



OD1000-6001R15

OD1000

DISPLACEMENT MEASUREMENT SENSORS

SICK
 Sensor Intelligence.



Ordering information

Type	Part no.
OD1000-6001R15	1075638

Other models and accessories → www.sick.com/OD1000



Detailed technical data

Features

Measuring range	200 mm ... 1,000 mm ¹⁾
Target	Natural objects
Repeatability	0.4 mm ^{2) 3)}
Linearity	± 1.5 mm ^{2) 4)}
Response time	≥ 1.5 ms ⁵⁾
Output time	≥ 0.33 ms
Light source	Laser, red visible red light
Type of light	Visible red light
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014) ⁶⁾
Typ. light spot size (distance)	1.5 mm x 1.5 mm (200 mm ... 1,000 mm)
Additional function	Adjustable average value or media filter Switching mode: Distance to Object (DtO) / switching window / object between sensor and background (ObSB) Teach-in of digital output Invertable digital output Teach-in of analog output Invertable analog output Switchable analog output (mA / V) Multifunctional input: laser off / external teach-in / deactivated Switch-off display Lock user interface

¹⁾ 6 % ... 90 % remission; at default settings.

²⁾ With 90% remission (white), with constant ambient conditions.

³⁾ Statistical error 3 σ.

⁴⁾ Observe min. warm-up time of 10 minutes.

⁵⁾ With measuring frequency of 3 kHz, target change white 90%/white 90%.

⁶⁾ Wavelength 655 nm, max. pulse output 0.78 mW, max. average power 0.39 mW, max. pulse duration 1.8 ms.

	Display can be rotated by 180° Alarm function Edge height jump Time functions (ON/OFF delay, 1 shot)
Safety-related parameters	
	MTTF _D 100 years
	DC _{avg} 0%

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- 2) With 90% remission (white), with constant ambient conditions.
- 3) Statistical error 3 σ .
- 4) Observe min. warm-up time of 10 minutes.
- 5) With measuring frequency of 3 kHz, target change white 90%/white 90%.
- 6) Wavelength 655 nm, max. pulse output 0.78 mW, max. average power 0.39 mW, max. pulse duration 1.8 ms.

Interfaces

IO-Link	✓, IO-Link V1.1, IO-Link V1.0
Function	Process data, parameterization, diagnosis, data storage
Data transmission rate	230,4 kbit/s (COM3) / 38,4 kbit/s (COM2)
Digital input	In ₁ Can be used as laser off, external teach-in, or deactivated
Digital output	
Number	2 ¹⁾
Type	Push-pull: PNP/NPN
Analog output	
Number	1
Type	Current output / voltage output
Current	4 mA ... 20 mA, $\leq 600 \Omega$
Voltage	0 V ... 10 V, $> 20,000 \Omega$
Resolution	16 bit

- 1) PNP: HIGH = $U_V - (< 3 V)$ / LOW = $< 3 V$; NPN: HIGH = $< 3 V$ / LOW = U_V .

Electronics

Supply voltage U_B	DC 18 V ... 30 V ¹⁾
Power consumption	$\leq 2.5 W$ ²⁾
Ripple	$\leq 5 V_{pp}$ ³⁾
Warm-up time	< 10 min
Indication	OLED display, status LEDs
Enclosure rating	IP65 IP67
Protection class	III (EN 50178)

- 1) Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
- 2) Without load, at +20 °C.
- 3) May not fall short of or exceed V_S tolerances.

Mechanics

Dimensions (W x H x D)	25.9 mm x 71.5 mm x 53.2 mm
Control elements	4 buttons

Housing material	Metal (zinc diecast)
Window material	Plastic (PMMA)
Weight	280 g
Connection type	Cable with male connector, M12, 5-pin, A-coded, 30 cm

Ambient data

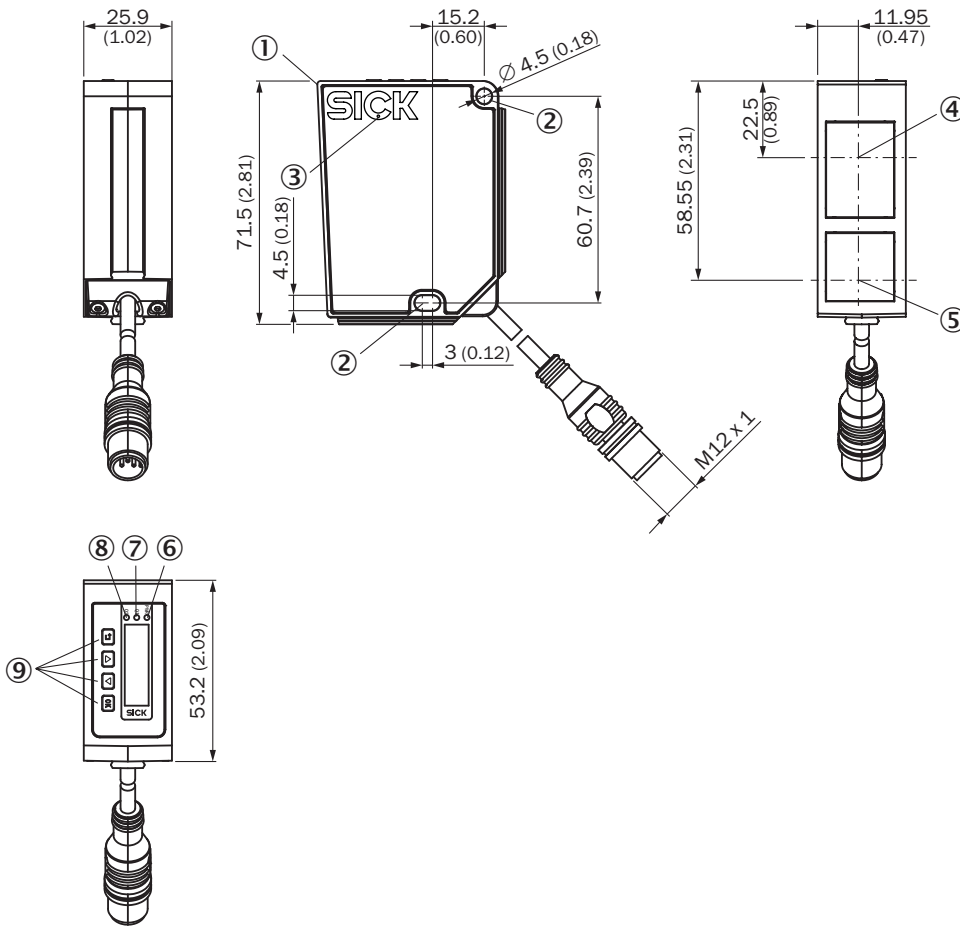
Ambient temperature, operation	-10 °C ... +50 °C, Operating temperature at $V_S = 24\text{ V}$
Ambient temperature, storage	-20 °C ... +60 °C
Temperature drift	0.15 mm/K
Typ. Ambient light immunity	Artificial light: $\leq 3,000\text{ lx}$ ¹⁾ Sunlight: $\leq 10,000\text{ lx}$
Vibration resistance	EN 60068-2-6, EN 60068-2-64
Shock resistance	EN 60068-2-27

¹⁾ With constant object movement in the measuring range.

Classifications

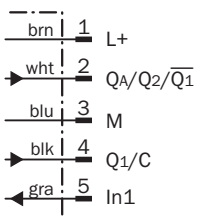
ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

Dimensional drawing (Dimensions in mm (inch))



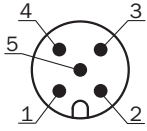
- ① Zero level
- ② Mounting hole M4
- ③ Ventilation opening (do not cover)
- ④ Center of optical axis, receiver
- ⑤ Center of optical axis, sender
- ⑥ PWR LED green
- ⑦ LED Q1, yellow
- ⑧ LED Q2, yellow
- ⑨ Control elements

Connection diagram



PIN assignment

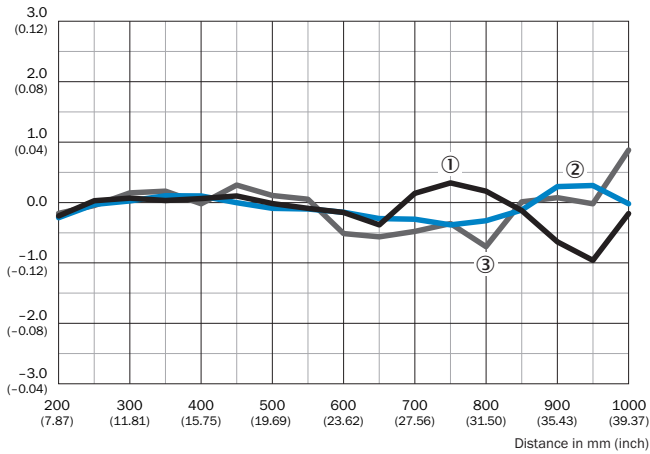
Connector M12, 5-pin, A-coded



- ① L+
- ② QA/Q2/Q̄1
- ③ M
- ④ Q₁/C
- ⑤ In₁

Linearity



Typical linearity deviation in mm (inch)




- ① Black 6 % remission
- ② White 90 % remission
- ③ Stainless steel

Recommended accessories

Other models and accessories → www.sick.com/OD1000

	Brief description	Type	Part no.
Connection modules			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
Mounting brackets and plates			
	Stainless-steel mounting bracket, stainless steel	BEF-WN-OD1000	4089813

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF2A15-020VB5XLEAX	2096239

Recommended services

Additional services → www.sick.com/OD1000

	Type	Part no.
Commissioning		
<ul style="list-style-type: none"> • Product area: Displacement measurement sensors • Range of services: Inspection of connection and mounting, optimization of parameters of SICK product as well as tests, set-up of previously defined functions of the scaling of the analog measuring range, switching point position, hysteresis, measuring frequency, measured value filter, signal quality, evaluation function, or communication interface • Travel expenses: The prices do not include travel costs such as hotel, flight, travel time and expenses. • Duration: Additional work will be invoiced separately 	DT20 Hi/OD/OL commissioning	1612241

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.”

WORLDWIDE PRESENCE:

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