



# Brief Operating Instructions

## Liquipoint FTW33

### IO-Link

Conductive and capacitance point level measurement

These Brief Operating Instructions are not a substitute for the Operating Instructions pertaining to the device.

Detailed information is provided in the Operating Instructions and other documentation.

Available for all device versions via:

- Internet: [www.endress.com/deviceviewer](http://www.endress.com/deviceviewer)
- Smartphone/tablet: Endress+Hauser Operations app

## Basic safety instructions

### Requirements for 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
- ▶ They must have read and understood the instructions in the manual, supplementary documentation and certificates (depending on the application) prior to starting work.
- ▶ They must follow instructions and comply with basic conditions.

The operating personnel must satisfy the following requirements:

- ▶ They must be suitably trained and authorized by the plant operator to meet the requirements of the task.
- ▶ They must follow the instructions in this manual.

### Intended use

The device described in this manual may only be used as a point level switch for applications with pasty and sticky media, as well as for media with heavy build-up. Incorrect use may pose a hazard. To ensure that the measuring device remains in perfect condition during the operating time:

- Measuring devices must be used only for media to which the process-wetted materials have an adequate level of resistance.

- The relevant limit values must not be exceeded or undershot. See Technical Information.

### Incorrect use

The manufacturer is not liable for damage caused by using the device incorrectly or for purposes for which it was not intended.

### Residual risks

Due to heat transfer from the process, the temperature of the electronics housing and the assemblies contained therein may rise to 80 °C (176 °F) during operation.

Danger of burns from contact with surfaces!

- ▶ In the event of elevated fluid temperatures, ensure protection against contact to prevent burns.

### Operational safety

Risk of injury!

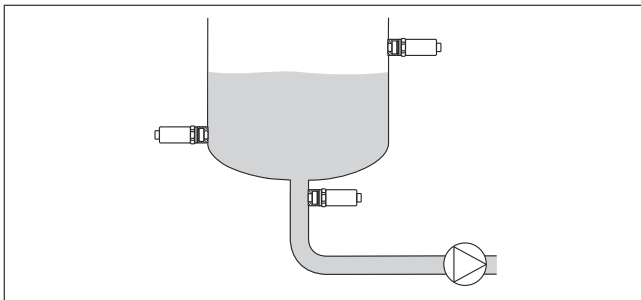
- ▶ Operate the device only if it is in proper technical condition, free from errors and faults.
- ▶ The operator is responsible for interference-free operation of the device.

## Mounting procedure

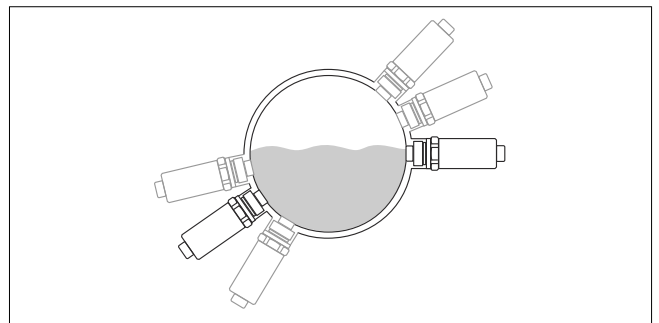
### Mounting requirements

- Installation is possible in any position in a vessel, pipe or tank.
- Use a socket wrench for measuring points that are difficult to access.

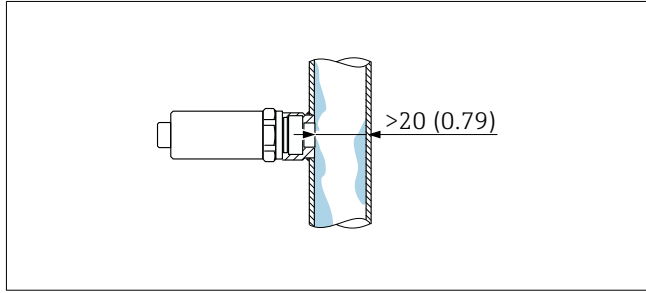
The socket wrench 32 AF can be ordered as an optional accessory.



1 Installation examples, vessel



2 Installation examples, pipe



3 Flush-mounted installation for highly viscous media, dimensions in mm (inch).

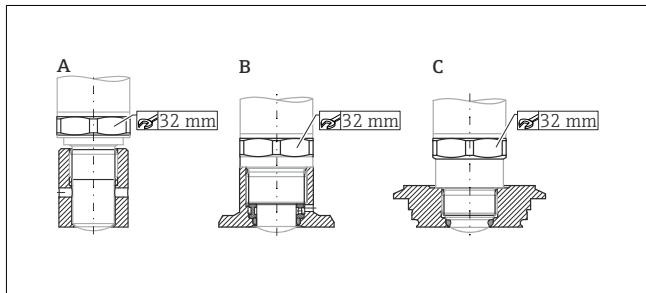
**i** Vertical installation:  
 If the sensor is not completely covered by the medium or if there are air bubbles on the sensor, this may interfere with the measurement.

**Mounting the device**

Required tools:  
 Open-ended wrench or socket wrench 32 AF

**Installation**

- Tighten by the hexagonal nut only.
- Torque: 15 to 30 Nm (11 to 22 lbf ft)



A G 1/2 thread  
 B G 3/4 thread  
 C Thread M24x1.5

**Electrical connection**

The measuring device has two modes of operation:

- Maximum point level detection (MAX): e.g. for overflow protection  
 The device keeps the electrical switch closed as long as the sensor is not yet covered by liquid or the measured value is within the process window.
- Minimum point level detection (MIN): e.g. to protect pumps from dry running  
 The device keeps the electrical switch closed as long as the sensor is covered by liquid or the measured value is outside the process window.

Choosing the MAX or MIN mode of operation ensures that the device switches in a safe manner even in an alarm condition, e.g. if the power supply line is disconnected. The electronic switch opens if the point level is reached, if a fault occurs or if the power fails (quiescent current principle).

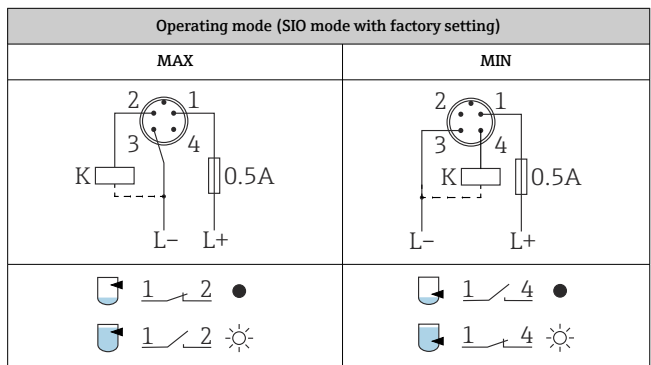
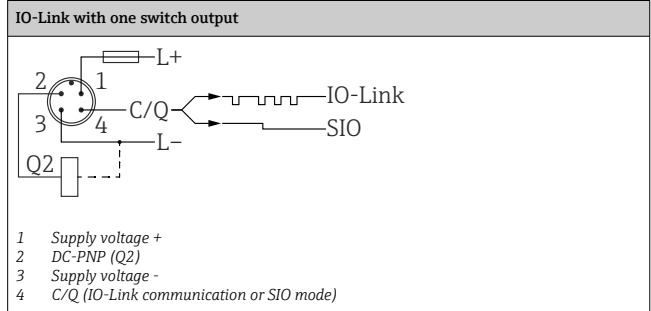
- IO-Link: communication on Q1; switch mode on Q2.
- SIO mode: If there is no communication, the device switches to SIO mode = standard IO mode.

The factory-set functions for the MAX and MIN modes can be changed via IO-Link.

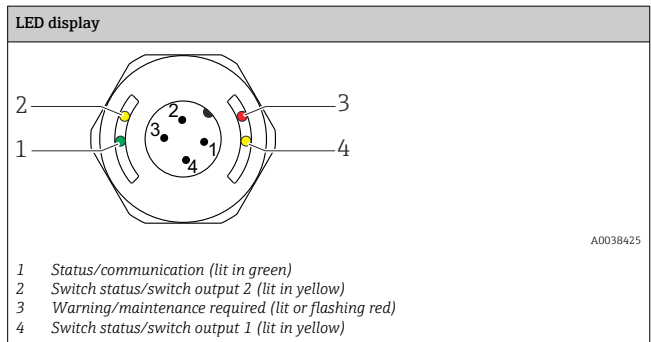
- Supply voltage 10 to 30 V DC on a direct current power unit  
 IO-Link communication is guaranteed only if the supply voltage is at least 18 V.

- In accordance with IEC/EN61010 a suitable circuit breaker must be provided for the measuring device.
- Voltage source: non-hazardous contact voltage or Class 2 circuit (North America)
- The device must be operated with a fine-wire fuse 500 mA (slow-blow).

**Connecting the device with an M12 plug**



Symbols	Description
*	Yellow LED lit
•	Yellow LED not lit
K	External load



**i** On the metal housing cover (IP69), there is no external signaling via LEDs.