

Ultrasonic sensor

UB800-18GM60A-E5-V1-M

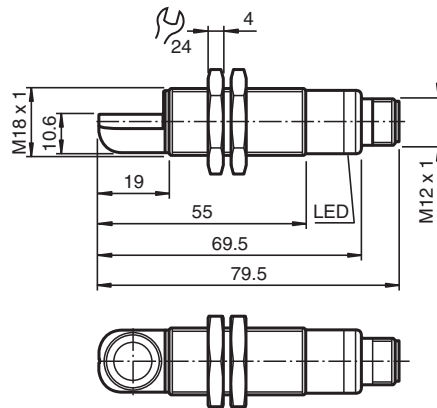


- Short version: 55 mm
- Function indicators visible from all directions
- Switching output
- 5 different output functions can be set
- Program input
- Temperature compensation
- E1-Type approval

Single head system



Dimensions



Technical Data

| General specifications | |
|----------------------------|---|
| Sensing range | 50 ... 800 mm |
| Adjustment range | 70 ... 800 mm |
| Dead band | 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 | indication of the switching state flashing: program function object detected |
| LED red | solid 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 ≤ 20 mA |
| Input | |

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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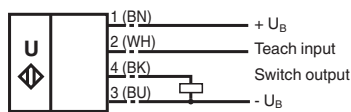
PEPPERL+FUCHS

Technical Data

| | | |
|---|--|---|
| Input type | 1 program input operating distance 1: $-U_B \dots +1 \text{ V}$, operating distance 2: $+6 \text{ V} \dots +U_B$ input impedance: $> 4,7 \text{ k}\Omega$ program pulse: $\geq 1 \text{ s}$ | |
| Output | | |
| Output type | 1 switching output E5, PNP NO/NC, programmable | |
| Rated operating current | I_e | 200 mA , short-circuit/overload protected |
| Default setting | Switch point A1: 70 mm Switch point A2: 800 mm | |
| Voltage drop | U_d | $\leq 3 \text{ V}$ |
| Repeat accuracy | $\leq 1 \%$ | |
| Switching frequency | f | $\leq 4 \text{ Hz}$ |
| Range hysteresis | H | 1 % of the set operating distance |
| Temperature influence | $\pm 1.5 \%$ of full-scale value | |
| Compliance with standards and directives | | |
| Standard conformity | | |
| Standards | EN IEC 60947-5-2:2020 IEC 60947-5-2:2019 | |
| Approvals and certificates | | |
| UL approval | cULus Listed, General Purpose | |
| CCC approval | CCC approval / marking not required for products rated $\leq 36 \text{ V}$ | |
| UN/ECE Regulation No. 10 (E1) | Type-approval number: 10R-058090 | |
| Ambient conditions | | |
| Ambient temperature | $-25 \dots 70 \text{ }^\circ\text{C}$ ($-13 \dots 158 \text{ }^\circ\text{F}$) | |
| Storage temperature | $-40 \dots 85 \text{ }^\circ\text{C}$ ($-40 \dots 185 \text{ }^\circ\text{F}$) | |
| Mechanical specifications | | |
| Connection type | Connector plug M12 x 1 , 4-pin | |
| Housing diameter | 18 mm | |
| Degree of protection | IP67 | |
| Material | | |
| Housing | brass, nickel-plated | |
| Transducer | epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT | |
| Mass | 32 g | |

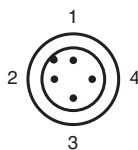
Connection

Standard symbol/Connections:
(version E5, pnp)



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

Connection Assignment



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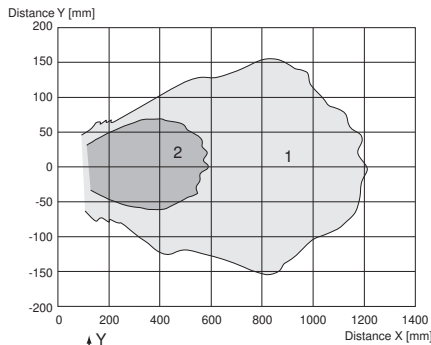
Connection Assignment

Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

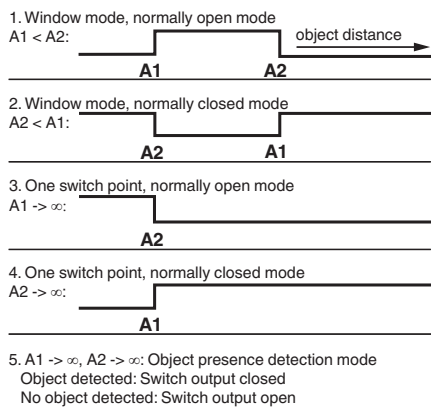
Characteristic Curve

Characteristic response curve



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

Programmable output modes






Accessories

| | | |
|--|-----------------|---|
| | UB-PROG2 | Programming unit |
| | OMH-04 | Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm |
| | BF 18 | Mounting flange, 18 mm |
| | BF 18-F | Plastic mounting adapter, 18 mm |

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Accessories

| | | |
|---|---------------------------|--|
|  | <p>BF 5-30</p> | <p>Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm</p> |
|  | <p>V1-G-2M-PVC</p> | <p>Female cordset single-ended M12 straight A-coded, 4-pin, PVC cable grey</p> |
|  | <p>V1-W-2M-PUR</p> | <p>Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey</p> |

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Teach-In

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. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. Switching point A1 is taught with $-U_B$, A2 with $+U_B$.

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 $+U_B$

LED Displays

| Displays in dependence on operating mode | Red LED | Yellow LED |
|--|---------|-----------------|
| TEACH-IN switching point: | | |
| Object detected | off | flashes |
| No object detected | flashes | off |
| Object uncertain (TEACH-IN invalid) | On | off |
| Normal operation | off | Switching state |
| Fault | on | Previous state |

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