



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

Mechanics/electronics

| | |
|-------------------------------------|--|
| Supply voltage V_s | DC 12 V (-5 %) ... DC 24 V (+10 %) |
| Power consumption | ≤ 1.92 W ¹⁾ |
| Warm-up time | ≤ 5 min |
| Housing material | Stainless steel |
| Window material | PPSU |
| 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 |
| Enclosure rating | IP67 |
| Protection class | III |

¹⁾ Without load, with current output.

Performance

| | |
|------------------------|-----------------------|
| Measuring range | 10 mm ... 20 mm |
| Target | Natural objects |
| Repeatability | 1 μm ^{1) 2)} |
| Linearity | ± 10 μm ³⁾ |
| Response time | ≥ 2 ms ⁴⁾ |

¹⁾ Averaging function set to: 512.

²⁾ Constant ambient conditions.

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

⁴⁾ 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.

⁵⁾ Wavelength: 655 nm, max. output: 390 μW (laser class 1) / < 1 mW (laser class 2).

| | |
|--|---|
| Measuring frequency | ≤ 2 kHz |
| Output time | ≥ 0.5 ms |
| Light source | Laser, red |
| Laser class | 1 (IEC 60825-1:2014, EN 60825-1:2014) ⁵⁾ |
| 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, digital outputs can be taught in, invertable digital 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⁾ 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.

⁵⁾ Wavelength: 655 nm, max. output: 390 μW (laser class 1) / < 1 mW (laser class 2).

Interfaces

| | | |
|-----------------------------------|------------|-------------------------|
| Digital output | Number | 1 |
| | Type | PNP/NPN, selectable |
| Analog output | Number | 1 |
| | Type | Power output |
| | Current | 4 mA ... 20 mA, ≤ 300 Ω |
| | Resolution | 13.4 bit |
| Multifunctional input (MF) | | 1 x ¹⁾ |

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

Ambient data

| | |
|--|---|
| Ambient temperature operation | -10 °C ... +50 °C |
| Ambient storage temperature | -20 °C ... +60 °C |
| Min. rel. humidity (not condensing) | 35 % |
| Max. rel. humidity (not condensing) | 95 % |
| Temperature drift | ± 0.08 % FS/K (FS = Full Scale = Measuring range of sensor) |
| Typ. Ambient light immunity | Artificial light: ≤ 3,000 lx Sunlight: ≤ 10,000 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. |
|-------------|--|

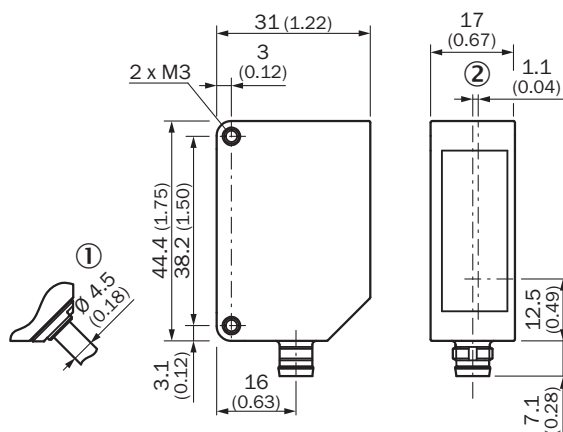
Classifications

| | |
|---------------------|----------|
| ECl@ss 5.0 | 27270801 |
| ECl@ss 5.1.4 | 27270801 |
| ECl@ss 6.0 | 27270801 |
| ECl@ss 6.2 | 27270801 |

| | |
|-----------------------|-----------|
| ECl@ss 7.0 | 27270801 |
| ECl@ss 8.0 | 27270801 |
| ECl@ss 8.1 | 27270801 |
| ECl@ss 9.0 | 27270801 |
| ETIM 5.0 | EC001825 |
| ETIM 6.0 | EC001825 |
| UNSPSC 16.0901 | 411111613 |

Dimensional drawing (Dimensions in mm (inch))

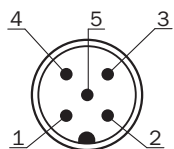
Stainless steel housing



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

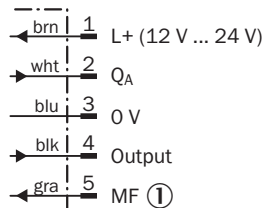
Connection type

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



Connection diagram

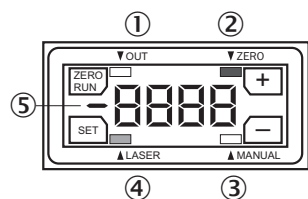
OD1-Bxxxxxl25 OD1-BxxxxxU25 cable with 5-pin, M12 male connector



① Multifunctional input (MF)

Adjustment possible

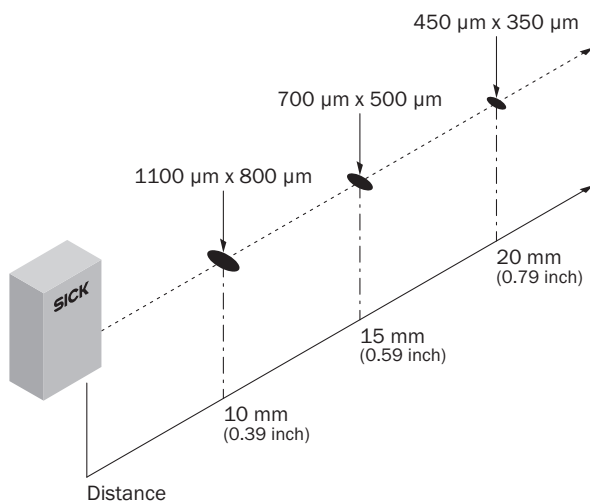
Adjustments



- ① Digital 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

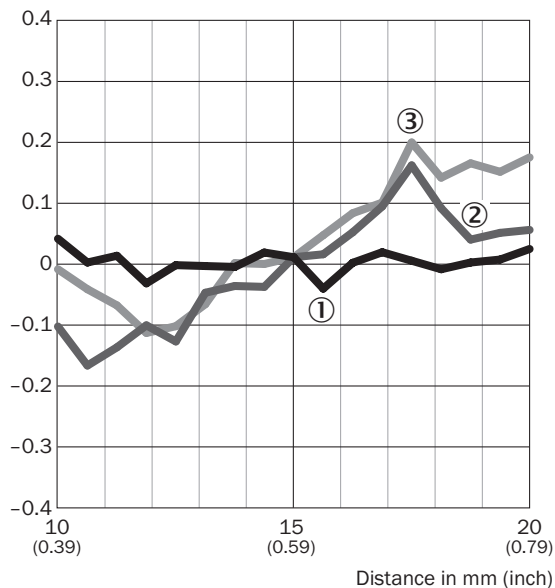
OD Mini Prime 10 mm ... 20 mm



Linearity

OD Mini Prime 10 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. |
|---|---|--------------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting bracket, for wall installation, no alignment bracket, stainless steel | BEF-OD1-A | 5328343 |
|  | Mounting bracket, no alignment bracket, stainless steel | BEF-OD1-B | 5328344 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m | YF2A15-020UB5XLEAX | 2095617 |
|  | Head A: female connector, M12, 4-pin, straight Head B: male connector, M8, 4-pin Cable: Highly flexible, PUR, 2 m | DSL-2804-G02MB | 6059743 |
|  | Head A: female connector, M12, 4-pin, straight, A-coded Head B: male connector, M8, 4-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m | YF2A14-020UA3M8U14 | 2096112 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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.”

WORLDWIDE PRESENCE:

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