Model Number

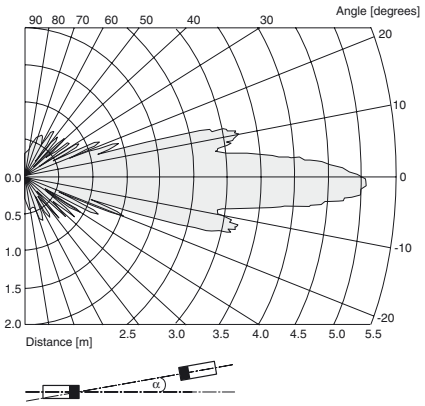
UBE4000-30GM-SA2-V15

Features

- **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**

Diagrams

Characteristic response curves



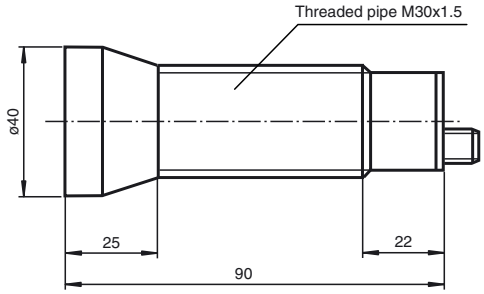
Technical data

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
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
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
Protection degree	IP65
Material	
Housing	nickel plated brass; plastic components: PBT
Mass	160 g each sensor
Compliance with standards and directives	
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

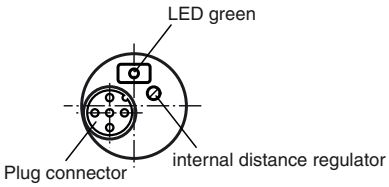
Approvals and certificates	
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤36 V

Dimensions

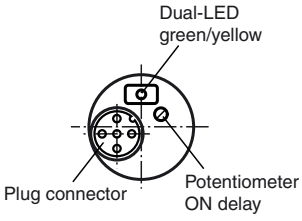
Dimensions:



Emitter:



Receiver:



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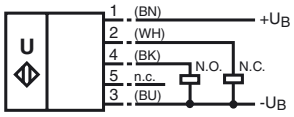
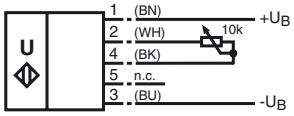
Electrical Connection

Standard symbol/Connection:
(version A2, pnp)

Receiver:

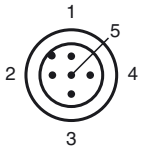


Emitter:



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

Pinout



Wire colors in accordance with EN 60947-5-2

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

Accessories

FP100
Remote potentiometer

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, M12, 4-pin, PVC cable

V1-W-2M-PVC
Female cordset, M12, 4-pin, PVC cable

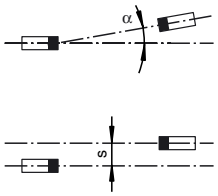
Description of the sensor functions

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 kΩ/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).

Additional Information

Alignment



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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: $\alpha < \pm 2°$
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.

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