CE

Model Number

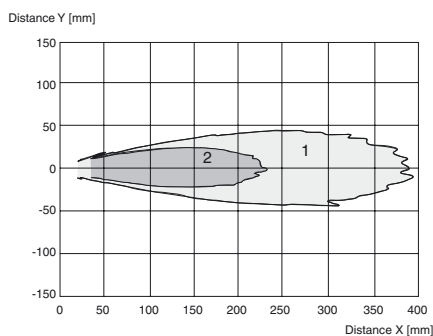**UB200-12GM-I-V1**

Single head system

Features

- **Analogue output 4 mA ... 20 mA**
- **Very small unusable area**
- **Measuring window adjustable**
- **Program input**
- **Temperature compensation**

Curves

Characteristic response curve

Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

Technical data

General specifications

Sensing range	15 ... 200 mm
Adjustment range	20 ... 200 mm
Unusable area	0 ... 15 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 400 kHz
Response delay	approx. 30 ms

Indicators/operating means

LED yellow	permanently yellow: object in the evaluation range yellow, flashing: program function, object detected
LED red	permanently red: Error red, flashing: program function, object not detected

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 kΩ, pulse duration: ≥ 1 s

Output

Output type	1 analogue output 4 ... 20 mA, short-circuit/overload protected
Resolution	0.17 mm
Deviation of the characteristic curve	± 1 % of full-scale value
Repeat accuracy	± 0.5 % of full-scale value
Load impedance	0 ... 200 Ω
Temperature influence	± 1.5 % of full-scale value

Ambient conditions

|	
Ambient temperature	-25 ... 70 °C (248 ... 343 K)
Storage temperature	-40 ... 85 °C (233 ... 358 K)

Mechanical specifications

Protection degree	IP67
Connection	V1 connector (M12 x 1), 4-pin
Material	
Housing	brass, nickel-plated
Transducer	epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass	25 g

Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-7:2003 IEC 60947-5-7:2003

Dimensions

M12x1

4

41

48.4

70

17

(Torque)
max. 10 Nm

LED

6

M12x1
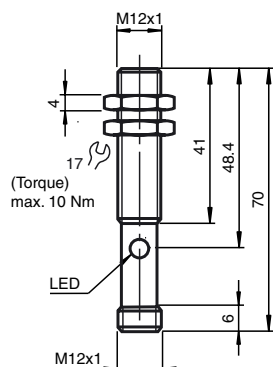
Electrical Connection

Standard symbol/Connections:
(version I)

U	1 (BN)	+ U_B
◇	2 (WH)	Teach input
	4 (BK)	Analogue output
	3 (BU)	- U_B
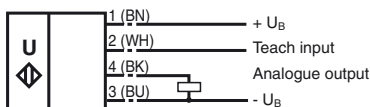
Core colours in accordance with EN 60947-5-2.

Pinout

Connector V1

2
3 • 1
4

Adjusting the evaluation limits

The ultrasonic sensor features an analogue output with two teachable evaluation limits. 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. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. The lower evaluation limit A1 is taught with -U_B, A2 with +U_B.

Two different output functions can be set:
1. Analogue value increases with rising distance to object (rising ramp)
2. Analogue value falls with rising distance to object (falling ramp)

**TEACH-IN rising ramp (A2 > A1)**
- Position object at lower evaluation limit
- TEACH-IN lower limit A1 with - U_B
- Position object at upper evaluation limit
- TEACH-IN upper limit A2 with + U_B

TEACH-IN falling ramp (A1 > A2):
- Position object at lower evaluation limit
- TEACH-IN lower limit A2 with + U_B
- Position object at upper evaluation limit

Additional Information

Programmed analogue output function

Rising ramp
A1 < A2:

A1   A2   object range

Falling ramp
A2 < A1:

A2   A1
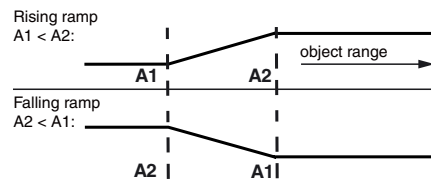
Accessories

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

UVW90-M12
Ultrasonic -deflector

- TEACH-IN upper limit A1 with - U_B

Default setting

A1:   unusable area
A2:   nominal sensing range
Mode of operation: rising ramp

LED Displays

Displays in dependence on operating mode	Red LED	Yellow LED
TEACH-IN evaluation limit		
Object detected	off	flashes
No object detected	flashes	off
Object uncertain (TEACH-IN invalid)	on	off
Normal mode (evaluation range)	off	on
Fault	on	previous state

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.

Release date: 2009-12-11 09:20   Date of issue: 2009-12-11   182235_ENG.xml