



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

OD1-B100H50U14



Model Name > OD1-B100H50U14
Part No. > 6050513



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)
Multifunctional input (MF) ¹⁾ :	1 x

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

Mechanics/electronics

Connection type:	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

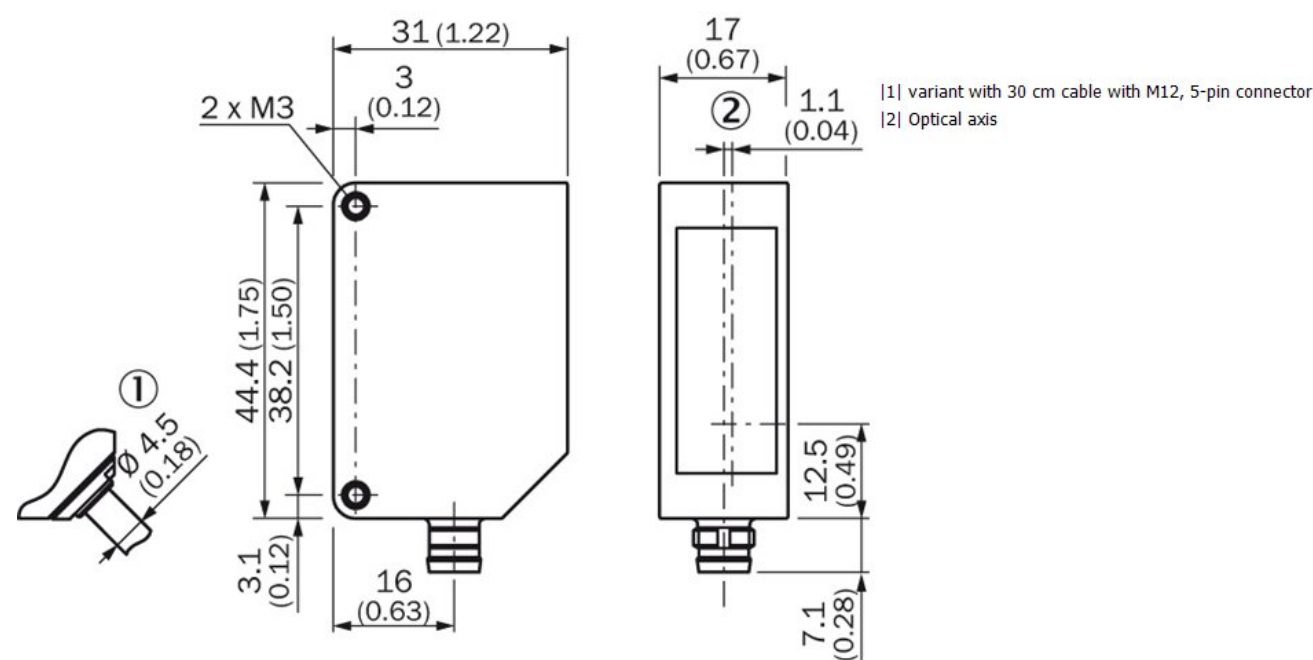
Ambient data

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)
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)

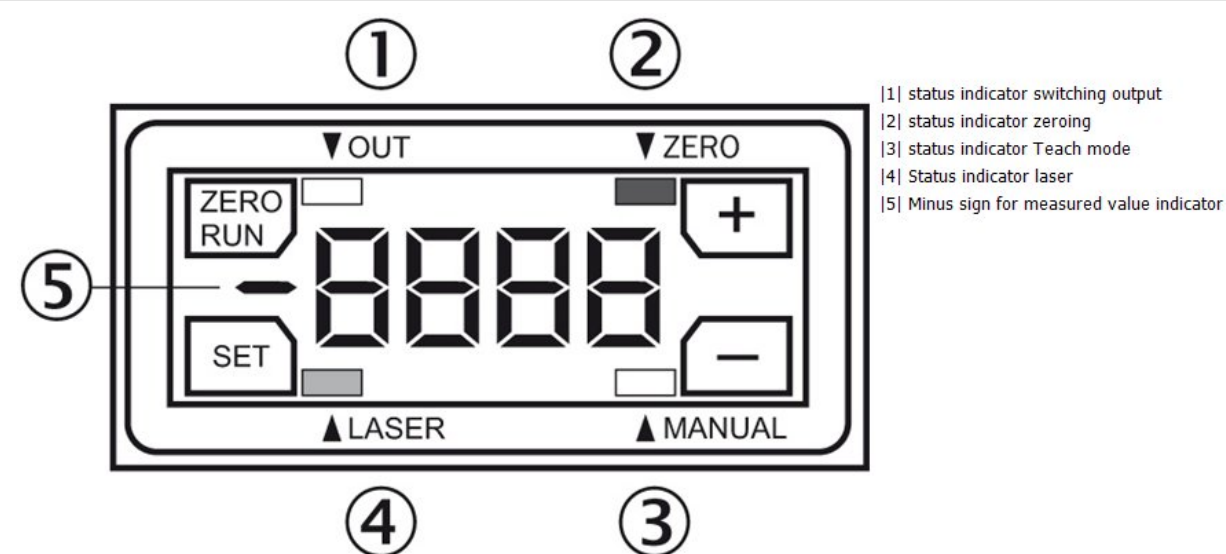
General notes

Note:	Not free of paint wetting impairment substances
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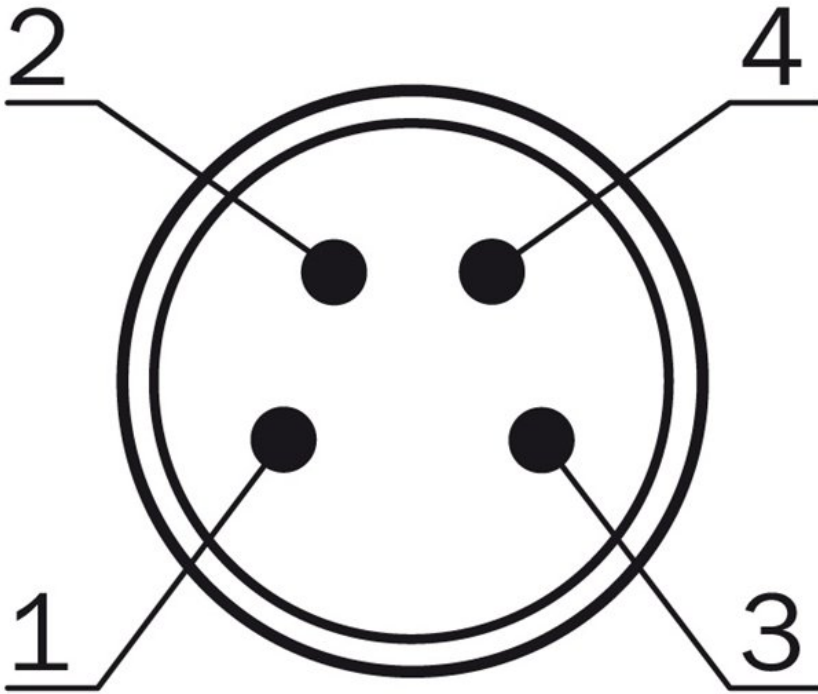
Dimensional drawing



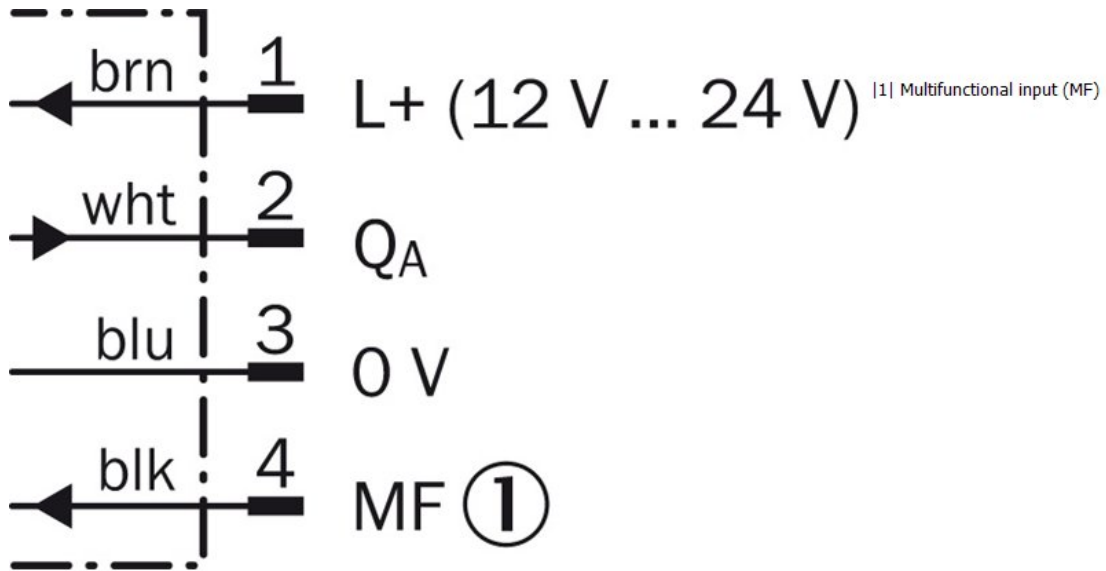
Adjustments



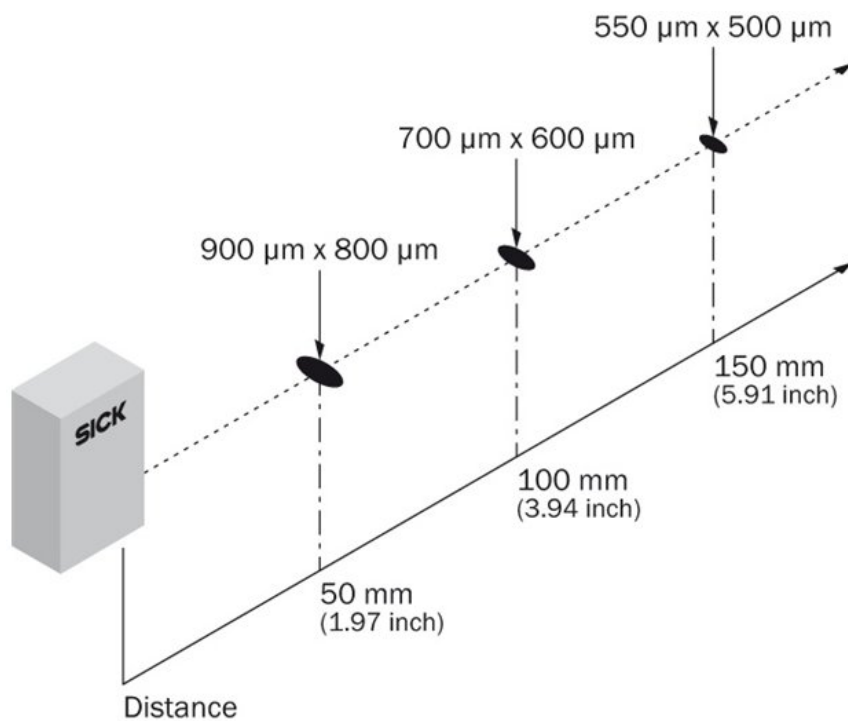
Connection type



Connection diagram



Light spot size



Australia

Phone +61 3 9457 0600
1800 334 802 – 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 sac@sick.com.br

Canada

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

Ceská 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 kundenservice@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 +972-4-6801000
E-Mail info@sick-sensors.com

Italia

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

Japan

Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Magyarország

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

Nederlands

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

Norge

Phone +47 67 81 50 00
E-Mail austefjord@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 admin@sicksgp.com.sg

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 8865 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