Data sheet

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]
Repeatability	0.4 mm [2] [3]
Linearity	± 1,500 µm [2] [4]
Response time	≥ 1.5 ms [5]
Measuring frequency	≤ 3 kHz
Output time	≥ 0.33 ms
Emitted beam	
Light source	Laser, red
Typ. light spot size (distance)	1.5 mm x 1.5 mm (200 mm ... 1,000 mm)
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	1 [6]
	[7]
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

[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.
[7] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

	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 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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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, ≤ 600 Ω
Voltage	0 V ... 10 V, > 20,000 Ω
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	≤ 2.5 W [2]
Ripple	≤ 5 V_{pp} [3]
Warm-up time	< 10 min
Display	OLED display, status LEDs
Enclosure rating	IP65 IP67

[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.

Protection class	III (EN 50178)
Connection type	
	Cable with male connector, 30 cm

[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

Ambient data

Ambient temperature, operation	–10 °C ... +50 °C, Operating temperature at V_S = 24 V
Ambient temperature, storage	–20 °C ... +60 °C
Temperature drift	0.15 mm/K
Typ. Ambient light immunity	Artificial light: ≤ 3,000 lx [1] Sunlight: ≤ 10,000 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.

Certificates

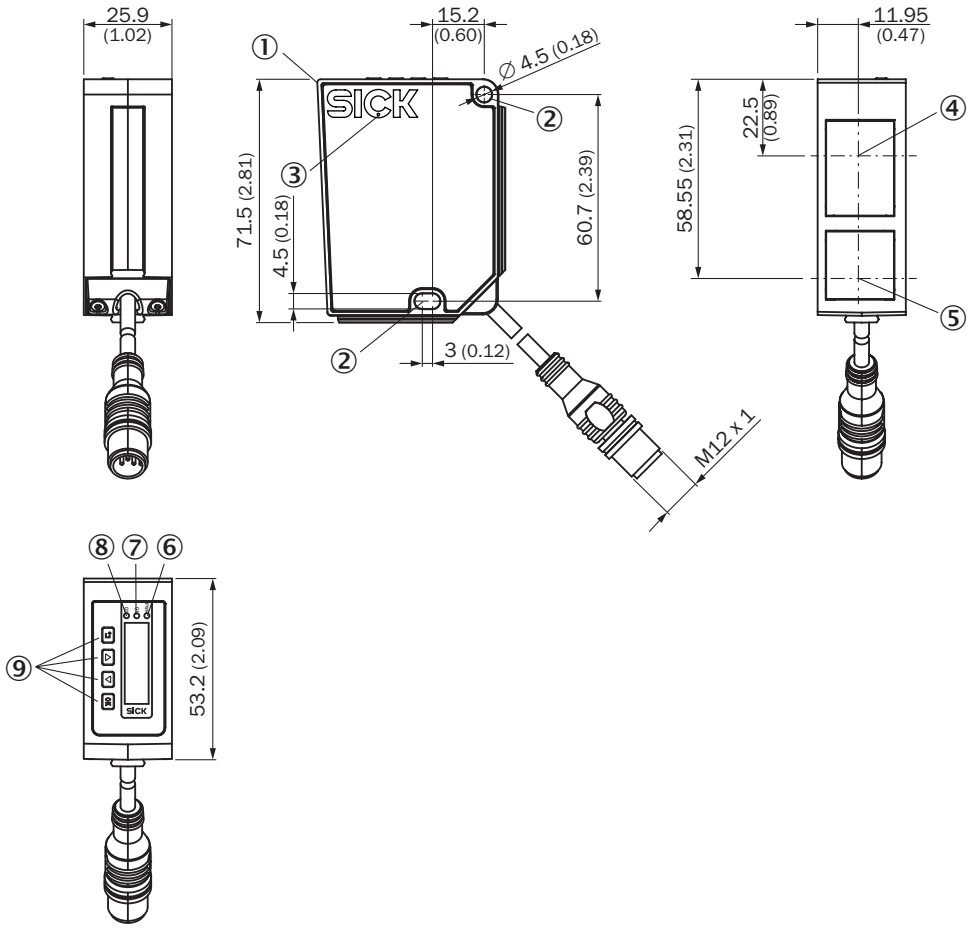
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
IO-Link certificate	✓
cTUVus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

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

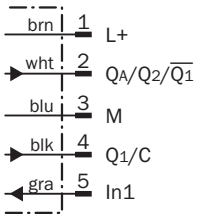
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

Dimensional drawing

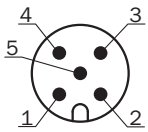


Dimensions in mm (inch)
① Zero level
② Mounting hole M4
③ Ventilation opening (do not cover)
④ Center of optical axis, receiver
⑤ Center of optical axis, sender
⑥ PWR LED green
⑦ LED Q1, yellow
⑧ LED Q2, yellow
⑨ Control elements

Connection diagram



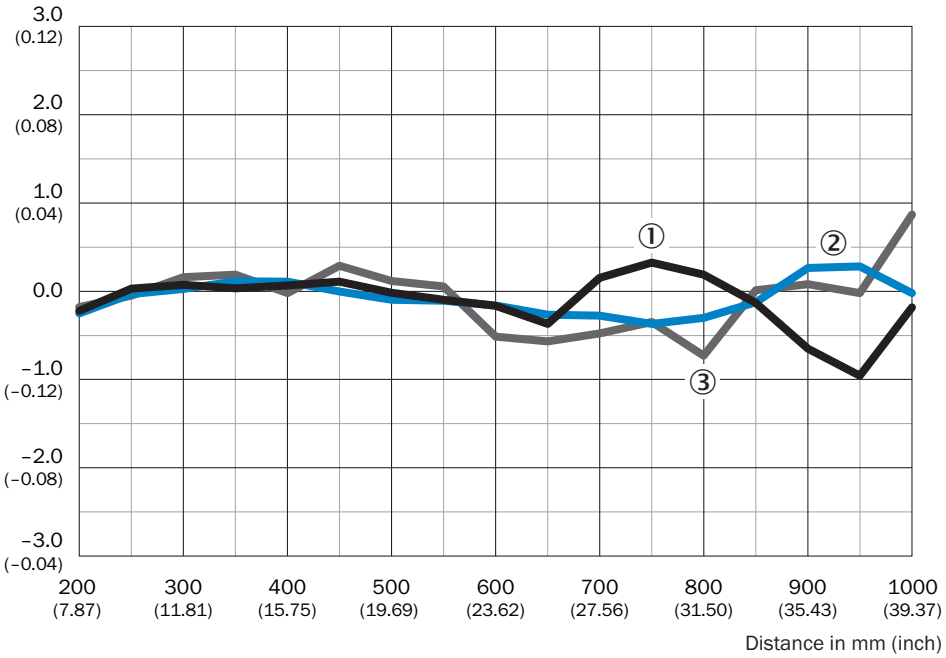
PIN assignment Connector M12, 5-pin, A-coded



① L+
② QA/Q2/Q̄1
③ M
④ Q_1/C
⑤ In_1

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.
Mounting systems			
	• **Description:** Stainless-steel mounting bracket • **Material:** Stainless steel • **Details:** Stainless steel	BEF-WN-OD1000	4089813
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
connectors and cables			
	• **Description:** Sensor/actuator cable, unshielded • **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 • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15-020VB5XLEAX	2096239
	• **Description:** Sensor/actuator cable, unshielded • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 5-wire, PVC • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15- C60VB5XLEAX	2145570
	• **Description:** Sensor/actuator cable, unshielded • **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 3 m, 5-wire, PVC • **Application:** Uncontaminated zones, Zones with chemicals	YF2A15-030VB5XLEAX	2145572

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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