

Through-beam ultrasonic barrier

UBE4000-30GM-SA2-V15

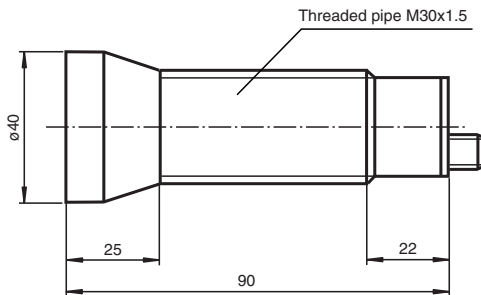


- Reliable detection of transparent materials
- High switching frequency
- Adjustable sensitivity
- Adjustable switch-on delay
- Small angle of divergence
- Protective functions
- Emitter and receiver included in the delivery package

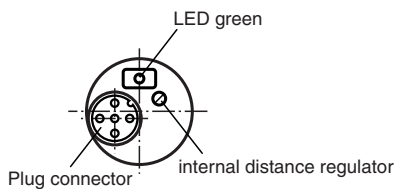


Dimensions

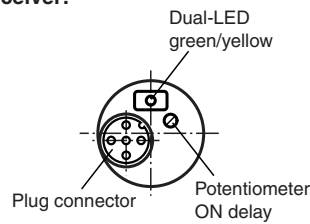
Dimensions:



Emitter:



Receiver:



Technical Data

General specifications

| | |
|----------------------|--|
| Sensing range | 0 ... 4000 mm , distance emitter-receiver 500 mm ... 4000 mm |
| Through-beam mode | Single path ultrasonic switch |
| Reference target | receiver |
| Transducer frequency | 85 kHz |

Indicators/operating means

| | |
|------------|--|
| LED green | alignment aid OFF: no ultrasonic signal flashing: uncertain area ON: positive reception |
| LED yellow | switching state |

Release date: 2020-05-23 Date of issue: 2021-02-05 Filename: 120344_eng.pdf

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

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PEPPERL+FUCHS

Technical Data

Electrical specifications

| | | |
|------------------------|-------|--|
| Operating voltage | U_B | 18 ... 30 V DC , ripple 10 % _{SS} |
| No-load supply current | I_0 | 35 mA emitter 25 mA receiver |

Output

| | | |
|-------------------------|----------|--|
| Output type | | 2 switch outputs PNP, normally open/closed (complementary) |
| Rated operating current | I_e | 200 mA |
| Voltage drop | U_d | ≤ 2.5 V |
| Switch-on delay | t_{on} | 100 ... 3000 ms |
| Switching frequency | f | ≤ 15 Hz |

Compliance with standards and directives

| | | |
|---------------------|--|---|
| Standard conformity | | |
| Standards | | EN 60947-5-2:2007+A1:2012 IEC 60947-5-2:2007 + A1:2012 |

Approvals and certificates

| | | |
|--------------|--|--|
| UL approval | | cULus Listed, General Purpose |
| CSA approval | | cCSAus Listed, General Purpose |
| CCC approval | | CCC approval / marking not required for products rated ≤36 V |

Ambient conditions

| | | |
|---------------------|--|--------------------------------|
| Ambient temperature | | 0 ... 60 °C (32 ... 140 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |

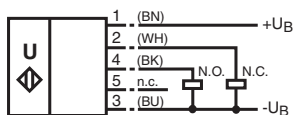
Mechanical specifications

| | | |
|----------------------|--|--|
| Connection type | | Connector M12 x 1 , 5-pin |
| Degree of protection | | IP65 |
| Material | | |
| Housing | | nickel plated brass; plastic components: PBT |
| Mass | | 160 g each sensor |

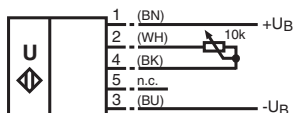
Connection

Standard symbol/Connection:
(version A2, pnp)

Receiver:

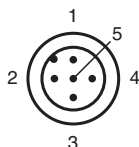


Emitter:



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

Connection Assignment

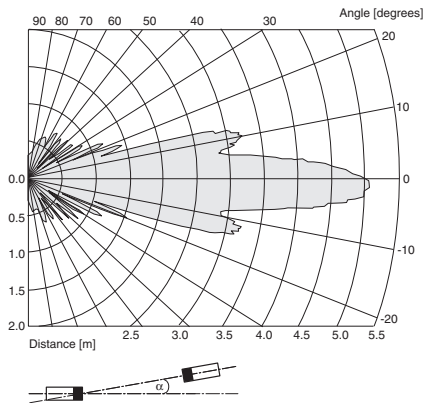


Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |
| 5 | GY | (gray) |

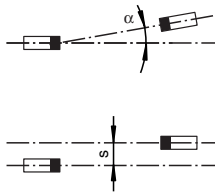
Characteristic Curve

Characteristic response curves



Installation Conditions

Alignment






Accessories

| | | |
|--|--------------------|---|
| | BF 30 | Mounting flange, 30 mm |
| | BF 5-30 | Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm |
| | V1-G-2M-PVC | Female cordset single-ended M12 straight A-coded, 4-pin, PVC cable grey |
| | UVW90-M30 | Ultrasonic -deflector |

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Accessories

| | | |
|---|---------------------|---|
|  | UVW90-K30 | Ultrasonic -deflector |
|  | M30K-VE | Plastic nuts with centering ring for the vibration-free mounting of cylindrical sensors |
|  | V15-G-2M-PVC | Female cordset single-ended M12 straight A-coded, 5-pin, PVC cable grey |

Additional Information

Description of the sensor functions

Remote potentiometer

The distance range of the through-beam ultrasonic barrier can be adjusted with the potentiometer integrated in the emitter, or via a remote potentiometer connected to the emitter.

The remote potentiometer simplifies the adjustment of the distance range if the sensors are installed in an inaccessible location. A 10 k Ω /0.3 W potentiometer serves as the remote potentiometer. The connection is realised using the plug connector pins 2 and 4 of the emitter (see: Electrical Connection).

The following distance ranges can be set using the remote potentiometer:

| Adjustment of the internal distance regulator | Distance range adjustable via remote potentiometer |
|---|--|
| Minimum switching point | 0 m ... 2 m |
| Maximum switching point | 2 m ... 4 m |

When operating without a remote potentiometer, the plug connector pins 2 and 4 must be bridged.

Adjustment

Turning the potentiometer on the emitter to the left (counterclockwise) causes a reduction of the transmission power. Thus, the through-beam ultrasonic barrier becomes more sensitive.

Note: If no remote potentiometer is connected and the connector pins 2 and 4 are not bridged, the emitter always operates at maximum transmission power. The through-beam ultrasonic barrier then has the lowest sensitivity. Turning the transmitter side potentiometer won't have an effect, then.

Alignment

When adjusting the emitter and receiver, take care to align them as precisely as possible.

Angular tolerance: $\alpha < \pm 2^\circ$

maximum offset: $s < \pm 5$ mm

A through-beam ultrasonic barrier consists of a single emitter and a single receiver.

Caution

Mount or replace emitter and receiver only in pairs. Both devices are optimally matched to each other by the manufacturer.