

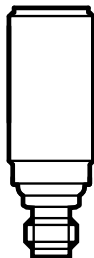


Operating instructions
Ultrasonic diffuse-reflection sensor
without IO-Link

UK

UGT20x
UGT21x
UGT50x
UGT52x

80237715 / 00 02 / 2019



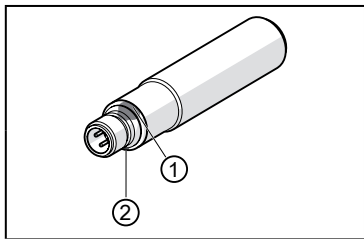
1 Safety instructions

- 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 (→ 2 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.

2 Functions and features

Ultrasonic sensor for monitoring levels and detecting objects.

3 Installation



► Secure the unit to a bracket.

1: Status LED (yellow), setting aid and output indication

2: Echo LED (green), is on when object or background is detected



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.




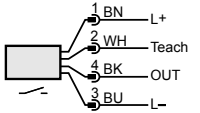
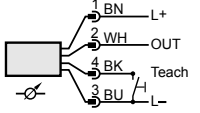
For further information please refer to www.ifm.com

→ General information about installation and operation.

4 Electrical connection

- ▶ Disconnect power.
- ▶ Connect unit (depending on the type selected):

UK

 <p>BK: black BN: brown BU: blue WH: white</p>	 <p>Units with switching output</p> <ul style="list-style-type: none"> • OUT: switching output • Teach: programming wire
	 <p>Units with analogue output</p> <ul style="list-style-type: none"> • OUT: analogue output • Teach: programming wire

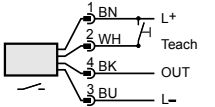
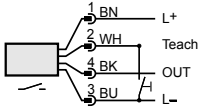
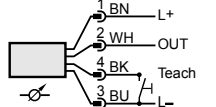
Colours to DIN EN 60947-5-2

5 Settings



The unit and the parameters are set via the teach programming wire (→ 5.1).

5.1 Wire teach

<p>Switching output: Teach with L+ (PNP)</p> 	<p>Switching output: Teach with L- (NPN)</p> 	<p>Analogue output: Teach with L-</p> 
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If programming has not been completed successfully, the unit returns to the previous setting.

5.1.1 Start programming mode

- ▶ Connect teach input for 2 s...6 s (→ 5.1 Wire teach).
- > The yellow status LED flashes > 1 s (1 Hz), the unit is in the programming mode.

5.1.2 Set output response

- ▶ Start programming mode (→ 5.1.1).
- ▶ Position the object in P1 (Fig. 1 or 2).
- ▶ Connect the teach input for approx. 1 s (→ 5.1 Wire teach).
- > The yellow status LED flashes (2.5 Hz), setting of P1 is completed.
- ▶ Position the object in P2 (Fig. 1 or 2).
- ▶ Connect the teach input for approx. 1 s (→ 5.1 Wire teach).
- > The yellow status LED briefly flashes (4 Hz), setting of P2 is completed.

5.1.3 Invert output response

- ▶ Connect the teach input for > 6 s (→ 5.1 Wire teach).
- > Yellow status LED flashes (> 10 Hz).
- > Yellow status LED flashes briefly (> 4 Hz).
- > Output signal is inverted.

5.1.4 Restore factory setting

- ▶ Align the device so that no echo is received.
- > Green echo LED off.
- ▶ Start programming mode (→ 5.1.1).
- ▶ Connect the teach input for 1 s.
- > The yellow status LED flashes < 1 s (4 Hz), factory setting is restored.

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

Fig. 1: Window function $P1 > P2$

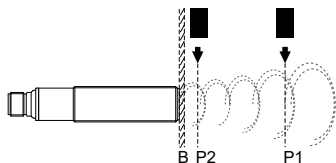
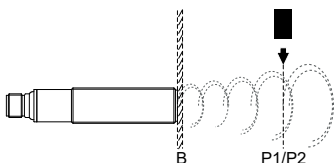
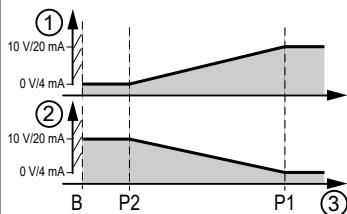


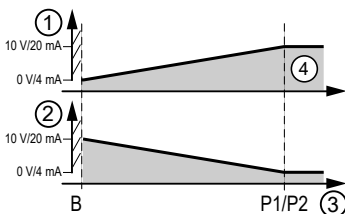
Fig. 2: Hysteresis function $P1 = P2$



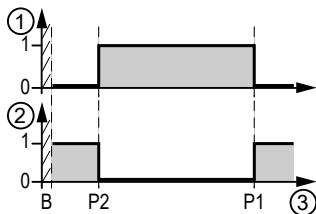
Analogue signal for window function



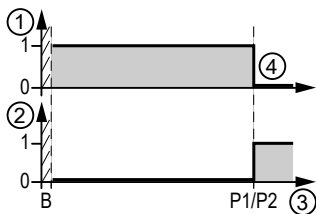
Analogue signal for hysteresis function



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