



OD2-P50W10U0

OD Value

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
OD2-P50W10U0	6036598

Other models and accessories → www.sick.com/OD_Value



Detailed technical data

Performance

Measuring range	40 mm ... 60 mm, 6 % ... 90 % remission
Resolution	5 μm ¹⁾
Repeatability	15 μm ^{2) 1) 3) 4)}
Linearity	± 20 μm ^{1) 5) 4) 6)}
Response time	1 ms / 10 ms / 35 ms ⁷⁾
Measuring frequency	2 kHz
Light source	Laser, red
Laser class	2 (EN 60825-1) ⁸⁾
Typ. light spot size (distance)	0.5 mm x 1 mm (50 mm)
Additional function	Mean-value setting 1 ... 64x, automatic sensitivity adjustment, Analog outputs can be taught in, Invertable analog output, Teach-in of switching output, Invertable switching output, multifunctional input: laser-off / external teach-in / trigger, switching mode: distance to object (DtO), switching mode: window (Wnd)

¹⁾ At averaging function medium.

²⁾ 6 % ... 90 % remission.

³⁾ Constant ambient conditions.

⁴⁾ For best performance consider warm up time ≤ 5 minutes.

⁵⁾ Measurement on 90 % remission (ceramic, white)

⁶⁾ When calibrated in the application regularly.

⁷⁾ Automatic sensitivity adjustment ≤ 4 ms, 6 ms for the models with measuring range of 100 mm ... 400 mm.

⁸⁾ Wavelength: 655 nm, max. output: 1 mW.

Interfaces

Switching output	2 x PNP (100 mA) ¹⁾
Multifunctional input (MF)	1 x MF ²⁾
Data interface	1 x 0 V ... 10 V (> 10 kΩ)

¹⁾ PNP: HIGH = V_S - (< 2 V) / LOW = < 2 V; NPN: HIGH = < 2 V / LOW = V_S.

²⁾ MF can be used as laser-off, trigger, external teach-in, or deactivated; response time ≤ 3 ms.

Mechanics/electronics

Supply voltage V_s	DC 12 V ... 24 V ¹⁾
Power consumption	≤ 2.88 W ²⁾
Warm-up time	≤ 30 min
Housing material	PBT housing with PMMA lens
Connection type	Male connector, M12, 8-pin
Indication	Distance bar graph, up to 8 status LEDs
Weight	70 g

¹⁾ DC 12 V (-5 %) ... 24 V (+10 %); DC 18 V (-5 %) ... DC 24 V (+10 %) when using analog voltage output.

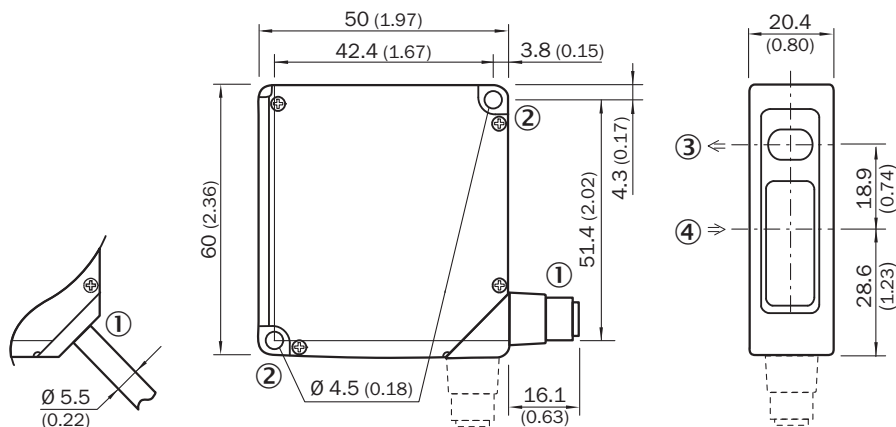
²⁾ Without load, with current output.

Ambient data

Enclosure rating	IP 67
Protection class	III
Ambient temperature	Operation: -10 °C ... $+40$ °C Storage: -20 °C ... $+60$ °C
Relative air humidity (non-condensing)	35 % ... 95 %
Temperature drift	± 0.08 % FS/K (FS = Full Scale = Measuring range of sensor)
Typ. Ambient light immunity	Artificial light: $\leq 3,000$ lx Sunlight: $\leq 10,000$ 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)

Dimensional drawing (Dimensions in mm (inch))

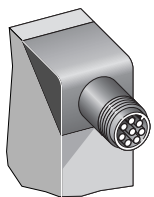
OD2-x50W10xx



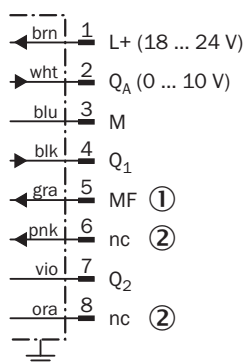
- ① 2 m cable or M12 connector; 90° rotatable
- ② Mounting hole, $\varnothing 4.5$ mm
- ③ Optical axis sender
- ④ Optical axis receiver

Connection type

OD2-xxxxxA0 OD2-xxxxxC0 OD2-xxxxxI0 OD2-xxxxxU0 connector M12, 8-pin



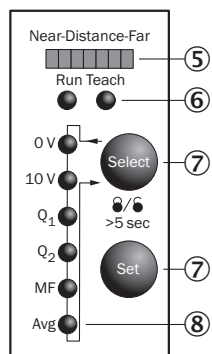
Connection diagram



- ① Multifunctional input (MF)
- ② Not assigned

Adjustment possible

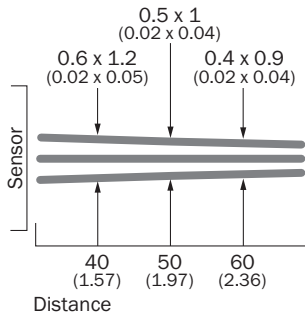
OD2-xxxxxUx



- ⑤ Distance indicator
- ⑥ Mode indicator (Run/Teach)
- ⑦ Operating elements
- ⑧ Status indicator in- and outputs (Run-mode)/menu indicator (Teach-mode)

Light spot size

OD2-x50W10xx

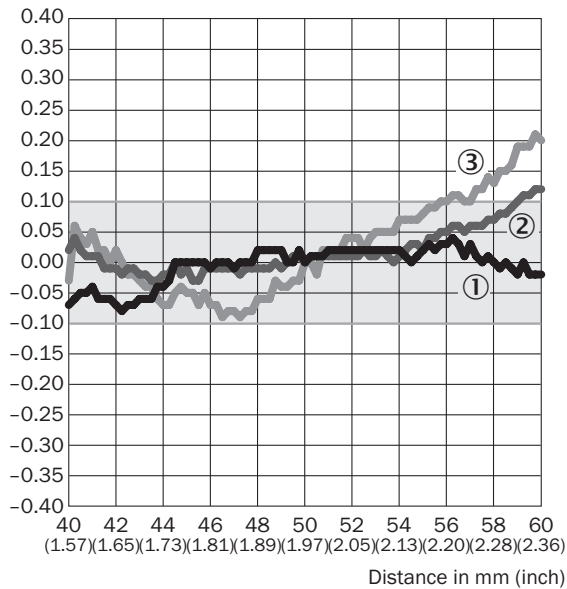


All dimensions in mm (inch)

Linearity

OD2-x50xxxxx

Linearity [%FS]




- ① White ceramic
- ② Black paper
- ③ Stainless steel

Recommended accessories

Other models and accessories → www.sick.com/OD_Value

	Brief description	Type	Part no.
	Plug connectors and cables		

	Brief description	Type	Part no.
	Head A: female connector, M12, 8-pin, straight Head B: cable Cable: special color code, PVC, shielded, 2 m	DOL-1208-G02MF	6020663
	Head A: female connector, M12, 8-pin, straight Head B: cable Cable: special color code, PVC, shielded, 5 m	DOL-1208-G05MF	6020664
	Head A: female connector, M12, 8-pin, straight Head B: cable Cable: special color code, PVC, shielded, 10 m	DOL-1208-G10MF	6048434

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Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

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