Brief Operating Instructions

Capacitance

Products

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

Detailed information about the device can be found in the Operating Instructions and the other documentation: Available for all device versions via:

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

Basic safety instructions

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
- Follow instructions and comply with basic conditions

The operating personnel must fulfill the following requirements:

- Must be suitably trained and authorized by the plant operator to meet the requirements of the task
- Follow the instructions in this manual

Intended use

The device may be used only as a point level switch for powdered and finegrained bulk solids. It is used to detect minimum or maximum levels. The device may only be used for media to which the process-wetted materials are sufficiently resistant. The limit values for the operating time may not be exceeded or undershot, see the Technical Information manual.

Operational safety

- Operate the device only if it is in proper technical condition, free from errors
- The operator is responsible for the interference-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 equipment):

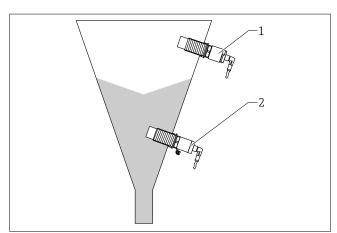
Based on the technical data on the nameplate, check whether the ordered device is permitted for the intended use in the hazardous area.

Mounting

Mounting requirements

Lateral mounting in bulk solids vessel, e.g. silo

A miniature contactor, a solenoid valve or a programmable logic controller (PLC) can be connected directly to the point level switch.



Application examples

Overfill protection or upper level detection (MAX)

Dry-running protection or lower level detection (MIN)

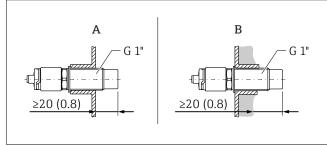
Mounting the device

Required tools

Open-ended wrench AF32

- When screwing in, turn by the hex bolt only.
- Torque: 5 to 12 Nm (3.7 to 8.9 lbf ft)

Installation examples



Engineering unit: mm (in)



- Standard installation with external G 1° threaded adapter Where buildup occurs on the silo wall with internal G 1° threaded adapter



For more installation variants, see the Operating Instructions and the Technical Information manual.

Type of connection

Other installation methods are possible with optionally available

Electrical connection

Connecting the device

- Supply voltage 12 to 30 V DC
- 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 500 mA fine-wire fuse (slow-blow) which is suitable for DC current in accordance with IEC 60127-2.
- Depending on the analysis of the switch outputs, the measuring device works in the MAX or MIN modes.

Type of connection	Operating mode	
M12 plug	MAX	MIN
	2 1 3 4 0.5A L- L+	2 1 3 4 K 0.5A L- L+
	<u>1</u> <u>1</u> <u>2</u> •	1/4
	<u>↑ 1 / 2</u> ⊹	<u>14</u>

Valve plug MAX MIN ∭0.5A 0.5A L+ 3 2 ->> Symbols **Description** Yellow LED lit Yellow LED not lit Κ External load

Operating mode

If using the valve plug: Depending on the assignment of the plug or the wiring of the cable, the device works in either the MAX or MIN operating mode.

For information on commissioning, see the Operating Instructions.

