



## Ultrasonic direct detection sensor

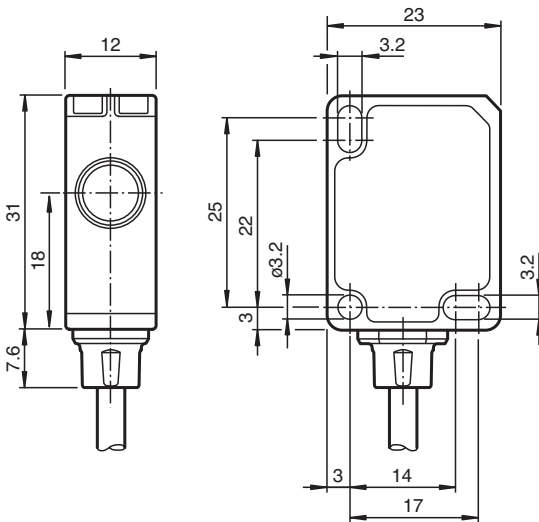
### UB400-F77-E0-2M

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

Ultrasonic direct detection sensor



### Dimensions



### Technical Data

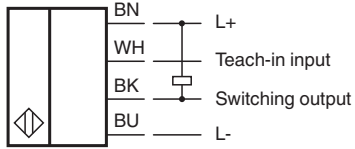
General specifications	
Sensing range	25 ... 400 mm
Adjustment range	40 ... 400 mm
Dead band	0 ... 25 mm
Standard target plate	20 mm x 20 mm
Transducer frequency	approx. 300 kHz
Response delay	≤ 75 ms
Limit data	
Permissible cable length	max. 300 m
Indicators/operating means	
LED yellow	switching state and flashing: Teach-In
Electrical specifications	
Rated operating voltage	$U_e$ 24 V DC
Operating voltage	$U_B$ 20 ... 30 V DC , ripple 10 % <sub>SS</sub> ; 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

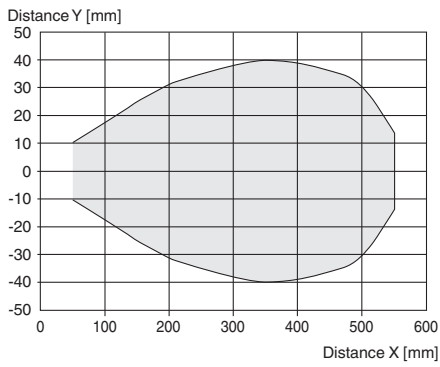
<b>Input</b>		
Input type		1 program input
Level		low level : 0 ... 0.7 V (Teach-In active) high level : $U_B$ or open input (Teach-In inactive)
Input impedance		16 k $\Omega$
Pulse length		$\geq 3$ s
<b>Output</b>		
Output type		1 switch output NPN, NO
Rated operating current	$I_e$	200 mA , short-circuit/overload protected
Voltage drop	$U_d$	$\leq 2$ V
Repeat accuracy		$\pm 1$ mm
Switching frequency	f	5 Hz
Range hysteresis	H	typ. 4 mm
Off-state current	$I_r$	$\leq 0.01$ mA
Temperature influence		0.17 %/K
<b>Compliance with standards and directives</b>		
Standard conformity		
Standards		EN IEC 60947-5-2:2020 IEC 60947-5-2:2019
<b>Approvals and certificates</b>		
UL approval		cULus Listed, Class 2 Power Source
CCC approval		CCC approval / marking not required for products rated $\leq 36$ V
<b>Ambient conditions</b>		
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 $\pm 1$ mm
<b>Mechanical specifications</b>		
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 <sup>2</sup>
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
<b>Factory settings</b>		
Output		Switching point: 400 mm

**Connection**



**Characteristic Curve**

**Characteristic response curve**



**Switch point mode**



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## 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.