



## Model Number

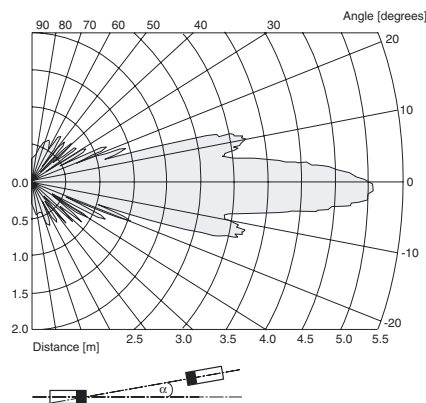
UBE4000-30GM-SA2-V15

## 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 % <sub>SS</sub>
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 $U_d$	$\leq 2.5$ V
Switch-on delay $t_{on}$	100 ... 3000 ms
Switching frequency $f$	$\leq 15$ 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

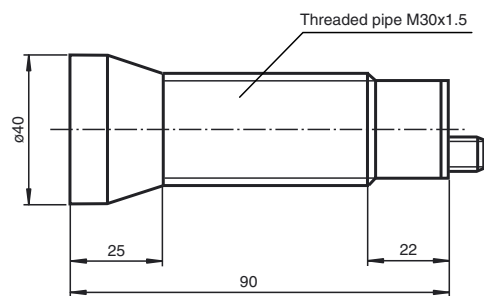
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

### Approvals and certificates

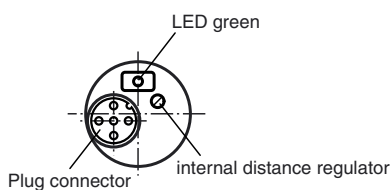
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions

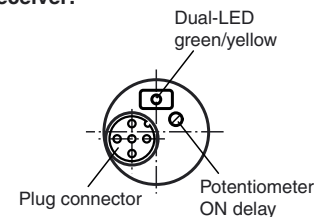
### Dimensions:



### Emitter:



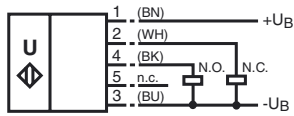
### Receiver:



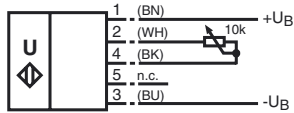
**Electrical Connection**

Standard symbol/Connection:  
(version A2, pnp)

Receiver:



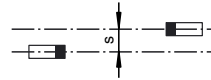
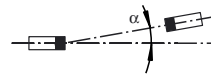
Emitter:



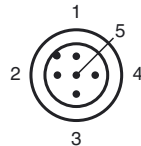
Core colours in accordance with EN 60947-5-2.

**Additional Information**

**Alignment**



**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).

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

maximum offset:  $s < \pm 5 \text{ mm}$

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.