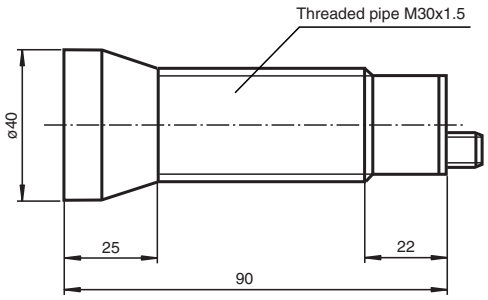
Through-beam ultrasonic barrier

UBE4000-30GM-SA2-V15

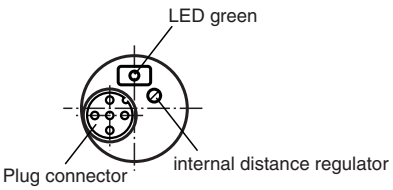
- Reliable detection of transparent materials
- High switching frequency
- Adjustable sensitivity
- Adjustable switch-on delay
- Small angle of divergence
- Protective functions
- Emitter and receiver included in the delivery package

Dimensions

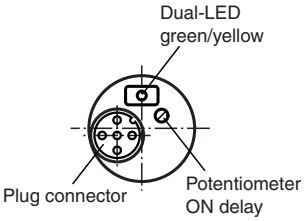
Dimensions:



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

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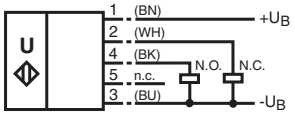
Technical Data

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

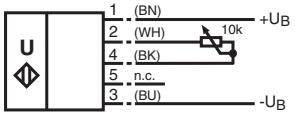
Connection

Standard symbol/Connection:
(version A2, pnp)

Receiver:

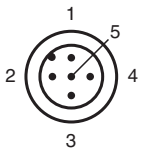


Emitter:



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

Connection Assignment



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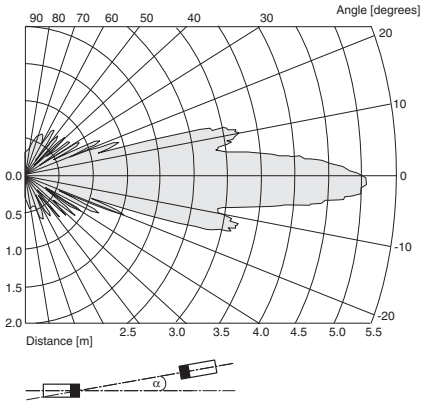
Wire colors in accordance with EN 60947-5-2

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

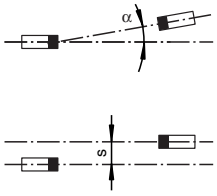
Characteristic Curve

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

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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 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).

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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