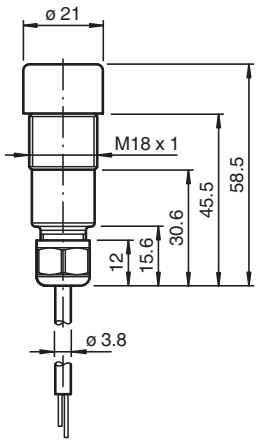
Through-beam ultrasonic barrier

UBEC300-18GH40-SE2-2M-Y274491

- Chemically highly resistant
- Short design, 40 mm
- Stainless steel housing
- PTFE connection cable
- Switching output
- Program input

Dimensions



Technical Data

General specifications		
Sensing range		100 ... 300 mm
Standard target plate		100 mm x 100 mm
Transducer frequency		approx. 255 kHz
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC , ripple 10 %$_{SS}$
No-load supply current	I_0	≤ 20 mA
Input		
Input type		1 program input [receiver] switch point 1: -U_B ... +1 V, switch point 2: +6 V ... +U_B input impedance: > 4.7 kΩ pulse duration: ≥ 1 s 1 test input [emitter] emitter deactivated: +6 V ... +U_B input impedance: > 4.7 kΩ
Output		
Output type		PNP, NO
Rated operating current	I_e	200 mA , short-circuit/overload protected
Voltage drop	U_d	≤ 3 V
Switch-on delay	t_{on}	< 5 ms

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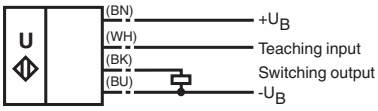
Technical Data

Switching frequency	f	≤ 100 Hz
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, Class 2 Power Source
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Housing diameter		18 mm
Degree of protection		IP68 / IP69K
Connection		cable, PTFE coated, 2 m length
Material		
Housing		Stainless steel 1.4404 / AISI 316L O-ring for cover sealing: FFKM O-romg for cable sealing: FFKM, FEP coated
Transducer		PTFE (diaphragm surface)
Mass		220 g

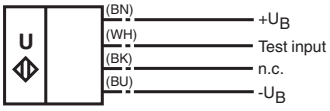
Connection

Standard symbol/Connection:
(version E2, pnp)

Receiver:



Emitter:



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

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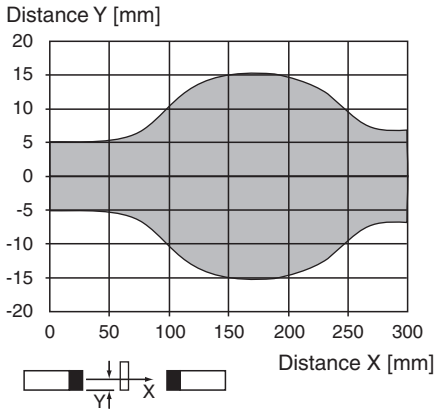
Characteristic Curve

Characteristic response curve



Obstacle: flat plate 100 mm x 100 mm

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Additional Information

Safety Information


Attention

To guarantee that the sensor is impermeable, the cap nut for the cable gland is fitted with a defined torque at the factory. This torque must not be changed by the user. Otherwise, the impermeability of the sensor is not guaranteed and any guarantee or warranty claims on behalf of the user are void.

Function

An ultrasonic thru-beam sensor always consists of one emitter and one receiver. The functional principle of ultrasonic thru-beam sensors is based on the transmission of sound from the emitter to the receiver being interrupted by the object to be detected (obstacle).
The emitter generates an ultrasonic signal, which is analyzed by the receiver. If the ultrasonic signal is dampened or interrupted by the object to be detected, the receiver trips.
The emitter and the receiver do not have to be electrically connected.
Ultrasonic thru-beam sensors function regardless of their installation position. However, in order to avoid a build-up of dirt particles, it is recommended to install the emitter facing downwards if fitted vertically.

Commissioning and parameterization

On delivery, the receiver is preconfigured for a distance between the emitter and receiver of 300 mm. If the ultrasonic thru-beam sensor is to be used for other distances, a Teach-in must be performed.

Teach-in

1. Install the emitter and receiver for the ultrasonic thru-beam sensor at the required distance.
2. Align the emitter and receiver accurately with one another and fix the devices in place.
3. Remove all objects between the emitter and the receiver.
4. Connect the Teach-in input on the receiver to $-U_B$ for at least 2 seconds.
   The receiver now detects the signal level in the clearance distance between the two units.
5. Position the obstacle to be detected at the required distance in the path of the ultrasonic signal.
6. Connect the Teach-in input on the receiver to $+U_B$ for at least 2 seconds.
   The receiver now detects the signal level in the clearance distance between the two devices, which is dampened, and detects the optimum signal threshold. The signal threshold is now stored in the receiver in nonvolatile form.
7. Disconnect the receiver Teach-in input from $+U_B$.

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