



Short range distance sensors (displacement)  
OD Value, 0 V ... 10 V (805; 10 k937;)

OD2-N120W60U0



**Model Name** > OD2-N120W60U0  
**Part No.** > 6036622

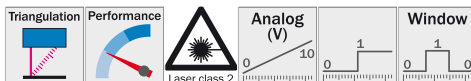


#### At a glance

- 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:                 | 60 mm ... 180 mm, 6 % ... 90 % remission                                                                                                                                                                                                                                                                   |
| Resolution:                      | 30 $\mu\text{m}$ <sup>1)</sup>                                                                                                                                                                                                                                                                             |
| Repeatability:::                 | 90 $\mu\text{m}$ <sup>2) 3) 4) 5)</sup>                                                                                                                                                                                                                                                                    |
| Linearity:::                     | $\pm 120 \mu\text{m}$ <sup>6) 7) 8) 9)</sup>                                                                                                                                                                                                                                                               |
| Response time <sup>10)</sup> :   | 1 ms/10 ms/35 ms                                                                                                                                                                                                                                                                                           |
| Measuring frequency:             | 2 kHz                                                                                                                                                                                                                                                                                                      |
| Light source:                    | Laser, red                                                                                                                                                                                                                                                                                                 |
| Typ. light spot size (distance): | 1 mm x 1.5 mm (120 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) <sup>11)</sup>                                                                                                                                                                                                                                                                              |

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 <sup>1)</sup> :                                                                                                                                                                                                      | 2 x NPN (100 mA)       |
| Multifunctional input (MF) <sup>2)</sup> :                                                                                                                                                                                       | 1 x MF                 |
| <sup>1)</sup> PNP: HIGH = $V_S - (< 2 \text{ V})$ / LOW = $< 2 \text{ V}$ ; NPN: HIGH = $< 2 \text{ V}$ / LOW = $V_S$ <sup>2)</sup> MF can be used as laser-off, trigger, external teach-in or deactivated; response time ≤ 3 ms |                        |

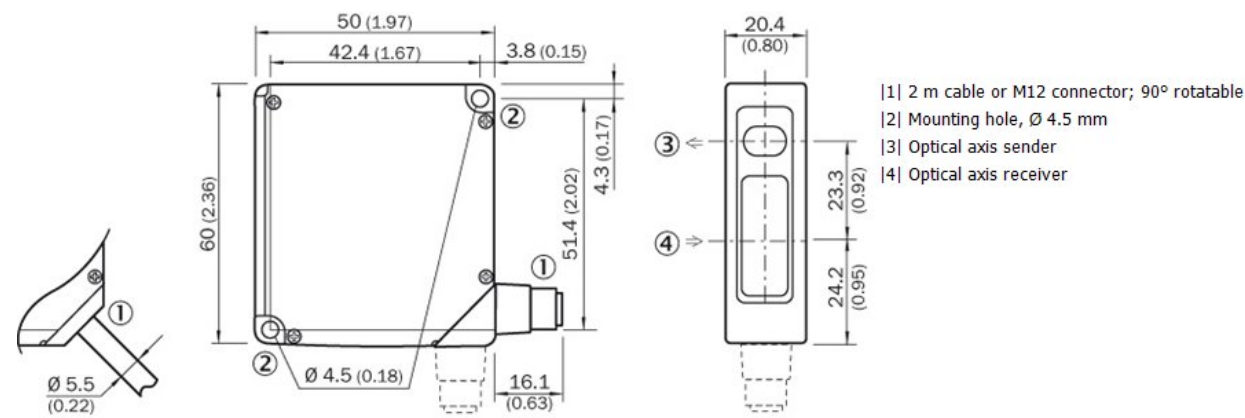
## Mechanics/electronics

|                                                                                                                                                                    |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Connection type:                                                                                                                                                   | Connector, M12, 8-pin                   |
| Supply voltage $V_S$ <sup>1)</sup> :                                                                                                                               | DC 12 V ... 24 V                        |
| Power consumption <sup>2)</sup> :                                                                                                                                  | ≤ 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              |
| <sup>1)</sup> DC 12 V (-5 %) ... 24 V (+10 %); DC 18 V (-5 %) ... DC 24 V (+10 %) when using analog voltage output <sup>2)</sup> Without load, with current output |                                         |

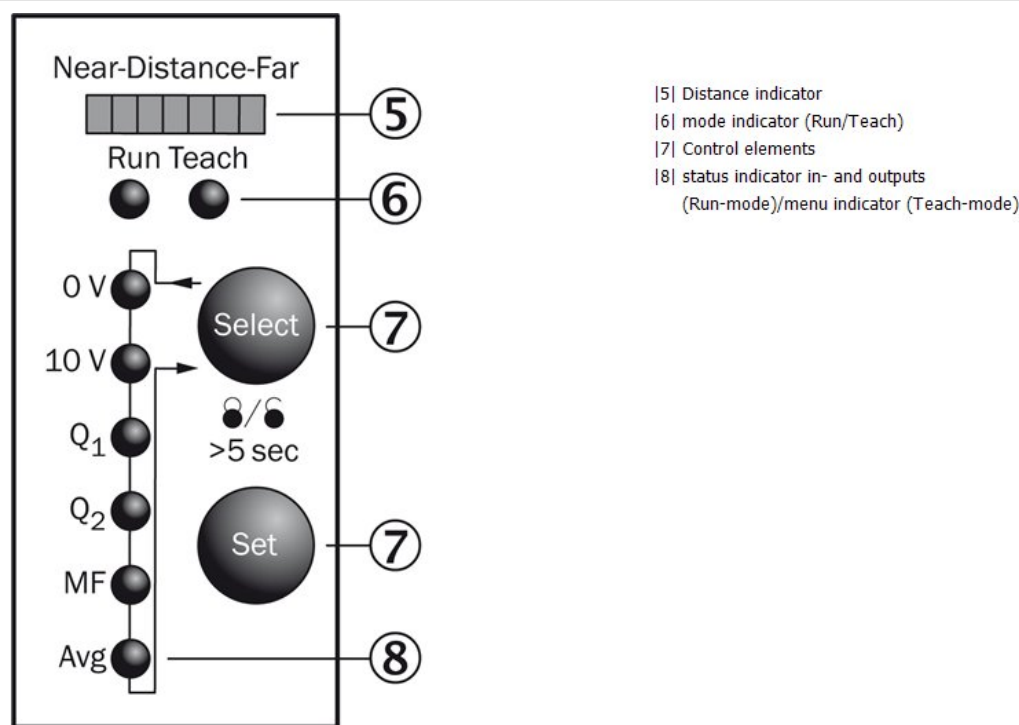
## Ambient data

|                                     |                                                                 |
|-------------------------------------|-----------------------------------------------------------------|
| 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<br>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 %                                                   |

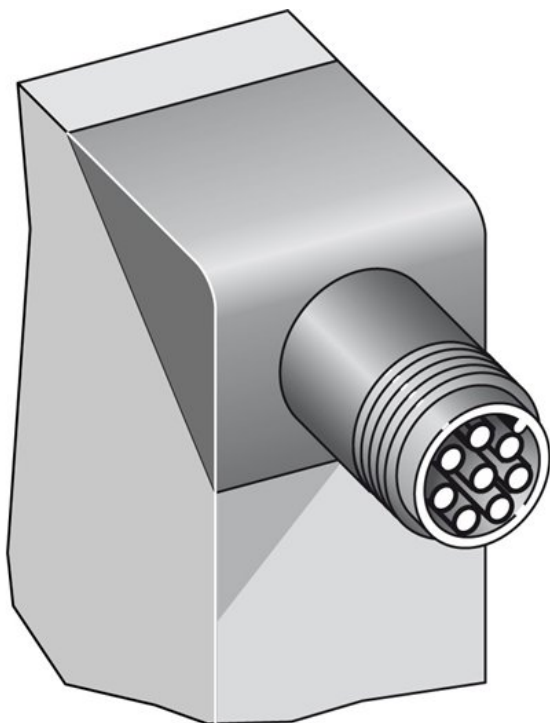
Dimensional drawing



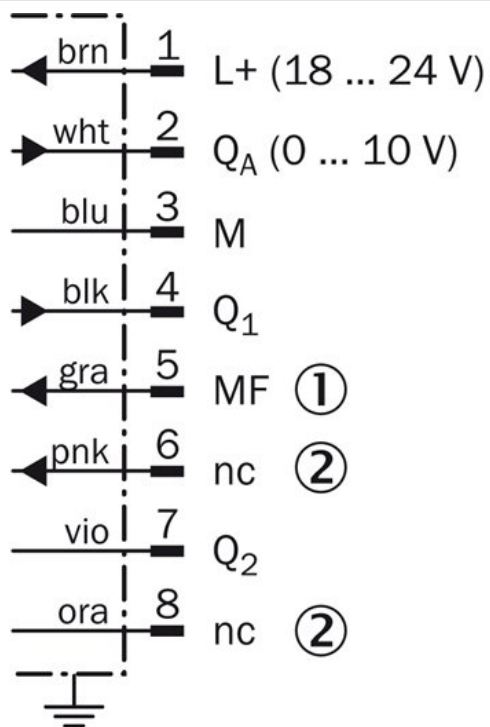
Adjustment possible



## Connection type

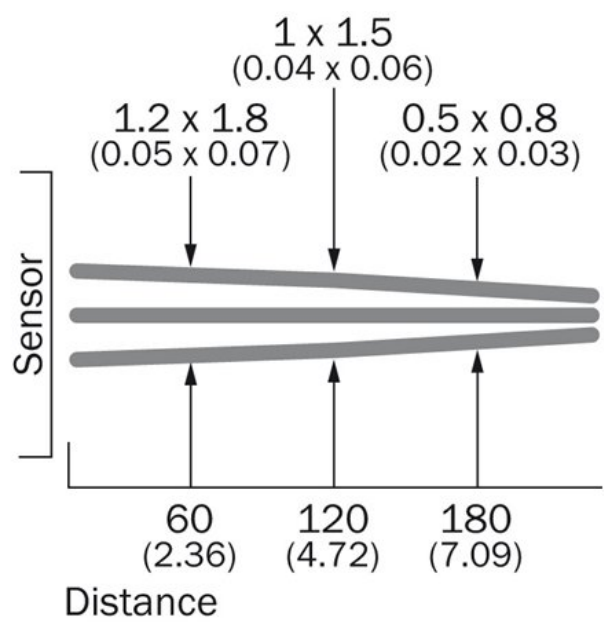


## Connection diagram



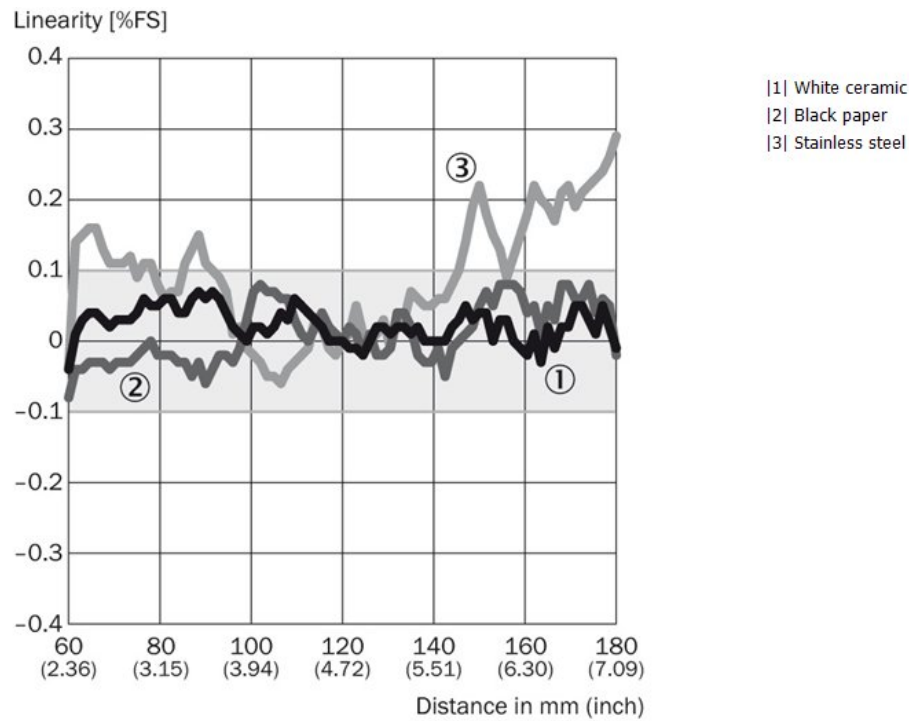
|1| Multifunctional input (MF)  
|2| not connected

Light spot size



All dimensions in mm (inch)

Linearity



**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](http://www.sick.com)