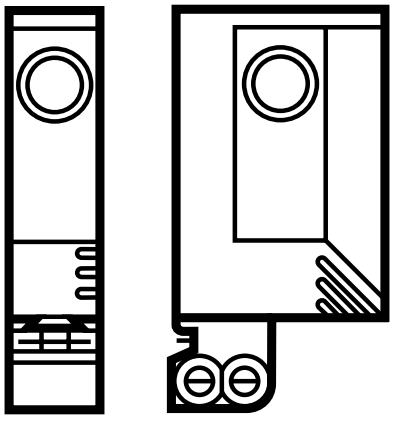
CE

Operating instructions
Retro-reflective sensor

UK

OJ50xx

11494816 / 00 07 / 2004



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1 Preliminary note

1.1 Symbols used

▶ Instruction

> Reaction, result

→ Cross-reference

Important note
Non-compliance can result in malfunctions or interference.

Information
Supplementary note.

UK

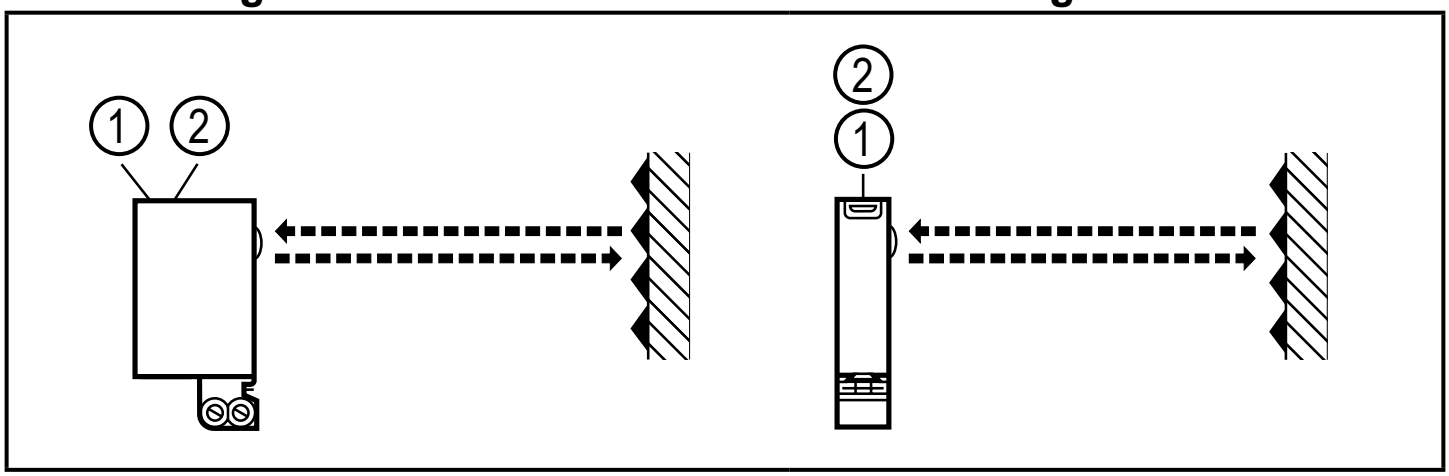
2 Function and features

In conjunction with a prismatic reflector or reflective tape the retro-reflective sensor detects objects and materials without contact and indicates their presence by a switched signal.

Range : see type label (value referred to prismatic reflector with Ø 80 mm).

3 Installation

side sensing* **front sensing***



1: LED
2: push button

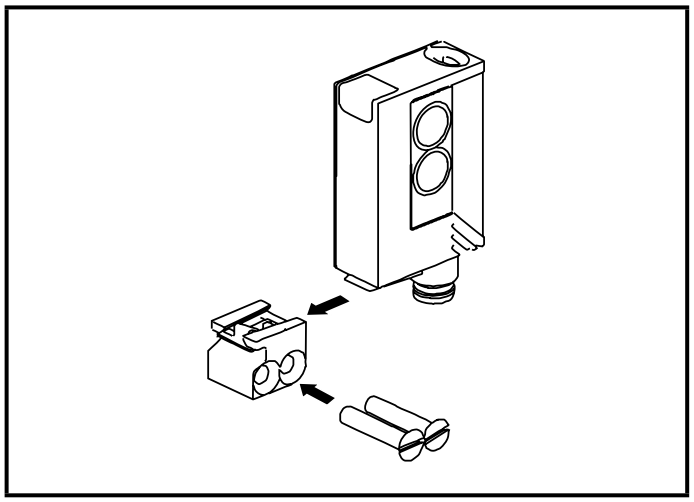
* In the following sections installation and set-up are described using the example of the type with front lens. The functions of the units with side lens are identical.

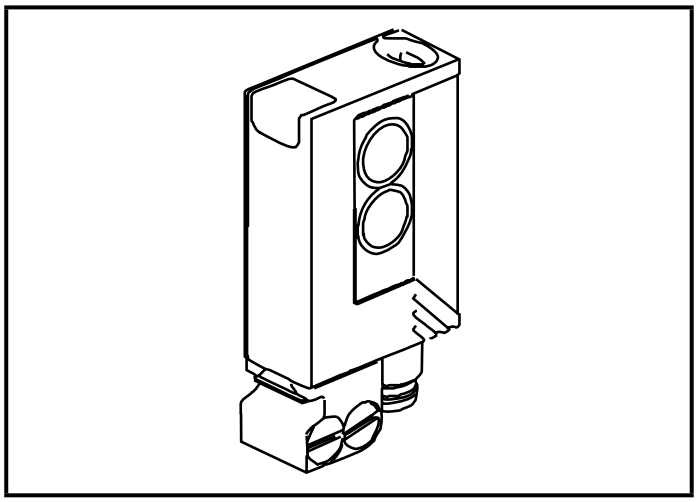
▶ Fix prismatic reflector / reflective tape in desired position.

▶ Align the photocell photocell towards the reflector and fasten it with a mounting fixture; the light spot must hit the prismatic reflector.

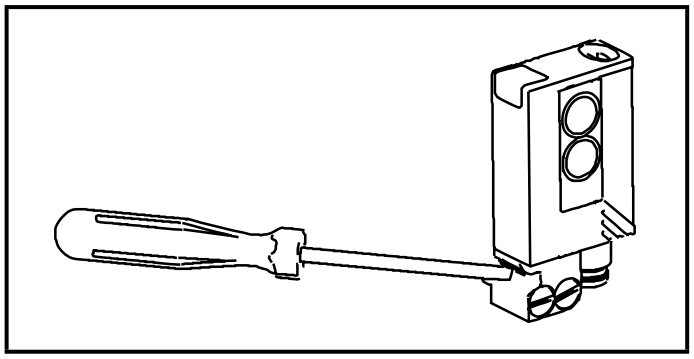
Maximum range is only possible with precise alignment.

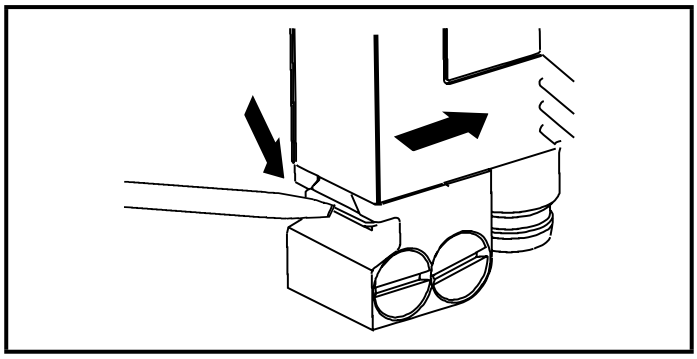
3.1 Installation of the supplied mounting fixture





▶ Secure the mounting fixture with the screws supplied, then slide the unit into the slot of the fixture until the spring clicks home.





▶ To remove the unit press the spring down with a screwdriver and slide the unit out.

4 Electrical connection

The unit must be connected by a qualified electrician.

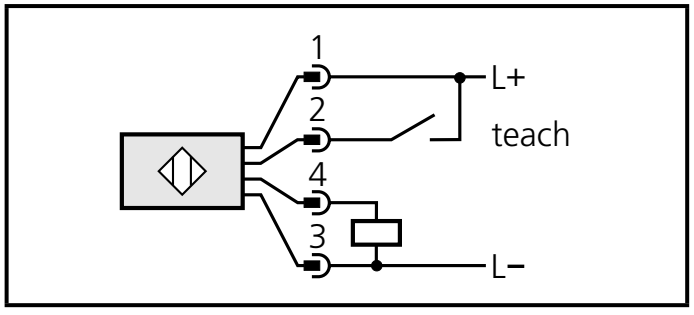
▶ The national and international regulations for the installation of electrical equipment must be adhered to.

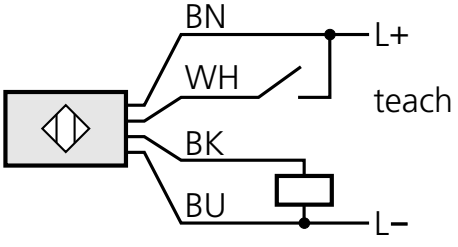
▶ Voltage supply according to EN 50178.

▶ Disconnect power.

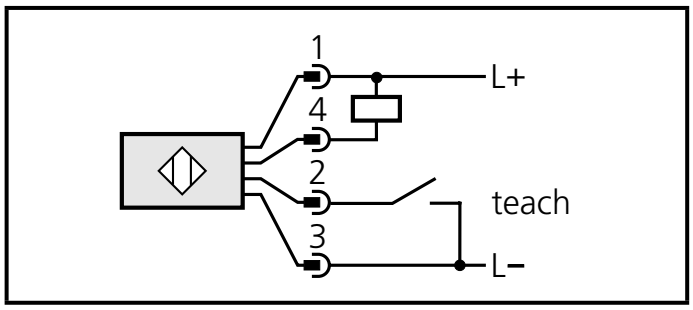
▶ Connect the unit as follows:

DC PNP





DC NPN



Core colours: BN = brown, BU = blue, BK = black, WH = white.

Programming of the output function by push button or programming wire (→ 6.5 Programming the output function).

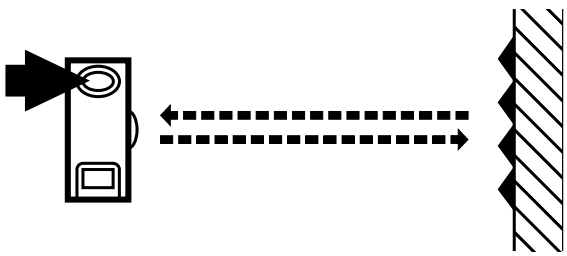
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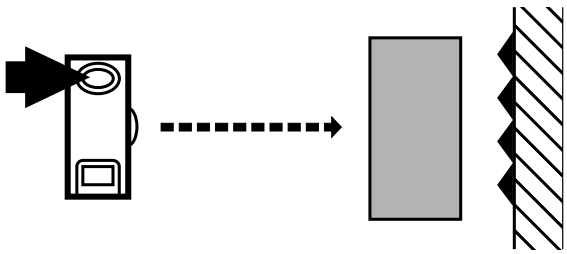
5 Commissioning

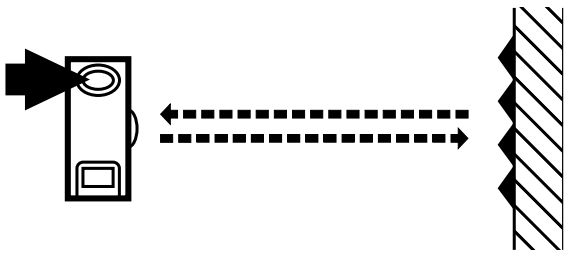
The retro-reflective sensor is supplied ready to operate (plug and play) set at the max. sensing range. This is sufficient if the retro-reflective sensor can operate with maximum excess gain (highest contrast). The following setting procedures should only be necessary in less straightforward applications, for example if partly transparent objects must be detected.

6 Settings

6.1 Setting of the sensitivity with stationary objects*

1	▶ Activate the programming mode of the unit. ▶ Press for about 2 s until the red LED flashes. 
	▶ The red LED goes out; the yellow and green LEDs flash alternately. ▶ The unit is in the programming mode.

2	Set the sensitivity with object. ▶ Press once 
	> The yellow and green LEDs go out for approx. 1 s, then flash again alternately.

3	Set the sensitivity without object. ▶ Press once 
	> The yellow and green LEDs go out for approx. 1 s. > After approx 3 s the green LED is on. > The unit is in the operating mode.

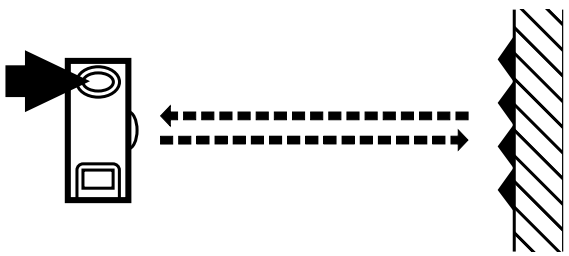
You can also proceed in reverse order: first setting without the object, then with the object.

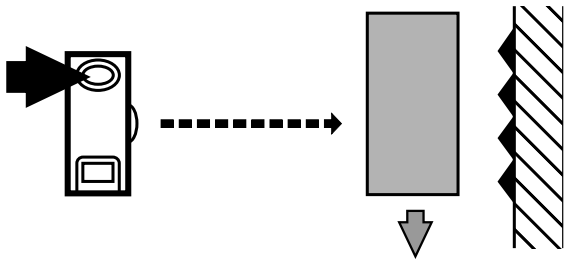
* The sensitivity can also be set in exactly the same way using the programming wire (pin 2 / WH). To activate the functions the programming wire is connected for the appropriate time to L+ (pin 1 / BN) for PNP units or to L- (pin 3 / BU) for NPN units. Feedback: If setting was not successful via the programming wire, the output will switch for 2 s. The unit then reverts to the operating mode with the sensitivity unchanged.

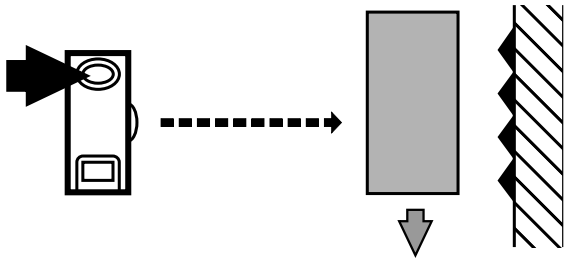
If the setting of the sensitivity is not possible (e.g. object signal and background signal are about the same), the red LED flashes after step 3 for approx. 2 s. The unit then passes into the operating mode with the sensitivity being unchanged.

If the setting button is not activated for 15 minutes during the programming process, the unit passes automatically into the operating mode with the sensitivity being unchanged.

6.2 Setting of the sensitivity with moving objects*

1	▶ Activate the programming mode of the unit. ▶ Press for about 2 s until the red LED flashes. 
	> The red LED goes out; the yellow and green LEDs flash alternately. > The unit is in the programming mode.

2	▶ Allow objects to pass through the detection area during the measurement (about 1 s) (number of the objects between min. 8 Hz and max. switching frequency). ▶ Press once 
	> The yellow and green LEDs go out for approx. 1 s, then flash again alternately.

3	▶ Allow objects to pass through the detection area during the measurement (about 1 s) (number of the objects between min. 8Hz and max. switching frequency). ▶ Press once 
	> The yellow and green LEDs go out for approx. 1 s. > After approx. 3 s the green LED is on. > The unit is in the operating mode.

* The sensitivity can also be set in exactly the same way using the programming wire (pin 2 / WH). To activate the functions the programming wire is connected for the appropriate time to L+ (pin 1 / BN) for PNP units or to L- (pin 3 / BU) for NPN units. Feedback: If setting was not successful via the programming wire, the output will switch for 2s. The unit then reverts to the operating mode with the sensitivity unchanged.

If the setting of the sensitivity is not possible (e.g. object signal and background signal are about the same), the red LED flashes after step 3 for approx. 2 s. The unit then passes into the operating mode with the sensitivity being unchanged.

If the setting button is not activated for 15 minutes during the programming process, the unit passes automatically into the operating mode with the sensitivity being unchanged.

6.3 Setting of the maximum sensitivity*

▶ Go into the programming mode (→ step 1).

▶ Align the unit so that no light is reflected.

▶ Press the setting button twice (→ steps 2 and 3).

* The maximum sensitivity can also be set in exactly the same way using the programming wire (pin 2 / WH). To activate the functions the programming wire is connected for the appro-

priate time to L+ (pin 1 / BN) for PNP units or to L- (pin 3 / BU) for NPN units.

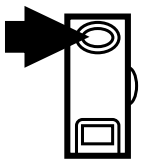
6.4 Electronic lock

Activate the lock by connecting the programming wire for about 15 s – 20 s*.

De-activate the lock by connecting the programming wire again for 15 s – 20 s*.

* To activate the functions the programming wire (pin 2 / WH) is connected to L+ (pin 1 / BN) for PNP units or to L- (pin 3 / BU) for NPN units for the appropriate time.

6.5 Programming the output function*

▶ Press for 10 s. 		> The red LED starts to flash fast after 2 s. > Then the yellow and green LEDs flash alternately. > After 10 s all LEDs go off, the output function has changed from light-on mode to dark-on mode (or vice versa).

* The output function can be programmed in exactly the same way using the programming wire (pin 2 / WH). To activate the functions the programming wire is connected for the appropriate time to L+ (pin 1 / BN) for PNP units or to L- (pin 3 / BU) for NPN units.

7 Operation

▶ Check the safe functioning of the unit.

> Display by LEDs.

LED green is lit	Unit is ready for operation.
LED yellow is lit	Output is switched.
LED red is lit	Error in object detection, e.g. maladjustment, soiling of the lenses.
LEDs yellow + red	Flash alternately, 2 Hz: output short-circuited. Flash alternately, 1 Hz: internal malfunction (output is not switched).

8 Maintenance, repair and disposal

▶ Keep the front panes of the sensors free from soiling.

▶ For cleaning do not use any solvents or cleaning agents which could damage the plastic material.

Technical data and further information at

www.ifm.com → Select your country → Data sheet direct: