Operating instructions
Ultrasonic diffuse-reflection sensor
without IO-Link

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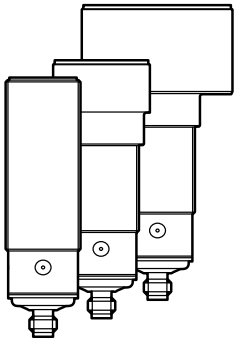
UIT510
UIT511
UIT513
UIT514
UIT516
UIT517



11487702 / 00 02 / 2019

1 Preliminary note

1.1 Symbols used

▶ Instructions

> Reaction, result

[…] Designation of keys, buttons or indications

→ Cross-reference

Important note
Non-compliance may result in malfunction or interference.

Information
Supplementary note.

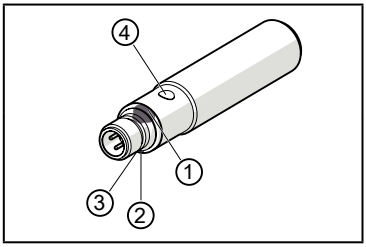
2 Safety instructions

- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ 3 Functions and features).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- Protect units and cables against damage.

3 Functions and features

Ultrasonic sensor for monitoring levels and detecting objects.

4 Installation



▶ Secure the unit to a bracket.

1/2: status LEDs 1/2 (yellow), setting aid and output indication
3: echo LED (green), is on when object or background is detected
4: teach button

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Sound-absorbing surfaces have a negative effect on a reliable function.

▶ Consider the dead zone (→ Technical data sheet): No object detection in the dead zone.

For units with metal housing (according to UL 508):
▶ Observe a minimum distance of 12.7 mm between the sensor and non-insulated live parts.

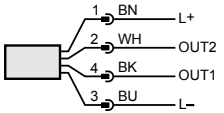
For further information please refer to www.ifm.com
→ General information about installation and operation.

5 Electrical connection

▶ Disconnect power.

▶ Connect unit (depending on the type selected):

BK: black
BN: brown
BU: blue
WH: white



colours to DIN EN 60947-5-2

• OUT1: switching output
• OUT2: analogue output

6 Settings

The unit and the parameters are set via the teach button (→ 6.1).

6.1 Teach button

6.1.1 Start programming mode

▶ Press the teach button for 2 s...6 s.

> Yellow status LEDs 1/2 flash (1 Hz), the unit is in the programming mode.

If programming has not been completed successfully, the unit returns to the previous setting.

6.1.2 Set output response

▶ Start programming mode (→ 6.1.1).

▶ Position the object in P1 (Fig. 1 or 2).

▶ Press the teach button for 1 s.

> Yellow status LEDs 1/2 flash (2.5 Hz), P1 setting is completed.

▶ Position the object in P2 (Fig. 1 or 2).

▶ Press the teach button for 1 s.

> Yellow status LEDs 1/2 flash briefly (4 Hz), P2 setting is completed.

6.1.3 Invert output response

▶ Press the teach button for > 6 s.

> Yellow status LEDs 1/2 flash (> 10 Hz).

> Yellow status LEDs 1/2 flash briefly (> 4 Hz).

> Output function is inverted.

6.1.4 Restore factory setting

▶ Align the unit so that no echo is received.

> Green echo LED off.

▶ Start programming mode (→ 6.1.1).

▶ Press the teach button for 1 s.

> Yellow status LEDs 1/2 flash briefly (4 Hz), factory setting is restored.

In case of object recognition, the following output signals are provided:

Fig. 1: Window function P1 > P2

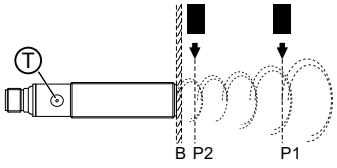
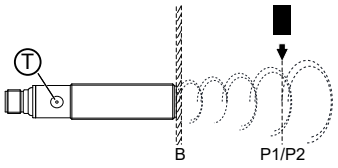


Fig. 2: Hysteresis function P1 = P2



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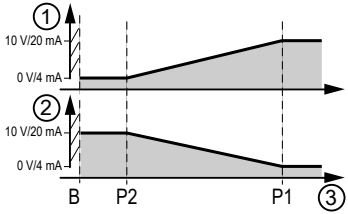
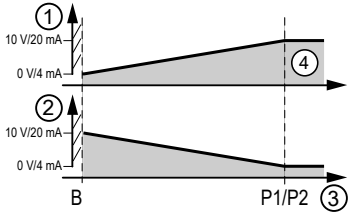
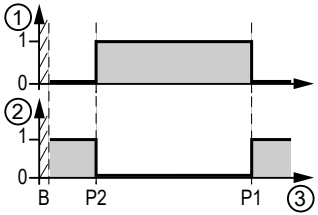
Analogue signal for window function



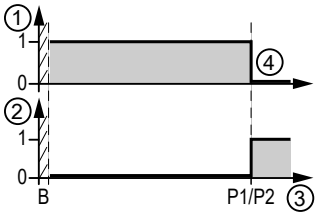
Analogue signal for hysteresis function



Switching signal for window function



Switching signal for hysteresis function



1: output response
2: Inverted output signal
3: Distance object
4: Factory setting

B: blind zone
P: taught position
T: teach button