



Short range distance sensors (displacement)
OD Mini, OD Mini Prime

OD1-B100C50I25



Model Name > **OD1-B100C50I25**
Part No. > **6050528**



At a glance

- Compact, robust housing
- Integrated amplifier unit, no additional unit necessary
- Display and LEDs on device for visualization of current status
- Wide range of interfaces available
- Simple teach-in using display or external teaching input
- CMOS receiver unit for precise, fast measurement in the μm range
- Different measuring ranges enabling measurement from 10 mm up to 250 mm

Your benefits

- Cost-saving commissioning through simple operating concept and display
- Small installation size and low weight also allow use in highly dynamic applications
- Reduction in cabling, as no additional amplifier unit is necessary
- High machine throughput thanks to reliable measurement, regardless of brightness and color of surface
- The wide range of available interfaces enables simple integration into industrial networks
- Optimum performance even at high production speeds



Performance

| | |
|---|---|
| Measuring range: | 50 mm ... 150 mm |
| Resolution ¹⁾ : | 20 μm |
| Repeatability ²⁾ , ³⁾ : | 30 μm |
| Linearity ⁴⁾ , ⁵⁾ : | $\pm 100 \mu\text{m}$ |
| Response time ⁶⁾ : | 2 ms/4 ms/8 ms/16 ms/auto |
| Measuring frequency: | 2 kHz/1 kHz/500 Hz/250 Hz/auto |
| Light source: | Laser, red |
| Typ. light spot size (distance): | 700 μm x 600 μm (100 mm) |
| Additional function: | Automatic or manual sensitivity adjustment, Teach-in of analog outputs, Teach-in of switching outputs, Switching output invertible, Averaging 1 ... 512x, Multifunctional input: laser-off/external teach-in/trigger, Switching mode: distance to object (DtO), Switching mode: window (Wnd), Switching mode: object between sensor and background (ObSB) |
| Laser class: | 1 (EN 60825-1) ⁷⁾ |

^{1) 2)} Averaging function set to: 512 ³⁾ Constant ambient conditions ⁴⁾ Measurement on 90 % remission (ceramic, white) ⁵⁾ For best performance consider warm up time ≤ 5 minutes ⁶⁾ At fixed sensitivity setting and averaging = 1. With automatic sensitivity setting and sample rating 500 μs : 2 ... 7.5 ms response time/sample rating 1,000 μs : 4 ... 15 ms response time ⁷⁾ Wavelength: 655 nm, max. output: 390 μW (laser class 1)/< 1 mW (laser class 2)

Interfaces

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

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

Mechanics/electronics

| | |
|-----------------------------------|--|
| Electrical connection: | Cable with connector, M12, 5-pin, 30 cm |
| Supply voltage Vs: | DC 12 V (-5 %) ... DC 24 V (+10 %) |
| Power consumption ¹⁾ : | ≤ 1.92 W |
| Warm-up time: | ≥ 5 min |
| Indication: | 4-digit 7-segment display (plus 4 LEDs for status display) |
| Control elements: | 4 buttons |
| Weight: | 40 g |
| Dimensions: | 44.4 mm x 31 mm x 17 mm |
| Housing material: | Aluminum housing with PPSU lens |

¹⁾ Without load, with current output

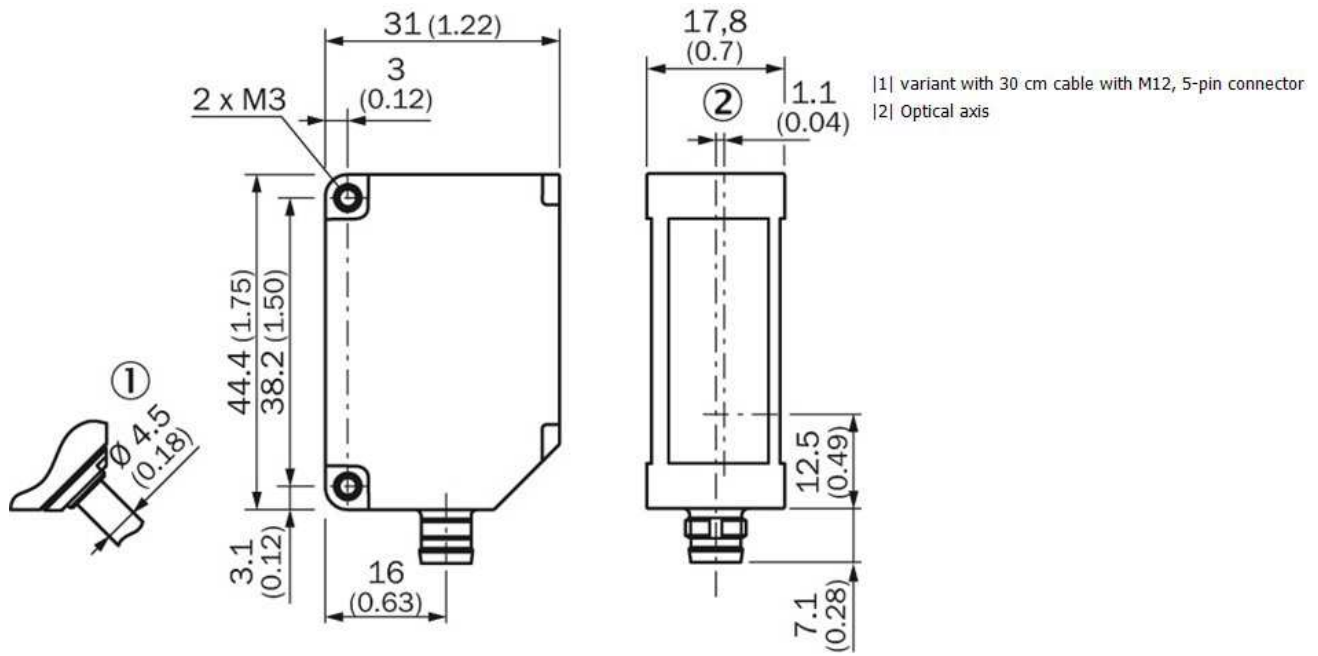
Ambient data

| | |
|--------------------------------------|---|
| Enclosure rating: | IP 67 |
| Protection class: | III |
| Ambient temperature: | Operation: -10 ... +40 °C, Storage: -20 ... +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) |
| 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) |
| Typ. ambient light safety: | Artificial light: ≤ 3,000 lx, Sunlight: ≤ 10,000 lx |

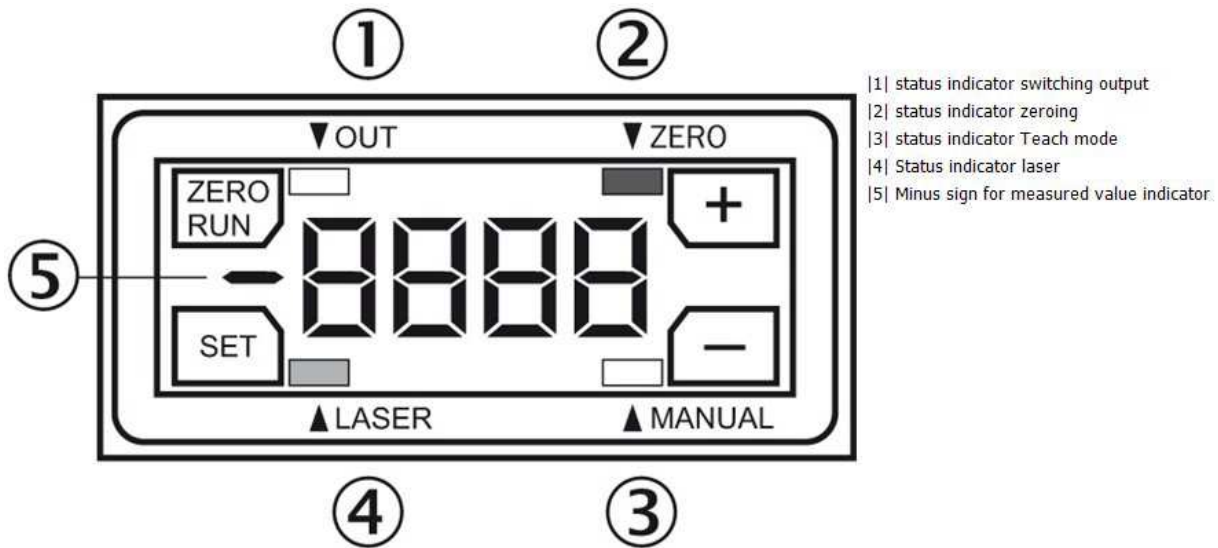
General notes

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

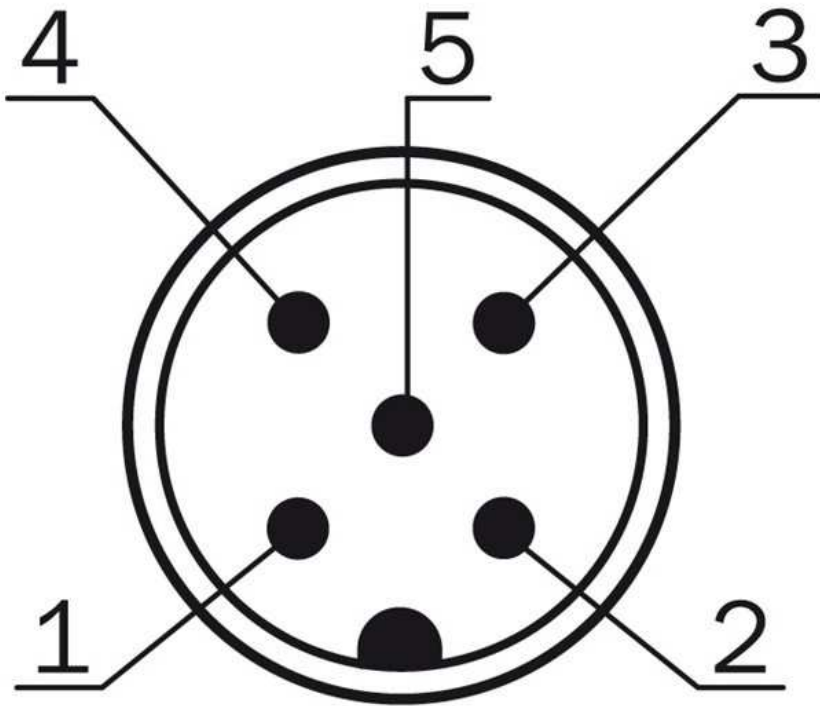
Dimensional drawing



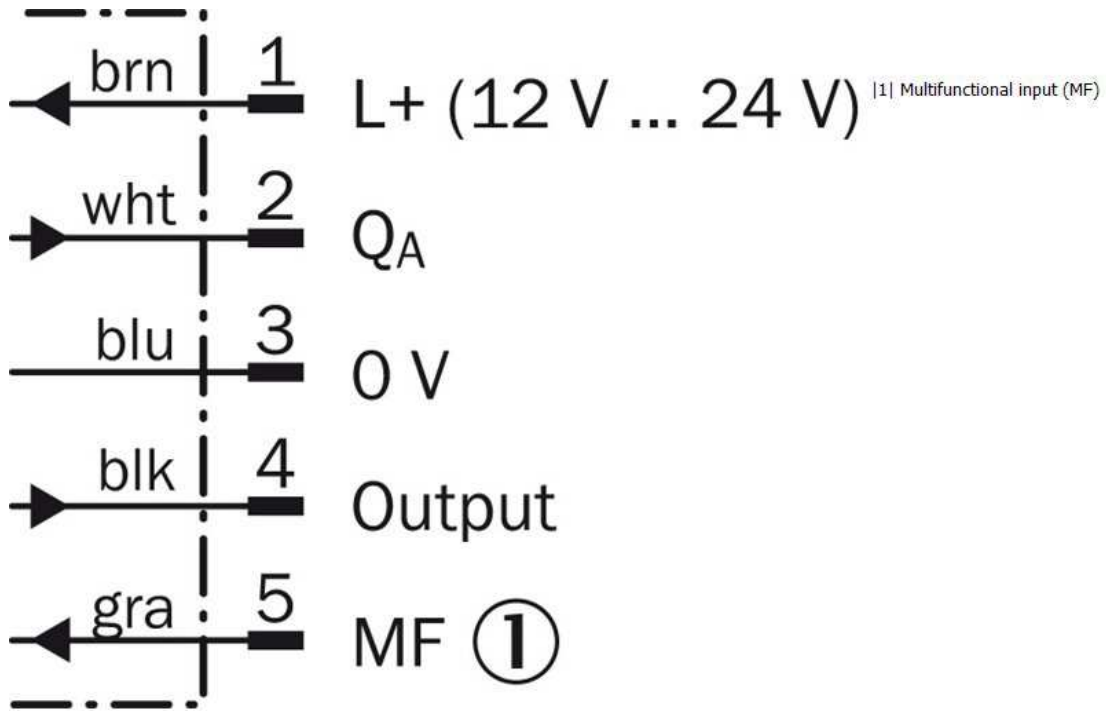
Adjustments



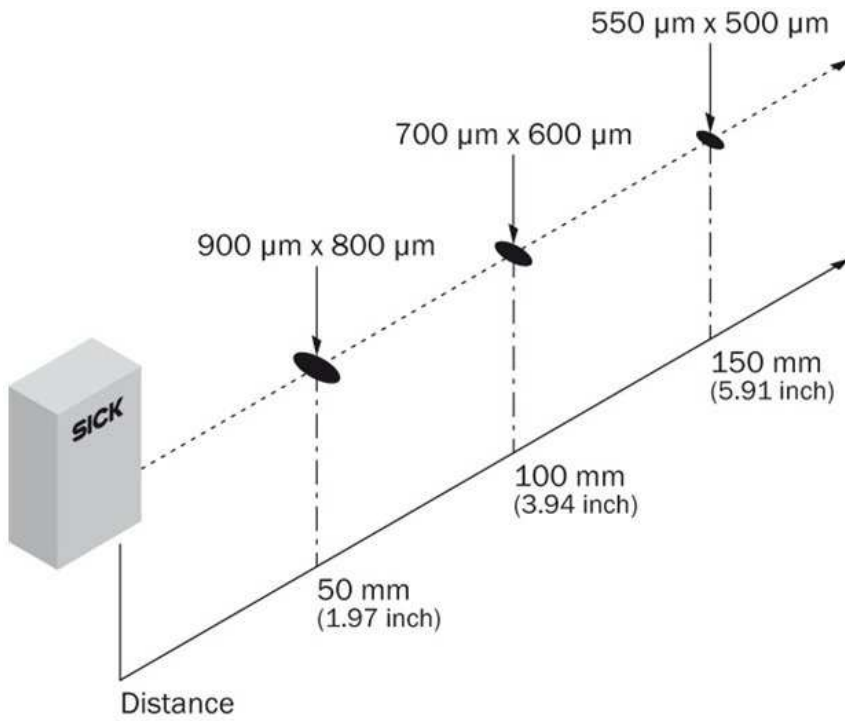
Connection type



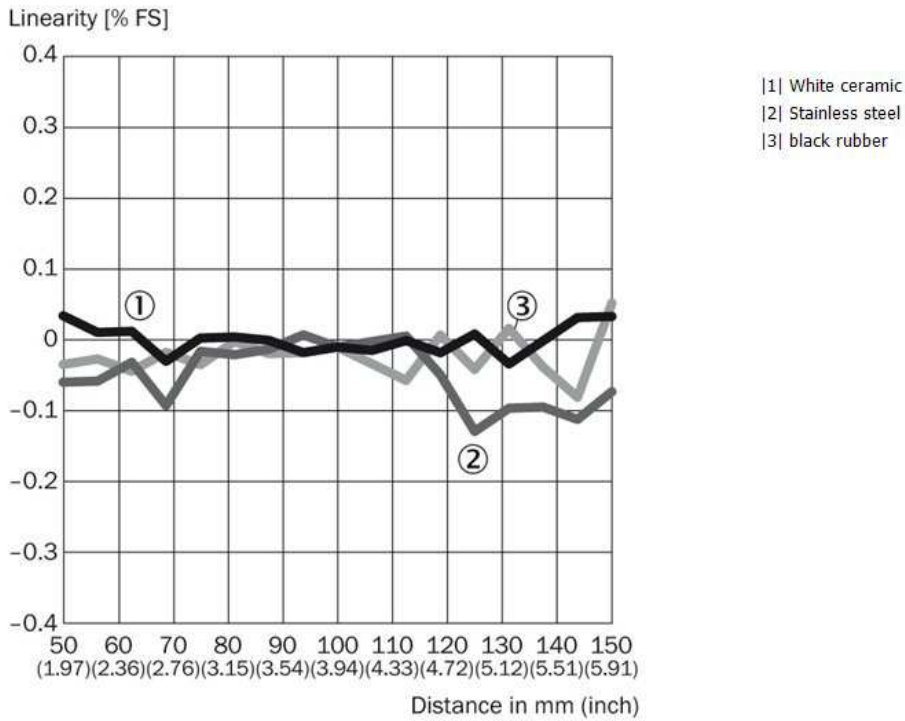
Connection diagram



Light spot size



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