Operating Instructions **Soliswitch FTE20**

Point level switch





Soliswitch FTE20 Table of contents

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1 Important document information

1.1 Document function

These Operating Instructions contain all the information required in the various life cycle phases of the device: from product identification, incoming acceptance and storage, to installation, connection, operation and commissioning, through to troubleshooting, maintenance and disposal.

1.2 Document conventions

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.

A 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 Electrical symbols

| Symbol | Meaning | |
|---------------|--|--|
| === | Direct current | |
| ~ | Alternating current | |
| $\overline{}$ | Direct current and alternating current | |
| = | Ground connection A grounded terminal which, as far as the operator is concerned, is grounded via a grounding system. | |
| | Potential equalization connection (PE: protective earth) Ground terminals that must be connected to ground prior to establishing any other connections. | |
| | The ground terminals are located on the interior and exterior of the device: Interior ground terminal: potential equalization is connected to the supply network. Exterior ground terminal: device is connected to the plant grounding system. | |

1.2.3 Symbols for certain types of information

| Symbol | Meaning | Symbol | Meaning |
|----------|--|------------|--|
| ✓ | Permitted Procedures, processes or actions that are permitted. | ✓ ✓ | Preferred Procedures, processes or actions that are preferred. |
| X | Forbidden Procedures, processes or actions that are forbidden. | i | Tip Indicates additional information. |
| i | Reference to documentation | A | Reference to page |
| | Reference to graphic | 1., 2., 3 | Series of steps |
| L. | Result of a step | | Visual inspection |

1.2.4 Symbols in graphics

| Symbol | Meaning |
|----------------|--|
| 1, 2, 3 | Item numbers |
| 1., 2., 3 | Series of steps |
| A, B, C, | Views |
| A-A, B-B, C-C, | Sections |
| EX | Hazardous area Indicates the hazardous area. |
| × | Safe area (non-hazardous area) Indicates the non-hazardous area. |

1.2.5 Tool symbols

| Symbol | Meaning |
|----------|------------------------|
| A0011220 | Flat-blade screwdriver |
| A0011221 | Allen key |
| A0011222 | Open-ended wrench |
| A0013442 | Torx screwdriver |

Safety instructions Soliswitch FTE20

2 Safety instructions

2.1 Requirements for the personnel

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

- ► 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.

The operating personnel must fulfill the following requirements:

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

2.2 Intended use

The Soliswitch FTE20 must only be used as a point level switch for specific bulk solids (see Technical data $\rightarrow \ \cong$ 26).

- The device may only be operated when installed.
- The manufacturer accepts no liability for damages resulting from improper or nondesignated use. It is not permitted to convert or modify the device in any way.

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

Risk of injury!

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

Soliswitch FTE20 Identification

3 Identification

3.1 Nameplate



Δ0017317

■ 1 Nameplate of the Soliswitch FTE20 (example)

- 1 Order code
- 2 Serial number
- 3 Extended order code
- 4 Power supply and IP protection of the housing
- 5 Ambient temperature range
- 6 Approvals
- 7 Output values
- 8 Year of manufacture, manufacturer's address

3.2 Name and address of manufacturer

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

4 Mounting

4.1 Incoming acceptance, transport, storage

4.1.1 Incoming acceptance

On receipt of the goods, check the following points:

- Is the packaging or the content damaged?
- Is the delivery complete? Compare the scope of delivery against the information on your order form

Mounting Soliswitch FTE20

4.1.2 Transport and storage

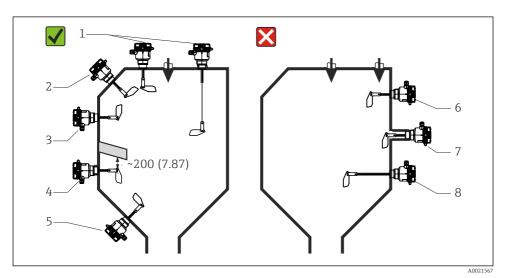
Please note the following:

- Pack the device so that is protected against impact for storage and transport. The original packaging offers the best protection for this.
- The permitted storage temperature is -20 to 60 °C (-4 to 140 °F).

4.2 Installation conditions

Correct and incorrect installation positions are indicated in $\rightarrow \mathbb{Z}$ 2, $\stackrel{\triangle}{=}$ 8.

The dimensions of the device are provided in the "Technical data" section $\rightarrow \blacksquare 16$, $\blacksquare 27$.



■ 2 Orientations of the point level switch, dimensions in mm (in)

| Permitted orientations | | Forbidden orientations | |
|------------------------|---|------------------------|--|
| 1: | Vertical from the top | 6: | In direction of solids flow |
| 2: | Angled from the top | 7: | Installation coupling too long |
| 3: | From the side | 8: | Horizontal with shaft length >300 mm (11.8 in) |
| 4: | From the side with protective cover against falling solids | | |
| 5: | From the bottom (device must be protected against shock-type loads) | | |

Ambient temperature range

-20 to 60 °C (-4 to 140 °F)

Medium temperature range -20 to 80 °C (-4 to 176 °F)

Soliswitch FTE20 Mounting

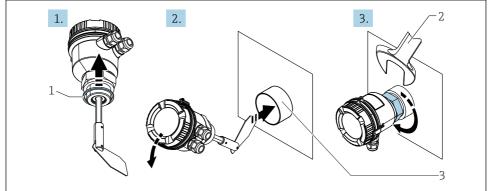
Mechanical load of optional indicator light

4.3 Installation instructions

NOTICE

The device can be damaged if handled incorrectly during installation

▶ Do not turn the housing to tighten the process connection. Once the process connection has been tightened, the housing can be aligned so that the cable entries point downwards.



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■ 3 Installation of the standard version

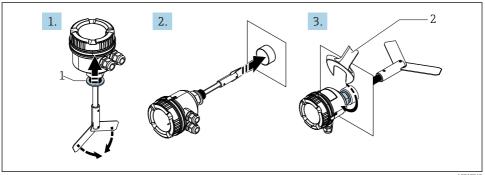
- 1 Attach sealing ring (1) 60x48x3 mm (2.36x1.89x0.12 in).
- Insert the rotary paddle into the connecting flange (3). Note: Pay attention to the maximum flange depth of the connection. With the standard rotary paddle, installation in flange connections is permitted up to a sleeve length ≤ 40 mm (1.57 in). For sleeve lengths > 40 mm (1.57 in) only the version with hinged rotary paddle can be used. It must be possible to insert the rotary paddle without force.
- *Tighten nut with open-ended wrench AF 60 (2).*

NOTICE

The device with hinged rotating paddle does not function correctly when the transport lock is secured.

► Remove the transport lock (plastic net around the rotating paddle) prior to installation.

Mounting Soliswitch FTE20

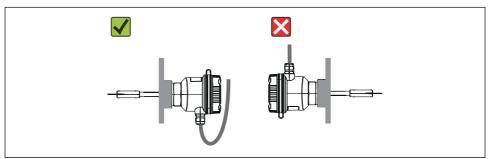


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€ 4 Installation of the version with hinged rotary paddle

- Attach sealing ring (1) 60x48x3 mm (2.36x1.89x0.12 in). 1
- 2 *Slide the rotary paddle into the connecting flange (3).*
- *Tighten nut with open-ended wrench AF 60 (2).* 3

4.3.1 Turning the housing to the right position



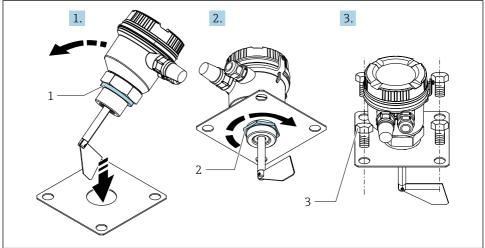
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₩ 5 Correct housing position

4.3.2 Installation of the flange version

The flange version is available as an accessory. The dimensions are provided in the "Technical data" section $\rightarrow \implies 31$.

Soliswitch FTE20 Mounting



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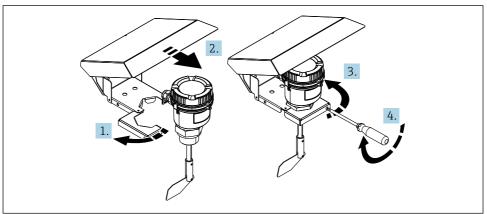
■ 6 Installation of the flange version

- 1 Attach sealing ring (1) 60x48x3 mm (2.36x1.89x0.12 in) and insert rotary paddle into connecting flange.
- 2 Tighten nut (2) with open-ended wrench AF 60.
- 3 Secure the device using 4 screws (not included in the scope of delivery).

4.3.3 Mounting the weather protection cover

The weather protection cover is available as an accessory and can be installed without disassembling the point level switch. The dimensions are provided in the "Technical data" $\sec 19$, 19,

Mounting Soliswitch FTE20



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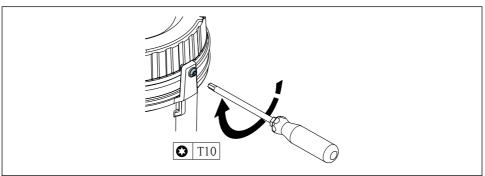
■ 7 Mounting the weather protection cover

To protect the device from sunlight, arrange the weather protection cover in such a way that provides optimum shade for the device.

4.3.4 Installation in hazardous areas

When installing the point level switch in a hazardous area, the securing screw must be tightened to prevent the cover from opening.

Additional installation instructions for the hazardous area are provided in the separate Ex documentation for the device (optional).



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8 Tightening the cover securing screw. This is a combined screw; a flat-blade screwdriver can be used as an alternative to a T10 Torx screwdriver.

Soliswitch FTE20 Wiring

4.4 Post-installation check

- Are the seals undamaged?
- Is the process connection securely tightened?
- Do the cable entries point downwards and are they tightened?
- Is the cover securely closed and the securing screw securely tightened?

5 Wiring

5.1 Connection instructions

WARNING

Danger! Electric voltage!

▶ The entire connection of the device must take place while the device is de-energized.

A CAUTION

Pay attention to additional information provided

- ► The protective ground conductor must be connected before any other connection is established.
- Before commissioning the device, make sure that the supply voltage matches the voltage specifications on the nameplate.
- Provide a suitable switch or power-circuit breaker in the building installation. This switch must be provided close to the device (within easy reach) and marked as a circuit breaker.
- ▶ An overload protection element (rated current \leq 10 A) is required for the power cable.

NOTICE

High temperatures can damage the cables and the device

 \blacktriangleright Use cables that are suitable for temperatures 10 °C (18 °F) above the ambient temperature.

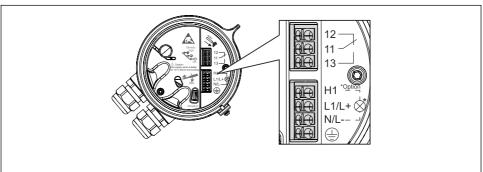
NOTICE

IP66 protection is not provided if the protection caps supplied are used for the cable entries

- ▶ The protection caps supplied are designed to protect against contamination during transport and storage. Use a suitable dummy plug to seal any cable entry that is not used during operation.
- If replacing an older Soliswitch FTE3x with a new FTE20-type device, note that the free ends of the cable to the terminal are longer than in the older version (approx. 5 to 6 cm (1.97 to 2.36 in)).

Wiring Soliswitch FTE20

5.2 Quick wiring guide



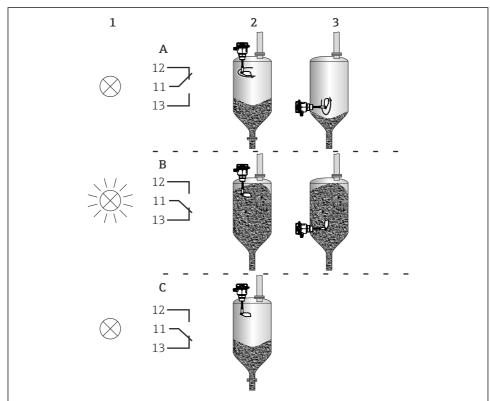
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 \blacksquare 9 Terminal assignment of the point level switch

| Symbol | Description | Symbol | Description | |
|------------|-------------------|--------|-------------------------------------|--|
| (a) | Protective ground | H1 | Connection for signaling empty/full | |
| N (AC), | Power supply | N/L- | status detection (optional) | |
| L- (DC) | rowei suppiy | 11 | Changeover contact | |
| L1 (AC), | Davies supply | 12 | Normally closed contact | |
| L+ (DC) | Power supply | 13 | Normally open contact | |

Soliswitch FTE20 Wiring

5.2.1 Switching states

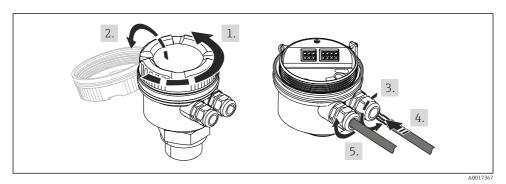


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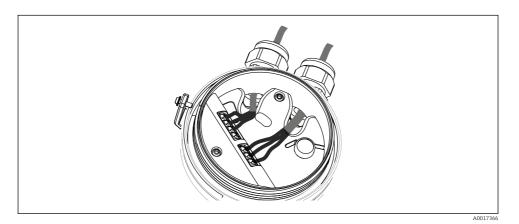
| | 1 = Indicator light (optional, non-Ex only) | 2 = Full signaling | 3 = Refill signalling | Shaft rotation | Internal light |
|--|---|-----------------------|--------------------------|----------------|----------------|
| A | OFF | OFF | ON | YES | ON |
| В | ON | ON | OFF | NO | ON |
| C (only with optional rotation monitoring) | OFF | ON | OFF | NO | Flashes |

Wiring Soliswitch FTE20

5.2.2 Inserting the cable



 \blacksquare 10 Removing the housing cover and inserting the cables



 \blacksquare 11 Connecting the cables to the terminals

5.3 Post-connection check

| Device condition and specifications | Notes |
|---|-------------------|
| Are cables or the device damaged? | Visual inspection |
| Electrical connection | Notes |
| Does the supply voltage match the information on the nameplate? | → 🖸 1, 🖺 7 |
| Are the mounted cables connected correctly and strain-relieved? | - |
| Are the cable glands securely tightened? | - |

Soliswitch FTE20 Operation

6 Operation

A WARNING

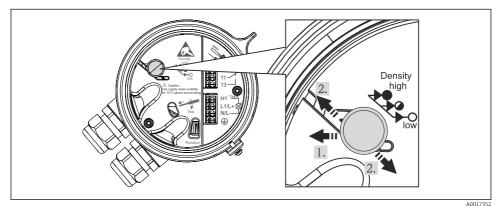
The device is not explosion-protected if the housing is open.

► The device may only be opened in the hazardous area if no supply voltage is applied. Therefore the device may only be operated in a de-energized state or outside the hazardous area.

6.1 Setting the switching threshold (sensitivity)

The switching threshold can be set in 3 stages via an operating element that is accessible from above. The threshold can also be set during operation (in the non-hazardous area):

- Minimum: 80 g/l (4.99 lb/ft³)
- Adjustable in 3 stages depending on the density of the bulk solids: low, medium (factory default), high



■ 12 Setting the switching threshold

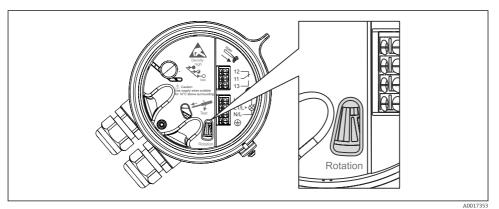
Setting the switching pressure

- 1. Move the operating element counterclockwise as illustrated in the graphic.
- 2. Move the operating element to the desired position and let it click into place.

6.2 Rotational movement display

The shaft's rotational movement is displayed by a ratchet disk fitted on the drive axle of the rotary paddle. The viewing area is lit up by an LED to make it easier to see. The rotational movement of the disk, and therefore also the shaft, can be checked through an inspection opening in the cover of the internal compartment when the cover is closed.

Operation Soliswitch FTE20



■ 13 Inspection glass to observe rotational movement

Indicator light (optional)

6.3

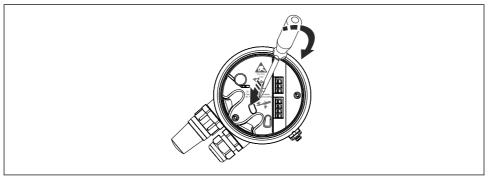
■ 14

The point level switch is optionally fitted with an indicator light that lights up when the rotary paddle stops.

6.4 Testing the internal switch

Testing the internal switch

When the housing cover is open, the function of the internal switch to switch off the motor can be checked by inserting a screwdriver into the opening provided in the electronics cover and by moving the handle in the direction of the arrow.



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Soliswitch FTE20 Commissioning

7 Commissioning

7.1 Post-installation and post-connection check

Checklists:

- Post-installation check → 🖺 13
- Post-connection check → 🗎 16

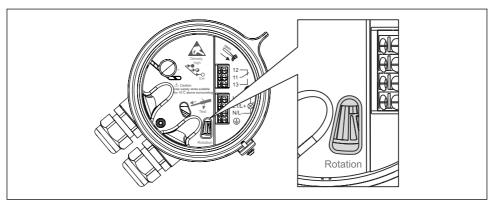
7.2 Setting the switching pressure (sensitivity)

The switching threshold can be adapted to the weight of the bulk solids in 3 stages via an operating element that is accessible from above (also possible during operation):

- Minimum: 80 g/l (4.99 lb/ft³)
- Adjustable in 3 stages depending on the density of the bulk solids: low, medium (factory default), high

7.3 Switching on the device

The shaft starts to turn as soon as the supply voltage is switched on. The rotational movement can be observed from the outside.



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■ 15 Window to observe rotational movement

8 Troubleshooting

Functional testing of the point level switch by testing the internal switch $\rightarrow \blacksquare 14, \blacksquare 18$

Maintenance Soliswitch FTE20

8.1 Point level switch with rotation monitoring

The table below shows the output signal of the point level switch with rotation monitoring for overfill protection.

Rotation monitoring of the point level switch (optional)

| | Power supply | Motor | Output signal of "full" sensor | Internal light |
|------------------|--------------|---|-----------------------------------|----------------|
| | On | Shaft turns | - | On |
| Normal operation | On | Shaft does not turn, rotating paddle is covered | Full | On |
| Event of fault | On | Shaft does not turn, rotating paddle is not covered | Full | Flashes |
| | Off | | Full | Off |

If the rotation monitoring system detects an error, a "full" alarm is signaled and the light in the electronics housing flashes.

Function testing of the point level switch

Operate the internal switch

- 1. Insert a screwdriver or another suitable tool in the opening provided in the electronics cover and move it in the direction indicated, see testing the internal switch
 - → 14, 18.
 - ► The switch is operated and the empty/full alarm is reset.
- 2. Wait for the error detection time to elapse (approx. 25 s).
 - If no rotational movement is detected during the error detection time, the device signals the full or empty alarm again and the light in the electronics housing flashes.

9 Maintenance

No special maintenance work is required for the device.

9.1 Cleaning

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

Soliswitch FTE20 Repair

10 Repair

10.1 General information

Due to its design, the device cannot be repaired.

10.2 Spare parts

Spare parts currently available for the device:

http://www.products.endress.com/spareparts_consumables. Always quote the serial number of the device when ordering spare parts!

| Туре | Order code |
|--------------------------------------|------------|
| Housing cover | 71418346 |
| Flange version | 71418347 |
| Hinged rotary paddle, 304 | 71418318 |
| Double rotary paddle | 71418342 |
| Rope extension | 71418345 |
| Universal joint rope extension set | 71572490 |
| Indicator light | 71418344 |
| Bulb set E14 24-28 VDC/24 VAC, 5 pcs | 71528394 |
| Bulb set E14 115 VAC, 5 pcs | 71528395 |
| Bulb set E14 230 VAC, 5 pcs | 71528396 |

10.3 Return

The requirements for safe device return can vary depending on the device type and national legislation.

- 1. Refer to the web page for information: http://www.endress.com/support/return-material
 - Select the region.
- 2. Return the device if repairs or a factory calibration are required, or if the wrong device was ordered or delivered.

Technical data Soliswitch FTE20

10.4 Disposal



If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to the manufacturer for disposal under the applicable conditions.

11 Technical data

11.1 Input

11.1.1 Measured variable

Level (in line with the orientation and length)

11.1.2 Measuring range

The measuring range depends on the installation location of the device and the selected length of the shaft 75 to 300 mm (2.95 to 11.81 in) or the rope extension up to max. $2\,000$ mm (6.56 ft).

11.2 Output

11.2.1 Output signal

Binary

11.2.2 Switch output

Function

Switch a floating changeover contact.

Switching behavior

On/off

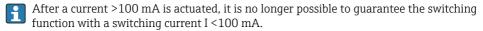
Switching time

From rotary paddle standstill until output of the switch signal: 20°, corresponds to 3.5 s

Soliswitch FTE20 Technical data

Switching capacity

- According to EN 61058: 250 V AC 5E4, 6(2) A
- According to UL 1054: 125 to 250 V AC, 5 A
- 24 V DC, 3 A
- Min. switching load 300 mW (5 V/5 mA)



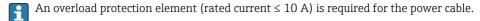
11.3 Power supply

11.3.1 Terminal assignment

| Symbol | Description | Symbol | Description |
|------------|-------------------|--------|-------------------------------------|
| (a) | Protective ground | H1 | Connection for signaling empty/full |
| N (AC), | Davier supply | N/L- | status detection (optional) |
| L- (DC) | Power supply | 11 | Changeover contact |
| L1 (AC), | Dower supply | 12 | Normally closed contact |
| L+ (DC) | Power supply | 13 | Normally open contact |

11.3.2 Supply voltage

- 24 V DC ±15%
- 24 V AC ±10%, 50/60 Hz
- 115 V AC ±10%, 50/60 Hz
- 230 V AC ±10%, 50/60 Hz



11.3.3 Power consumption

Max. 3.5 VA

11.3.4 Terminals

Terminals with spring terminal design

Permitted cable cross-sections

| Rigid | 0.2 to 2.5 mm ² (24 to 14 AWG) |
|--|---|
| Flexible | 0.2 to 2.5 mm ² (24 to 14 AWG) |
| Flexible with wire end ferrule without plastic ferrule | 0.5 to 2.5 mm ² (22 to 14 AWG) |
| Flexible with wire end ferrule with plastic ferrule | 0.5 to 1.5 mm ² (22 to 16 AWG) |
| AWG as per UL/CUL/kcmil | ' |

Use supply wires suitable for 10 °C (18 °F) above surrounding.

Technical data Soliswitch FTE20

11.4 Performance characteristics

11.4.1 Shaft speed

 1 min^{-1}

11.4.2 Sensitivity

■ Minimum: 80 q/l (4.99 lb/ft³)

 Depending on the density of the bulk solids adjustable in three stages: low, medium (default), high

11.4.3 Mechanical operating life

500 000 switching operations

11.5 Mounting

11.5.1 Mounting location

Installation position $\rightarrow \square 2$, $\square 8$

| Permitted | Not permitted | Comments |
|---|---|--|
| Vertical from the top | | |
| Angled from the top | | Cable entry must point downwards |
| From the side | | Cable entry must point downwards; with protective cover against falling solids depending on the installation position |
| From the bottom (device must be protected against shock-type loads) | | Cable entry must point downwards |
| | In direction of solids flow | |
| | Installation socket too long | |
| | Horizontal with shaft length >300 mm (11.8 in) | |

11.5.2 Special mounting instructions

Side load on the shaft

Max. 60 N

Load on the rope

Max. 1500 N

Operating pressure (abs.)

0.5 to 2.5 bar (7.25 to 36.3 psi)

Soliswitch FTE20 Technical data

Housing can be rotated 360°

To adjust to the direction of the cable entries (pointing downwards)

Cable entries

The dust protection caps which are delivered with the device are only for protection during transport and storage. Close an unused cable entry with a blind plug (IP65) when commissioning the device.

Mechanical load of optional signal lamp

The optional signal lamp must be protected against mechanical stress (impact energy > 1 J).

Maximum flange depth of the connection

In the case of the standard rotary paddle, installation in flange connections is permitted up to a sleeve length of ≤ 40 mm (1.57 in), for lengths > 40 mm (1.57 in) this installation is only permitted in the version with the hinged rotary paddle. The insertion of the rotary paddle must be performed without the use of force and must be possible.

11.6 Environment

The device must be protected against direct sunshine.

All values not indicated as per DIN EN 6054-1.

11.6.1 Ambient temperature range

-20 to 60 °C (-4 to 140 °F)

11.6.2 Storage temperature

-20 to 60 °C (-4 to 140 °F)

11.6.3 Climate class

EN60654-1, Class C2

11.6.4 Degree of protection

IP66

11.6.5 Shock resistance

As per EN 60068-2-27: 30g

11.6.6 Vibration resistance

As per EN 60068-2-64: 0.01g²/Hz

11.6.7 Electromagnetic compatibility

Electromagnetic compatibility in accordance with all the relevant requirements of the EN 61326 series. For details refer to the Declaration of Conformity.

- Interference immunity: as per IEC 61326-1, industrial environment
- Interference emission: as per IEC 61326-1, Class B

Technical data Soliswitch FTE20

11.6.8 Electrical safety

Class I equipment, overvoltage category II, pollution degree 2

11.6.9 Altitude

< 2 000 m (6 560 ft) over MSL

11.7 Process

11.7.1 Medium temperature range

-20 to 80 °C (-4 to 176 °F)

11.7.2 Process pressure range

 \leq 1.5 bar (21.8 psi) overpressure (e.g. when silo is filled)

11.7.3 Solids weight

 $\geq 80 \text{ g/l } (4.99 \text{ lb/ft}^3)$

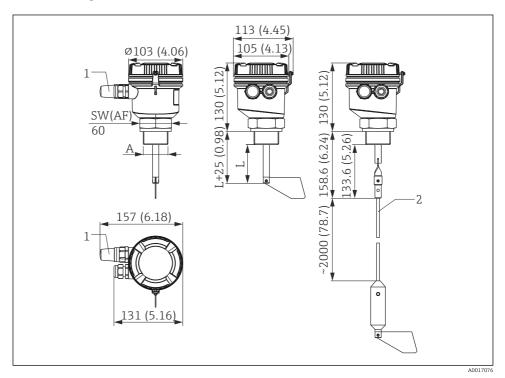
11.7.4 Grain size

 \leq 50 mm (1.97 in)

Soliswitch FTE20 Technical data

11.8 Mechanical construction

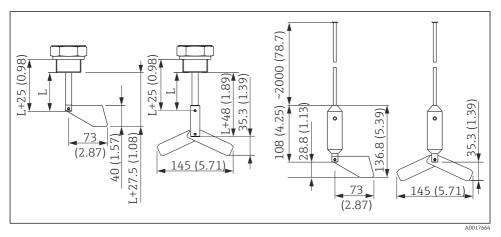
11.8.1 Design, dimensions



■ 16 Dimensions of the point level switch, dimensions in mm (in)

- 1 Indicator light (optional)
- 2 Version with rope extension, can be shortened

Technical data Soliswitch FTE20



Dimensions of the rotary paddle - standard and hinged, for shaft and rope extension, dimensions in mm (in)

| Dimensions depending on the version | | |
|-------------------------------------|--------------------|---------------------------------|
| A | Process connection | NPT 1¼", NPT 1½", G 1½" |
| L | Length of shaft | 75 to 300 mm (2.95 to 11.81 in) |

11.8.2 Weight

| Version / part | Weight (approx.) |
|--|------------------|
| With axis 100 mm (3.94 in), plastic process connection | 800 g (1.76 lb) |
| With axis 100 mm (3.94 in), metal process connection | 1600 g (3.53 lb) |
| Hinged rotary paddle | 110 g (0.24 lb) |
| Rope extension | 755 g (1.66 lb) |

11.8.3 Materials

| Designation | Material |
|---------------------------------|---|
| Housing | Polycarbonate |
| Captive screw cap | Polyamide |
| Cover seal | Silicone |
| Housing/process connection seal | Viton |
| Process seal | Synthetic/organic fiber elastomer seal (asbestos-free) NPT versions do not have a process seal and the thread must be sealed by the customer onsite, e.g. using a Teflon tape. |

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| Designation | Material |
|-----------------------------------|--|
| Shaft | 1.4305 / 303 |
| Rope extension | 1.4401 / 316 |
| Rotary paddle (standard / hinged) | 1.4301 / 304 |
| Shaft seal | NBR |
| Process connections | In stainless steel 1.4305 / 303 or PBT |

11.8.4 Cable entries

2 x cable gland, M20 x1.5

(optionally 1 x cable gland M20 x 1.5 and indicator lamp)

Permitted cable diameter 5 to 9 mm (0.2 to 0.35 in)

11.9 Operability

11.9.1 Local operation

Rotational movement display

The shaft's rotational movement is indicated by a reflector disk fitted on drive shaft of the rotary paddle and can be monitored through a sight opening in the drive/terminal cover. The disk's viewing area is lit up by an LED to make it easier to see.

If rotation monitoring (optional) detects an error, the LED flashes.

Setting the switching threshold (sensitivity)

The switching threshold can be adapted to the weight of the bulk solids in 3 stages via an operating element that is accessible from above (also possible during operation):

- Minimum: 80 q/l (4.99 lb/ft³)
- Adjustable in 3 stages depending on the density of the bulk solids: low, medium (factory default), high

11.10 Certificates and approvals

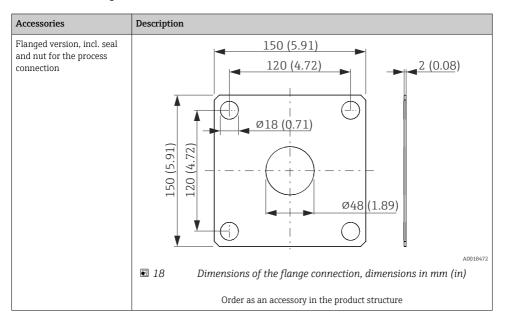
- For certificates and approvals valid for the device: see the data on the nameplate
- Approval-related data and documents: www.endress.com/deviceviewer → (enter the serial number)

11.11 Accessories

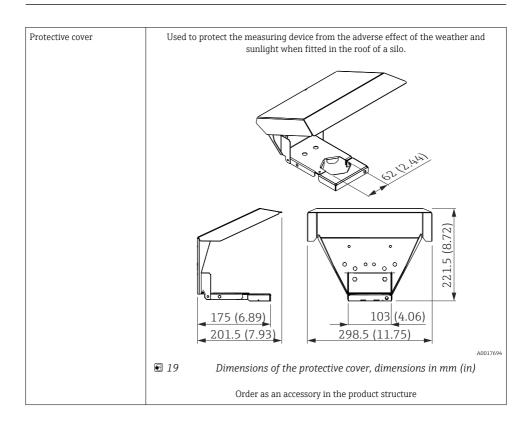
Various accessories, which can be ordered with the device or subsequently from Endress +Hauser, are available for the device. Detailed information on the order code in question is available from your local Endress+Hauser sales center or on the product page of the Endress +Hauser website: www.endress.com.

Technical data Soliswitch FTE20

11.11.1 Device-specific accessories



Soliswitch FTE20 Technical data





www.addresses.endress.com