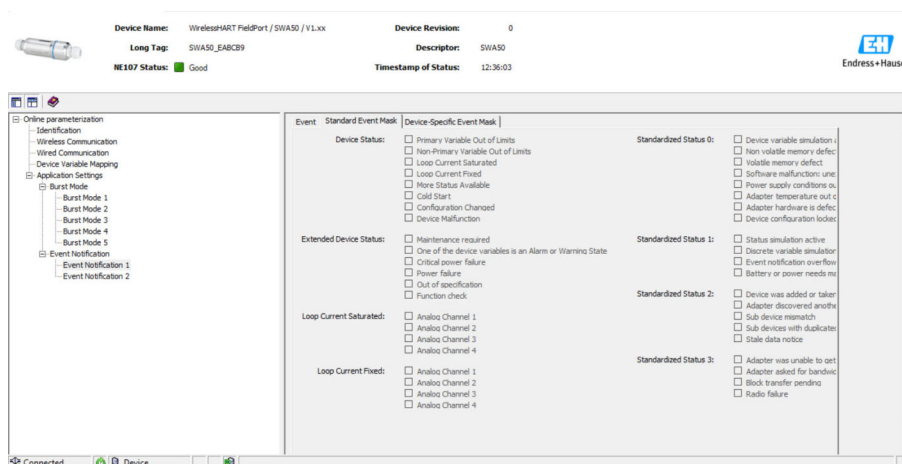
- Online parameterization > Application Settings > Event Notification > Event Notification 1  
Online parameterization > Application Settings > Event Notification > Event Notification 1
- Online parameterization > Application Settings > Event Notification > Event Notification 2  
Online parameterization > Application Settings > Event Notification > Event Notification 2



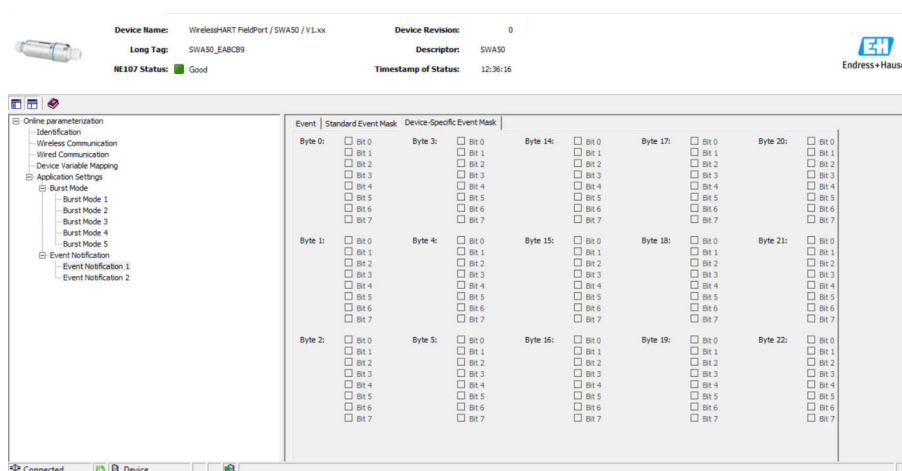
### Configuring event notification

1. Open the page for configuring an event notification, e.g. the **Event Notification Control Code 1** page.
2. On the "Event" tab, select the **On** option for the **"Event Notification Control Code"** parameter.  
↳ The gray fields become white. It is possible to enter data.
3. For the **Device Index** parameter, select either the FieldPort SWA50 or the connected HART field device.
4. Configure the remaining parameters on the "Event" tab.

5. On the "Standard Event Mask" tab, enable the desired event notifications by clicking the individual check box(es) in front of the event. Multiple selection is possible.



6. On the "Device-Specific Event Mask" tab, enable the desired event notifications by clicking the individual check box(es) in front of the event. Multiple selection is possible. See the Operating Instructions for the selected device ("Device index" parameter).



7. Click the **Apply** button.

↳ The settings are downloaded to the FieldPort and saved.

8. Click the **OK** button.

↳ The event is monitored immediately once the FieldPort is connected to the network.

A message is displayed if the FieldPort is not connected to the network. Press **OK** to acknowledge the message. The event takes effect as soon as the FieldPort is connected to the network.

*Description of parameters for "Event Notification", "Event" tab*

Parameter	Description
<b>Event Notification Control Code</b>	<p><b>Description</b> Enable and disable the event notification mode.</p> <p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Off: the event notification mode is disabled. The entry fields are grayed out and write-protected.</li> <li>■ On: the event notification mode is enabled. It is possible to enter data.</li> </ul> <p><b>Factory setting</b> Off</p> <p><b>Additional information</b> The event notification parameters are written to the FieldPort after the "Apply" button is clicked.</p>
<b>Device Index</b>	<p><b>Prerequisite</b> Event notification: on</p> <p><b>Description</b> Select the device for which the event notification parameters are active.</p> <p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ SWA50</li> <li>■ Connected field device</li> </ul> <p><b>Factory setting</b> SWA50</p>
<b>Event Notification Retry Time</b>	<p><b>Prerequisite</b> Event notification: on</p> <p><b>Description</b> Enter the time between two attempts to transmit event notification. The transmission attempt is repeated until the FieldPort receives confirmation of receipt.</p> <p><b>User entry</b></p> <ul style="list-style-type: none"> <li>■ 00:00:01</li> <li>■ 00:00:02</li> <li>■ 00:00:04</li> <li>■ 00:00:08</li> <li>■ 00:00:16</li> <li>■ 00:00:32</li> <li>■ From 00:01:00, any time can be specified</li> </ul> <p><b>Factory setting</b> 00:30:00</p>
<b>Maximum Update Time</b>	<p><b>Prerequisite</b> Event notification: on</p> <p><b>Description</b> Enter the maximum time that is used if no event change occurs. If no event occurs, the FieldPort sends event notification after this period of time. If an event notification occurs during this time, the timer is restarted.</p> <p><b>User entry</b></p> <ul style="list-style-type: none"> <li>■ 00:00:01</li> <li>■ 00:00:02</li> <li>■ 00:00:04</li> <li>■ 00:00:08</li> <li>■ 00:00:16</li> <li>■ 00:00:32</li> <li>■ From 00:01:00, any time can be specified</li> </ul> <p><b>Factory setting</b> 00:30:00</p>
<b>Event Debounce Interval</b>	<p><b>Prerequisite</b> Event notification: on</p> <p><b>Description</b> Enter the time that an event must last before the event notification is sent.</p>

Parameter	Description
Event Status	<p><b>Prerequisite</b> Event notification: on</p> <p><b>Description</b> Indicates whether and which event notifications have been sent and have not yet been acknowledged. If the check box is ticked, event notification has been sent but not yet acknowledged.</p> <p><b>Possible display</b></p> <ul style="list-style-type: none"> <li>■ "Configuration Changed" event pending</li> <li>■ "Device Status" event pending</li> <li>■ "More Status Available" event pending</li> </ul> <p><b>Factory setting</b> No check boxes ticked</p>
First unACK Time	<p><b>Prerequisite</b> Event notification: on</p> <p><b>Description</b> Indicates how long the event notification shown under the "Event Status" parameter has been pending.</p> <p><b>Factory setting</b> 00:00:00</p>

*Description of parameters for "Event Notification", "Standard Event Mask" tab*

Parameter	Description
Device Status	<p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Primary Variable Out of Limits</li> <li>■ Non-Primary Variable Out of Limits</li> <li>■ Loop Current Saturated</li> <li>■ Loop Current Fixed</li> <li>■ More Status Available</li> <li>■ Cold Start</li> <li>■ Configuration Changed</li> <li>■ Device Malfunction</li> </ul>
Extended Device Status	<p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Maintenance required</li> <li>■ One of the device variables is an Alarm or Warning State</li> <li>■ Critical power failure</li> <li>■ Failure</li> <li>■ Out of specification</li> <li>■ Function check</li> </ul>
Loop Current Saturated	<p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Analog Channel 1</li> <li>■ Analog Channel 2</li> <li>■ Analog Channel 3</li> <li>■ Analog Channel 4</li> </ul>
Loop Current Fixed	<p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Analog Channel 1</li> <li>■ Analog Channel 2</li> <li>■ Analog Channel 3</li> <li>■ Analog Channel 4</li> </ul>
Standardized Status 0	<p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Device variable simulation active</li> <li>■ Non volatile memory defect</li> <li>■ Volatile memory defect</li> <li>■ Software malfunction: unexpected condition.</li> <li>■ Power supply conditions out of range</li> <li>■ Adapter temperature out of specified range.</li> <li>■ Adapter hardware is defective.</li> <li>■ Device configuration locked</li> </ul>



Parameter	Description
Standardized Status 1	<b>Selection</b> <ul style="list-style-type: none"> <li>Status simulation active</li> <li>Discrete variable simulation active</li> <li>Event notification overflow</li> <li>Battery or power needs maintenance</li> </ul>
Standardized Status 2	<b>Selection</b> <ul style="list-style-type: none"> <li>Device was added or disconnected from the wired interface.</li> <li>Adapter discovered another master of same type.</li> <li>Sub device mismatch</li> <li>Sub devices with duplicated IDs found</li> <li>Stale data notice</li> </ul>
Standardized Status 3	<b>Selection</b> <ul style="list-style-type: none"> <li>Adapter was unable to get required bandwidth.</li> <li>Adapter asked for bandwidth and is awaiting a response.</li> <li>Block transfer pending</li> <li>Radio failure</li> </ul>

### Description of parameters for "Event Notification", "Device-Specific Event Mask" tab



Monitoring of device-specific events

- HART field device: see the Operating Instructions for the connected HART field device
- FieldPort SWA50: see the following table

#### Monitoring of standard events for FieldPort SWA50

Byte	Bit	Description
0	0	No join attempt started so far.
	1	Adapter is not connected to a wireless network.
	2	No alternative path to a neighbor.
	3	Adapter has no join key.
	4	Adapter could not join the wireless network.
	5	WirelessHART started.
	6	Bluetooth connection active.
	7	–
1	0	Adapter cannot communicate with the field device.
	1	HART modem failure
	2	–
	3	–
	4	–
	5	Adapter is in configuration mode.
	6	Adapter is searching for connected devices.
	7	–
2	0	Adapter hardware is defective.
	1	Adapter is executing a self-test.
	2	Adapter temperature out of specified range.
	3	–
	4	Number of write cycles to FLASH at critical level.
	5	Number of write cycles of FLASH at maximum level.
	6	–
	7	–

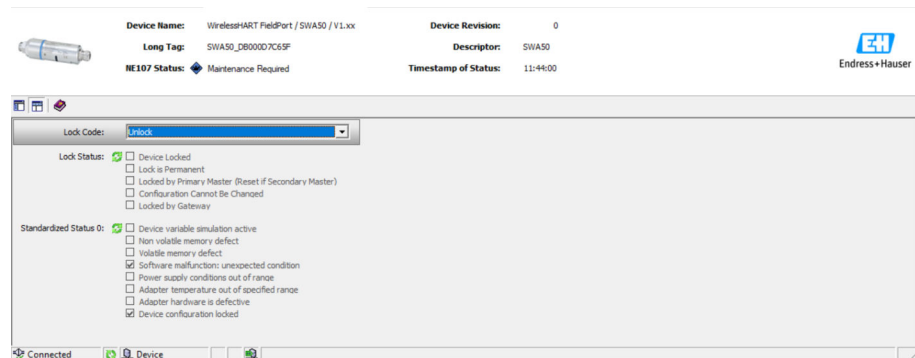
Byte	Bit	Description
3	0	–
	1	–
	2	–
	3	–
	4	–
	5	–
	6	Burst or event notification exist without field device
	7	–
4	0	Wired device has additional status information.
	1	Wired device is not working correctly.
	2	–
	3	–
	4	–
	5	–
	6	–
	7	–
5	0	Not used
	1	DIP-Switch 1: Bluetooth-Communication activated
	2	DIP-Switch 2: Firmware update activated
	3	DIP-Switch 3: Configuration via Bluetooth activated
	4	DIP-Switch 4: Spare activated
	5	–
	6	–
	7	–

## 12 Additional DTM functions

### 12.1 Lock / Unlock

This page is used to protect the FieldPort from unauthorized access via the DTM. If the lock is activated and DIP switch 3 is set to "On", parameterization via Bluetooth is still possible.

If the "Device configuration locked" option is activated in the "Standardized Status 0" section, DIP switch 3 is set to "Off" and parameterization via Bluetooth is not possible.



*Description of parameters on the "Lock / Unlock" page*

Parameter	Description
Lock Code	<p>Select the type of lock for the DTM to the FieldPort.</p> <p><b>Selection</b></p> <ul style="list-style-type: none"> <li>■ Unlocked: the FieldPort is not protected. All parameters can be modified.</li> <li>■ Lock Temporary: the FieldPort is locked. A FieldPort reboot or power failure will unlock the FieldPort.</li> <li>■ Lock Permanent: the FieldPort is permanently locked. A FieldPort reboot or power failure will not unlock the FieldPort.</li> <li>■ Lock All: the FieldPort is locked permanently for all masters.</li> </ul> <p>If you select another option for the "Lock Code" parameter, the new option is active immediately.</p>
Lock Status	<p>Displays the current access status of the DTM to the FieldPort. If a check box is ticked, the statement applies.</p> <p><b>Possible display</b></p> <ul style="list-style-type: none"> <li>■ Device Locked</li> <li>■ Lock is Permanent</li> <li>■ Locked by Primary Master (Reset if Secondary Master): the FieldPort has been locked by the primary master.</li> <li>■ Configuration Cannot Be Changed</li> <li>■ Locked by Gateway</li> </ul>

## 13 Diagnosis and troubleshooting

### 13.1 Diagnosis



Health Status:

### 13.2 Troubleshooting

Fault	Corrective action
No communication between HART field device and FieldPort.	Check settings of HART parameters in the FieldPort. <ul style="list-style-type: none"> <li>SmartBlue app and FieldXpert: Root menu &gt; System &gt; FieldPort SWA50 &gt; Connectivity &gt; HART Configuration →  47</li> <li>FieldCare: Wired communication</li> </ul>
No Bluetooth communication between the FieldPort and the SmartBlue app.	Check if Bluetooth communication is enabled →  43.
No Bluetooth communication between the FieldPort and the Field Xpert.	Check if Bluetooth communication is enabled →  43.
No process values from third-party HART field devices in the SmartBlue app.	For third-party HART field devices, use the Field Xpert . For device variables, see Technical Information TI01468S.
The FieldPort does not connect to the WirelessHART network.	<ul style="list-style-type: none"> <li>It can take several minutes to establish a connection.</li> <li>Check network identification and network access key of the FieldPort and the WirelessHART gateway. The FieldPort and WirelessHART gateway must use the same network identification and network access key.</li> <li>Check if the FieldPort is correctly installed.</li> </ul>

## 14 Maintenance



### 14.1 General maintenance

We recommend periodic visual inspections of the device.

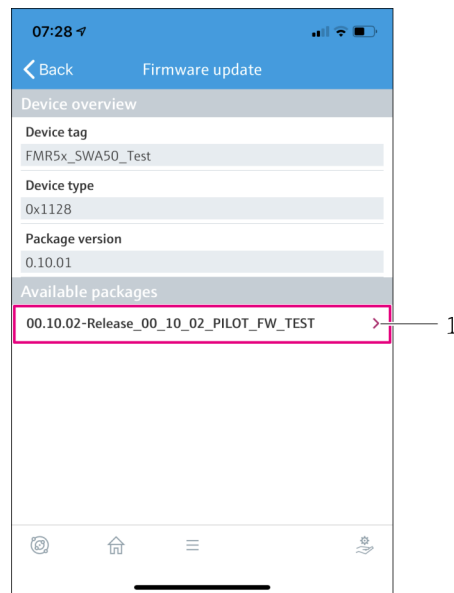
### 14.2 Updating the firmware


You can carry out firmware updates for the FieldPort SWA50 via the SmartBlue app.

#### Requirements

- The smartphone battery is charged or the smartphone is connected to a power supply.
  - The bluetooth signal quality of the smartphone is sufficient.
  - In the case of the FieldPort SWA50, DIP switch 2 must be set to ON.
  - Do not interrupt the supply voltage while carrying out a firmware update for the FieldPort SWA50 and the HART field device.
  - During the firmware update, at least 10 mA must be transmitted from the connected HART field device. This can be achieved by simulating the current output at the HART field device, for example. You can check the current value on the "Device information" page in the SmartBlue app. →  44
- If there is no HART field device connected to the FieldPort SWA50, or if the HART field device cannot be reached, it is assumed that the loop current is sufficiently high.  
→  32

1. Copy update packages to the SmartBlue app.
2. Open the **Firmware update** page. Navigation: Root menu > System > FieldPort SWA50 > Connectivity > Bluetooth configuration
3. Select update package from the list of available packages.

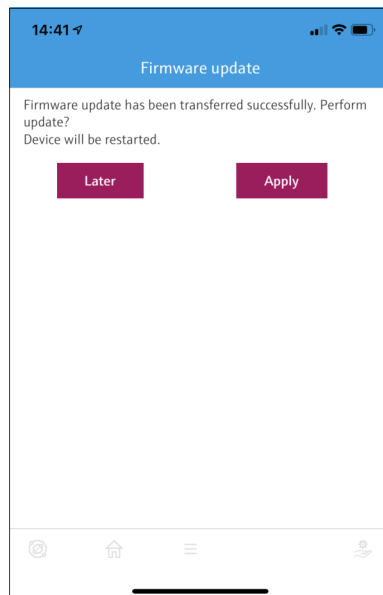


 25 "Firmware update" page

1 Example of a package

4. Tap the **Start update** button to download the firmware update to the FieldPort SWA50. If the update cannot be downloaded, the error message "Internal firmware update error" is displayed.

5. Wait until the firmware update has been downloaded. The remaining time is displayed.
  - ↳ The following view is displayed:



6. Tap either the **Apply** button or the **Later** button.
  - ↳ **Apply** button: The FieldPort SWA50 is restarted and the firmware update is installed on the FieldPort SWA50.
  - Later** button: The firmware update is not installed until the next time the FieldPort SWA50 is restarted.
7. Wait for restart.
8. Connect the FieldPort SWA50 to the SmartBlue app again.
9. Use the "Firmware version" parameter to check if the new firmware is installed.
  - 49

**i** If the firmware update is not fully downloaded or is not correctly installed, the FieldPort SWA50 works with the old firmware.

## 15 Repair

### 15.1 General notes

Repairs may only be performed by Endress+Hauser staff or by individuals authorized and trained by Endress+Hauser.

### 15.2 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.

## 16 Accessories

Optional accessories:

Mounting bracket (order number: 71487573)

For detailed information about the accessories, contact your Endress+Hauser Sales Center ([www.addresses.endress.com](http://www.addresses.endress.com)) or refer to the product page.



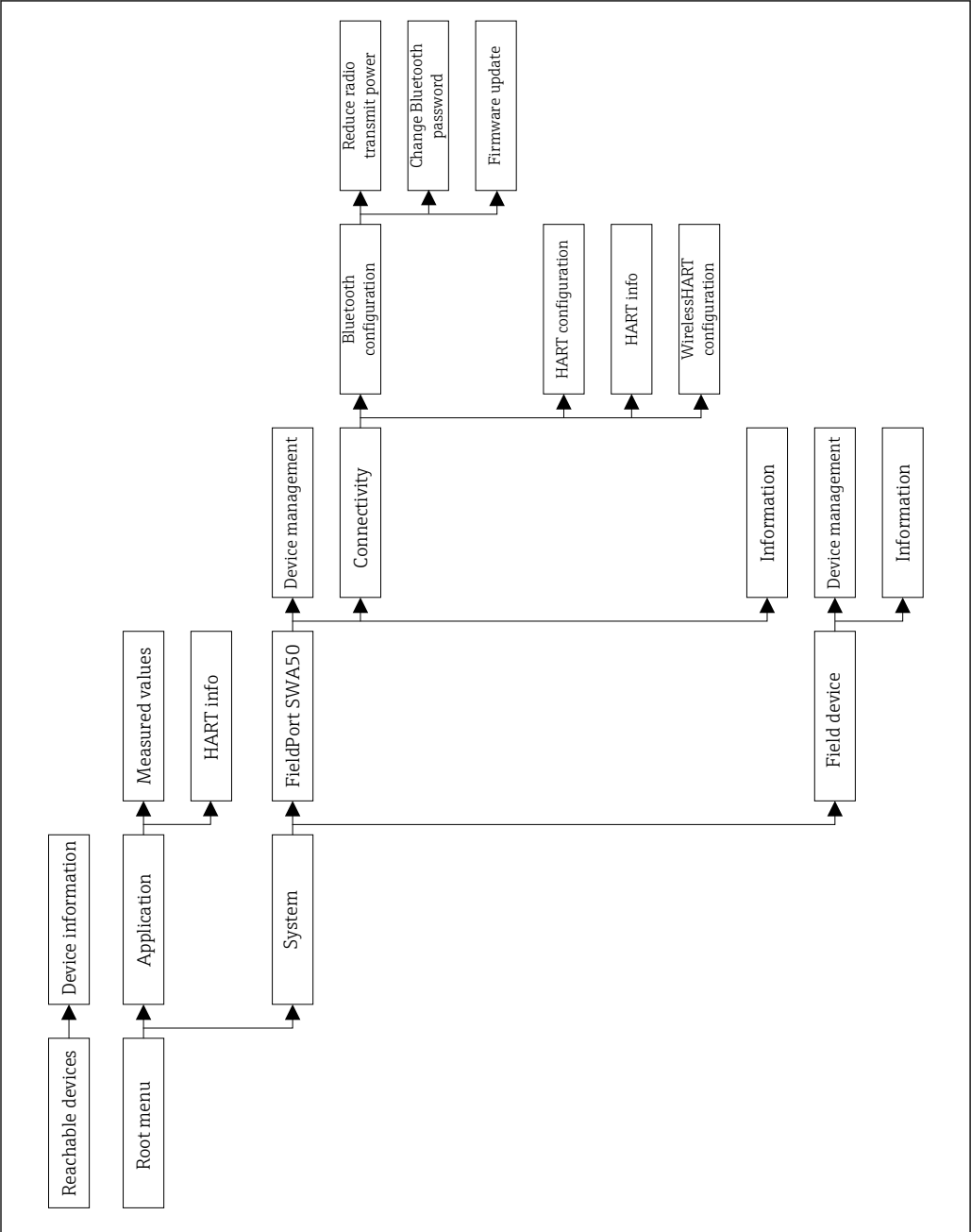
## 17 Technical data



For detailed information on "technical data": see Technical Information TI01468S

# 18 Appendix

## 18.1 Menu overview (Navigation)



A0043771





[www.addresses.endress.com](http://www.addresses.endress.com)

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