



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

OD1-B100H50I14



**Model Name** > **OD1-B100H5014**  
**Part No.** > **6050511**



**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  $\mu\text{m}$  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 <sup>1)</sup> :	20 $\mu\text{m}$
Repeatability <sup>2)</sup> , <sup>3)</sup> :	30 $\mu\text{m}$
Linearity <sup>4)</sup> , <sup>5)</sup> :	$\pm 100 \mu\text{m}$
Response time <sup>6)</sup> :	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 $\mu\text{m}$ x 600 $\mu\text{m}$ (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) <sup>7)</sup>

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

## Interfaces

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Data interface:	1 x 4 mA ... 20 mA (< 300 Ω)
Multifunctional input (MF) <sup>1)</sup> :	1 x

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

## Mechanics/electronics

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Electrical connection:	Male connector, M8, 4-pin
Supply voltage Vs:	DC 12 V (-5 %) ... DC 24 V (+10 %)
Power consumption <sup>1)</sup> :	≤ 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

<sup>1)</sup> Without load, with current output

## Ambient data

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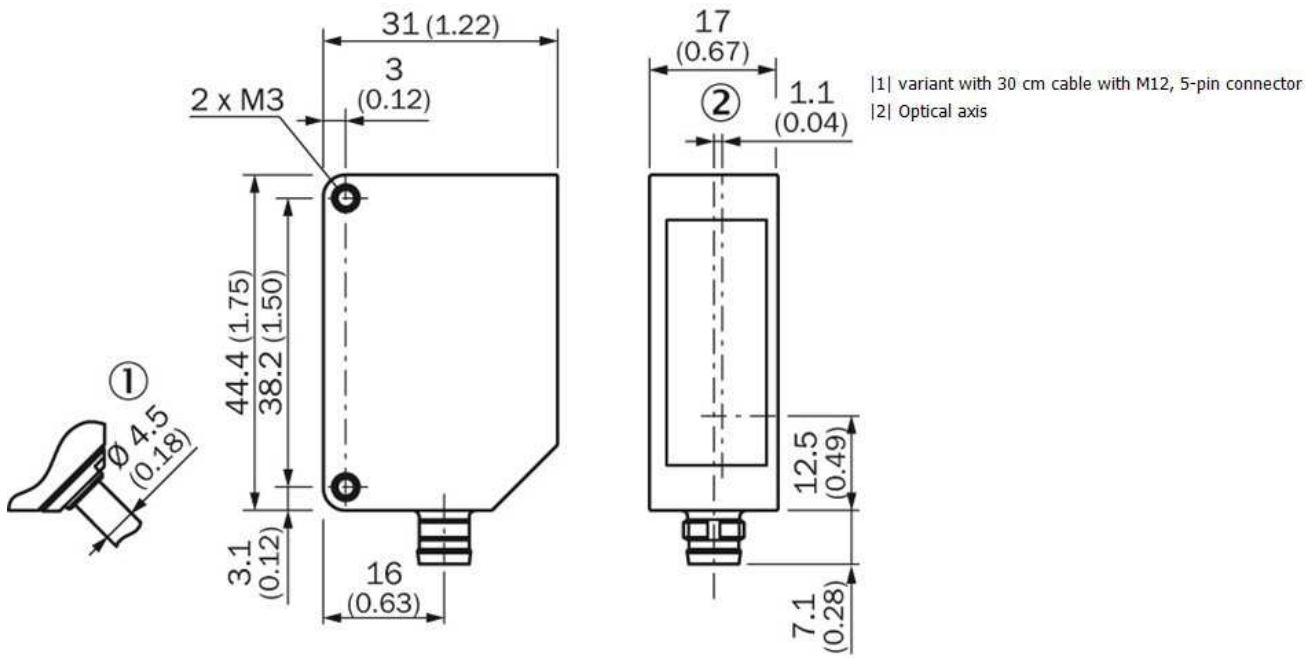
Enclosure rating:	IP 67
Protection class:	III
Ambient temperature:	Operation: -10 ... +40 °C, Storage: -20 ... +60 °C
Min. rel. humidity (not condensing):	35 %
Max. rel. humidity (not condensing):	95 %
Temperature drift:	± 0.08 % FS/K (FS = Full Scale = Measuring range of sensor)
Vibration resistance:	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

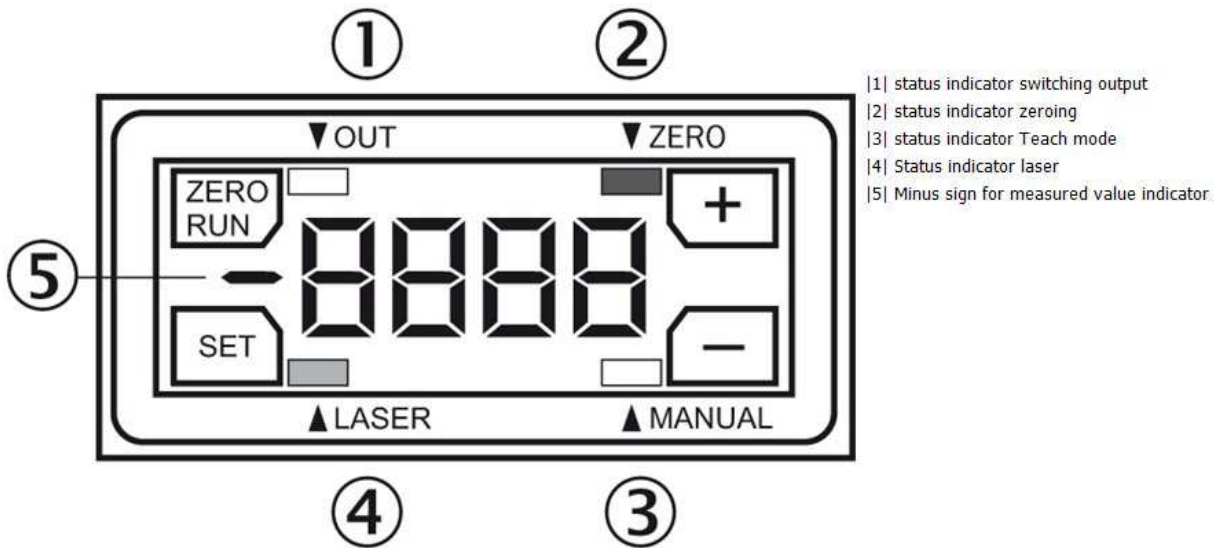
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Note:	Not free of paint wetting impairment substances
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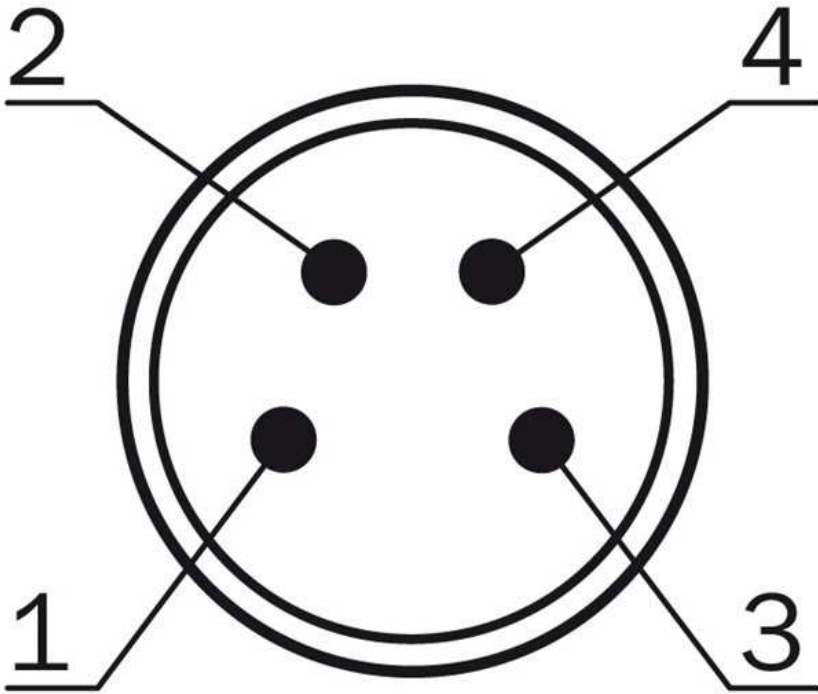
**Dimensional drawing**



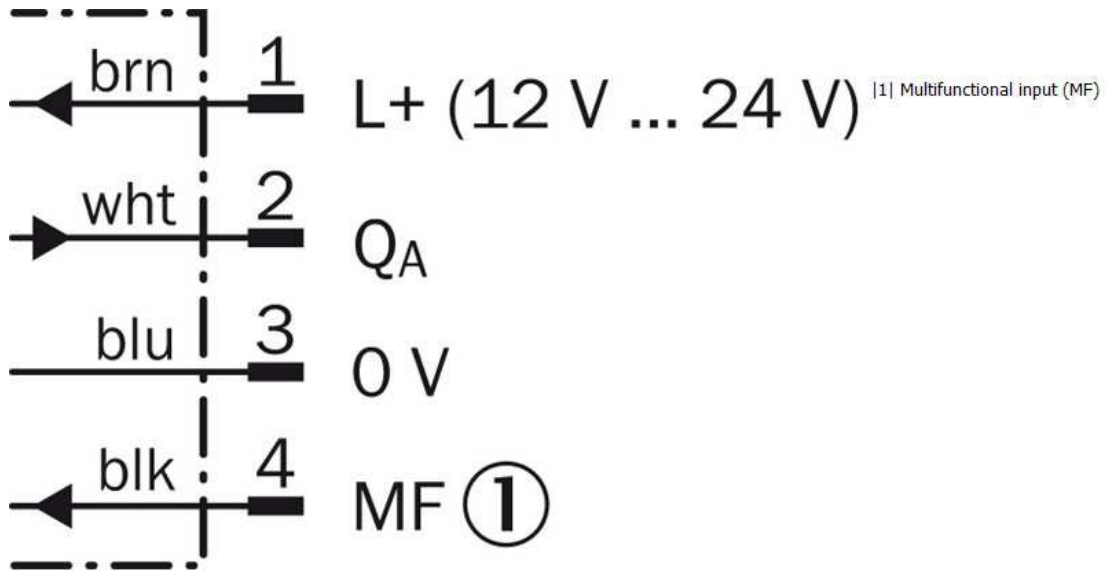
**Adjustments**



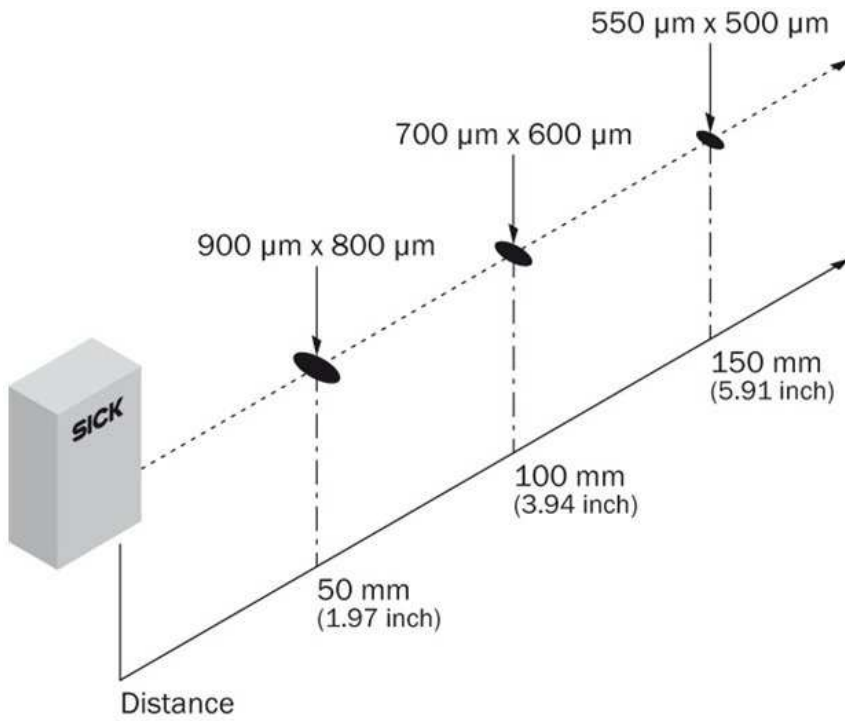
Connection type



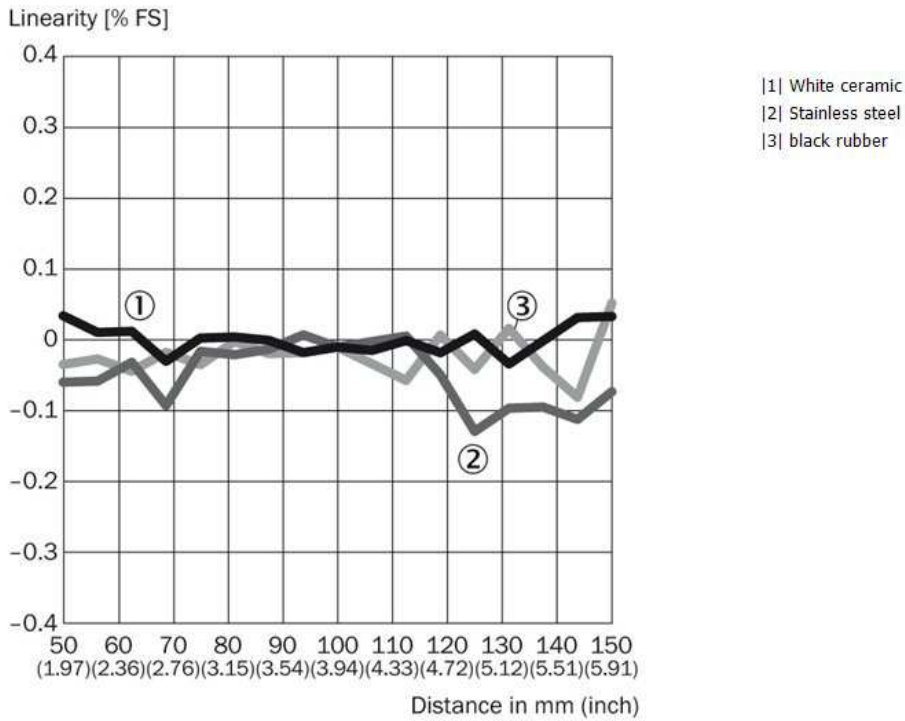
Connection diagram



**Light spot size**



**Linearity**



**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6881000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886 2 2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 88 65 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 (800) 325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)