



Ultrasonic direct detection sensor

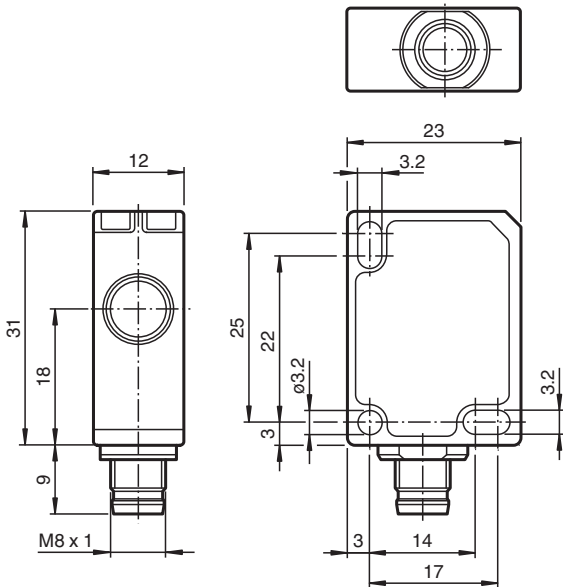
UB400-F77-E0-V31

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

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

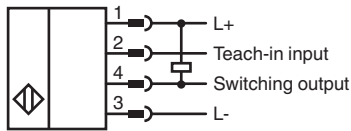
| | | |
|-------------------------|----------------|---|
| Rated operating voltage | U _e | 24 V DC |
| Operating voltage | U _B | 20 ... 30 V DC , ripple 10 % _{SS} ; 12 ... 20 V DC sensitivity reduced to 90 % |

Release date: 2025-05-13 Date of issue: 2025-05-13 Filename: 252738_eng.pdf

Technical Data

| | | |
|---|-------|---|
| No-load supply current | I_0 | $\leq 20 \text{ mA}$ |
| Time delay before availability | t_v | $\leq 150 \text{ ms}$ |
| 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 | | $\geq 3 \text{ s}$ |
| Output | | |
| Output type | | 1 switch output E0, NPN, NO |
| Rated operating current | I_e | 200 mA , short-circuit/overload protected |
| Voltage drop | U_d | $\leq 2 \text{ V}$ |
| Repeat accuracy | | $\pm 1 \text{ mm}$ |
| Switching frequency | f | 5 Hz |
| Range hysteresis | H | typ. 4 mm |
| Off-state current | I_r | $\leq 0.01 \text{ mA}$ |
| 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 $\leq 36 \text{ V}$ |
| 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 $\pm 1 \text{ mm}$ |
| 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 | | 10 g |
| Tightening torque, fastening screws | | max. 0.2 Nm |
| Dimensions | | |
| Height | | 31 mm |
| Width | | 12 mm |
| Length | | 23 mm |
| Factory settings | | |
| Output | | Switching point: 400 mm |

Connection Assignment



Connection Assignment

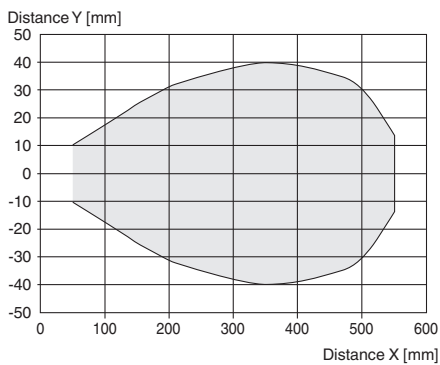


Wire colors in accordance with EN 60947-5-2

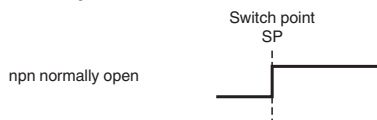
| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

Characteristic Curve

Characteristic response curve



Switch point mode



Release date: 2025-05-13 Date of issue: 2025-05-13 Filename: 252738_eng.pdf

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.