



Model Number

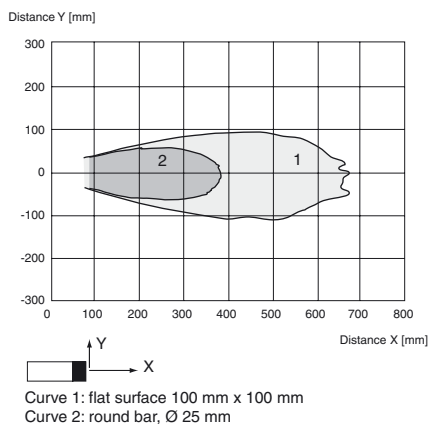
UBC250-12GM-E5-V1

Features

- 1 switch output
- Programmable output functions
- Very small unusable area
- Stainless steel housing

Curves

Characteristic response curve



Technical data

General specifications

Sensing range	30 ... 250 mm
Adjustment range	50 ... 250 mm
Unusable area	0 ... 30 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 310 kHz
Response delay	approx. 50 ms

Electrical specifications

Operating voltage U_B	10 ... 30 V DC, ripple 10 % _{SS}
No-load supply current I_0	≤ 30 mA

Input

Input type	1 program input lower evaluation limit A1: $-U_B ... +1$ V, upper evaluation limit A2: $+4$ V ... $+U_B$ input impedance: > 4.7 k Ω , pulse duration: ≥ 1 s
------------	---

Output

Output type	1 switch output E5, pnp NO/NC, programmable
Rated operational current I_e	100 mA, short-circuit/overload protected
Voltage drop U_d	≤ 3 V
Repeat accuracy	≤ 1 %
Switching frequency f	≤ 8 Hz
Range hysteresis H	1 % of the set operating distance
Temperature influence	± 1.5 % of full-scale value

Ambient conditions

Ambient temperature	0 ... 70 °C (32 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)

Mechanical specifications

Protection degree	IP68 / IP69K
Connection	V1 connector (M12 x 1), 4-pin
Material	
Housing	Stainless steel 1.4435 / AISI 316L O-ring for cover sealing: EPDM
Transducer	PTFE (diaphragm surface)
Mass	35 g

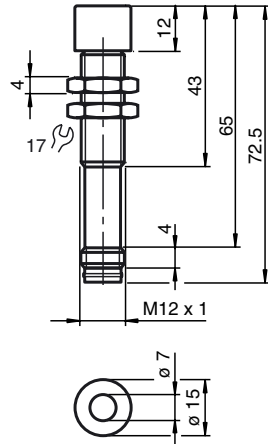
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

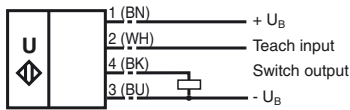
UL approval	cULus Listed, General Purpose
-------------	-------------------------------

Dimensions



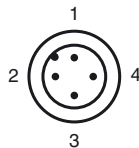
Electrical Connection

Standard symbol/Connections:
(version E5, pnp)



Core colours in accordance with EN 60947-5-2.

Pinout



Wire colors in accordance with EN 60947-5-2

1	BN
2	WH
3	BU
4	BK

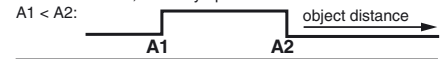
Adjusting the switching points

The ultrasonic sensor features a switch output with two teachable switching points. These are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. Switching point A1 is taught with $-U_B$, A2 with $+U_B$.

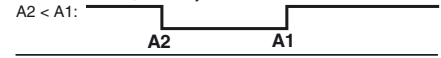
Additional Information

Programmable output modes

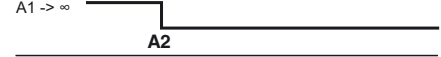
1. Window mode, normally open mode



2. Window mode, normally closed mode



3. One switch point, normally open mode



4. One switch point, normally closed mode



5. A1 $\rightarrow \infty$, A2 $\rightarrow \infty$: Object presence detection mode
Object detected: Switch output closed
No object detected: Switch output open

Accessories

UB-PROG2

Programming unit

BF 5-30

Mounting flange

BF 12

Mounting flange

BF 12-F

Mounting flange

V1-G-2M-PVC

Cable connector

V1-W-2M-PUR

Cable connector

Five different output functions can be set

1. Window mode, normally-open function
2. Window mode, normally-closed function
3. one switching point, normally-open function
4. one switching point, normally-closed function
5. Detection of object presence

TEACH-IN window mode, normally-open function

- Set target to near switching point
- TEACH-IN switching point A1 with $-U_B$
- Set target to far switching point
- TEACH-IN switching point A2 with $+U_B$

TEACH-IN window mode, normally-closed function

- Set target to near switching point
- TEACH-IN switching point A2 with $+U_B$
- Set target to far switching point
- TEACH-IN switching point A1 with $-U_B$

TEACH-IN switching point, normally-open function

- Set target to near switching point
- TEACH-IN switching point A2 with $+U_B$
- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switching point A1 with $-U_B$

TEACH-IN switching point, normally-closed function

- Set target to near switching point
- TEACH-IN switching point A1 with $-U_B$
- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switching point A2 with $+U_B$

TEACH-IN detection of objects presence

- Cover sensor with hand or remove all objects from sensing range
- TEACH-IN switching point A1 with $-U_B$
- TEACH-IN switching point A2 with $+U_B$

Default setting of switching points

A1 = blind range, A2 = nominal distance

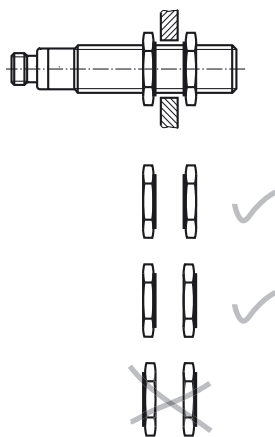
Installation conditions

If the sensor is installed at places, where the environment temperature can fall below 0 °C, for the sensors fixation, one of the mounting flanges BF 12, BF 12-F or BF 5-30 must be used. In case of direct mounting of the sensor in a through hole, it has to be fixed at the middle of the housing thread.

Note

If the sensor is used in an environment with strong electromagnetic interference, we recommend non-conductive mounting. For this, use the accompanying plastic nuts or the BF12 or BF12-F mounting flange.

Please observe proper application when using the accompanying plastic nuts. The hole for the sensor must be ≥ 14 mm.



Release date: 2010-06-14 08:56 Date of issue: 2010-06-14 197204_ENG.xml