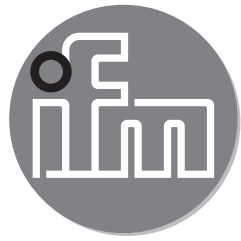


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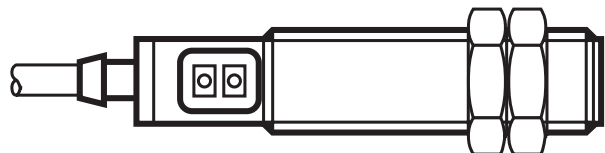
Operating instructions
Capacitive sensors

efectoriso®

KG5070

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Contents

1 Preliminary note.....	3
1.1 Symbols used.....	3
2 Safety instructions.....	3
3 Functions and features.....	4
4 Installation.....	4
4.1 Notes on flush and non-flush installation.....	4
4.2 Notes on installation in tanks.....	5
4.3 Notes on laying of the connection cable.....	5
5 Electrical connection.....	6
4.1 Wiring.....	6
6 Operating and display elements.....	6
7 Operating modes.....	7
7.1 Settings.....	7
8 Operation.....	9
9 Maintenance, repair and disposal.....	9
10 Approvals.....	10
11 Terms.....	10

1 Preliminary note

1.1 Symbols used

▶ Instruction

> Reaction, result



Important note:

Non-compliance can result in malfunctions or interference.

2 Safety instructions

- Please read the product description prior to installing the unit. Ensure that the product is suitable for your application without any restrictions.
- The unit conforms to the relevant regulations and EU directives.
- Improper use or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application.
- That is why installation, electrical connection, set-up, operation and maintenance of the unit must only be carried out by qualified personnel authorised by the machine operator.

3 Functions and features

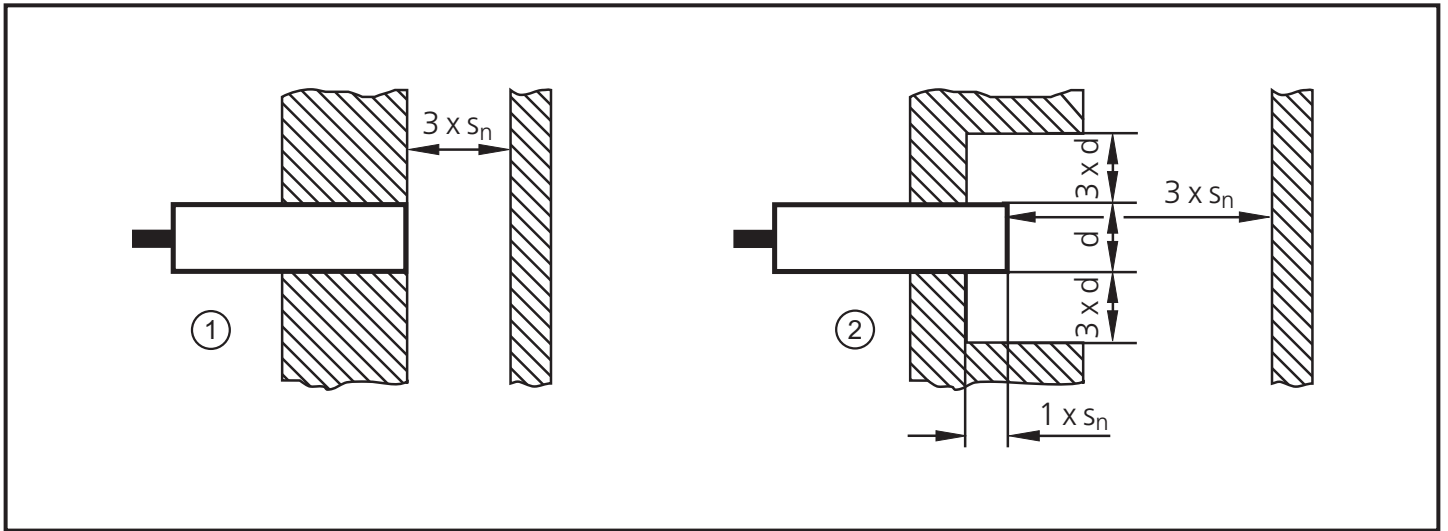
- Capacitive sensor for monitoring levels of liquids and dry bulk material, preferably of conductive media (e.g. aqueous solutions).
- Automatic adjustment to the medium to be detected by means of programming buttons

4 Installation

4.1 Notes on flush and non-flush installation

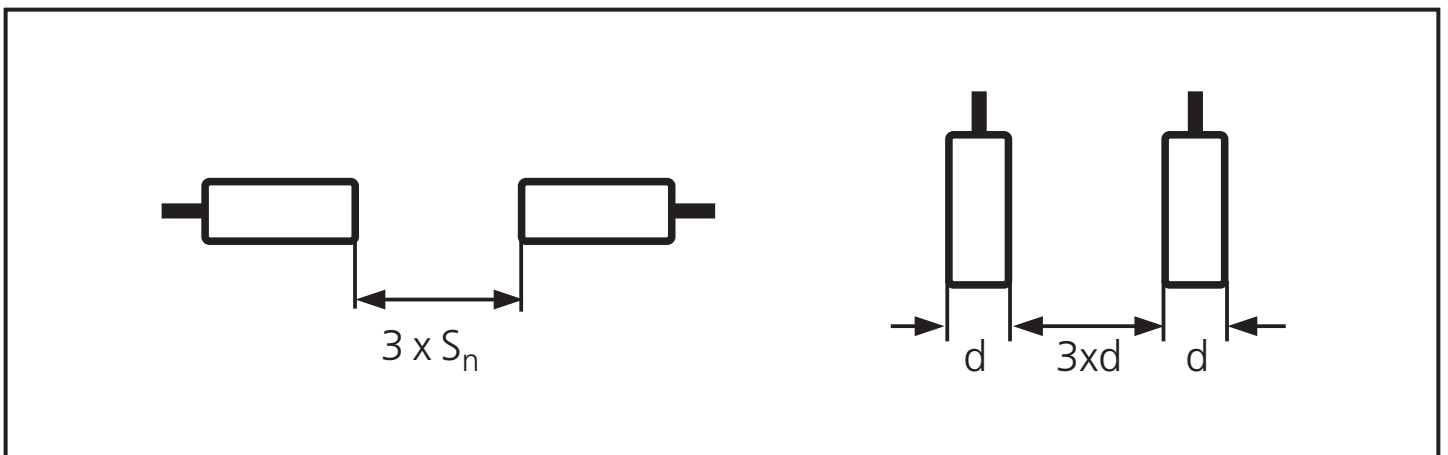
For flush installation of non-flush units the sensor properties change and the sensor can remain permanently switched (loss of function).

- ▶ Respect the open space around the sensing face



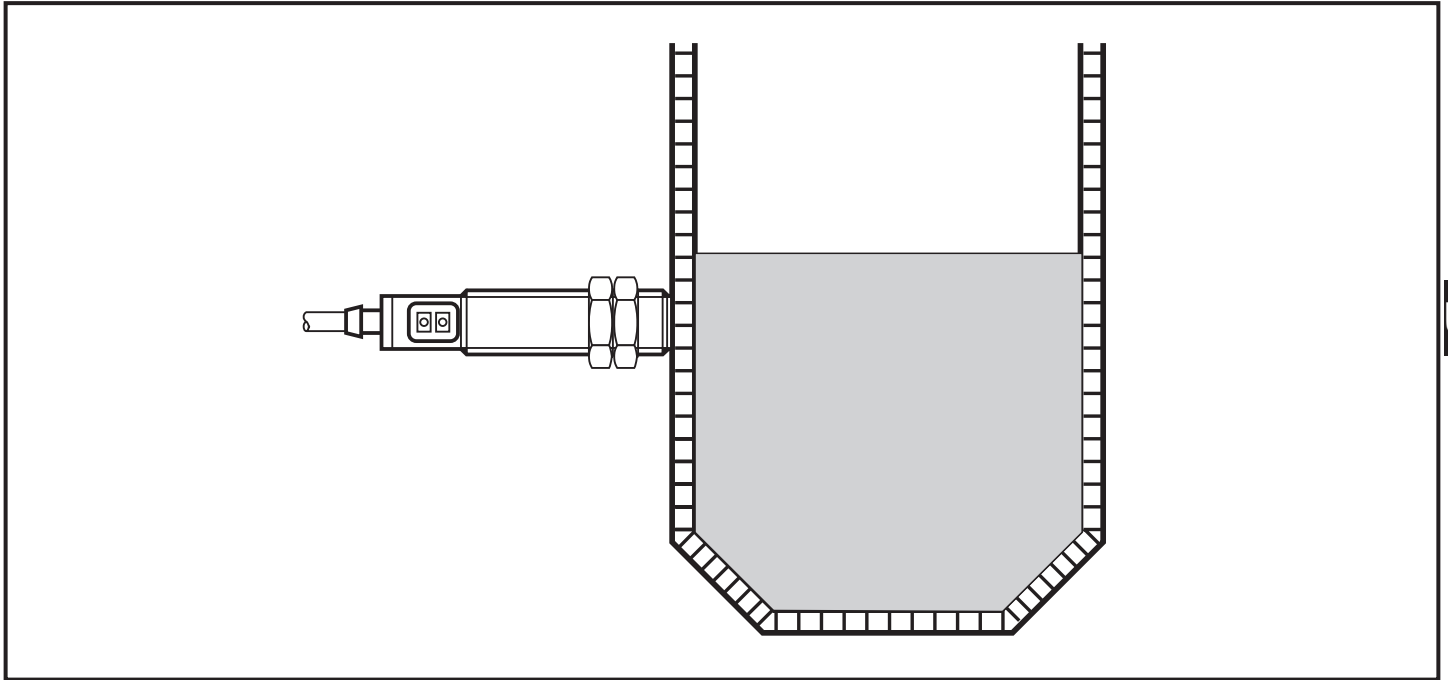
- 1: flush
- 2: non flush

- ▶ Adhere to the minimum distances when mounting several sensors of the same type



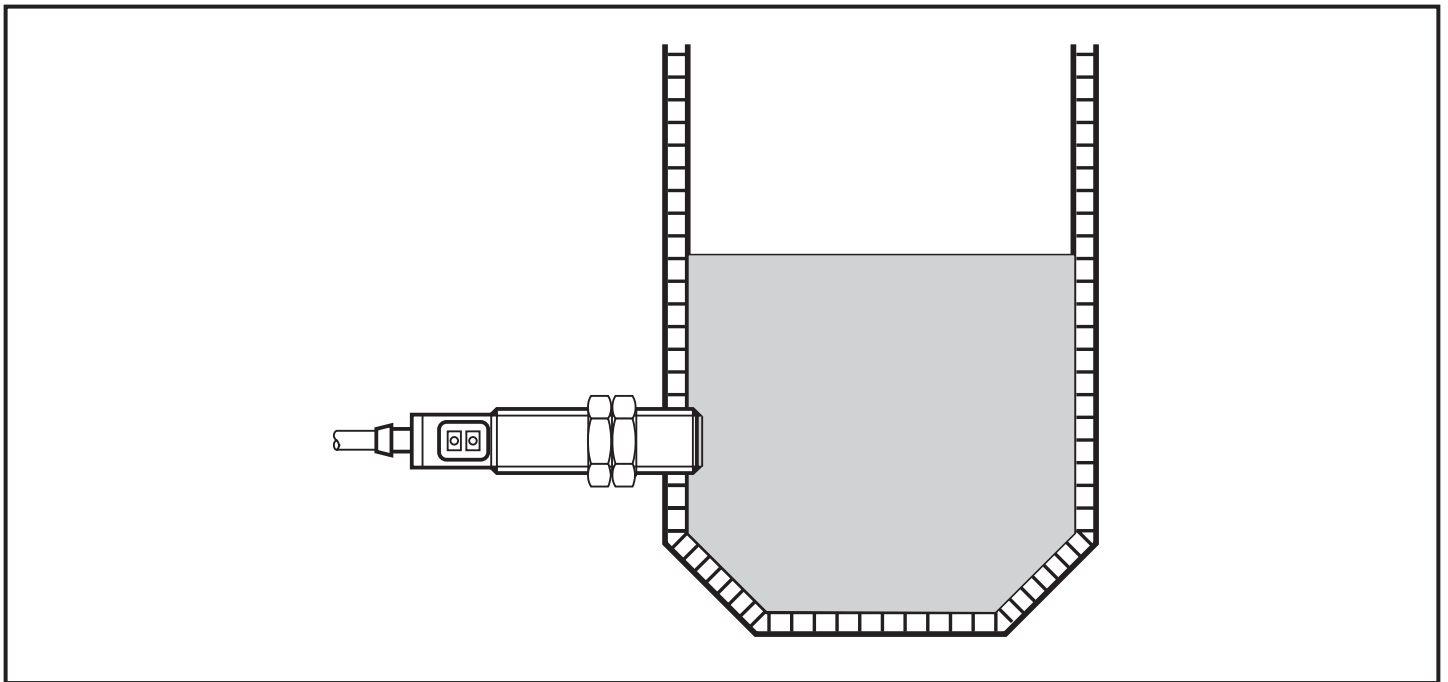
4.2 Notes on installation in tanks

- ▶ Mount the unit as shown:
- Not in contact with the medium (only for non-metallic tanks)



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- In contact with the medium
- ▶ In case of liquids use a mounting adapter (e.g. E43900).



4.3 Notes on laying of the connection cable

- ▶ Lay the cable as straight as possible and do not coil it.
- ▶ If necessary, cut the cable to the required length.

5 Electrical connection



The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

► Disconnect power.

► Connect the unit.

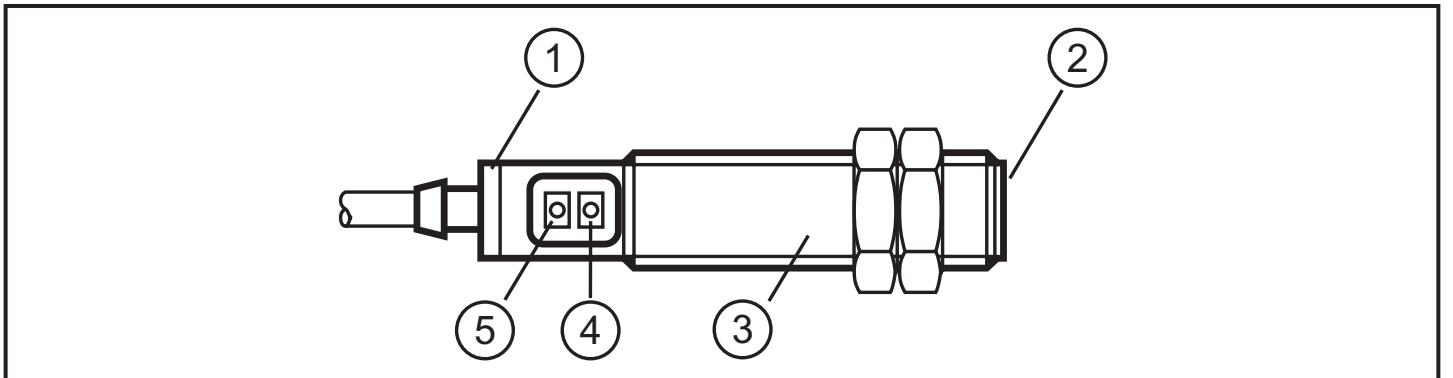
4.1 Wiring



p-switching (type...FPKG...)

BN = brown, BK = black, BU = blue

6 Operating and display elements



1: LED ring green / yellow (green: operation indication / yellow: output status indication)

2: sensing face

3: threaded sleeve

4: programming button OUT ON

5: programming button OUT OFF

Output function	Medium present	LED green	LED yellow	Teaching
normally open	no	on	off	no
normally open	yes	off	on	no
normally closed	no	off	on	no
normally closed	yes	on	off	no
normally open	no	on	flashes	yes
normally open	yes	on	flashes	yes
normally closed	no	on	flashes	yes
normally closed	yes	on	flashes	yes

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7 Operating modes

7.1 Settings

Basic teach empty state

Using the basic teach empty state the unit suppresses the wall of the tank. The basic teach empty state resets the unit, an adjustment teach already carried out is deleted.

Normally open unit (output closes when the tank is full)

- ▶ Press [OUT OFF] for min. 2 s (max. 6 s).
- > While pressing the pushbutton the LED flashes slowly. After releasing the pushbutton, the LED goes out.

Normally closed unit (output opens when the tank is full)

- ▶ Press [OUT ON] for min. 2 s (max. 6 s).

- > While pressing the pushbutton the LED flashes slowly. After releasing the pushbutton, the LED lights continuously.

The unit is now ready for operation. For the detection of media with a low dielectric constant (e.g. plastic granulates or oils) no further setting is required.

Adjustment teach full state

Necessary for aqueous media. The sensitivity of the unit is optimised. Later on, the adjustment teach full state can be repeated at any time, an adjustment teach empty state already carried out is not affected.

- ▶ Fill the tank until the sensing face of the unit is covered.
- > For NO the LED lights, for NC it goes out.

Normally open unit

- ▶ Press [OUT ON] for min. 6 s.
- > While pressing the pushbutton the LED first flashes slowly, after 6 s more quickly. After releasing the pushbutton, the LED lights continuously.

Normally closed unit

- ▶ Press [OUT OFF] for min. 6 s.
- > While pressing the pushbutton the LED first flashes slowly, after 6 s more quickly. After releasing the pushbutton, the LED goes out.

Adjustment teach empty state

Recommended for deposits in the tank. Deposits are suppressed. Later on, the adjustment teach can be repeated at any time, an adjustment teach full state already carried out is not affected.

- ▶ Empty the tank until the level is below the sensing face of the unit.
- > For NO the LED goes out, for NC the LED lights.

Normally open unit

- ▶ Press [OUT OFF] for min. 6 s.

- > While pressing the pushbutton the LED first flashes slowly, after 6 s more quickly. After releasing the pushbutton, the LED goes out.

Normally closed unit

- ▶ Press [OUT ON] for min. 6 s.
- > While pressing the pushbutton the LED first flashes slowly, after 6 s more quickly. After releasing the pushbutton, the LED lights continuously.

Locking / unlocking

The unit can be electronically locked to protect it against unintentional setting.

- ▶ To lock press [OUT ON] and [OUT OFF] simultaneously for 10 s.
- > Acknowledgement: LED state (yellow) changes for a short time (the lit LED goes out briefly or the LED which is not lit lights briefly).
- ▶ To unlock repeat this step.

If the unit does not react, it may be locked.

8 Operation

Check whether the unit operates correctly. Bring about a sensor response by taking suitable measures.

Display by LED:

LED yellow OFF: switching output disabled

LED yellow ON: switching output enabled

9 Maintenance, repair and disposal

The operation of the unit is maintenance-free. To ensure a correct function:

- Keep the sensing face and a clear space, if any, free from deposits and foreign bodies.

When removing the unit or changing the medium, a new adjustment might be necessary.

It is not possible to repair the unit.

After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.

10 Approvals

The device shall be supplied from an isolating transformer having a secondary Listed fuse rated 2.5 A

11 Terms

Active zone / active face

Area above the sensing face in which the sensor reacts to the approach of the target.

Output function

Normally open: Object within the active zone - output switched.

Normally closed: Object within the active zone - output blocked.

Programmable: Choice between normally closed or normally open.

Positive switching: Positive output signal (to L-).

Negative switching: Negative output signal (to L+).

Power-on delay time

The time the sensor needs to be ready for operation after application of the operating voltage (in the millisecond range).

Hysteresis

The difference between the switch-on and the switch-off point.

Leakage current

Current for the internal supply of 2-wire units, also flows through the load when the output is unswitched.

Current consumption

Current for the internal supply of 3-wire DC units.

Switch point drift

The shifting of the switch point owing to changes of the operating conditions (e.g. temperature, pressure, air humidity).

Short-circuit protection

ifm sensors which are protected against excessive current by means of a pulsed short-circuit protection. The inrush current of incandescent lamps, electronic relays and low resistance loads may cause this protection to cut in and turn the sensor off!

Operating voltage

The voltage range in which the sensor functions safely. A stabilised and smoothed direct voltage should be used! Take into account residual ripple!

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Technical data and further information at
www.ifm.com → Select your country → Data sheet direct: