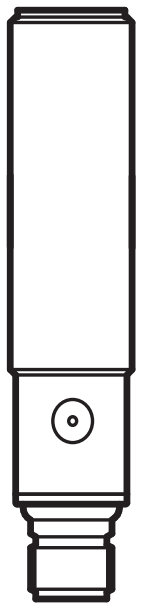
ifm electronic

Operating instructions
Ultrasonic retro-reflective sensor
efector230

UK

UGA



80237717 / 00 04 / 2016

1 Preliminary note

1.1 Symbols used

▶ Instructions

> Reaction, result

→ Cross-reference

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

Information
Supplementary note.

2 Safety instructions

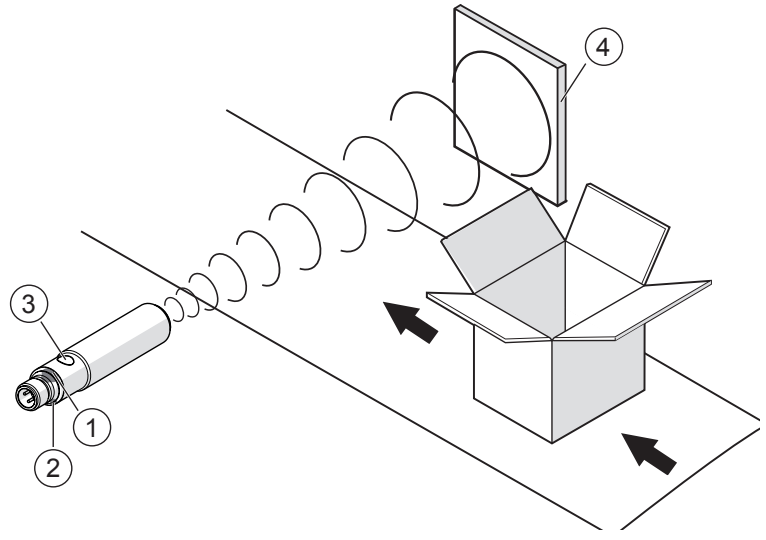
- Installation, electrical connection, set-up, operation and maintenance of the unit must be carried out by qualified personnel authorised by the machine operator.

3 Functions and features

Ultrasonic retro-reflective sensor detect without any contact objects made of various materials that interrupt the barrier. Detected objects are signalled via switching output.

4 Installation

UGxxxx / UGAxxx



1: Status LED (yellow)
2: Echo LED (green)
3: Set button
4: Reflector

▶ Adjust the ultrasonic sensor to the reflector and secure it to a bracket.
> The reflector is detected when the echo LED (green) lights.

The functional specifications refer to a mild steel reflector defined by ifm, at maximum range, with an edge length of 300 mm. The minimum size of the reflector depends on the size of the object. For further information please view "Basic information about installation and operation" → www.ifm.com.

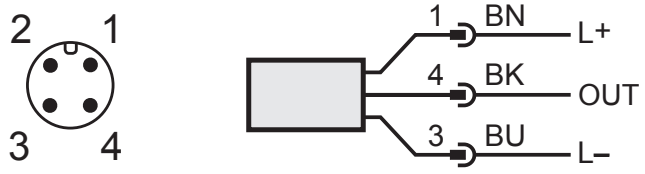
When using ultrasonic reflective barriers, please observe the minimum distances to the reflector → Technical data sheet!

5 Electrical connection

▶ Disconnect power.

▶ Connect the unit:

Core colours	
BK	black
BN	brown
BU	blue



OUT: Switching output

Colours to DIN EN 60947-5-2

Technical data and more information at → www.ifm.com

6 Set-up

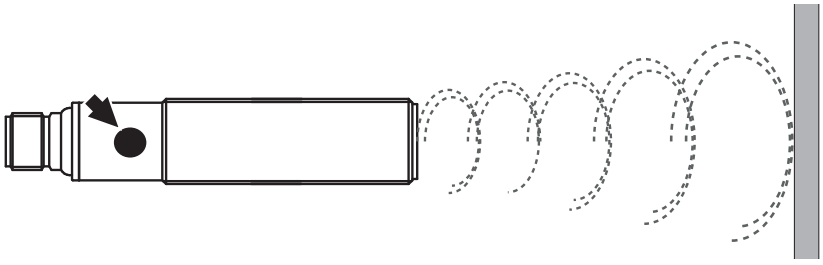
Note the LED behaviour for the set-up:

Echo LED green	
On	Echo is received.
Off	No echo (reflector not recognised).
Off	For the time of resetting to factory setting.

Status LED yellow	
LED	Function acknowledgement
Flashes 1 Hz	Programming mode active.
Flashes 2.5 Hz	Adjustment to the reflector finished.
Flashes >10 Hz	Inverting the switching characteristics.

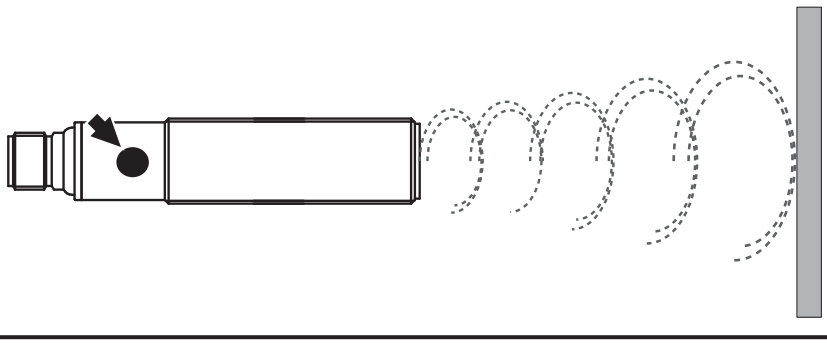
7 Settings

▶ Start programming mode of the device.

▶ Press button 2 s...6 s > LED (yellow) flashes (1 Hz).	

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

7.1 Adjust the unit to the reflector

▶ Press button for 1 s > Yellow LED flashes (2.5 Hz)	

> The unit is ready for use.

7.2 Inverting the output response

▶ Press button > 6 s.

> LED (yellow) flashes (> 10 Hz).

> Output functions are inverted (NO becomes NC or vice versa).

7.3 restore factory setting

▶ Align the device so that no echo is received.

▶ Go into the programming mode of the unit.

▶ Press the button once for 1 s.

> LED (yellow) flashes briefly with 4 Hz.

> Function of the factory setting:
Sn = maximum range
OUT = output function normally open (NO)

8 Operation

▶ Check whether the unit operates correctly.

> Display by LEDs:

Green LED is lit	The echo is received by the reflector.
Yellow LED on	The object interrupts the ultrasonic reflective barrier, the output is switched (output function NO).
Yellow LED on / green LED off	Reflector is not detected (output function NO)
LED green flashes	short circuit at the output.

The minimum distance between the "Proximity Switch Metal Enclosure" and any "External uninsulated live part" shall be at least 12.7 mm.