



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

OD1-B015H05U14



Model Name > [OD1-B015H05U14](#)
Part No. > [6050497](#)



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:	10 mm ... 20 mm
Resolution ¹⁾ :	1 μm
Repeatability ²⁾ , ³⁾ :	3 μm
Linearity ⁴⁾ , ⁵⁾ :	$\pm 10 \mu\text{m}$
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 500 μm (15 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 0 V ... 10 V (> 10 k Ω)
Multifunctional input (MF) ¹⁾ :	1 x

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

Mechanics/electronics

Electrical connection:	Male connector, M8, 4-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

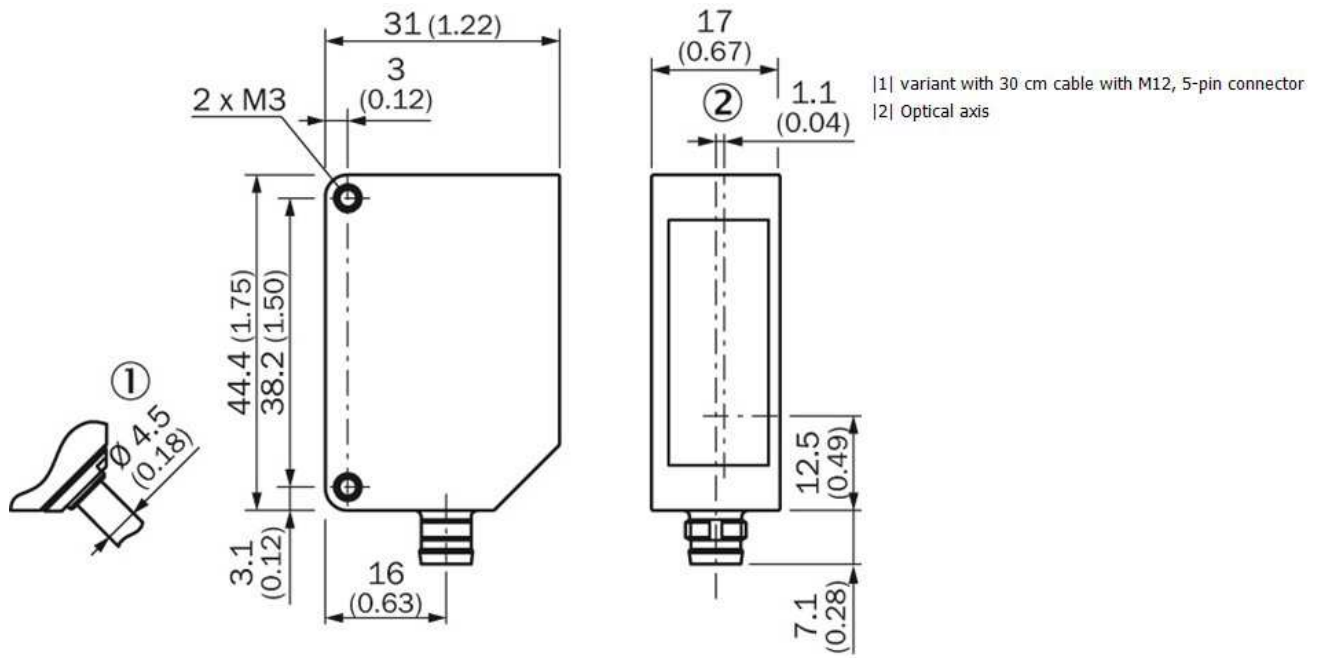
Ambient data

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)
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: $\leq 3,000$ lx, Sunlight: $\leq 10,000$ lx

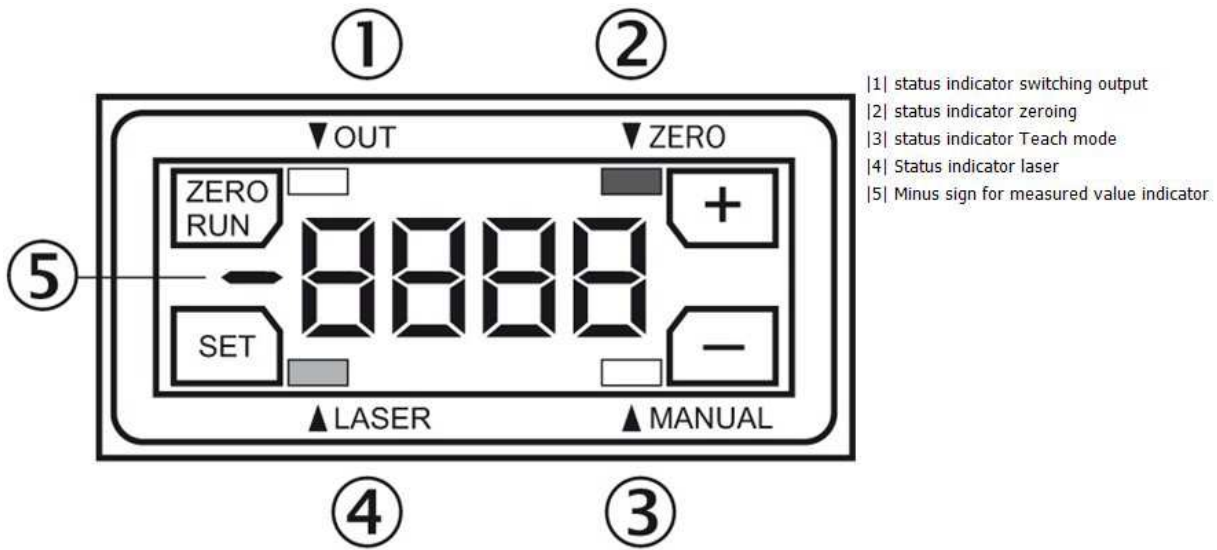
General notes

Note:	Not free of paint wetting impairment substances
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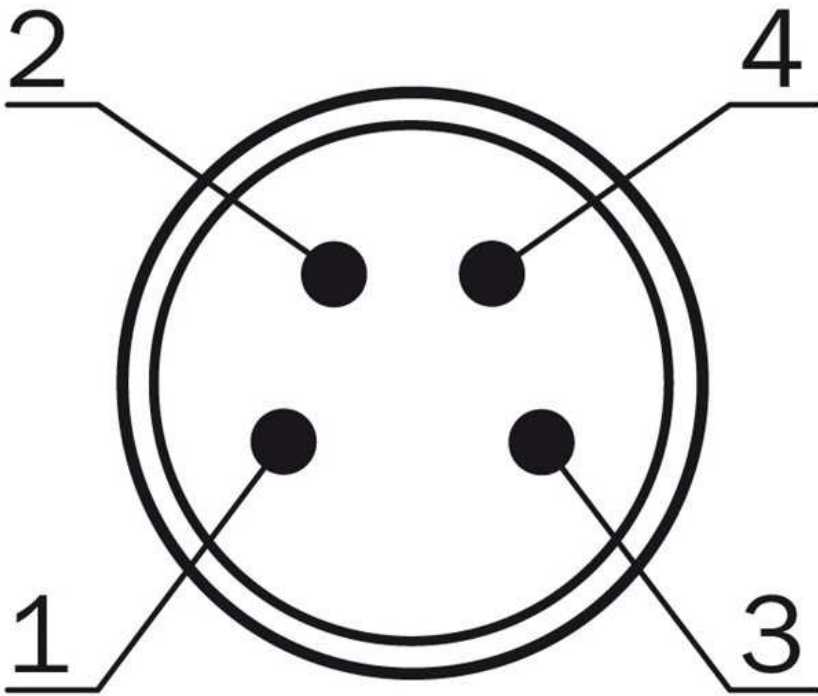
Dimensional drawing



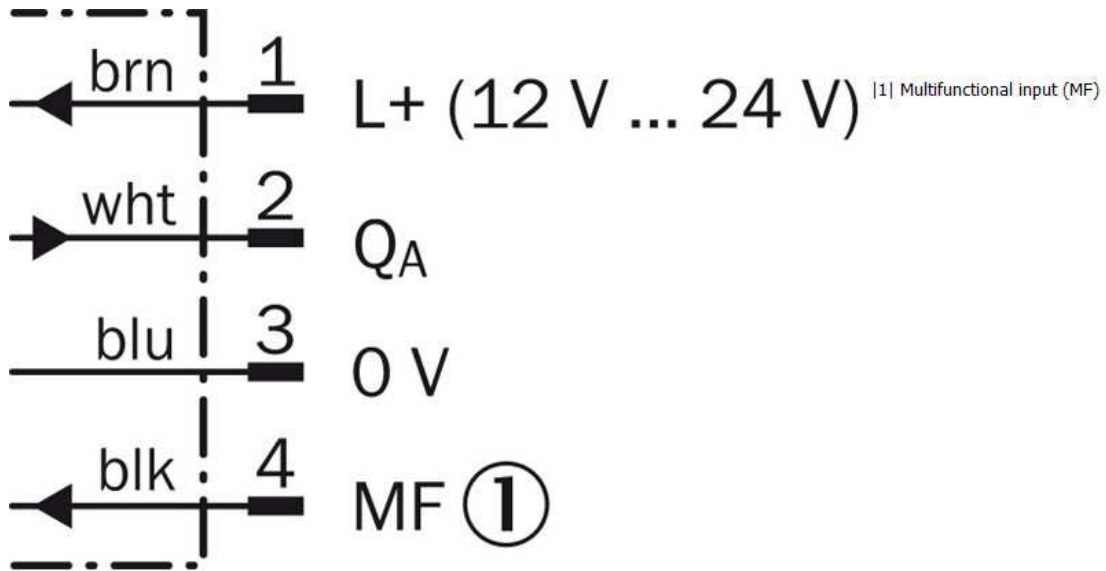
Adjustments



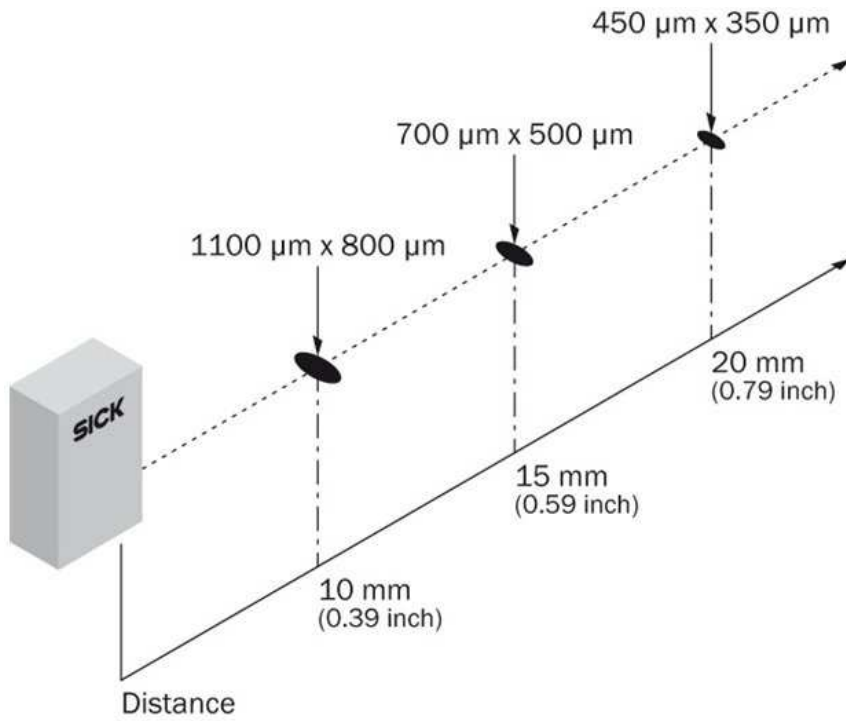
Connection type



Connection diagram

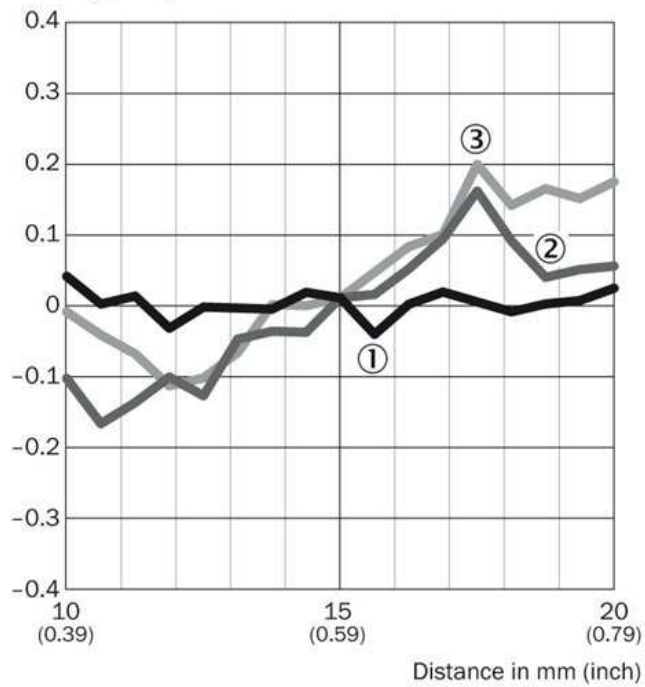


Light spot size



Linearity

Linearity [% FS]



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

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