



# OD2-N85W20C2

OD Value

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	part no.
OD2-N85W20C2	6036603

Other models and accessories → [www.sick.com/OD\\_Value](http://www.sick.com/OD_Value)

### Detailed technical data

#### Features

<b>Measuring range</b>	65 mm ... 105 mm <sup>1)</sup>
<b>Target</b>	Natural objects
<b>Repeatability</b>	10 µm <sup>1) 2) 3)</sup>
<b>Linearity</b>	± 40 µm <sup>2) 4) 5)</sup>
<b>Response time</b>	≥ 1 ms
<b>Output time</b>	≥ 0.5 ms
<b>Light source</b>	Laser, redvisible red light
<b>Type of light</b>	Visible red light
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014) <sup>6)</sup>
<b>Typ. light spot size (distance)</b>	0.8 mm x 1.3 mm (85 mm)
<b>Additional function</b>	Mean-value setting 1 ... 64x Automatic sensitivity adjustment Teach-in of digital output Invertable switching output Multifunctional input: laser-off / external teach-in / trigger Switching mode: distance to object (DtO) Switching mode: window (Wnd)

<sup>1)</sup> 6% ... 90% remission factor.

<sup>2)</sup> At averaging function medium.

<sup>3)</sup> Constant ambient conditions.

<sup>4)</sup> Measurement on 90 % remission (ceramic, white).

<sup>5)</sup> When calibrated in the application regularly.

<sup>6)</sup> Wavelength: 655 nm, max. output: 1 mW.

#### Interfaces

<b>Digital output</b>	
Number	2 <sup>1)</sup>
Type	NPN
Maximum output current I <sub>A</sub>	≤ 100 mA

<sup>1)</sup> PNP: HIGH = V<sub>S</sub> - (< 2 V) / LOW = < 2 V; NPN: HIGH = < 2 V / LOW = V<sub>S</sub>.

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

<b>Multifunctional input (MF)</b>	1 x MF <sup>2)</sup>
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<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  $\leq 3 \text{ ms}$ .

## Electronics

<b>Supply voltage <math>U_B</math></b>	DC 12 V ... 24 V
<b>Power consumption</b>	$\leq 2.88 \text{ W}$ <sup>1)</sup>
<b>Warm-up time</b>	$\leq 30 \text{ min}$
<b>Indication</b>	Distance bar graph, up to 8 status LEDs
<b>Enclosure rating</b>	IP67
<b>Protection class</b>	III

<sup>1)</sup> Without load, with current output.

## Mechanics

<b>Dimensions (W x H x D)</b>	20.4 mm x 60 mm x 50 mm
<b>Housing material</b>	Plastic (PBT)
<b>Window material</b>	Plastic (PMMA)
<b>Weight</b>	70 g
<b>Connection type</b>	Cable, 2 m

## Ambient data

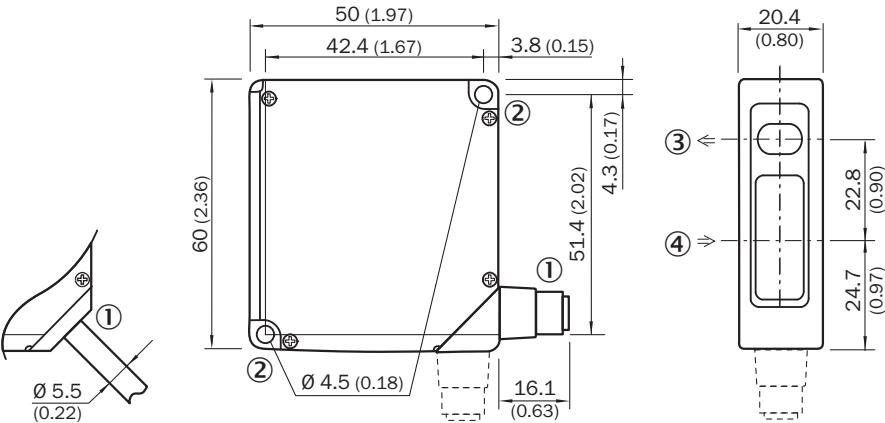
<b>Ambient temperature, operation</b>	-10 °C ... +40 °C
<b>Ambient temperature, storage</b>	-20 °C ... +60 °C
<b>Relative air humidity (non-condensing)</b>	35 % ... 95 %
<b>Temperature drift</b>	$\pm 0.08 \text{ \% FS/K}$ (FS = Full Scale = Measuring range of sensor)
<b>Typ. Ambient light immunity</b>	Artificial light: $\leq 3,000 \text{ lx}$ Sunlight: $\leq 10,000 \text{ lx}$
<b>Vibration resistance</b>	10 Hz ... 55 Hz (amplitude 1.5 mm, x-, y-, z-axis 2 hours each)
<b>Shock resistance</b>	50 G (x, y, z axis 3 times each)

## Classifications

<b>ECLASS 5.0</b>	27270801
<b>ECLASS 5.1.4</b>	27270801
<b>ECLASS 6.0</b>	27270801
<b>ECLASS 6.2</b>	27270801
<b>ECLASS 7.0</b>	27270801
<b>ECLASS 8.0</b>	27270801
<b>ECLASS 8.1</b>	27270801
<b>ECLASS 9.0</b>	27270801
<b>ECLASS 10.0</b>	27270801
<b>ECLASS 11.0</b>	27270801
<b>ECLASS 12.0</b>	27270916
<b>ETIM 5.0</b>	EC001825
<b>ETIM 6.0</b>	EC001825

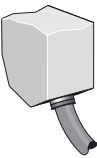
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

Dimensional drawing OD2-x85W20xx

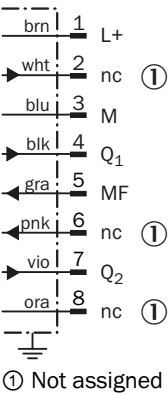


- Dimensions in mm (inch)
- ① 2 m cable or M12 connector; 90° rotatable
  - ② Mounting hole, Ø 4.5 mm
  - ③ optical axis, sender
  - ④ optical axis, receiver

Connection type OD2-xxxxxA2 OD2-xxxxxC2 OD2-xxxxxI2 OD2-xxxxxU2 cable



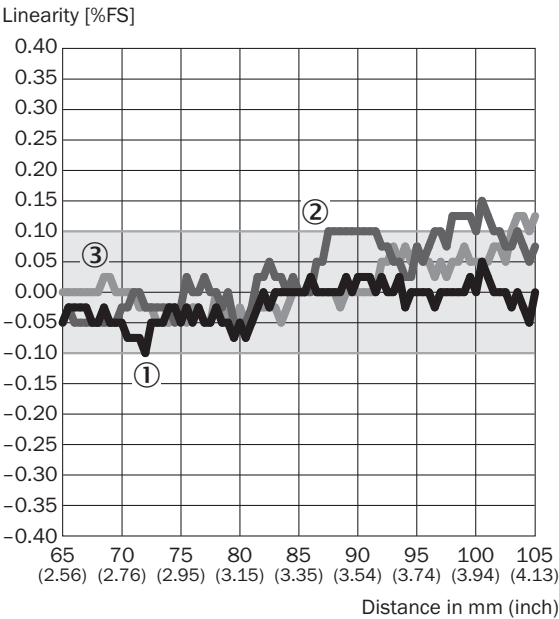
Connection diagram



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Linearity OD2-x85xxxxx



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

Recommended accessories

Other models and accessories → [www.sick.com/OD\\_Value](http://www.sick.com/OD_Value)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 2 m, 8-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, special color code, shielded</li><li>• <b>Connection systems:</b> Flying leads</li></ul>	DOL-1208-G02MF	6020663
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Stainless-steel mounting bracket</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel</li></ul>	BEF-WN-OD1000	4089813

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

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

For us, that is “Sensor Intelligence.”

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