



Short range distance sensors (displacement) OD Value

OD2-P85W20U0



Model Name > **OD2-P85W20U0**
Part No. > **6036614**

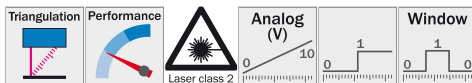


At a glance

- 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:	65 mm ... 105 mm, 6 % ... 90 % remission
Resolution ¹⁾ :	10 µm
Repeatability ^{2), 3), 4), 5)} :	30 µm
Linearity ^{6), 7), 8), 9)} :	± 40 µm
Response time ¹⁰⁾ :	1 ms/10 ms/35 ms
Measuring frequency:	2 kHz
Light source:	Laser, red
Typ. light spot size (distance):	0.8 mm x 1.3 mm (85 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: 0 V ... 10 V (≥ 10 kΩ)
 Output type ¹⁾: 2 x PNP (100 mA)
 Multifunctional input (MF) ²⁾: 1 x MF

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

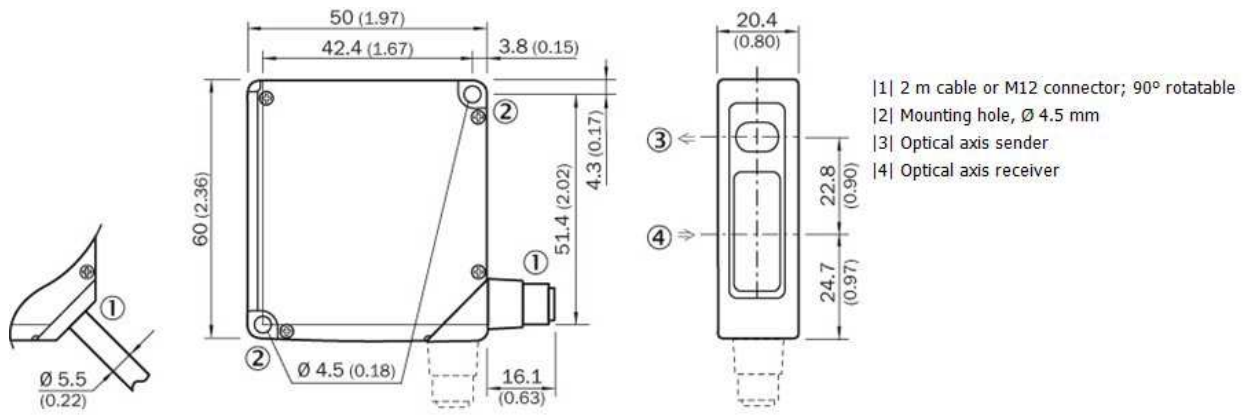
Electrical connection: Male connector, M12, 8-pin
 Supply voltage V_S ¹⁾: DC 12 V ... 24 V
 Power consumption ²⁾: ≤ 2.88 W
 Warm-up time: ≤ 5 min
 Indication: Distance bar graph, up to 8 status LEDs
 Weight: 70 g
 Housing material: PBT housing with PMMA lens

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

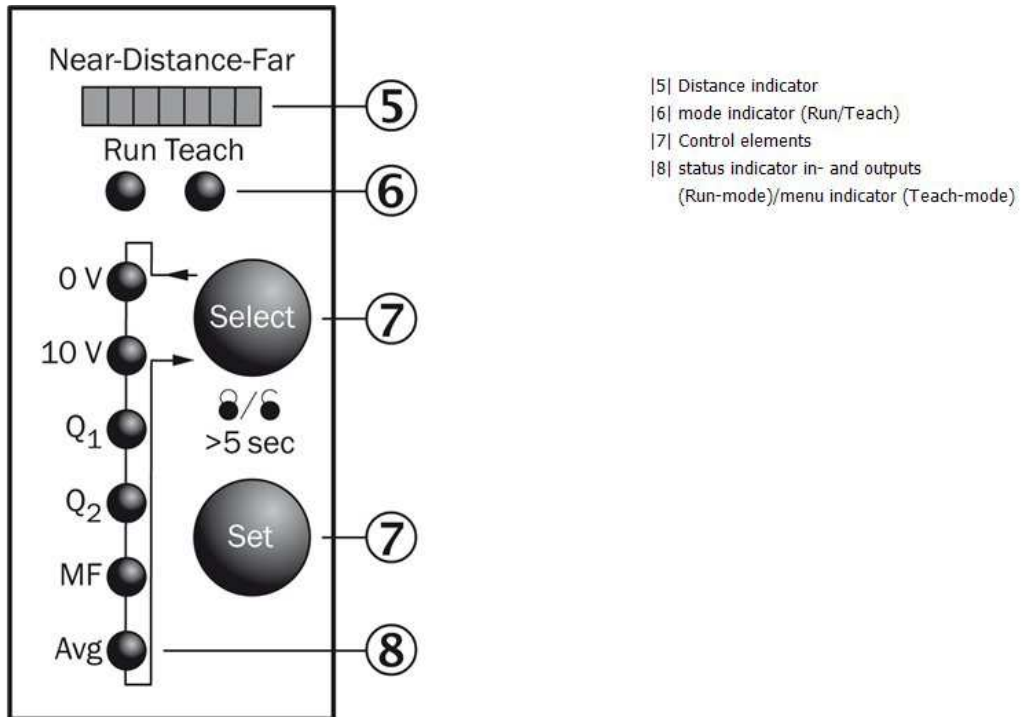
Ambient data

Enclosure rating: IP 67
 Protection class: III
 Ambient temperature: Operation: -10 ... +40 °C, Storage: -20 ... +60 °C
 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)
 Relative humidity (not condensing): 35 % ... 95 %

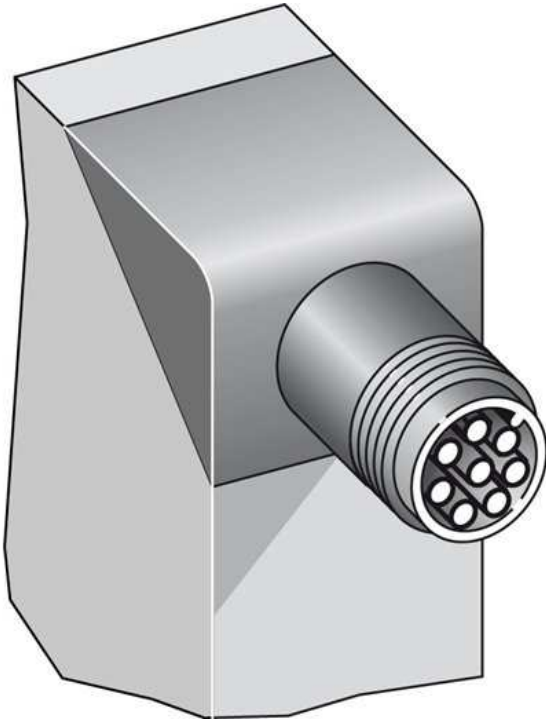
Dimensional drawing



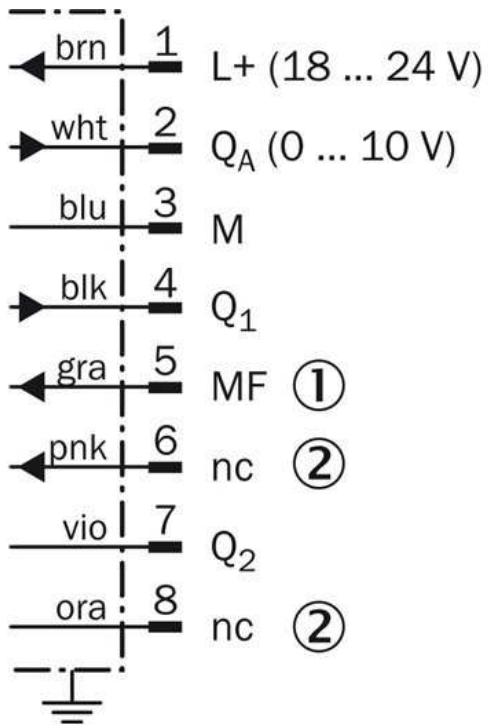
Adjustment possible



Connection type

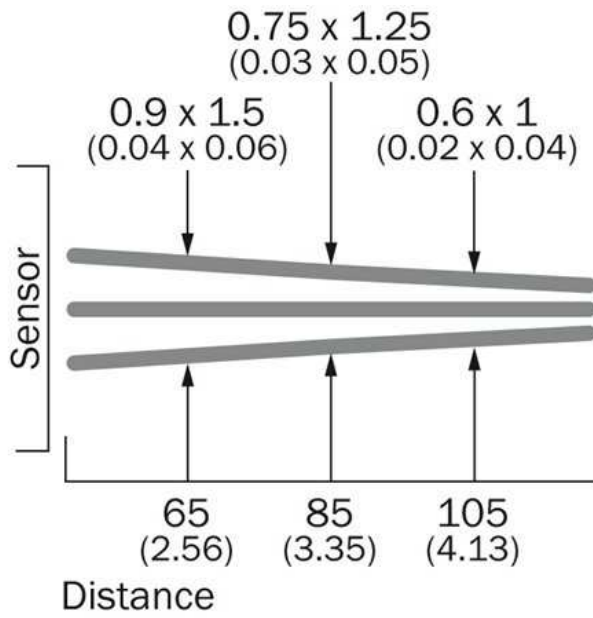


Connection diagram



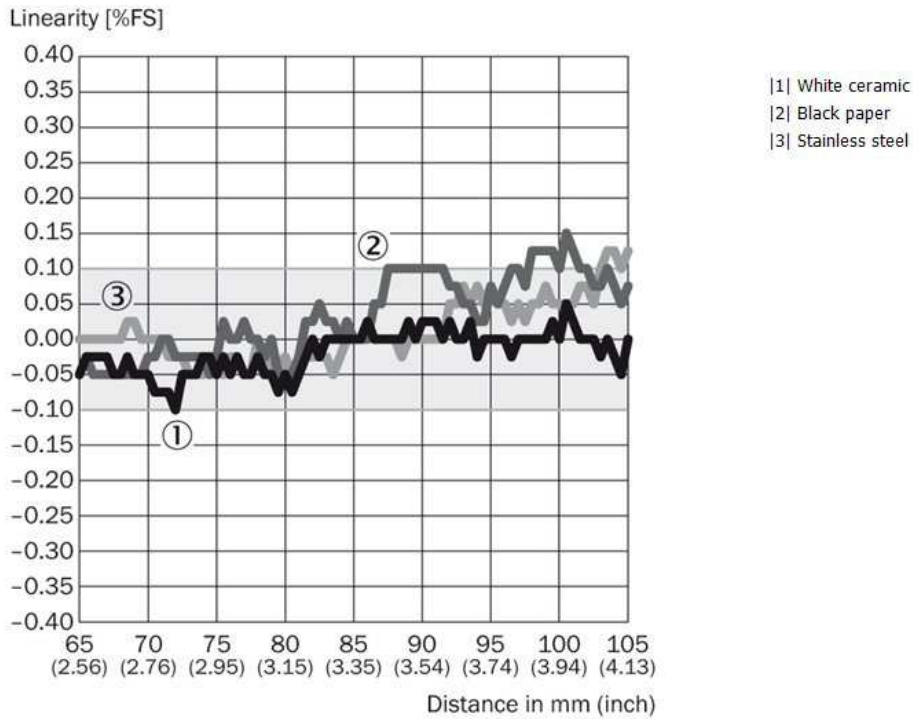
① Multifunctional input (MF)
② not connected

Light spot size



All dimensions in mm (inch)

Linearity



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