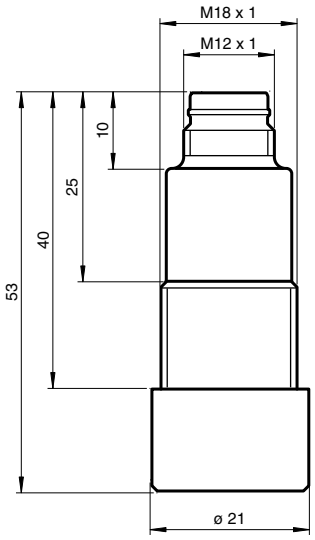
Through-beam ultrasonic barrier

UBEC300-18GH40-SE2-V1

- Short design, 40 mm
- Stainless steel housing
- Chemical-resistant
- 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		

Release date: 2023-02-15 Date of issue: 2023-02-15 Filename: 211977_eng.pdf

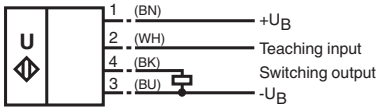
Technical Data

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
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		
Connection type		Connector plug M12 x 1 , 4-pin
Housing diameter		18 mm
Degree of protection		IP68 / IP69K
Material		
Housing		Stainless steel 1.4435 / AISI 316L O-ring for cover sealing: EPDM
Transducer		PTFE (diaphragm surface)
Mass		25 g

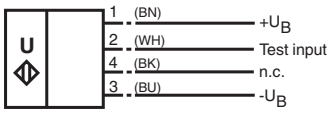
Connection

Standard symbol/Connection:
(version E2, pnp)

Receiver:



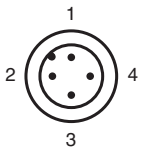
Emitter:



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

Release date: 2023-02-15 Date of issue: 2023-02-15 Filename: 211977_eng.pdf

Connection Assignment

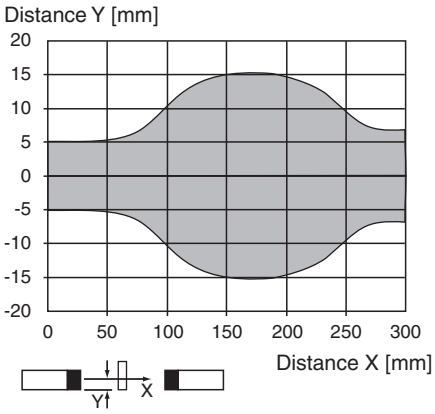


Wire colors in accordance with EN 60947-5-2

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

Characteristic Curve

Characteristic response curve



Obstacle: flat plate 100 mm x 100 mm

Accessories

	**UB-PROG2**	Programming unit
	**V1-GV4A-2M-PVC**	Female cordset single-ended M12 straight stainless steel 1.4404, A-coded, 4-pin, PVC cable grey
	**V1-WV4A-2M-PVC**	Female cordset single-ended M12 angled stainless steel 1.4404, A-coded, 4-pin, PVC cable grey

Release date: 2023-02-15 Date of issue: 2023-02-15 Filename: 211977_eng.pdf

Additional Information

Function

A through-beam ultrasonic barrier always consists of a single emitter and a single receiver. The function of a through-beam ultrasonic barrier is based in the interruption of the sound transmission to the receiver by the object to be detected.
The emitter sends an ultrasonic signal that is evaluated by the receiver. If the signal is interrupted or muted by the object to be detected, the receiver switches.
No electrical connections are required between the emitter and receiver.
The function of through-beam ultrasonic barriers is not dependent on the position of their installation. We recommend, however, to install the emitter below in the case of vertical installations to prevent the accumulation of dust particles.

Startup and parameterising

In the delivery status, the receiver is pr-configured for a 300 mm spacing between emitter and receiver. If the through-beam ultrasonic barrier is operated at different spacing, a TEACH-IN procedure has to be carried out.

TEACH-IN

1. Install both, emitter and receiver of the through-beam ultrasonic barrier at the desired positions.
2. Adust both devices exactly to each other and fix the adjustment.
3. Remove all obstacles from between the emitter and the receiver.
4. Connect the TEACH input of the receiver with $-U_B$ for at least 2 s.
   The receiver evaluates now the signal strength of the clear air path.
5. Place the object to be detected at the desired position between emitter and receiver.
6. Connect the TEACH input of the receiver with $+U_B$ for at least 2 s.
   The receiver evaluates the siognal stength of the attenuated air path and determines the optimal switching threshold. This switching threshold is then stored into the non-volatile memory of the receiver.
7. Disconnect the TEACH input from $+U_B$.

Release date: 2023-02-15 Date of issue: 2023-02-15 Filename: 211977_eng.pdf