

Model Number

UBE800-F77-SE2-V31

Through-beam ultrasonic barrier

Features

- **Miniature design**
- **Highly visible LEDs for Power ON and switching state**
- **High switching frequency**
- **Program input**
- **Protection degree IP67**

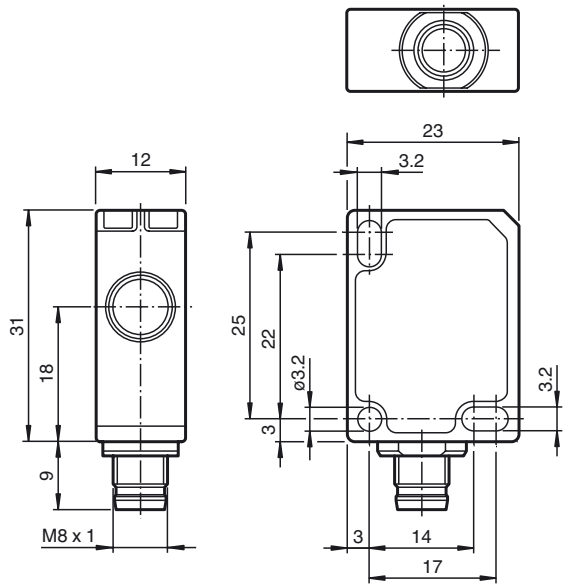
Technical data

General specifications	
Sensing range	0 ... 800 mm emitter/receiver spacing
Standard target plate	see table
Transducer frequency	approx. 300 kHz
Nominal ratings	
Time delay before availability t_v	≤ 150 ms
Limit data	
Permissible cable length	max. 300 m
Indicators/operating means	
LED green	Power on (emitter)
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 reduced sensitivity by 80 %
No-load supply current I_0	≤ 20 mA
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 PNP, NO
Rated operating current I_e	200 mA , short-circuit/overload protected
Voltage drop U_d	≤ 2 V
Switch-on delay t_{on}	≤ 5 ms
Switching frequency f	100 Hz
Off-state current I_r	≤ 0.01 mA
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
Protection degree	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
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 ≤36 V

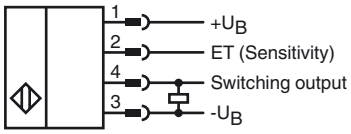
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Dimensions

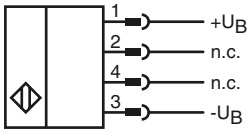


Electrical Connection

Receiver:



Emitter:



Pinout



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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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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)

Accessories

OMH-ML7-01
Mounting bracket

V31-GM-2M-PVC
Female cordset, M8, 4-pin, PVC cable

V31-WM-2M-PVC
Female cordset, M8, 4-pin, PVC cable

Description of Sensor Function

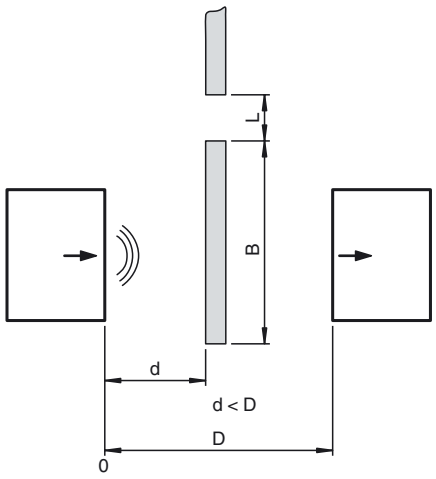
An ultrasonic thru-beam sensor always consists of an ultrasonic emitter and receiver. The working principle of the ultrasonic thru-beam sensor is based on the interruption of the transmission from the emitter to the receiver by the object to be detected (obstacle).

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.

Sensitivity adjustment

The sensitivity is adjusted using the input ET. This can be open or connected using $+U_B$ or $-U_B$.



ET	Sensitivity	D	B(1)	L(1)
Open	High	≤ 800 mm	≥ 50 mm	≥ 15 mm
$-U_B$	Medium	≤ 600 mm	≥ 40 mm	≥ 10 mm
$+U_B$	Low	≤ 400 mm	≥ 30 mm	≥ 5 mm

(1) The specified values for B and L are reference values and refer to the maximum distance D and to objects with a rectangular shape. The shape of the objects can have an effect on the values for B and L.

Safety Note

The use of this device in applications, where the safety of persons depends from the devices function, is not allowed!

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