



Ultrasonic direct detection sensor

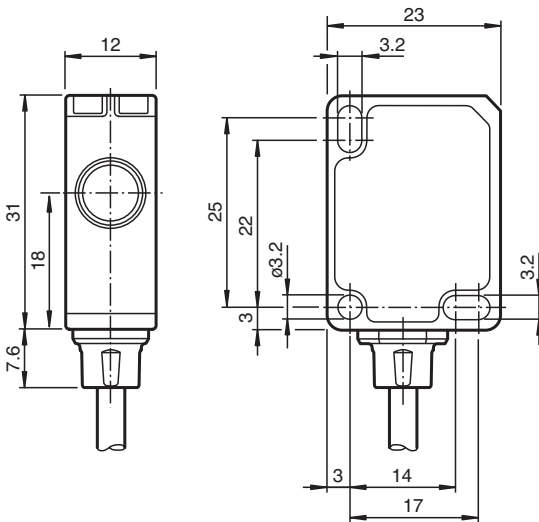
UB250-F77-E2-2M

- Miniature design
- Program input
- Degree of protection IP67
- Switching status indicator, yellow LED
- Cable connection

Ultrasonic direct detection sensor



Dimensions



Technical Data

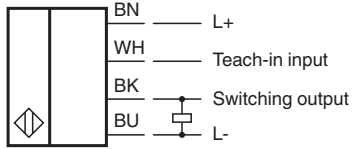
General specifications			
Sensing range			20 ... 250 mm
Adjustment range			45 ... 250 mm
Dead band			0 ... 20 mm
Standard target plate			20 mm x 20 mm
Transducer frequency			approx. 400 kHz
Response delay			≤ 50 ms
Limit data			
Permissible cable length			max. 300 m
Indicators/operating means			
LED yellow			switching state and flashing: Teach-In
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 90 %
No-load supply current	I_o		≤ 20 mA
Time delay before availability	t_v		≤ 150 ms

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Technical Data

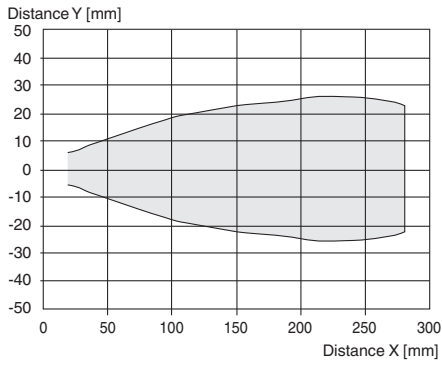
Input		
Input type		1 program input
Level		low level : 0 ... 0.7 V (Teach-In active) high level : U_B or open input (Teach-In inactive)
Input impedance		16 k Ω
Pulse length		≥ 3 s
Output		
Output type		1 switch output PNP, NO
Rated operating current	I_e	200 mA , short-circuit/overload protected
Voltage drop	U_d	≤ 2 V
Repeat accuracy		± 1 mm
Switching frequency	f	10 Hz
Range hysteresis	H	typ. 2.5 mm
Off-state current	I_r	≤ 0.01 mA
Temperature influence		0.17 %/K
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		cable
Degree of protection		IP67
Material		
Housing		Polycarbonate
Transducer		epoxy resin/hollow glass sphere mixture; polyurethane foam
Cable		
Connection assembly		flexible leads , Fine-stranded copper
Wire end ferrules		no
Cable diameter		3.9 mm \pm 0.1 mm
Bending radius		> 10 x cable diameter
Material		PUR
Color		black
Number of cores		4
Core cross section		0.19 mm ²
Length	L	2 m
Installation position		any position
Mass		51 g
Tightening torque, fastening screws		max. 0.2 Nm
Dimensions		
Height		31 mm
Width		12 mm
Length		23 mm
Factory settings		
Output		Switching point: 250 mm

Connection



Characteristic Curve

Characteristic response curve



Switch point mode



Additional Information

Adjustment possibilities

The sensor is equipped with a switching output with 1 adjustable switch point. The switch point is adjusted using the teach-in input of the sensor.

Further Documentation

For information on programming via teach-in input you may refer to the commissioning instruction.