



OD1-B035H15U14

OD Mini

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|----------------|----------|
| OD1-B035H15U14 | 6050505 |

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



Detailed technical data

Features

| | |
|--|---|
| Measuring range | 20 mm ... 50 mm |
| Target | Natural objects |
| Repeatability | 6 µm ^{1) 2)} |
| Linearity | ± 30 µm ³⁾ |
| Response time | ≥ 2 ms ⁴⁾ |
| Output time | ≥ 0.5 ms |
| Light source | Laser, redvisible red light |
| Type of light | Visible red light |
| Laser class | 1 (IEC 60825-1:2014, EN 60825-1:2014) ⁵⁾ |
| Typ. light spot size (distance) | 800 µm x 450 µm (35 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 |
| General notes | |
| Note | Not free of paint wetting impairment substances. |
| Safety-related parameters | |

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).

| | |
|-------------------|-----------|
| MTTF _D | 101 years |
| DC _{avg} | 0% |

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

| | | |
|-----------------------------------|------------|--------------------------|
| Analog output | Number | 1 |
| | Type | Voltage output |
| | Voltage | 0 V ... 10 V, > 10,000 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.

Electronics

| | |
|-------------------------------------|--|
| Supply voltage U_B | DC 12 V (-5 %) ... DC 24 V (+10 %) |
| Power consumption | ≤ 1.92 W ¹⁾ |
| Warm-up time | ≤ 5 min |
| Indication | 4-digit 7-segment display (plus 4 LEDs for status display) |
| Enclosure rating | IP67 |
| Protection class | III |

1) Without load, with current output.

Mechanics

| | |
|-------------------------------|---------------------------|
| Dimensions (W x H x D) | 17.8 mm x 44.4 mm x 31 mm |
| Control elements | 4 buttons |
| Housing material | Stainless steel |
| Window material | Plastic (PPSU) |
| Weight | 70 g |
| Connection type | Male connector, M8, 4-pin |

Ambient data

| | |
|--|---|
| Ambient temperature, operation | -10 °C ... +50 °C |
| Ambient temperature, storage | -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) |

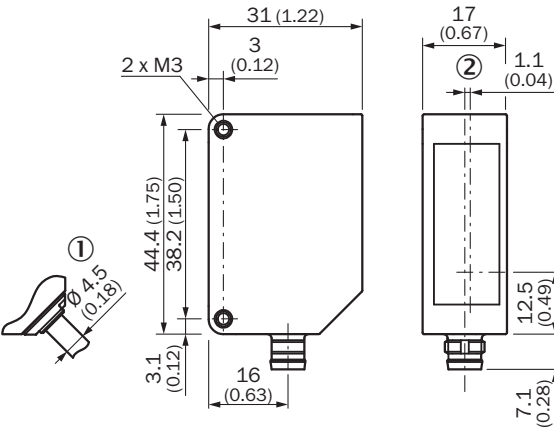
Certificates

| | |
|------------------------------------|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China-RoHS | ✓ |

Classifications

| | |
|----------------|----------|
| ECLASS 5.0 | 27270801 |
| ECLASS 5.1.4 | 27270801 |
| ECLASS 6.0 | 27270801 |
| ECLASS 6.2 | 27270801 |
| ECLASS 7.0 | 27270801 |
| ECLASS 8.0 | 27270801 |
| ECLASS 8.1 | 27270801 |
| ECLASS 9.0 | 27270801 |
| ECLASS 10.0 | 27270801 |
| ECLASS 11.0 | 27270801 |
| ECLASS 12.0 | 27270916 |
| ETIM 5.0 | EC001825 |
| ETIM 6.0 | EC001825 |
| ETIM 7.0 | EC001825 |
| ETIM 8.0 | EC001825 |
| UNSPSC 16.0901 | 41111613 |

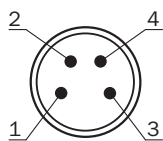
Dimensional drawing Stainless steel housing



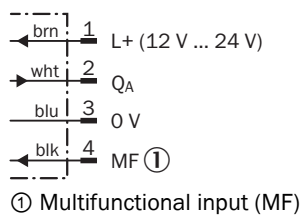
Dimensions in mm (inch)

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

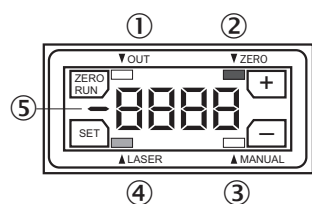
Connection type



connection diagram

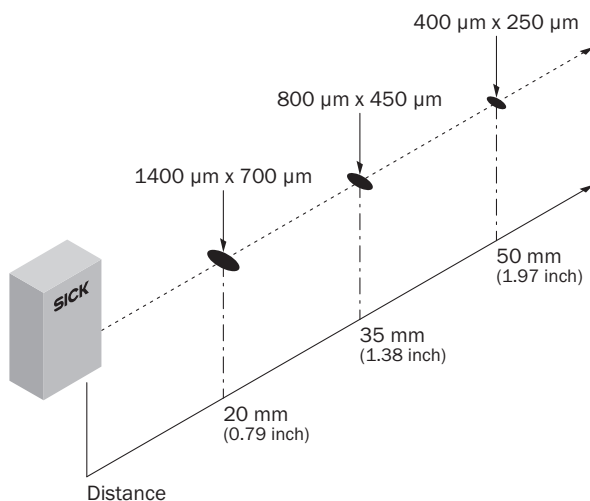


Adjustments

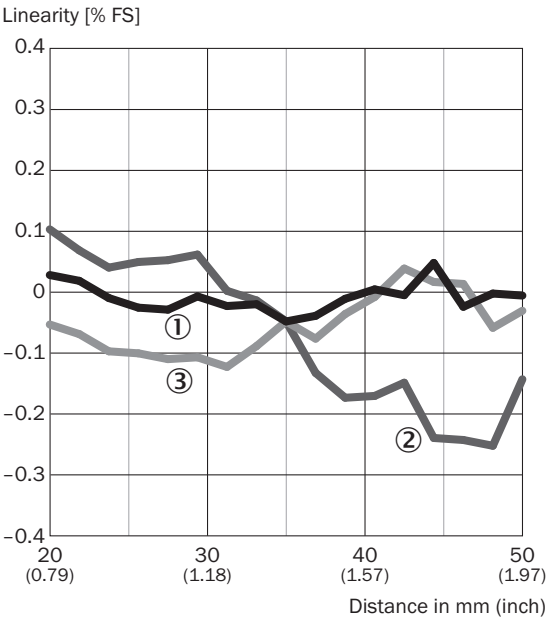


- ① digital output status indicator
- ② Zero offset status indicator
- ③ Teach mode status indicator
- ④ Laser status indicator
- ⑤ Minus sign for measured value indicator

Light spot size OD Mini Prime 20 mm ... 50 mm



Linearity



- 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. |
|---|---|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, straight Connection type head B: Male connector, M8, 4-pin, straight Cable: 2 m, PUR | DSL-0804-G02MB | 6059742 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Male connector, M8, 4-pin, straight, A-coded Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF8U14-020UA3M8U14 | 2096347 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF8U14-020UA3XLEAX | 2094791 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YG8U14-020UA3XLEAX | 2095589 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF8U14-C60UA3XLEAX | 2145825 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF8U14-010UA3XLEAX | 2145826 |
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: Mounting bracket, no alignment bracket Material: Stainless steel Details: Stainless steel | BEF-OD1-B | 5328344 |
|  | <ul style="list-style-type: none"> Description: Mounting bracket, for wall installation, no alignment bracket Material: Stainless steel Details: Stainless steel | BEF-OD1-A | 5328343 |

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:

Contacts and other locations –www.sick.com