



Model Number

UB800-18GM40A-U-V1

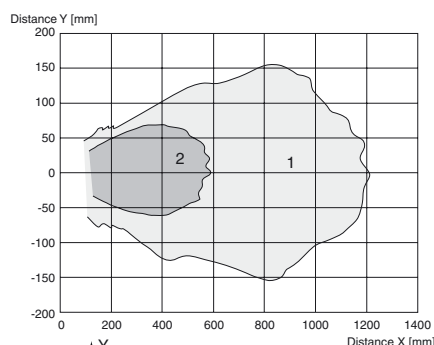
Single head system

Features

- Short design, 40 mm
- Function indicators visible from all directions
- Analogue output 0 V ... 10 V
- 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	50 ... 800 mm
Adjustment range	70 ... 800 mm
Unusable area	0 ... 50 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 255 kHz
Response delay	approx. 100 ms

Indicators/operating means

LED green	Power on
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	15 ... 30 V DC, ripple 10 % _{SS}
No-load supply current I_0	≤ 20 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
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Output

Output type	1 analogue output 0 ... 10 V
Default setting	evaluation limit A1: 70 mm evaluation limit A2: 800 mm
Resolution	0.4 mm at max. sensing range
Deviation of the characteristic curve	± 1 % of full-scale value
Repeat accuracy	± 0.5 % of full-scale value
Load impedance	> 1 kΩ
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)

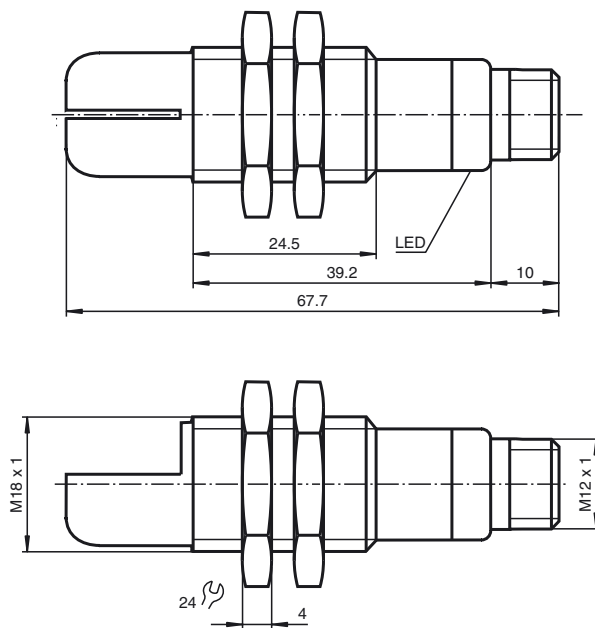
Mechanical specifications

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

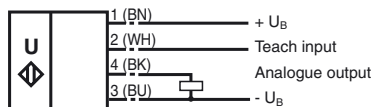
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

Dimensions



Electrical Connection

Standard symbol/Connections:
(version U)



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

Pinout

Connector V1



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

$A1 < A2$:



Falling ramp

$A2 < A1$:



$A1 \rightarrow \infty$, $A2 \rightarrow \infty$: Detection of object presence

Object detected: 10 V

No object detected: 0 V

Accessories

UB-PROG2

Programming unit

OMH-04

Mounting aid

BF 18

Mounting flange

BF 18-F

Mounting flange

BF 5-30

Mounting flange

V1-G-2M-PVC

Cable connector

V1-W-2M-PUR

Cable connector

- 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