

Brief Operating Instructions

iTEMP TMT82

2-channel temperature transmitter with HART® protocol



These Brief Operating Instructions are not a substitute for the Operating Instructions pertaining to the device. Detailed information can be found in the Operating Instructions and the additional documentation.

Available for all device versions via:

- Internet: www.endress.com/deviceviewer
- Smartphone/tablet: Endress+Hauser Operations app

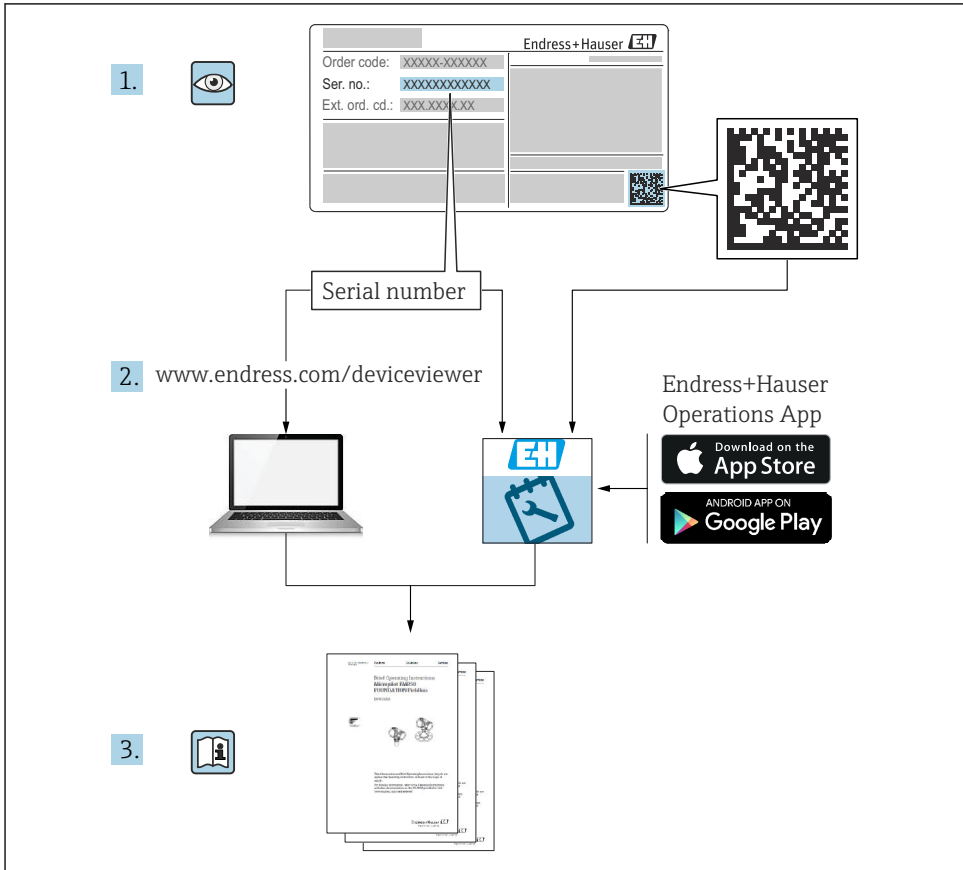


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1 Important information about this document

1.1 Functional safety



Please refer to Safety Manual FY01105T for the use of approved devices in safety-related systems according to IEC 61508.

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 potentially dangerous situation. Failure to avoid this situation can result in serious or fatal injury.



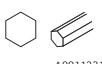

CAUTION

This symbol alerts you to a potentially dangerous situation. Failure to avoid this situation can result in minor or medium injury.

NOTICE

This symbol alerts you to a potentially harmful situation. Failure to avoid this situation can result in damage to the product or something in its vicinity.

1.2.2 Tool symbols

Symbol	Meaning
 A0011220	Flat blade screwdriver
 A0011219	Phillips head screwdriver
 A0011221	Allen key
 A0011222	Open-ended wrench

2 Basic safety instructions

2.1 Requirements for the personnel

The personnel must fulfill the following requirements for its tasks:

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

2.2 Intended use

The device is a universal and user-configurable temperature transmitter with either one or two sensor inputs for resistance thermometers (RTD), thermocouples (TC), resistance and voltage transmitters. The head transmitter version of the device is intended for mounting in a terminal head (flat face) as per DIN EN 50446. The device is also optionally available in a version that is integrated into a field housing. It is also possible to mount the device on a DIN rail using the optional DIN rail clip. The device is also optionally available in a version suitable for DIN rail mounting as per IEC 60715 (TH35).

If the device is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.

The manufacturer is not liable for harm caused by improper or unintended use.



In the SIL mode, the head transmitter must not be operated as a DIN rail transmitter substitute in a cabinet by using the DIN rail clip with remote sensors.

2.3 Workplace safety

When working on and with the device:

- ▶ Wear the required personal protective equipment as per national regulations.

2.4 Operational safety

Damage to the device!

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

Hazardous area

To eliminate a danger for persons or for the facility when the device is used in the hazardous area (e.g. explosion protection or safety-related system):

- ▶ Based on the technical data on the nameplate, check whether the ordered device is permitted for the intended use in the hazardous area. The nameplate can be found on the side of the transmitter housing.
- ▶ Observe the specifications in the separate supplementary documentation included as an integral part of these instructions.

Electromagnetic compatibility

The measuring system complies with the general safety requirements as per EN 61010-1, the EMC requirements as per the IEC/EN 61326 series and the NAMUR recommendations NE 21.

NOTICE

- ▶ The device must only be powered by a power unit that operates using an energy-limited electric circuit according to UL/EN/IEC 61010-1, Section 9.4 and the requirements in Table 18.

2.5 Product safety

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

2.6 IT security

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

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

3 Incoming acceptance and product identification

3.1 Incoming acceptance

On receipt of the delivery:

1. Check the packaging for damage.
 - ↳ Report all damage immediately to the manufacturer.
Do not install damaged components.
2. Check the scope of delivery using the delivery note.
3. Compare the data on the nameplate with the order specifications on the delivery note.
4. Check the technical documentation and all other necessary documents, e.g. certificates, to ensure they are complete.



If one of the conditions is not satisfied, contact the manufacturer.

3.2 Product identification

The device can be identified in the following ways:

- Nameplate specifications
- Enter the serial number from the nameplate into *Device Viewer* (www.endress.com/deviceviewer): all the information about the device and an overview of the Technical Documentation supplied with the device are displayed.
- Enter the serial number from the nameplate into the *Endress+Hauser Operations App* or scan the 2-D matrix code (QR code) on the nameplate with the *Endress+Hauser Operations App*: all the information about the device and the technical documentation pertaining to the device is displayed.

3.2.1 Nameplate

Do you have the correct device?

The nameplate provides you with the following information on the device:

- Manufacturer identification, device designation
 - Order code
 - Extended order code
 - Serial number
 - Tag name (TAG) (optional)
 - Technical values, e.g. supply voltage, current consumption, ambient temperature, communication-specific data (optional)
 - Degree of protection
 - Approvals with symbols
 - Reference to Safety Instructions (XA) (optional)
- Compare the information on the nameplate with the order.

3.2.2 Name and address of manufacturer

Name of manufacturer:	Endress+Hauser Wetzler GmbH + Co. KG
Address of manufacturer:	Obere Wank 1, D-87484 Nesselwang or www.endress.com

3.3 Storage and transport

Storage temperature

Head transmitter	-50 to +100 °C (-58 to +212 °F)
Optional	-52 to +85 °C (-62 to +185 °F), Product Configurator, order code for "Test, certificate, declaration", option "JN"
Head transmitter, field mount housing with separate terminal compartment incl. display	-35 to +85 °C (-31 to +185 °F), Product Configurator, order code for "Field housing", option "R" and "S"
DIN rail transmitter	-40 to +100 °C (-40 to +212 °F)

Maximum relative humidity: < 95 % as per IEC 60068-2-30



Pack the device for storage and transportation in such a way that it is reliably protected against impact and external influences. The original packaging offers the best protection.


4 Mounting

4.1 Mounting requirements

4.1.1 Mounting location

- Head transmitter:
 - In the terminal head, flat face, as per DIN EN 50446, direct mounting on insert with cable entry (middle hole 7 mm (0.28 in))
 - In the field mount housing with separate terminal compartment, if stable sensors are used, the device can be fitted directly on the sensor, otherwise it has to be mounted separately from the process
 - In the field housing, separated from the process
- DIN rail transmitter:
On DIN rail as per IEC 60715 TH35.

 It is also possible to mount the head transmitter on a DIN rail as per IEC 60715 using the DIN rail clip as accessory.

 SIL mode: The head transmitter must not be operated as a DIN rail transmitter substitute in a cabinet by using the DIN rail clip with remote sensors.

For use in hazardous areas, the limit values specified on the certificates and approvals must be observed (see Ex Safety Instructions).

4.1.2 Important ambient conditions

Ambient temperature range	-40 to +85 °C (-40 to +185 °F), for hazardous areas see Ex documentation
	-50 to +85 °C (-58 to +185 °F), for hazardous areas see Ex documentation; Product Configurator order code for "Test, certificate, declaration", option "JM" ¹⁾
	-52 to +85 °C (-62 to +185 °F), for hazardous areas see Ex documentation, Product Configurator order code for "Test, certificate, declaration", option "JN" ¹⁾
	Head transmitter, field mount housing with separate terminal compartment incl. display: -30 to +85 °C (-22 to +185 °F). At temperatures < -20 °C (-4 °F) the display may react slowly, Product Configurator, order code for "Field housing", option "R" and "S"
	SIL mode: -40 to +70 °C (-40 to +158 °F)
Altitude	Up to 4 000 m (13 123 ft) above sea level.
Overvoltage category	II
Pollution degree	2
Protection class	III
Condensation	Condensation as per IEC 60068-2-33 permitted for head transmitter, not permitted for DIN rail transmitter
Climate class	Head transmitter in accordance with climate class C1, DIN rail transmitter in accordance with B2 as per EN 60654-1

Degree of protection	<ul style="list-style-type: none"> ■ Head transmitter with screw terminals: IP 20, with push-in terminals: IP 30. When the device is installed, the degree of protection depends on the terminal head or field housing used. ■ When installing in field housing TA30x: <ul style="list-style-type: none"> ■ IP 66/68 (NEMA Type 4x encl.) ■ For ATEX: IP 66/67 ■ When installing in field mount housing with separate terminal compartment: IP 67, NEMA Type 4x ■ DIN rail transmitter: IP 20
Shock and vibration resistance	<p>Vibration resistance as per DNVGL-CG-0339 : 2015 and DIN EN 60068-2-27</p> <ul style="list-style-type: none"> ■ Head transmitter: 2 to 100 Hz at 4g (increased vibration stress) ■ DIN rail transmitter: 2 to 100 Hz at 0.7 g (general vibration stress) <p>Shock resistance as per KTA 3505 (section 5.8.4 Shock test)</p>

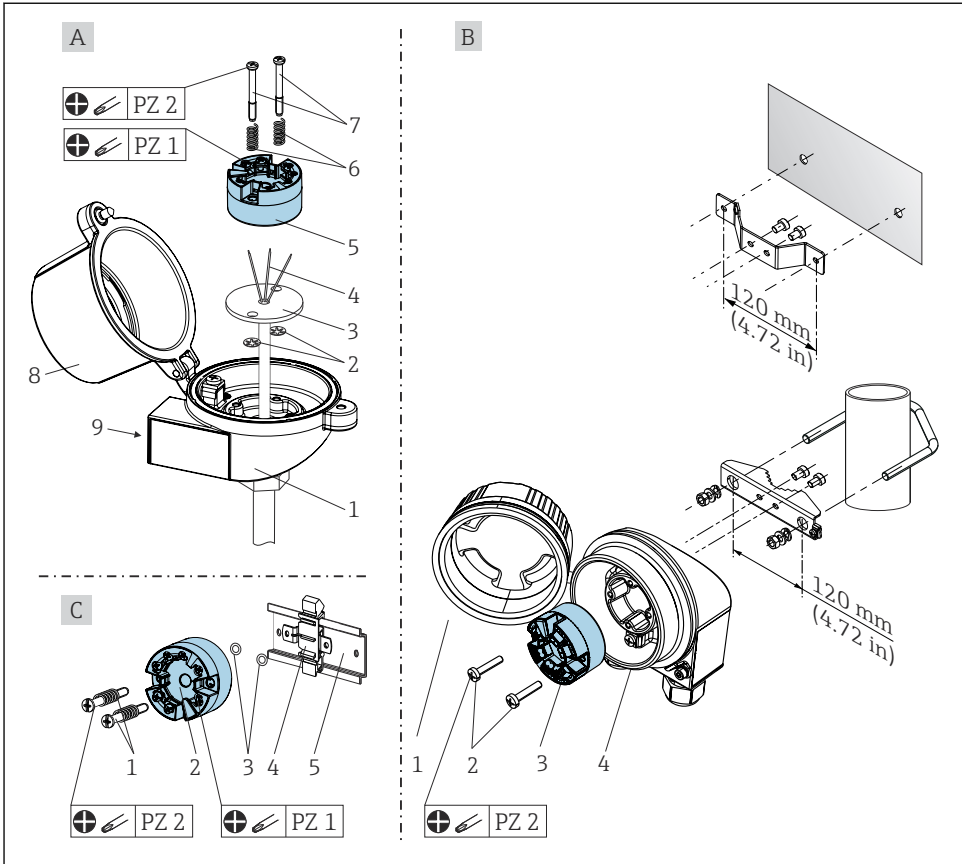
1) If the temperature is below $-40\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$), increased failure rates are likely.

4.2 Mounting the transmitter

A Phillips head screwdriver is required to mount the head transmitter:

- Maximum torque for securing screws = 1 Nm ($\frac{3}{4}$ lbf ft), screwdriver: Pozidriv PZ2
- Maximum torque for screw terminals = 0.35 Nm ($\frac{1}{4}$ lbf ft), screwdriver: Pozidriv PZ1

4.2.1 Mounting the head transmitter

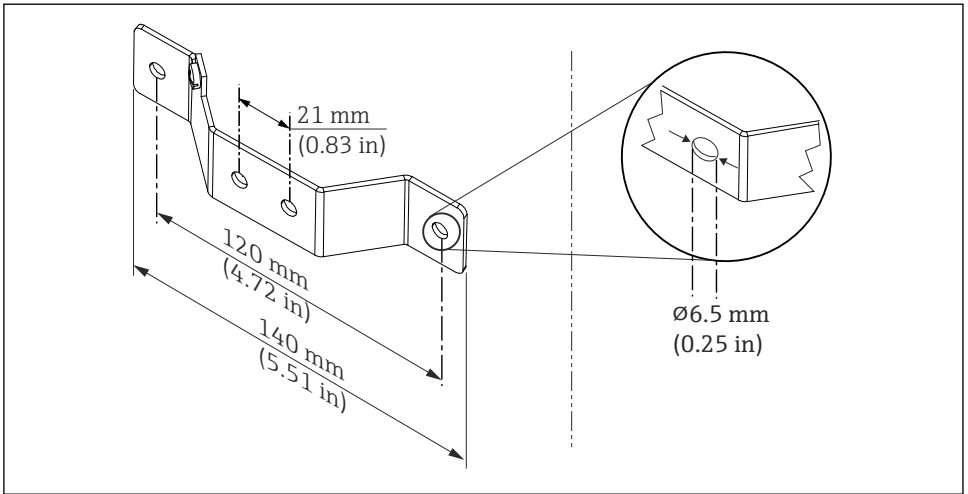


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1 Head transmitter mounting (three versions)

Procedure for mounting in a terminal head, Fig. A:


1. Open the terminal head cover (8) on the terminal head.
2. Guide the connection wires (4) of the insert (3) through the center hole in the head transmitter (5).
3. Fit the mounting springs (6) on the mounting screws (7).
4. Guide the mounting screws (7) through the side boreholes of the head transmitter and the insert (3). Then fix both mounting screws with the snap rings (2).
5. Then tighten the head transmitter (5) along with the insert (3) in the terminal head.
6. After wiring → 15, close the terminal head cover (8) tightly again.



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 2 Dimensions of angle bracket for wall mount (complete wall mounting set available as accessory)

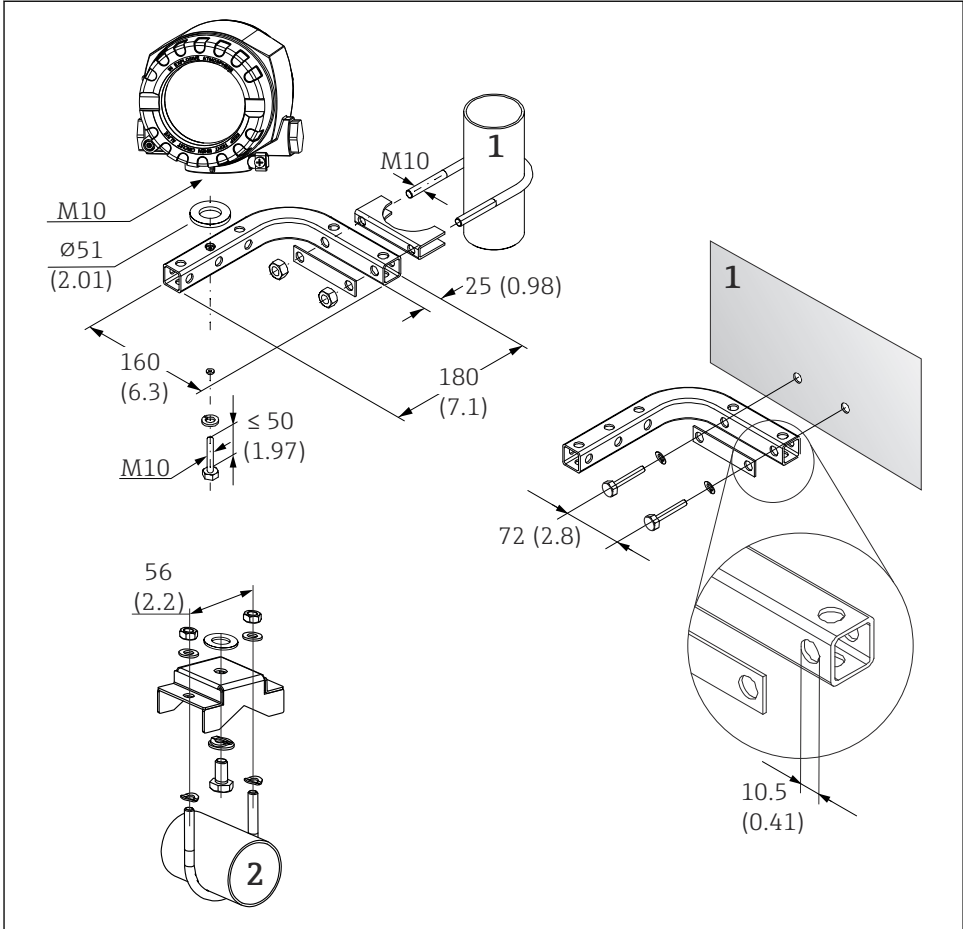
Procedure for mounting in a field housing, Fig. B:

1. Open the cover (1) of the field housing (4).
2. Guide the mounting screws (2) through the lateral bores in the head transmitter (3).
3. Screw the head transmitter to the field housing.
4. After wiring, close the field housing cover (1) again. →  15

Procedure for mounting on a DIN rail, Fig. C:

1. Press the DIN rail clip (4) onto the DIN rail (5) until it engages with a click.
2. Fit the mounting springs on the mounting screws (1) and guide the screws through the side boreholes of the head transmitter (2). Then fix both mounting screws with the snap rings (3).
3. Screw the head transmitter (2) onto the DIN rail clip (4).

Remotely mounting the field mount housing

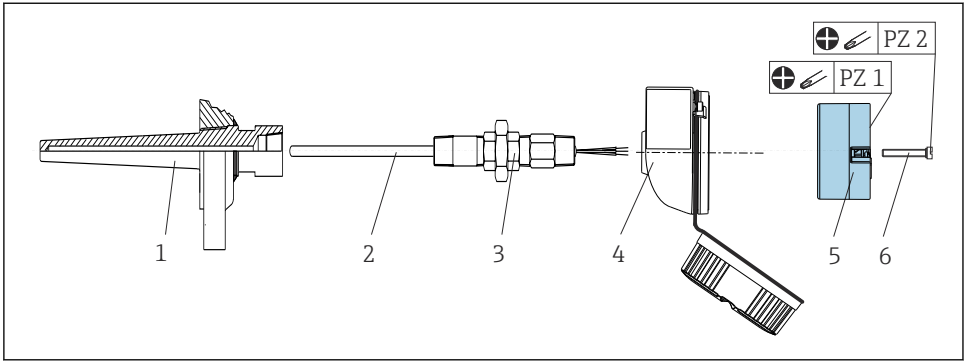


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3 Mounting the field mount housing using special mounting bracket, see chapter 'Accessories'.
Dimensions in mm (in)

- 1 Combined wall/pipe mounting bracket 2", L-shaped, material 304
- 2 Pipe mounting bracket 2", U-shaped, material 316L

Mounting with central-spring-loaded insert



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Thermometer design with thermocouples or RTD sensors and head transmitter:

1. Fit the thermowell (1) on the process pipe or the container wall. Secure the thermowell according to the instructions before the process pressure is applied.
2. Fit the necessary neck tube nipples and adapter (3) on the thermowell.
3. Make sure sealing rings are installed if such rings are needed for harsh environmental conditions or special regulations.
4. Guide the mounting screws (6) through the lateral bores of the head transmitter (5).
5. Position the head transmitter (5) in the terminal head (4) in such a way that the power supply (terminals 1 and 2) point to the cable entry.
6. Using a screwdriver, screw down the head transmitter (5) in the terminal head (4).
7. Guide the connection wires of the insert (3) through the lower cable entry of the terminal head (4) and through the middle hole in the head transmitter (5). Wire the connection wires up to the transmitter → 16.
8. Screw the terminal head (4), with the integrated and wired head transmitter, onto the ready-mounted nipple and adapter (3).

NOTICE

The terminal head cover must be secured properly to meet the requirements for explosion protection.

- ▶ After wiring, securely screw the terminal head cover back on.

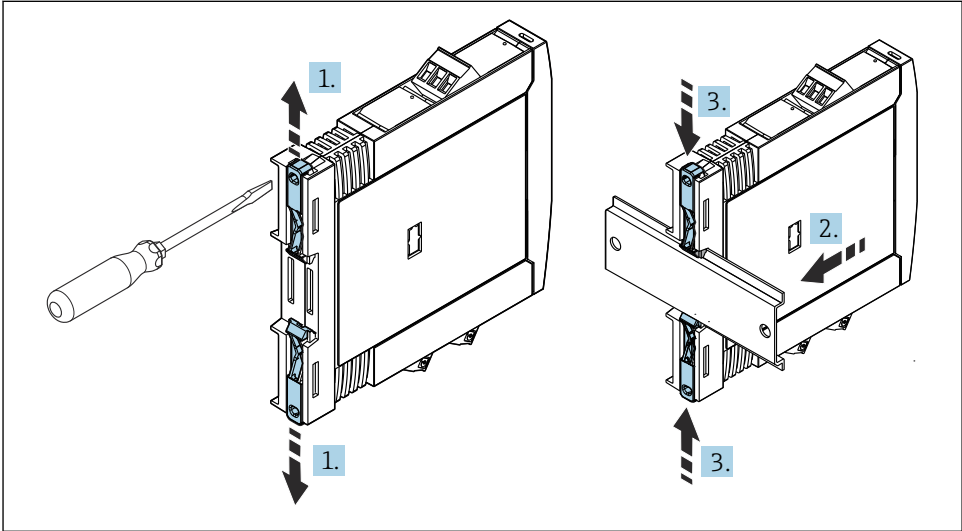
4.2.2 Mounting the DIN rail transmitter

NOTICE

Horizontal orientation

Measurement deviates from the maximum measurement accuracy rating when a thermocouple is connected and the internal reference junction is used.

- ▶ Mount the device vertically and ensure it is aligned correctly (sensor connection at the bottom / power supply at the top)!



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4 Mounting the DIN rail transmitter

1. Slide the upper DIN rail clip upwards and the lower clip downwards until they click into place.
2. Fit the device on the DIN rail from the front.
3. Slide the two DIN rail clips back together until they click into place.

4.3 Post-mounting check

After installing the device, carry out the following checks:

Device condition and specifications	Notes
Is the measuring instrument undamaged (visual inspection)?	-
Do the ambient conditions match the device specification (e.g. ambient temperature, measuring range, etc.)?	→ 8

5 Electrical connection

CAUTION

- ▶ Switch off the power supply before installing or connecting the device. Failure to observe this may result in the destruction of parts of the electronics.
- ▶ Do not occupy the display connection. An incorrect connection can destroy the electronics.

NOTICE



Do not overtighten the screw terminals, as this could damage the transmitter.

- ▶ Maximum torque = 0.35 Nm ($\frac{1}{4}$ lbf ft), screwdriver: Pozidriv PZ1.

5.1 Connecting requirements



A Phillips head screwdriver is required to wire the head transmitter with screw terminals. Use a flat blade screwdriver for the DIN rail transmitter with screw terminals. The push-in terminal version can be wired without any tools.

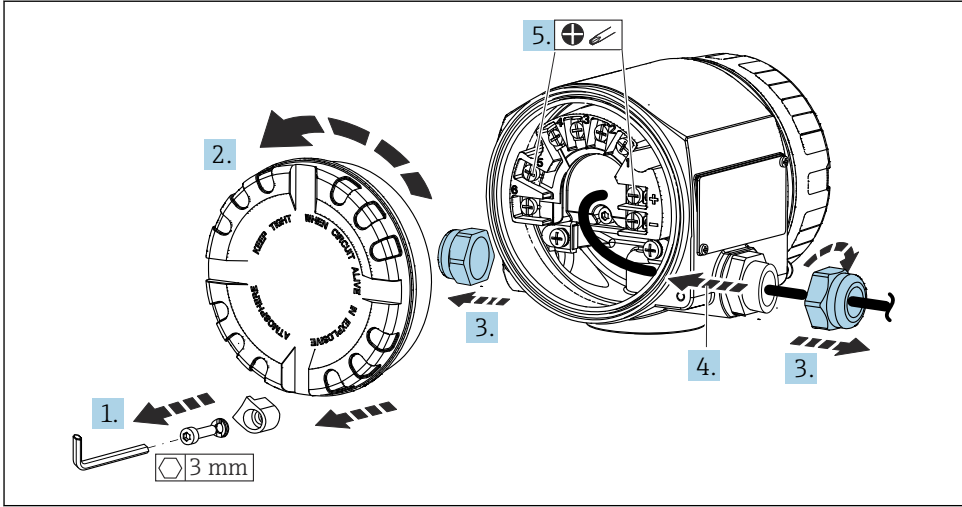
Proceed as follows to wire a head transmitter mounted in the terminal head or field housing:

1. Open the cable gland and the housing cover on the terminal head or the field housing.
2. Feed the cables through the opening in the cable gland.
3. Connect the cables as shown in →  16. If the head transmitter is fitted with push-in terminals, pay particular attention to the information in the "Connecting to push-in terminals" section. →  20
4. Tighten the cable gland again and close the housing cover.

In order to avoid connection errors always follow the instructions in the post-connection check section before commissioning!

Proceed as follows to wire the transmitter in a field mount housing:

1. Remove the cover clamp.
2. Unscrew the housing cover on the terminal compartment. The terminal compartment is opposite the electronics module together with the display cover.
3. Open the cable glands of the device.
4. Route the appropriate connecting cables through the openings of the cable glands.
5. Wire the cables as described in the sections: "Connecting the sensor cables" and "Connecting the transmitter". →  19, →  21

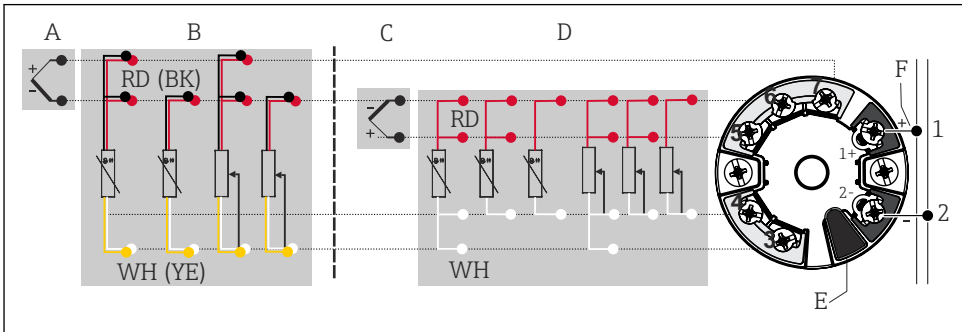


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On completion of the wiring, tighten the screw terminals of the connections. Tighten the cable glands again. Screw the housing cover tight again and fit the cover clamp back on.

In order to avoid connection errors always follow the instructions in the post-connection check section before commissioning!

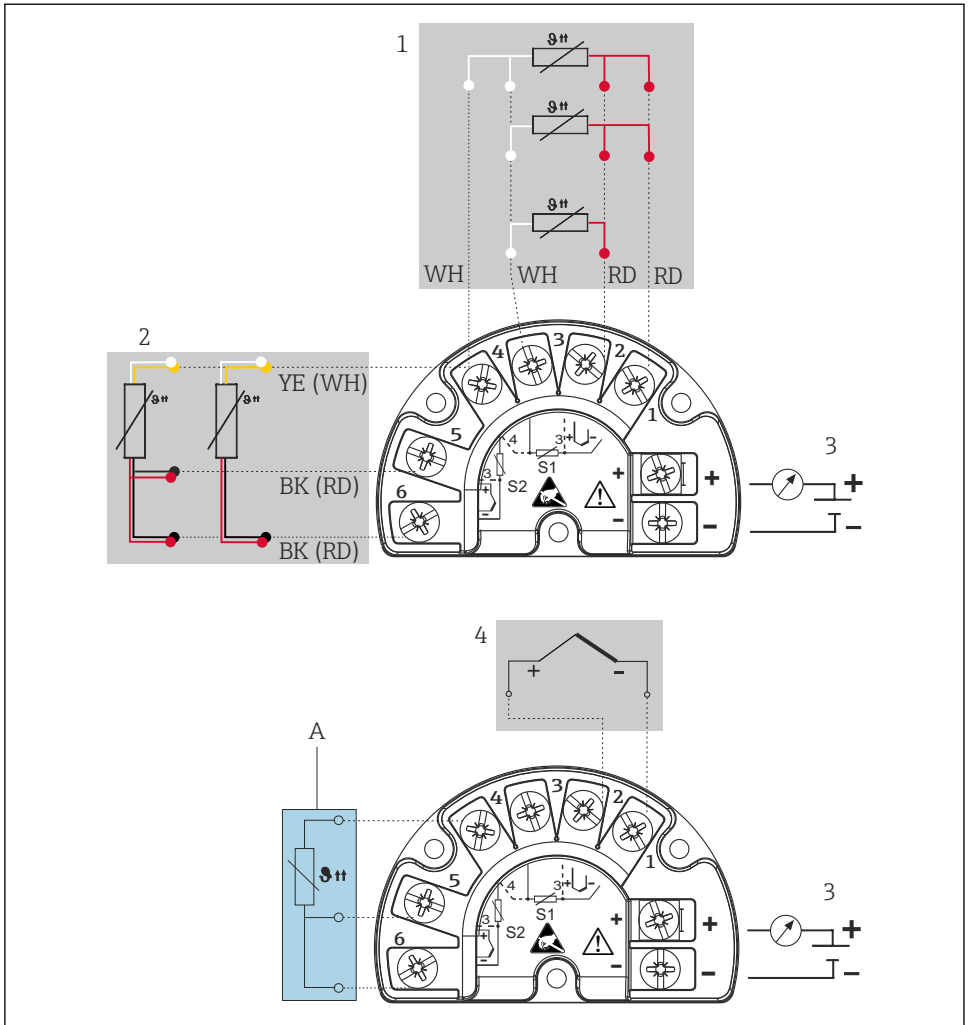
5.2 Quick wiring guide



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5 Assignment of terminal connections for head transmitter

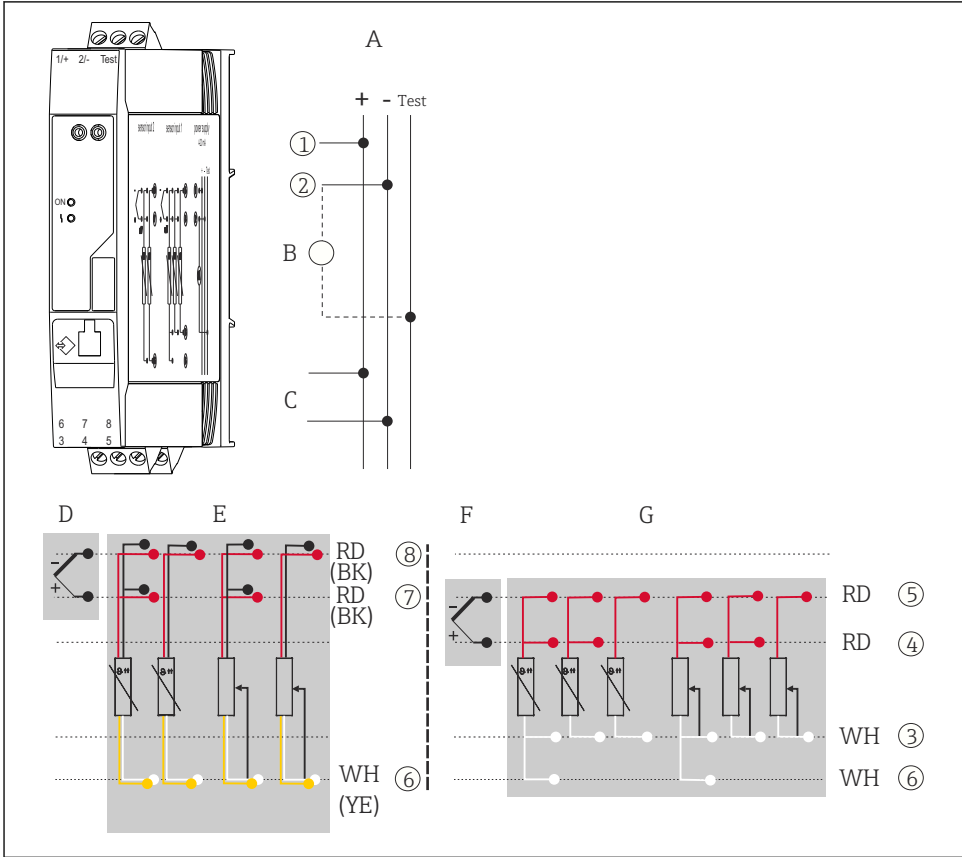
- A Sensor input 2, TC and mV
- B Sensor input 2, RTD and Ω , 3- and 2-wire
- C Sensor input 1, TC and mV
- D Sensor input 1, RTD and Ω , 4-, 3- and 2-wire
- E Display connection, service interface
- F Bus connection and power supply



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6 Terminal assignment of the field mount housing with separate terminal compartment

- 1 Sensor input 1, RTD, : 2-, 3- and 4-wire
 - 2 Sensor input 2, RTD: 2-, 3-wire
 - 3 Bus connection and power supply
 - 4 Sensor input 1, thermocouple (TC)
- A If sensor input thermocouple (TC) is selected: permanent connection of the external reference junction, terminals 4, 5 and 6 (Pt100, IEC 60751, class B, 3-wire). It is not possible to connect a second thermocouple (TC) on sensor 2.



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7 Assignment of terminal connections for DIN rail transmitter

- A 4 to 20 mA power supply
- B To check the output current, an ammeter (DC measurement) can be connected between the "Test" and "-" terminals.
- C HART connection
- D Sensor input 2, TC and mV
- E Sensor input 2, RTD and Ω , 3- and 2-wire
- F Sensor input 1, TC and mV
- G Sensor input 1, RTD and Ω , 4-, 3- and 2-wire

An unshielded installation cable suffices if only the analog signal is used. The use of shielded cables is recommended for increased EMC interference. As of a sensor cable length of 30 m (98.4 ft), a shielded cable must be used for a head transmitter in the field mount housing with a separate terminal compartment and for the DIN rail transmitter.

A shielded cable is recommended for HART communication. Observe grounding concept of the plant. A minimum load of 250 Ω is required in the signal circuit in order to operate the HART transmitter via the HART protocol (terminals 1 and 2).

NOTICE

- ▶  ESD – Electrostatic discharge. Protect the terminals from electrostatic discharge. Failure to observe this may result in the destruction or malfunction of parts of the electronics.

5.3 Connecting the sensor

NOTICE

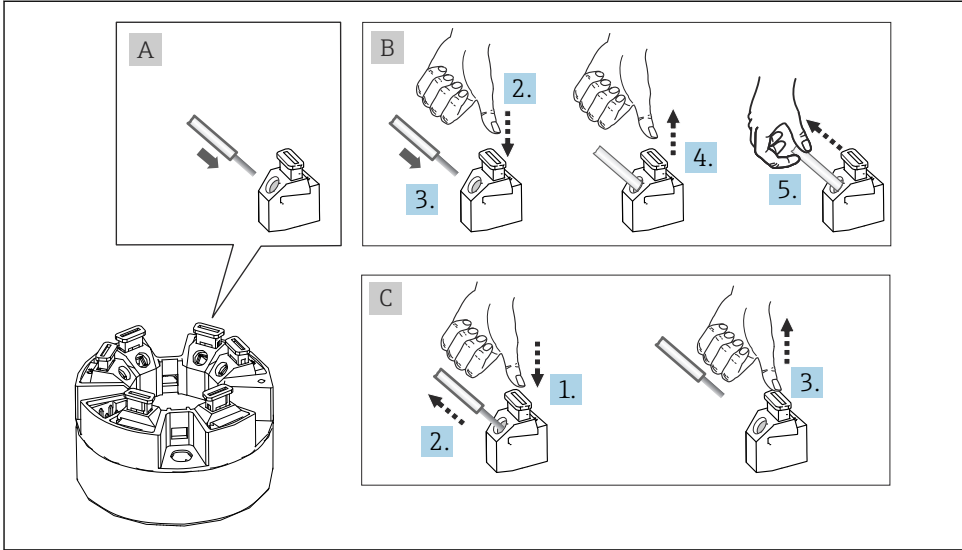
When connecting 2 sensors ensure that there is no galvanic connection between the sensors (e.g. caused by sensor elements that are not isolated from the thermowell). The resulting equalizing currents distort the measurements considerably.

- ▶ The sensors must remain galvanically isolated from one another by connecting each sensor separately to a transmitter. The transmitter provides sufficient galvanic isolation ($> 2 \cdot 10^3 V_{AC}$) between the input and output.

The following connection combinations are possible when both sensor inputs are assigned:

		Sensor input 1			
		RTD or resistance transmitter, 2-wire	RTD or resistance transmitter, 3-wire	RTD or resistance transmitter, 4-wire	Thermocouple (TC), voltage transmitter
Sensor input 2	RTD or resistance transmitter, 2-wire	☑	☑	-	☑
	RTD or resistance transmitter, 3-wire	☑	☑	-	☑
	RTD or resistance transmitter, 4-wire	-	-	-	-
	Thermocouple (TC), voltage transmitter	☑	☑	☑	☑
	For field mount housing with a thermocouple on sensor input 1: It is not possible to connect a second thermocouple (TC) or resistance thermometer, resistance transmitter or voltage transmitter on sensor input 2 as this input is needed for the external reference junction.				

5.3.1 Connecting to push-in terminals



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8 Push-in terminal connection, using the example of a head transmitter

Fig. A, solid wire:

1. Strip wire end. Minimum stripping length 10 mm (0.39 in).
2. Insert the wire end into the terminal.
3. Pull the wire gently to ensure it is connected correctly. Repeat starting from step 1 if necessary.


Fig. B, fine-strand wire without ferrule:

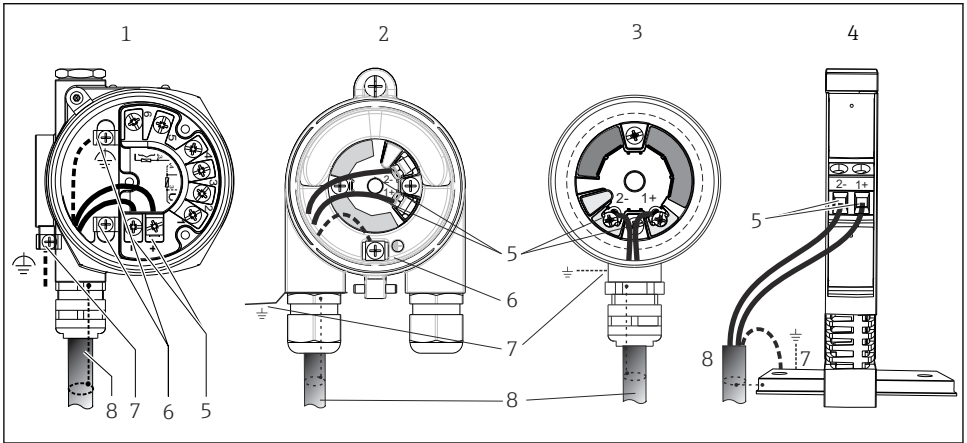
1. Strip wire end. Minimum stripping length 10 mm (0.39 in).
2. Press down on the lever opener.
3. Insert the wire end into the terminal.
4. Release lever opener.
5. Pull the wire gently to ensure it is connected correctly. Repeat starting from step 1 if necessary.

Fig. C, releasing the connection:

1. Press down on the lever opener.
2. Remove the wire from the terminal.
3. Release lever opener.

5.4 Connecting the transmitter

Also observe the general procedure on →  15.



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9 Connecting the signal cables and power supply

- 1 Head transmitter installed in field mount housing with separate terminal compartment
- 2 Head transmitter installed in field housing
- 3 Head transmitter installed in terminal head
- 4 DIN rail transmitter mounted on DIN rail
- 5 Terminals for HART protocol and power supply
- 6 Internal ground connection
- 7 External ground connection
- 8 Shielded signal cable (recommended for HART protocol)

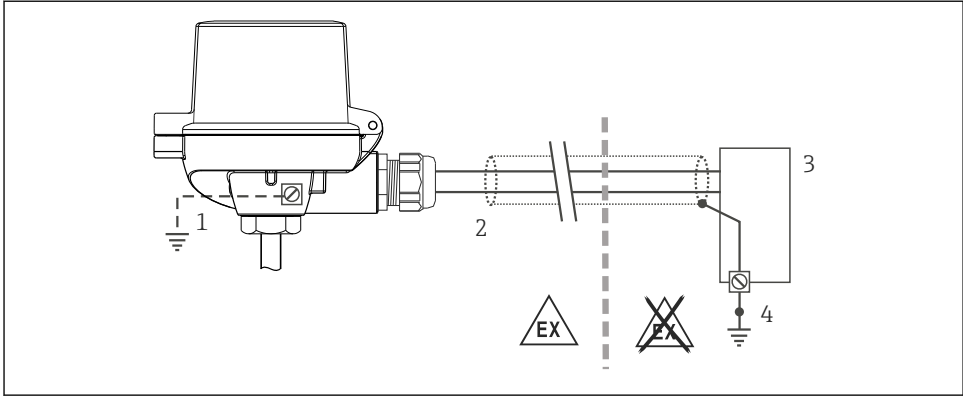


- The terminals for the signal cable connection (1+ and 2-) are protected against reverse polarity.
- Conductor cross-section:
 - Max. 2.5 mm² (13 AWG) for screw terminals
 - Max. 1.5 mm² (15 AWG) for push-in terminals. Stripping length of wire at least 10 mm (0.39 in).

5.5 Special connection instructions

Shielding and grounding

The specifications of the FieldComm Group must be observed during installation of the HART transmitter.



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10 Shielding and grounding the signal cable at one end with HART communication

- 1 Optional grounding of the field device, isolated from cable shielding
- 2 Grounding of the cable shield at one end
- 3 Supply unit
- 4 Grounding point for HART communication cable shield

5.6 Post-connection check

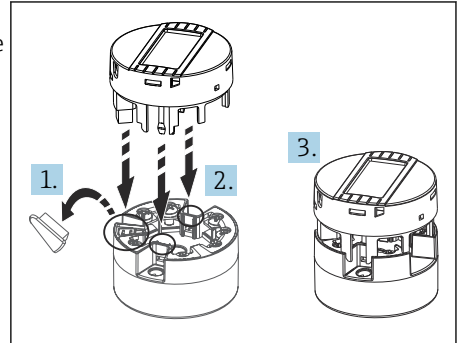
Device condition and specifications	Notes
Is the device or cable undamaged (visual check)?	--
Electrical connection	Notes
Does the supply voltage match the specifications on the nameplate?	<ul style="list-style-type: none"> ▪ Head transmitter: $U = 11$ to $42 V_{DC}$ ▪ DIN rail transmitter: $U = 12$ to $42 V_{DC}$ ▪ SIL mode: $U = 11$ to $32 V_{DC}$ for the head transmitter or $U = 12$ to $32 V_{DC}$ for the DIN rail transmitter ▪ Other values apply in the hazardous area, see the corresponding Ex Safety Instructions.
Are the mounted cables strain-relieved?	--
Are the power supply and signal cables connected correctly?	→ 16
Are all the screw terminals firmly tightened and have the push-in terminal connections been checked?	--
Are all the cable entries installed, tightened and leak-tight?	--
Are all housing covers installed and securely tightened?	--

6 Operation options

6.1 Measured value display and operating elements

6.1.1 Option: Display TID10 with transmitter

The display may also be subsequently ordered at any time after purchasing the transmitter, see the 'Accessories' section in the Operating Instructions for the device.



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 11 Attach the display to the transmitter

6.1.2 Display elements

DIN rail transmitter




The DIN rail transmitter version does not have an interface to the LC display and therefore does not have a local display either.

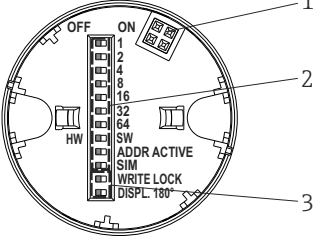
Two LEDs on the front indicate the device status.

Type	Function and characteristic
Status LED (red)	<p>When the device is operating without errors, the device status is displayed. This function can no longer be guaranteed in the event of an error.</p> <ul style="list-style-type: none"> ▪ LED off: without diagnostic message ▪ LED is lit: diagnostic display, category F ▪ LED flashing: diagnostic display of categories C, S or M
Power LED (green) 'ON'	<p>When the device is operating without errors, the operating status is displayed. This function can no longer be guaranteed in the event of an error.</p> <ul style="list-style-type: none"> ▪ LED off: Power failure or insufficient supply voltage ▪ LED is lit: Supply voltage is OK (either via CDI or via supply voltage, terminals 1+, 2-)

6.1.3 Onsite operation

NOTICE

- ▶  ESD – Electrostatic discharge. Protect the terminals from electrostatic discharge. Failure to observe this may result in the destruction or malfunction of parts of the electronics.

 <p>A0014562</p> <p>12 Hardware settings via DIP switches</p>	<p>1: Connection to head transmitter</p> <p>2: DIP switches (1 - 64, SW/HW, ADDR and SIM = simulation mode) no function for this head transmitter</p> <p>3: DIP switch (WRITE LOCK = write protection; DISPL. 180° = switch, turn the display monitor 180°)</p>
--	---

Procedure for setting the DIP switch:

1. Open the cover of the terminal head or field housing.
2. Remove the attached display from the head transmitter.
3. Configure the DIP switch on the rear of the display accordingly. In general: switch to ON = function enabled, switch to OFF = function disabled.
4. Fit the display onto the head transmitter in the correct position. The head transmitter accepts the settings within one second.
5. Secure the cover back onto the terminal head or field housing.

Switching write protection on/off

Write protection is switched on and off via a DIP switch on the rear of the optional attachable display. When write protection is active, parameters cannot be modified. A lock symbol on the display indicates that write protection is on. Write protection prevents any write access to the parameters. Write protection remains active even when the display is removed. To disable the write protection, the device must be restarted with the display attached and the DIP switch deactivated (WRITE LOCK = OFF). Alternatively, the display can be removed and reattached during operation to disable write protection.

Turning the display

The display can be rotated 180° using the "DISPL. 180°" DIP switch. The setting is retained when the display is removed.

6.2 Configuration of transmitter and HART protocol

The transmitter is configured and measured values interrogated via the HART protocol or CDI (= Endress+Hauser Common Data Interface). The following operating tools are available for this purpose:

Operating tools

FieldCare, DeviceCare, Field Xpert (Endress+Hauser)	SIMATIC PDM (Siemens)
AMS Device Manager (Emerson Process Management)	AMS Trex Device Communicator (Emerson Process Management)

NOTICE

The following applies if using the device in hazardous areas: Before accessing the device with the Commubox FXA291 via the CDI (= Endress+Hauser Common Data Interface), disconnect the transmitter from the power supply, terminals (1+) and (2-).

- ▶ Failure to comply with this instruction can result in damage to parts of the electronics.



The configuration of device-specific parameters is described in detail in the Operating Instructions for the device.

7 Commissioning

Switch on the device

Once you have completed the post-connection checks, switch on the supply voltage. The transmitter performs a number of internal test functions after power-up. During this process, a sequence containing device information appears on the display. The device works after approx. 30 seconds, the attachable display module after approx. 33 seconds during normal operation! Normal measuring mode commences as soon as the switch-on procedure is completed. Measured values and status values appear on the display.

8 Maintenance and cleaning

No special maintenance work is required for the device.

A clean, dry cloth can be used to clean the device.



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