

Through-beam ultrasonic barrier

UBE800-F77-SE1-V31

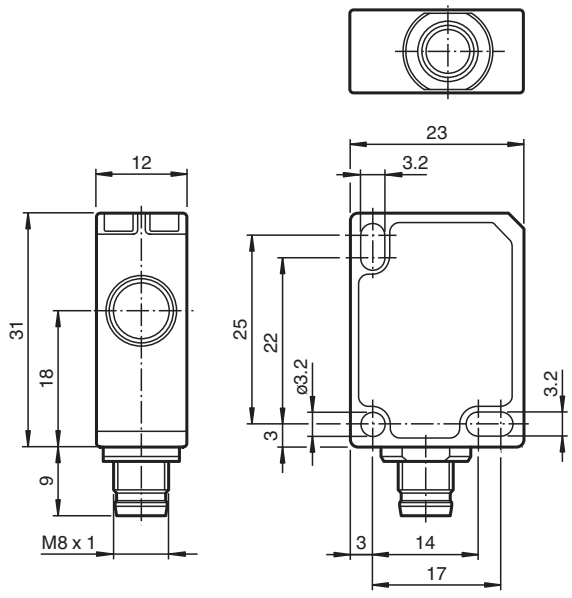
- Miniature design
- Highly visible LEDs for Power ON and switching state
- High switching frequency
- Program input
- Degree of protection IP67

Through-beam ultrasonic barrier

Function

An ultrasonic thru-beam sensor always consists of an ultrasonic emitter and receiver. The working principle of the ultrasonic thru-beam sensor is based on the interruption of the transmission from the emitter to the receiver by the object to be detected (obstacle). The emitter produces an ultrasonic signal which is evaluated by the receiver. If the signal is damped or broken by the object being detected, the receiver switches state. No electrical connections are required between the emitter and receiver.

Dimensions



Technical Data

General specifications		
Sensing range		0 ... 800 mm emitter/receiver spacing
Standard target plate		see table
Transducer frequency		approx. 300 kHz
Response delay		≤ 5 ms
Limit data		
Permissible cable length		max. 300 m
Indicators/operating means		
LED green		Power on (emitter)

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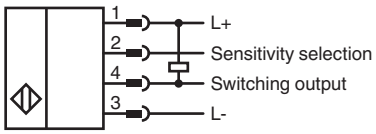
Technical Data

LED yellow		switching state (receiver)
Electrical specifications		
Rated operating voltage	U_e	24 V DC
Operating voltage	U_B	20 ... 30 V DC , ripple 10 $\%_{SS}$; 12 ... 20 V DC sensitivity reduced to 80 %
No-load supply current	I_0	≤ 20 mA
Time delay before availability	t_v	≤ 150 ms
Input		
Input type		1 program input (receiver)
Level		low level : 0 ... 0.7 V ; high level : > 14 V
Input impedance		16 kΩ
Pulse length		≥ 3 s
Output		
Output type		1 switch output E1, NPN, NC
Rated operating current	I_e	200 mA , short-circuit/overload protected
Voltage drop	U_d	≤ 2 V
Switching frequency	f	100 Hz
Off-state current	I_r	≤ 0.01 mA
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)
Shock resistance		30 g , 11 ms period
Vibration resistance		10 ... 55 Hz , Amplitude ± 1 mm
Mechanical specifications		
Connection type		M8 x 1 connector , 4-pin
Degree of protection		IP67
Material		
Housing		Polycarbonate
Transducer		epoxy resin/hollow glass sphere mixture; polyurethane foam
Installation position		any position
Mass		per 10 g
Tightening torque, fastening screws		max. 0.2 Nm
Dimensions		
Height		31 mm
Width		12 mm
Length		23 mm

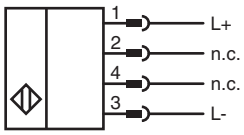
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Connection Assignment

Receiver:



Transmitter:



Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Commissioning

Adjustment possibilities
This sensor is an ultrasonic through-beam barrier consisting of a transmitter and a receiver. The receiver is equipped with a switching output. This switches when there is a sufficiently large object in the path between the transmitter and receiver. To adapt the ultrasonic through-beam barrier to different object sizes and/or distances between transmitter and receiver, the sensitivity can be configured via the „Sensitivity selection“ input on the receiver.

Further Documentation
For information on configuring the sensitivity via the „Sensitivity selection“ input you may refer to the commissioning instruction.

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