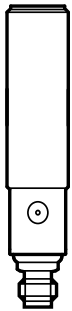
Operating instructions
Ultrasonic retro-reflective sensor without IO-Link

UGR502
UGR503

UK



11487704 / 00 07 / 2018

1 Preliminary note

1.1 Explanation of symbols

▶ Instructions

> Reaction, result

→ Cross-reference

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

Information
Supplementary note.

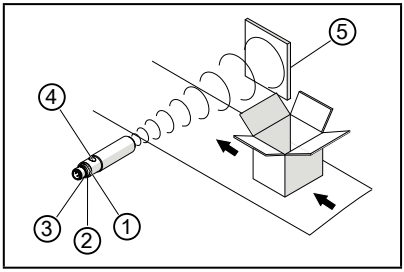
2 Safety instructions

- 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 (→ 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 the detection of objects.

4 Installation



▶ Secure the unit to a bracket

1/2: Status LED (yellow), setting aid and output indication
3: Echo LED (green), is on when reflector is detected
4: Teach button
5: Reflector

UK

The functional specifications refer to a mild steel reflector defined by ifm at maximum range and with an edge length of 300 mm. The minimum size of the reflector depends on the size of the object.

With ultrasonic retro-reflective sensors adhere to the minimum distances to the reflector (→ Technical data sheet).

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.

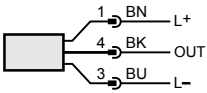
For further information please refer to www.ifm.com
→ General information about installation and operation.

5 Electrical connection

▶ Disconnect power.

▶ Connect the unit:

BK: Black
BN: Brown
BU: Blue



OUT: Switching output

Colours to DIN EN 60947-5-2

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 Adjust the unit to the reflector

The sensor is operational once the reflector has been aligned to it.

▶ Start programming mode (→ 6.1.1).

▶ Align the reflector to the unit (fig. 1).

▶ Press the teach button for 1 s.

> Yellow status LEDs 1/2 flash (2.5 Hz), adjustment 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.

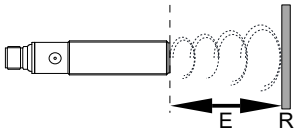
▶ Start programming mode (→ 6.1.1).

▶ Press the teach button for 1 s.

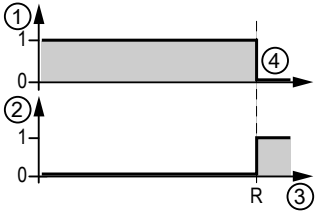
> Yellow status LEDs 1/2 flash briefly (4 Hz), factory setting is restored.

When the barrier is interrupted by an object, the following output signals are provided:

Fig. 1:



Switching signal when the barrier is interrupted by an object



R: Reflector position
E: Detection zone
1: Output signal
2: Inverted output signal
3: Distance object
4: Factory setting (max. range according to the data sheet)

7 Operation

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

Display by LEDs (independent of the programmed output configuration):

Status LED 1/2 yellow ON	Switching output is active.
Echo LED green ON	Echo is received.
Echo LED green flashing	Short circuit at the output.

Reflector is outside the detection zone.
> Echo LED green OFF.
> With NO function = switching output active. With NC function = switching output inactive.