



Short range distance sensors (displacement)
OD Value, 4 mA ... 20 mA (≤ 300 Ω)

OD2-P250W150IO



Model Name > OD2-P250W150IO
Part No. > 6036645



At a glance

- Several measurement ranges from 26 mm ... 34 mm to 100 mm ... 500 mm
- CMOS receiving element for measurement independent of surface
- Easy, LED-based user and teach-in concept
- Wide range of models and a wide range of standard interfaces
- Laser technology for precise measurement of very small objects
- Compact stand-alone device
- Excellent price-performance ratio

Your benefits

- Reliable measurement independent of surface, minimizes machine downtime
- Extremely simple sensor teach-in makes setup faster and more costeffective
- Minimal space requirements and less wiring due to its compact, standalone design
- Many measurement ranges and output interfaces make it ideal for cost-effective integration into any production environment
- Low investment costs make consistent, regular quality inspection possible
- Non-contact measurement technology from a safe distance allows the inspection to be carried out directly during the production process
- Wear and damage-free inspection, due to non-contact measurement



Performance

Measuring range:	100 mm ... 400 mm, 6 % ... 90 % remission
Resolution:	75 μm ¹⁾
Repeatability:::	225 μm ^{2) 3) 4) 5)}
Linearity:::	$\pm 750 \mu\text{m}$ ^{6) 7) 8) 9)}
Response time ¹⁰⁾ :	2 ms/15 ms/50 ms
Measuring frequency:	1.3 kHz
Light source:	Laser, red
Typ. light spot size (distance):	1.8 mm x 3.5 mm (250 mm)
Additional function:	Automatic sensitivity adjustment, Teach-in of analog outputs, Teach-in of switching output, Invertable analog output, Invertable switching output, Averaging 1 ... 64x, Multifunctional input: laser-off/external teach-in/trigger, Switching mode: distance to object (DtO), Switching mode: window (Wnd)
Laser class:	2 (EN 60825-1) ¹¹⁾

1) 3) 6) At averaging function medium 2) 6 % ... 90 % remission 4) Constant ambient conditions 5) 8) For best performance consider warm up time ≤ 5 minutes 7)
 Measurement on 90 % remission (ceramic, white) 9) When calibrated in the application regularly 10) Automatic sensitivity adjustment ≤ 4 ms, 6 ms for the models with
 measuring range of 100 mm ... 400 mm 11) Wavelength: 655 nm, max. output: 1 mW

Interfaces

Data interface:	4 mA ... 20 mA ($\leq 300 \Omega$)
Output type ¹⁾ :	2 x PNP (100 mA)
Multifunctional input (MF) ²⁾ :	1 x MF
¹⁾ PNP: HIGH = $V_S - (< 2 \text{ V})$ /LOW = $< 2 \text{ V}$; NPN: HIGH = $< 2 \text{ V}$ /LOW = V_S ²⁾ MF can be used as laser-off, trigger, external teach-in or deactivated; response time ≤ 3 ms	

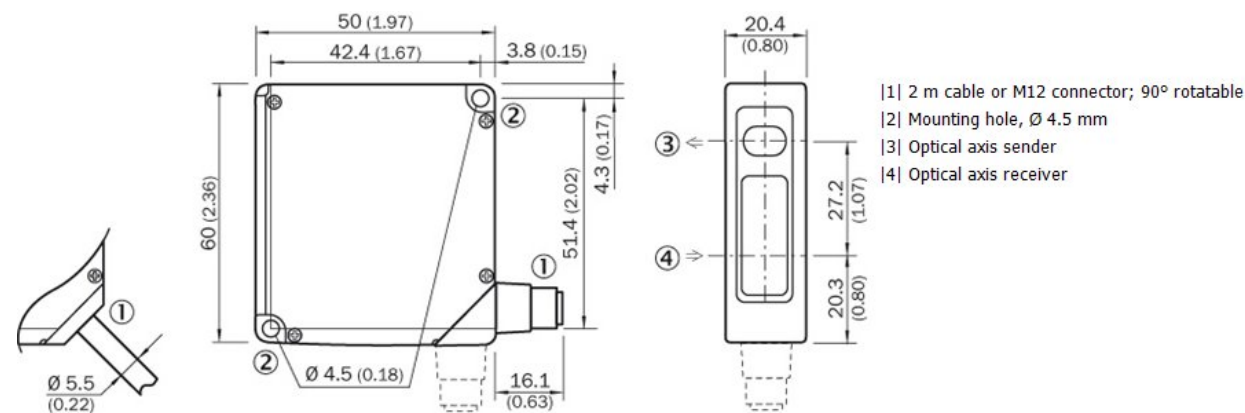
Mechanics/electronics

Connection type:	Connector, M12, 8-pin
Supply voltage V_S ¹⁾ :	DC 12 V ... 24 V
Power consumption ²⁾ :	$\leq 2.88 \text{ W}$
Warm-up time:	≤ 5 min
Indication:	Distance bar graph, up to 8 status LEDs
Weight:	70 g
Housing material:	PBT housing with PMMA lens
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	

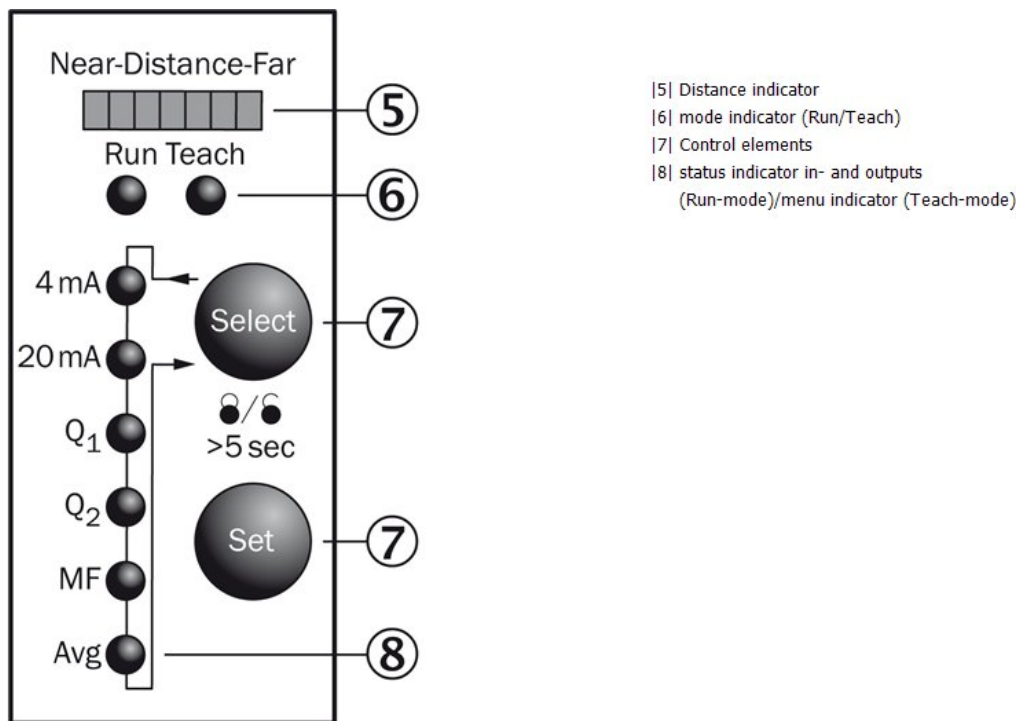
Ambient data

Enclosure rating:	IP 67
Protection class:	III
Ambient temperature:	Operation: $-10 \dots 40 \text{ }^\circ\text{C}$, Storage: $-20 \dots 60 \text{ }^\circ\text{C}$
Temperature drift:	$\pm 0.08 \text{ \% FS/K}$ (FS = Full Scale = Measuring range of sensor)
Typ. ambient light safety:	Artificial light: $\leq 3,000 \text{ lx}$ Sunlight: $\leq 10,000 \text{ lx}$
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)
Relative humidity (not condensing):	35 % ... 95 %

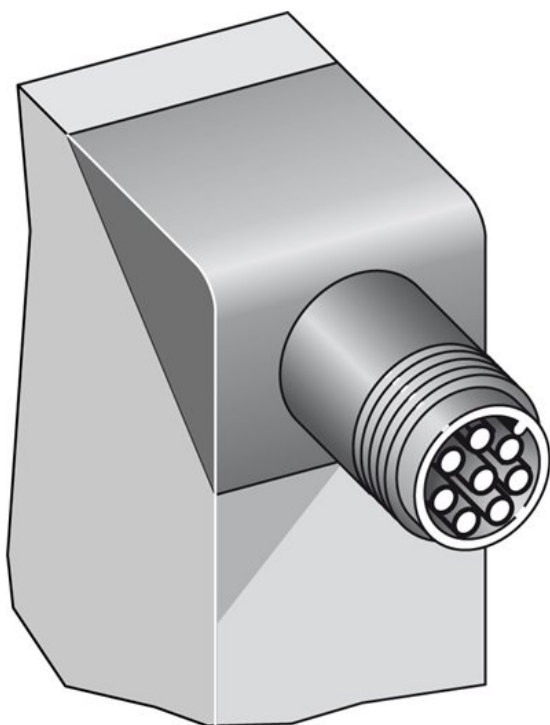
Dimensional drawing



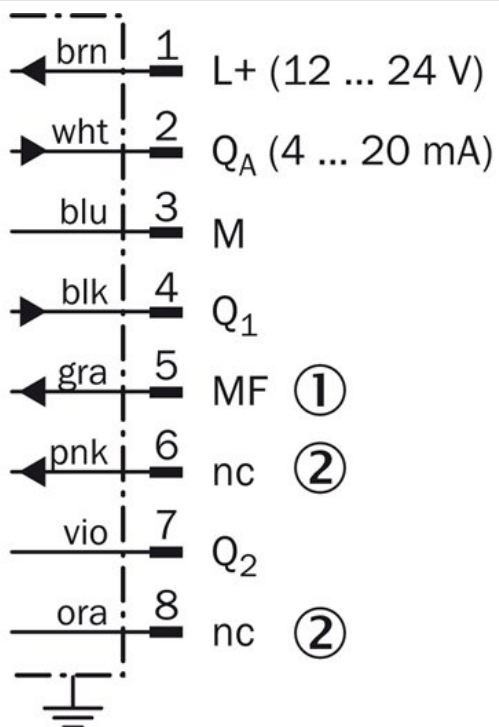
Adjustment possible



Connection type

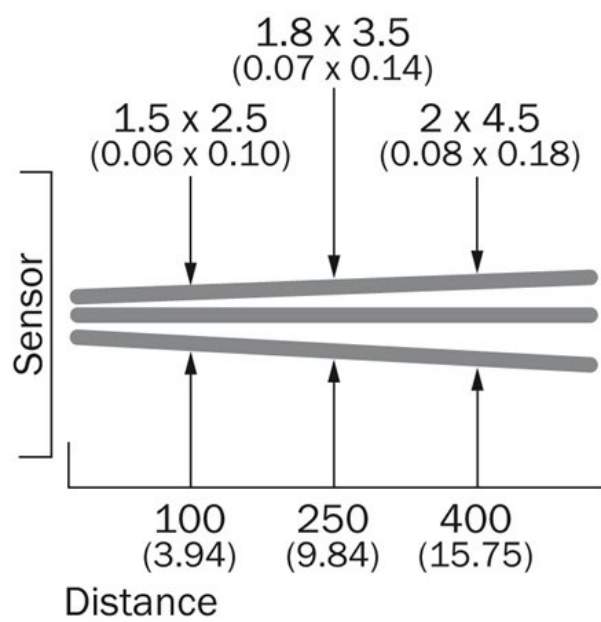


Connection diagram



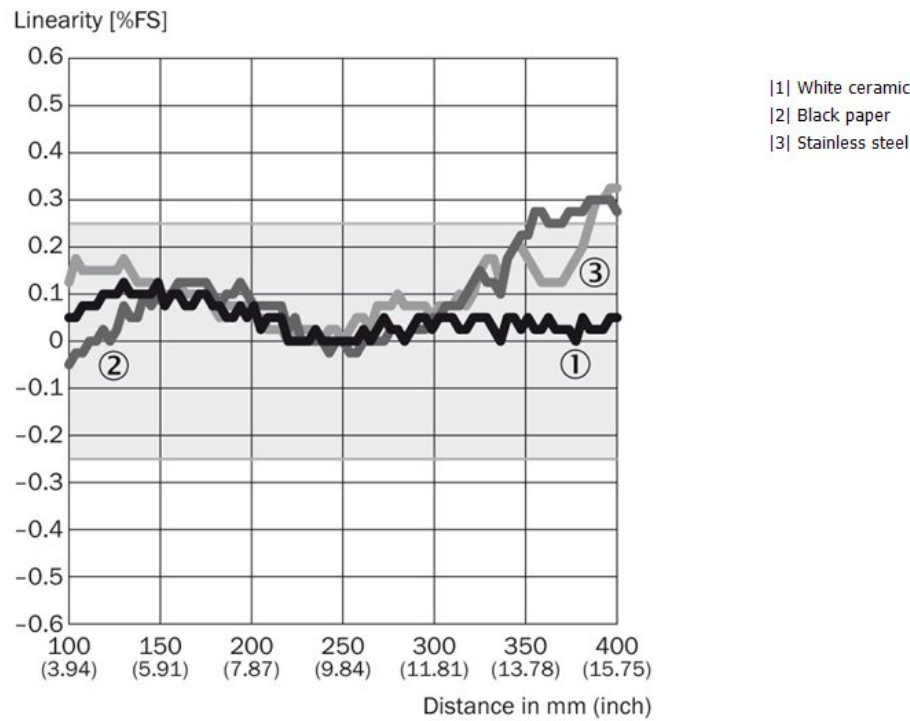
① Multifunctional input (MF)
② not connected

Light spot size



All dimensions in mm (inch)

Linearity



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