



Short range distance sensors (displacement)
OD Mini, 1 x 0 V ... 10 V (> 10 kΩ), OD Mini
Prime

OD1-B100H50U25



Model Name > OD1-B100H50U25
Part No. > 6050514

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:	20 μm ¹⁾
Repeatability:	30 μm ^{2) 3)}
Linearity:	$\pm 100 \mu\text{m}$ ^{4) 5)}
Response time ⁶⁾ :	0.5 ms / 1 ms / 2 ms / 4 ms / auto
Measuring frequency:	2 kHz / 1 kHz / 500 Hz / 250 Hz / auto
Light source ⁷⁾ :	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) 2 (21 CFR 1040.10)

^{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⁾ When automatic sensitivity adjustment is activated, the response time doubles ⁷⁾ Wavelength: 650 nm, max. output: 0.39 mW

Interfaces

Data interface:	1 x 0 V ... 10 V (> 10 kΩ)
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

Connection type:	Cable with connector M12, 5-pin
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:	70 g
Dimensions:	44.4 mm x 31 mm x 17 mm
Housing material:	Stainless steel housing with PPSU lens

¹⁾ Without load, with current output

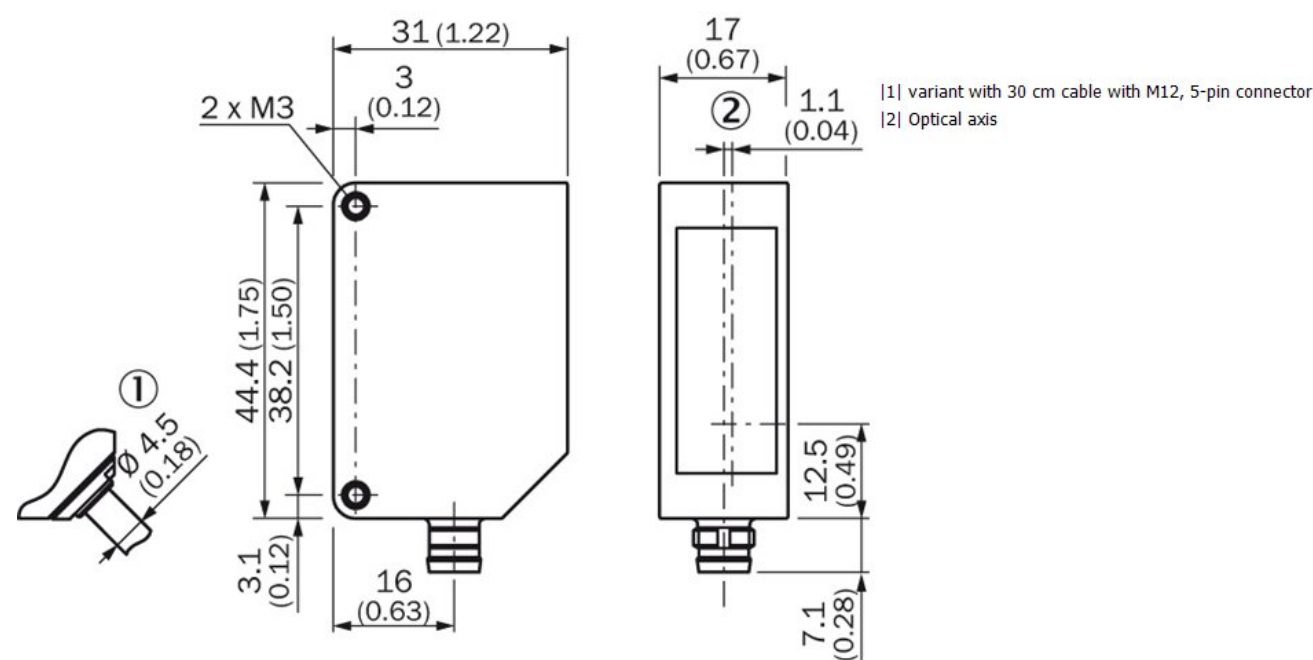
Ambient data

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)
Typ. ambient light safety:	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)

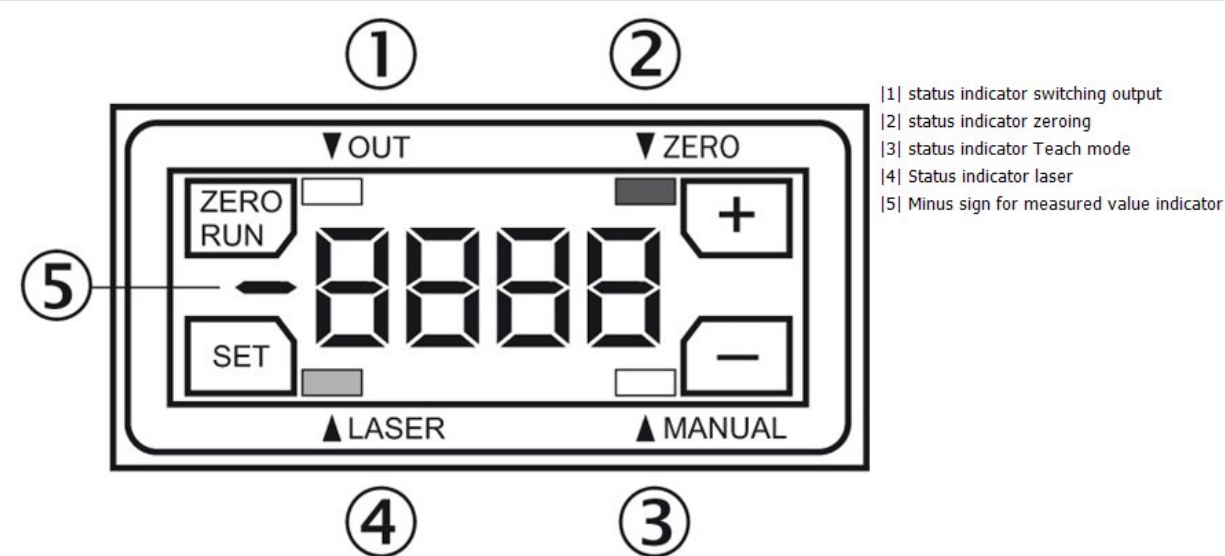
General notes

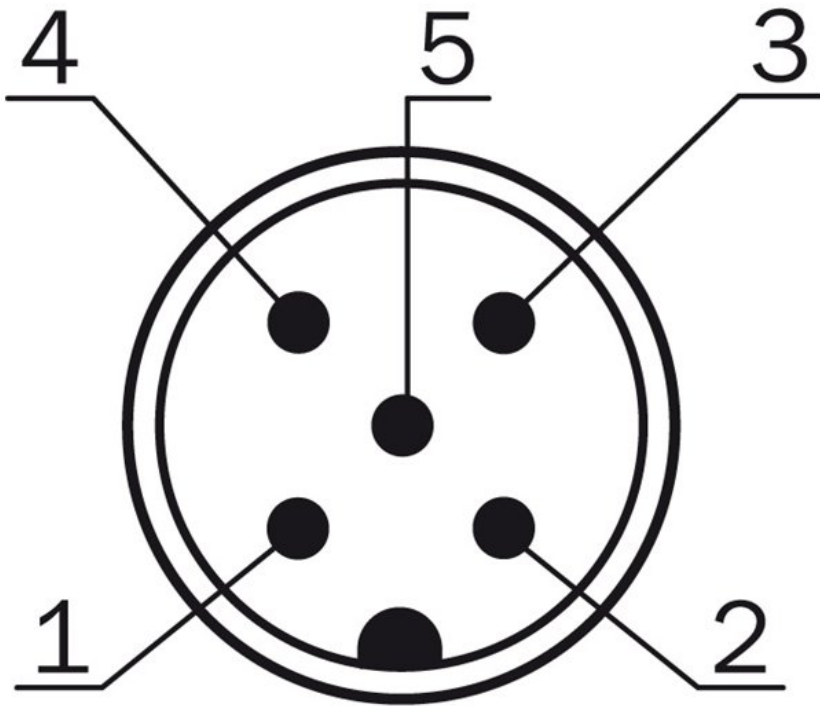
Note:	Not free of paint wetting impairment substances
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Dimensional drawing

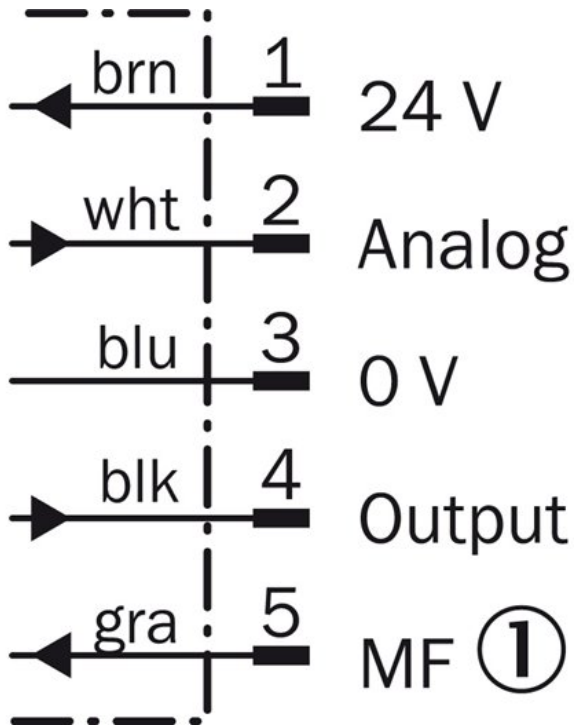


Adjustments



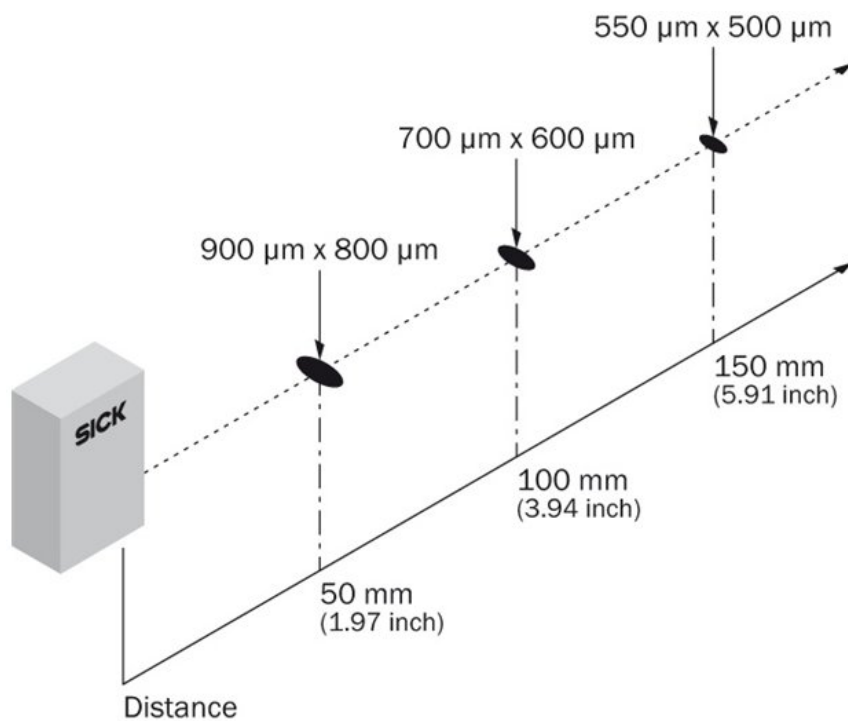


Connection diagram



|1| Multifunction input (MF)

Light spot size



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