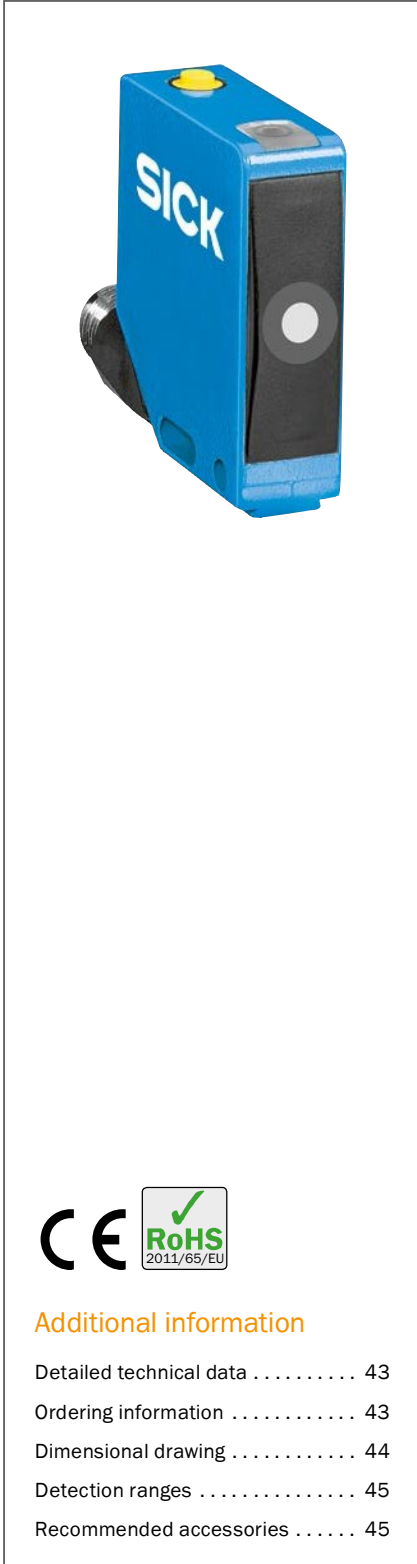


ULTRASONIC TECHNOLOGY HOUSED IN AN INDUSTRY-PROVEN DESIGN



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Product description

Ultrasonic technology provides reliable results where optical sensors reach their limits. The UC12 shares the same housing as common photoelectric sen-

sors. In addition a single teach-in button enables easy setup. Dark or transparent objects are easily detected.

At a glance

- Object detection independent of material color and ambient light – even transparent foils, glass, liquids and bottles are reliably detected
- Fast and easy teach-in with single push-button
- Immune to dirt, dust and fog
- Two ambivalent switching outputs (Q, /Q)
- Excellent background suppression
- Three operation modes: Distance to Object (DtO), Window (Wnd) or Object between sensor and background (ObSB)

Your benefits

- Fast commissioning due to single-button teach-in
- Full mechanical compatibility to photoelectric sensors increase application flexibility without machine modification
- Standard proximity, window and reflection modes provide application flexibility, which increases reliability and productivity
- Integrated temperature compensation ensures high measurement accuracy
- Complementary switching outputs immediately signal broken wiring, reducing faulty production results

→ www.mysick.com/en/UC12

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Performance

| | |
|--------------------------------|---|
| Resolution | ≥ 0.1 mm |
| Repeatability ¹⁾ | ± 0.15 % |
| Accuracy ¹⁾ | ± 1 % |
| Temperature compensation | ✓ |
| Switching frequency | 25 Hz |
| Ultrasonic frequency (typical) | |
| 20 mm ... 150 mm, 250 mm | 380 kHz |
| 55 mm ... 250 mm, 350 mm | 500 kHz |
| Detection area (typical) | See diagrams |
| Additional function | Set switching mode: Distance to object (DtO) / Window (Wnd) / Object between sensor and background (ObsB) Teach-in and parameterization of switching output Temperature compensation Lock user interface |

¹⁾ Referring to current measurement value.

Interfaces

| | |
|------------|------|
| Hysteresis | 2 mm |
|------------|------|

Mechanics/electronics

| | |
|------------------------------------|--|
| Supply voltage V_s ¹⁾ | DC 10 V ... 30 V |
| Power consumption ²⁾ | ≤ 1.2 W |
| Initialization time | < 300 ms |
| Design | Rectangular |
| Housing material | Die-cast zinc, ultrasonic transducer: polyurethane foam, glass epoxy resin |
| Connection type | Male connector, M12, 4-pin |
| Indication | Dual LED |
| Weight | 75 g |

¹⁾ Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

²⁾ Without load.

Ambient data

| | |
|---------------------|--|
| Enclosure rating | IP 67 |
| Protection class | III |
| Ambient temperature | Operation: -25 °C ... +70 °C Storage: -40 °C ... +85 °C |

Ordering information

- **Response time:** 30 ms
- **Output time:** 8 ms
- **Sending axis:** straight

| Working range, limiting range | Switching output ^{1) 2)} | Type | Part no. |
|-------------------------------|-----------------------------------|------------|----------|
| 20 mm ... 150 mm, 250 mm | 2 x PNP (500 mA) ³⁾ | UC12-11231 | 6029831 |
| | 2 x NPN (500 mA) ⁴⁾ | UC12-11235 | 6029833 |

¹⁾ Output Q short-circuit protected.

²⁾ Complementary switching outputs (Q, \bar{Q})

³⁾ PNP: HIGH = $V_s - (< 2 V)$ / LOW = 0 V.

⁴⁾ NPN: HIGH ≤ 2 V / LOW = V_s .

| Working range, limiting range | Switching output ^{1) 2)} | Type | Part no. |
|-------------------------------|-----------------------------------|------------|----------|
| 55 mm ... 250 mm, 350 mm | 2 x PNP (500 mA) ³⁾ | UC12-12231 | 6029832 |
| | 2 x NPN (500 mA) ⁴⁾ | UC12-12235 | 6029834 |

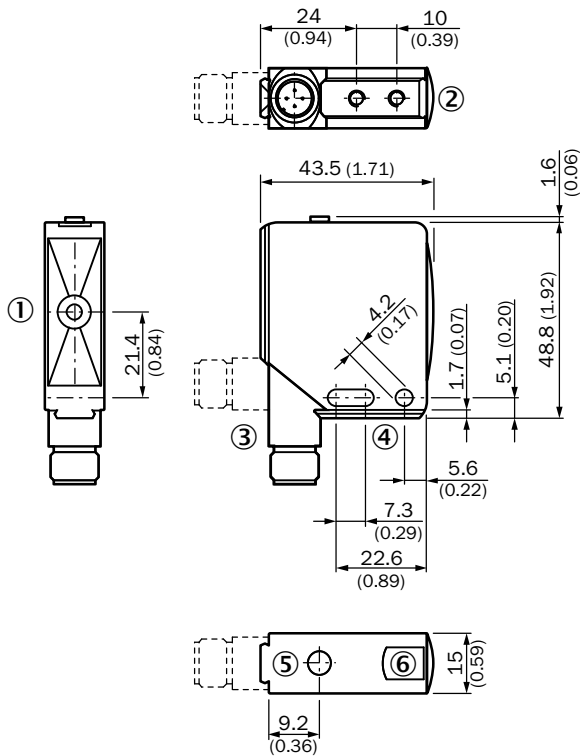
¹⁾ Output Q short-circuit protected.

²⁾ Complementary switching outputs (Q, \bar{Q})

³⁾ PNP: HIGH = $V_S - (< 2 V)$ / LOW = 0 V.

⁴⁾ NPN: HIGH $\leq 2 V$ / LOW = V_S .

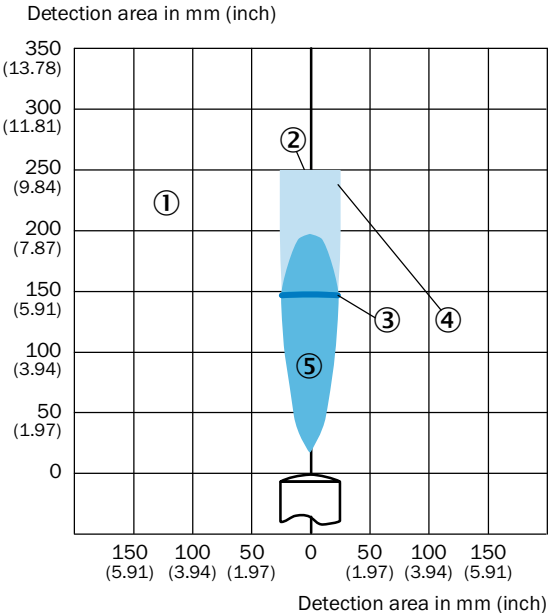
Dimensional drawing (Dimensions in mm (inch))



- ① Transmission and reception axis
- ② M4 threaded mounting hole, 4 mm deep
- ③ Connection
- ④ Mounting hole
- ⑤ Control elements
- ⑥ Status indicator switching output (orange) and power on (green)

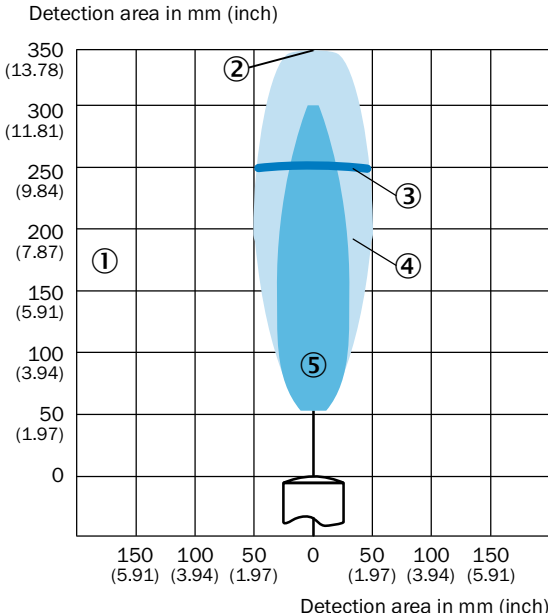
Detection ranges

UC12-11



- ① Sensing range dependent on reflection properties, size and orientation of the object
- ② Limiting range
- ③ Working range
- ④ Example object: aligned plate 10 mm x 10 mm
- ⑤ Example object: pipe with 10 mm diameter

UC12-12



- ① Sensing range dependent on reflection properties, size and orientation of the object
- ② Limiting range
- ③ Working range
- ④ Example object: aligned plate 10 mm x 10 mm
- ⑤ Example object: pipe with 10 mm diameter

Recommended accessories

Mounting systems

Mounting brackets and mounting plates



| | Brief description | Part no. |
|---|-------------------------|----------|
|  | Mounting bracket, large | 2013942 |
|  | Mounting bracket, small | 2012938 |

Universal bar clamp systems

| | Brief description | Part no. |
|---|---------------------------------------|----------|
|  | Plate D for universal clamp bracket | 2022461 |
|  | Plate L for universal clamp bracket | 2023057 |
|  | Plate N02 for universal clamp bracket | 2051608 |

Connection systems

Plug connectors and cables

| | Connection type head A | Connection type head B | Cable | Cable length | Part no. |
|--|--|------------------------|-----------------|--------------|----------|
|  <p>Illustration may differ</p> | Female connector, M12, 4-pin, straight | Cable | PVC, unshielded | 2 m | 6009382 |
|  <p>Illustration may differ</p> | Female connector, M12, 4-pin, angled | Cable | PVC, unshielded | 2 m | 6009383 |

