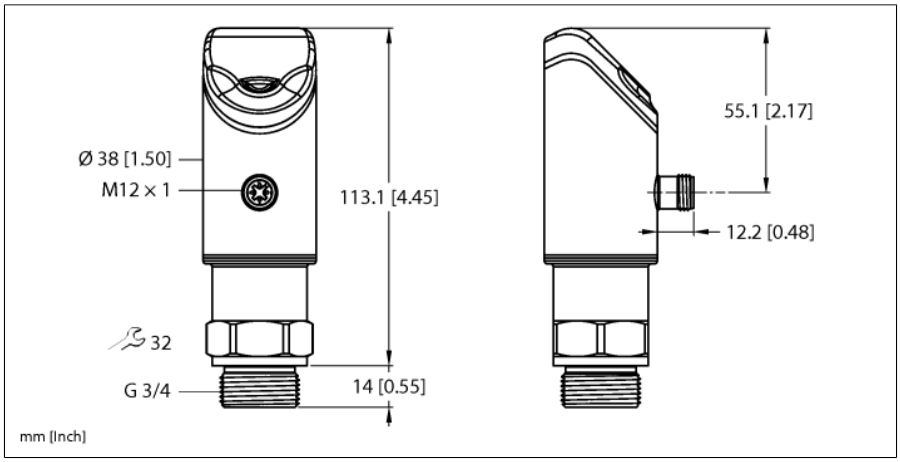
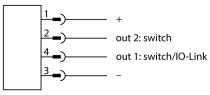
# Ultrasonic Sensor
# Level Control
# LUS211-40-51-2UPN8-H1141

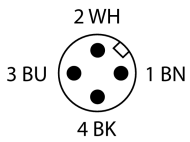


| | |
|---|---|
| Type | LUS211-40-51-2UPN8-H1141 |
| ID | 100003163 |
| **Ultrasonic data** | |
| Function | Proximity switch |
| Range | 5…400 mm |
| Resolution | 0.5 mm |
| Minimum measuring range | 50 mm |
| Minimum switching range | 5 mm |
| Ultrasound frequency | 320 kHz |
| Temperature drift | ± 1.5% of full scale% of full scale |
| Edge lengths of the nominal actuator | 20 mm |
| Approach speed | ≤ 3 m/s |
| Pass speed | ≤ 1.3 m/s |
| **Electrical data** | |
| Operating voltage $U_B$ | 18…33 VDC |
| No-load current $I_0$ | ≤ 150 mA |
| Load resistance | ≤ 1000 Ω |
| Residual current | ≤ 0.1 mA |
| Response time typical | < 60 ms |
| Readiness delay | ≤ 300 ms |
| Communication protocol | IO-Link |
| Output function | NO/NC, PNP |
| Output 1 | Switching output or IO-Link mode |
| Output 2 | Switching output |
| Switching frequency | ≤ 5 Hz |
| Hysteresis | ≤ 5 mm |
| Voltage drop at $I_e$ | ≤ 2.5 V |
| Short-circuit protection | yes |
| Reverse polarity protection | yes |
| Setting option | Capacitive Sensor<br>IO-Link |

- 4-digit, 2-colored, 12-segment display, rotatable by 180°
- Housing is rotatable after mounting the process connection
- G3/4" process connection
- Sealing ring included in delivery (stainless steel ring with NBR seal)
- Blind zone: 0.5 cm
- Range: 40 cm
- Resolution: 0.5 mm
- Aperture angle of sonic cone: ±15 °
- 2 × switching outputs, PNP/NPN
- NO/NC programmable
- Transmission of process value and parametrization via IO-Link

### Wiring Diagram




### Functional principle

Ultrasonic sensors capture a multitude of objects contactlessly and wear-free with ultrasonic waves. It does not matter whether the object is transparent or opaque, metallic or non-metallic, firm, liquid or powdery. Even environmental conditions such as spray, dust or rain hardly affect their function.

The sonic cone diagram indicates the detection range of the sensor. In accordance with standard EN 60947-5-2, quadratic targets in a range of sizes (20 × 20 mm, 100 × 100 mm) and a round rod with a diameter of 27 mm are used.

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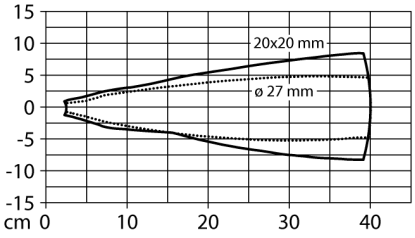
| IO-Link | |
|---|---|
| IO-Link specification | V 1.1 |
| IO-Link port type | Class A |
| Communication mode | COM 2 (38.4 kBaud) |
| Process data width | 32 bit |
| Measured value information | 15 bit |
| Switchpoint information | 4 bit |
| Frame type | 2.2 |
| Minimum cycle time | 5 ms |
| Function pin 4 | IO-Link |
| Function Pin 2 | DI |
| Maximum cable length | 20 m |
| Profile support | Smart Sensor Profile |
| Included in the SIDI GSDML | Yes |

| Mechanical data | |
|---|---|
| Design | Smooth barrel, LUS |
| Radiation direction | straight |
| Dimensions | Ø 38 x 127.1 mm |
| Housing material | Stainless-steel/Plastic, 1.4404 (AISI 316L)/Grilamid TR90 UV |
| Transducer material | Plastic, Epoxyd resin and PU foam |
| Electrical connection | Connector, M12 × 1, 4-wire |
| Process connection | G 3/4" |
| Ambient temperature | -25…+70 °C |
| Pressure resistance | 0.5…5 bar |
| Protection class | IP67<br>IP69K |
| | Not assessed by UL |

| Tests/approvals | |
|---|---|
| Declaration of conformity EN ISO/IEC | EN 60947-5-2 |
| Vibration resistance | 20 g, 10…2000 Hz, sine, 3 axes, 30 min/axis according to IEC 60068-2-6 |
| Shock test | 50 g, 11 ms, half sine, 3 axes according to IEC 60068-2-27 |
| Approvals | CE<br>cULus |

Important: The detection ranges for other targets may differ from those for standard targets due to the different reflection properties and geometries.

**Sonic Cone**

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