



OD1-B015H05I25

OD Mini

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|----------------|----------|
| OD1-B015H05I25 | 6050496 |

Other models and accessories → www.sick.com/OD_Mini



Detailed technical data

Performance

| | |
|--|---|
| Measuring range | 10 mm ... 20 mm |
| Resolution | 1 μm ¹⁾ |
| Repeatability | 3 μm ^{1) 2)} |
| Linearity | $\pm 10 \mu\text{m}$ ^{3) 4)} |
| Response time | 2 ms / 4 ms / 8 ms / 16 ms / auto ⁵⁾ |
| Measuring frequency | 2 kHz / 1 kHz / 500 Hz / 250 Hz / automatic |
| Light source | Laser, red |
| Laser class | 1 (EN 60825-1) ⁶⁾ |
| Typ. light spot size (distance) | 700 μm x 500 μm (15 mm) |
| Additional function | Averaging 1 ... 512x, automatic or manual sensitivity adjustment, Analog outputs can be taught in, Switching outputs can be taught in, Invertable switching output, switching mode: window (Wnd), switching mode: distance to object (DtO), switching mode: object between sensor and background (ObSB), multifunctional input: laser-off / external teach-in / trigger |

¹⁾ Averaging function set to: 512.

²⁾ Constant ambient conditions.

³⁾ Measurement on 90 % remission (ceramic, white)

⁴⁾ For best performance consider warm up time ≤ 5 minutes.

⁵⁾ With fixed sensitivity adjustment and averaging setting = 1. With automatic sensitivity and measuring rate 500 μs : 2 ... 7.5 ms response time/measuring rate
1,000 μs : 4 ... 15 ms response time.

⁶⁾ Wavelength: 655 nm, max. output: 390 μW (laser class 1) / < 1 mW (laser class 2)

Interfaces

| | |
|-----------------------------------|--------------------------------------|
| Switching output | 1 x PNP/NPN, selectable |
| Multifunctional input (MF) | 1 x ¹⁾ |
| Data interface | 1 x 4 mA ... 20 mA (< 300 Ω) |

¹⁾ MF can be used as laser-off, trigger, external teach-in or deactivated.

Mechanics/electronics

| | |
|--|--|
| Supply voltage V_s | DC 12 V (-5 %) ... DC 24 V (+10 %) |
| Power consumption | $\leq 1.92 \text{ W}^{1)}$ |
| Warm-up time | $\leq 5 \text{ min}$ |
| Housing material | Stainless steel housing with PPSU lens |
| Connection type | Cable with male connector, M12, 5-pin, 30 cm |
| Indication | 4-digit 7-segment display (plus 4 LEDs for status display) |
| Operating elements | 4 buttons |
| Weight | 70 g |
| Dimensions | 44.4 mm x 31 mm x 17 mm |

¹⁾ Without load, with current output.

Ambient data

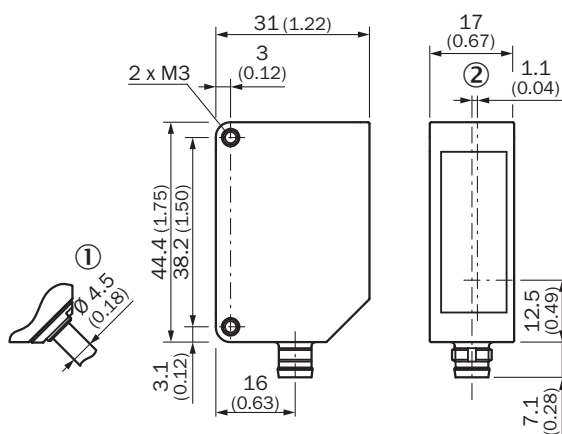
| | |
|--|--|
| Enclosure rating | IP 67 |
| Protection class | III |
| Ambient temperature | Operation: $-10 \text{ }^\circ\text{C} \dots +40 \text{ }^\circ\text{C}$ Storage: $-20 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$ |
| Min. rel. humidity (not condensing) | 35 % |
| Max. rel. humidity (not condensing) | 95 % |
| Temperature drift | $\pm 0.08 \text{ \% FS/K}$ (FS = Full Scale = Measuring range of sensor) |
| Typ. Ambient light immunity | Artificial light: $\leq 3,000 \text{ lx}$ Sunlight: $\leq 10,000 \text{ lx}$ |
| Vibration resistance | 10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each) |
| Shock resistance | 50 G (x, y, z axis 3 times each) |

General notes

| | |
|-------------|--|
| Note | Not free of paint wetting impairment substances. |
|-------------|--|

Dimensional drawing (Dimensions in mm (inch))

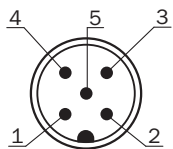
Stainless steel housing



- ① Variant with 30 cm cable with M12, 5-pin connector
- ② Optical axis

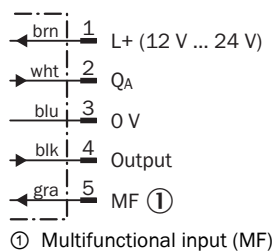
Connection type

OD1-BxxxxxI25 OD1-BxxxxxU25 cable with 5-pin, M12 male connector



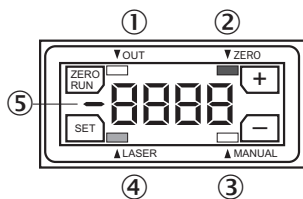
Connection diagram

OD1-BxxxxxI25 OD1-BxxxxxU25 cable with 5-pin, M12 male connector



Adjustment possible

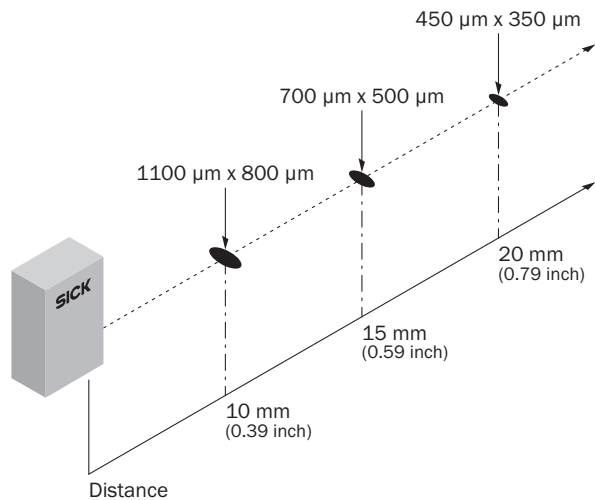
Adjustments



- ① Switching output status indicator
- ② Zero offset status indicator
- ③ Teach mode status indicator
- ④ Laser status indicator
- ⑤ Minus sign for measured value indicator

Light spot size

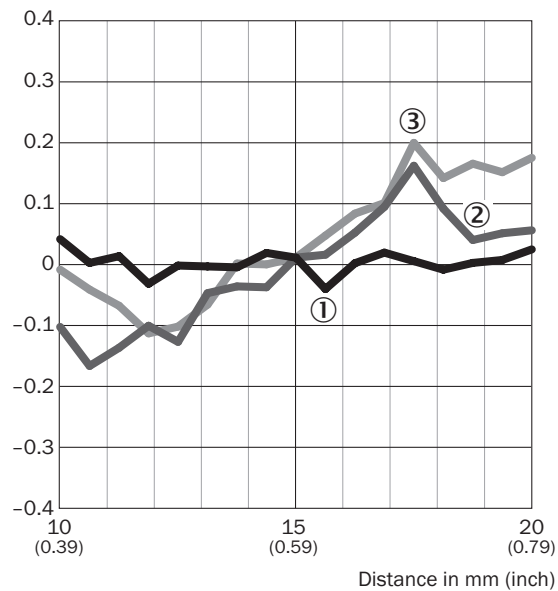
OD Mini Prime10 mm ... 20 mm



Linearity

OD Mini Prime10 mm ... 20 mm



Linearity [% FS]



- ① White ceramic
- ② Stainless steel
- ③ Black rubber

Recommended accessories

Other models and accessories → www.sick.com/OD_Mini

| | Brief description | Type | Part no. |
|---|--|----------------|----------|
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 5-pin, straight Head B: cable Cable: PVC, unshielded, 2 m | DOL-1205-G02M | 6008899 |
|  | Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m | DOL-1205-G02MC | 6025906 |

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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