Data sheet

OD200-0501W15

OD200

DISPLACEMENT SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
OD200-0501W15	6086980

Other models and accessories ➜ www.sick.com/OD200

Detailed technical data

Features

Measuring range	35 mm ... 65 mm [1]
Repeatability	5 µm [2] [3] [4]
Linearity	± 30 µm [4] [5] [6]
Response time	≥ 1 ms [7]
Measuring frequency	≤ 3 kHz
Output time	≥ 0.5 ms
Emitted beam	
Light source	Laser, red
Typ. light spot size (distance)	300 µm x 700 µm (50 mm)
Key laser figures	
Normative reference	IEC 60825-1:2014, EN 60825-1:2014
Laser class	1 [8]
Additional function	Adjustable average value or media filter, Switching mode: one-point mode/window mode/two-point mode, Teach-in of digital output, Peak value selection
Safety-related parameters	
$MTTF_D$	101 years

[1] 6 % ... 90 % remission; at default settings.
[2] Measurement on 90 % remission (ceramic, white).
[3] Mean value setting: 128, median: off, measuring frequency: 1 kHz, for static measurement.
[4] Observe min. warm-up time of 30 minutes.
[5] Measurement on 60 % remission (ceramic, white).
[6] At T = +25 °C, under constant general conditions.
[7] Dependent on the set average or sensitivity.
[8] Visible, wavelength: 655 nm, max. average power: 0.31 mW, max. pulse power: 0.62 mW, max. pulse duration: 2 ms.

DC_{avg}	0%

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Interfaces

IO-Link	✓ , IO-Link V1.1
Function	Process data, parameterization, diagnosis, data storage
Data transmission rate	230,4 kbit/s (COM3), Process data length 6 bytes, min. cycle time 0.8 ms
Digital input	In
Number	1
Digital output	
Number	1 [1) 2)]
Type	PNP/NPN, selectable
Maximum output current I_A	≤ 100 mA
Analog output	
Number	1
Type	Current output / voltage output
Function	Selectable
Current	4 mA ... 20 mA, ≤ 300 Ω
Voltage	0 V ... 10 V, > 20,000 Ω
Resolution	16 bit

[1] PNP: HIGH = V_S - (< 2.5 V) / LOW = 0 V.
[2] NPN: HIGH = < 2.5 V / LOW = V_S.

Electronics

Supply voltage U_B	DC 18 V ... 24 V, ± 10%, including residual ripple [1)]
Power consumption	1.5 W, At 24 V DC [2)]
Warm-up time	< 15 min
Display	OLED display, status LEDs
Enclosure rating	IP67
Protection class	III (EN 50178)
Electrical safety	IEC 60947-5-2 / CSA C22.2 / No.60947-5-2
Connection type	
	Cable with plug M12, 5-pin, 345 mm
Connection type Detail	
Length of male connector	45 mm
Length of cable	300 mm

[1] Limit values, reverse-polarity protected.
[2] Without load, at +20 °C.

Cable material	PVC
Cable diameter	5.5 mm
Conductor cross section	0.128 mm²

[1] Limit values, reverse-polarity protected.
[2] Without load, at +20 °C.

Mechanics

Dimensions (W x H x D)	18.4 mm x 46.4 mm x 33 mm
Control elements	4 buttons
Housing material	Metal (Aluminum)
Window material	Plastic (PMMA)
Weight	55 g

Ambient data

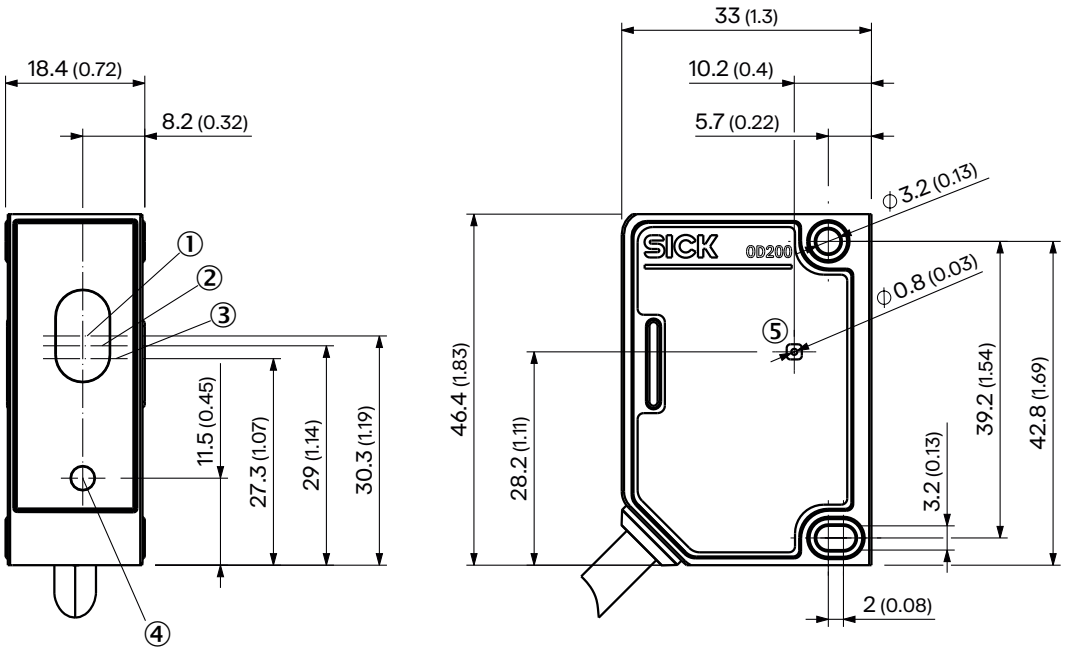
Ambient temperature, operation	–10 °C ... +50 °C, Operating temperature at V_S = 24 V
Ambient temperature, storage	–20 °C ... +60 °C
Relative air humidity (non-condensing)	35 % ... 85 %
Temperature drift	9 µm/K [1]
Typ. Ambient light immunity	Artificial light: 10,000 lx [2] Sunlight: 10,000 lx
Vibration resistance	EN 60068-2-6 (IEC 60068-2-6:2007) Sinusoidal resonance measurement: 10 Hz ... 55 Hz, amplitude 1.5 mm, 2 h/axis
Shock resistance	EN 60068-2-27 (IEC 60068-2-27:2008) 50 g, 11 ms, 6 axes, ± 3 single shocks

[1] 0.03%/K.
[2] With constant object movement in the measuring range.

Classifications

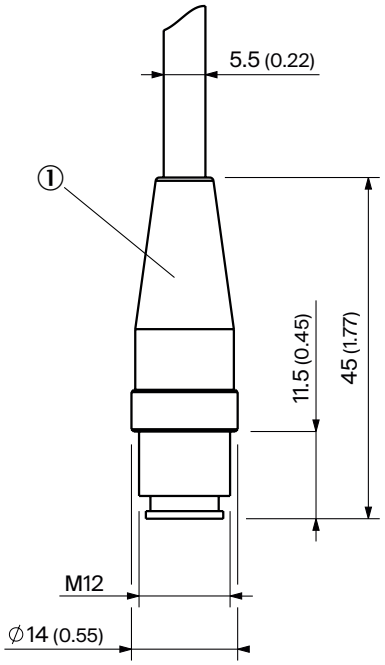
ECLASS 5.0	27270801
ECLASS 5.1.4	27270801
ECLASS 6.0	27270801
ECLASS 6.2	27270801
ECLASS 7.0	27270801
ECLASS 8.0	27270801
ECLASS 8.1	27270801
ECLASS 9.0	27270801
ECLASS 10.0	27270801
ECLASS 11.0	27270801
ECLASS 12.0	27270916
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC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

Dimensional drawing, sensor



Dimensions in mm (inch)
① optical axis, receiver (OD200-110xxxx)
② optical axis, receiver (OD200-050xxxx)
③ optical axis, receiver (OD200-030xxxx)
④ optical axis, sender
⑤ Ventilation element (membrane)

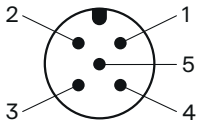
dimensional drawing, connection type



Dimensions in mm (inch)
Cable with M12 male connector

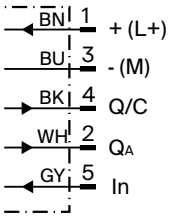
① connection (see technical data for length of cable)

pinouts

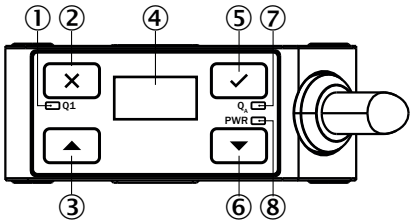


Supply voltage & I/O: plug M12, 5-pin, A-coded

Connection diagram

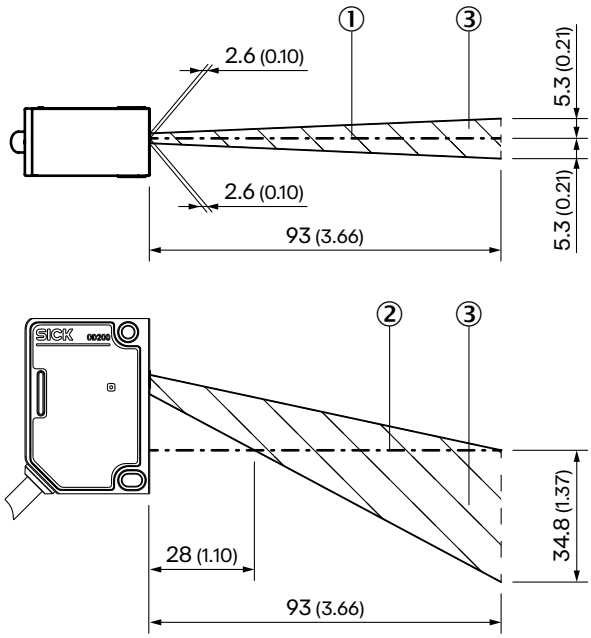


Display and control elements



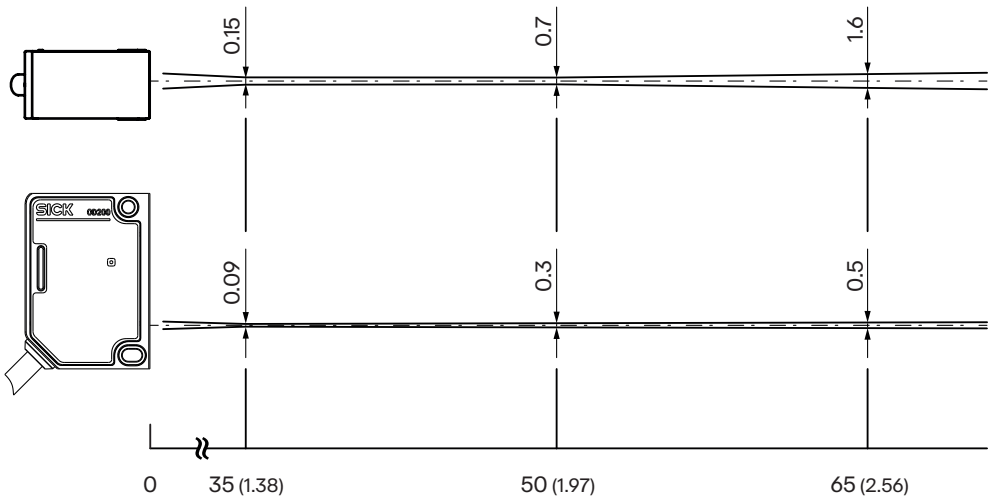
① Q1 status LED (orange)
② "Cross" pushbutton
③ UP pushbutton
④ Display
⑤ "Tick" pushbutton
⑥ DOWN pushbutton
⑦ Status LED QA (yellow)
⑧ PWR status LED (green)

Interference diagram

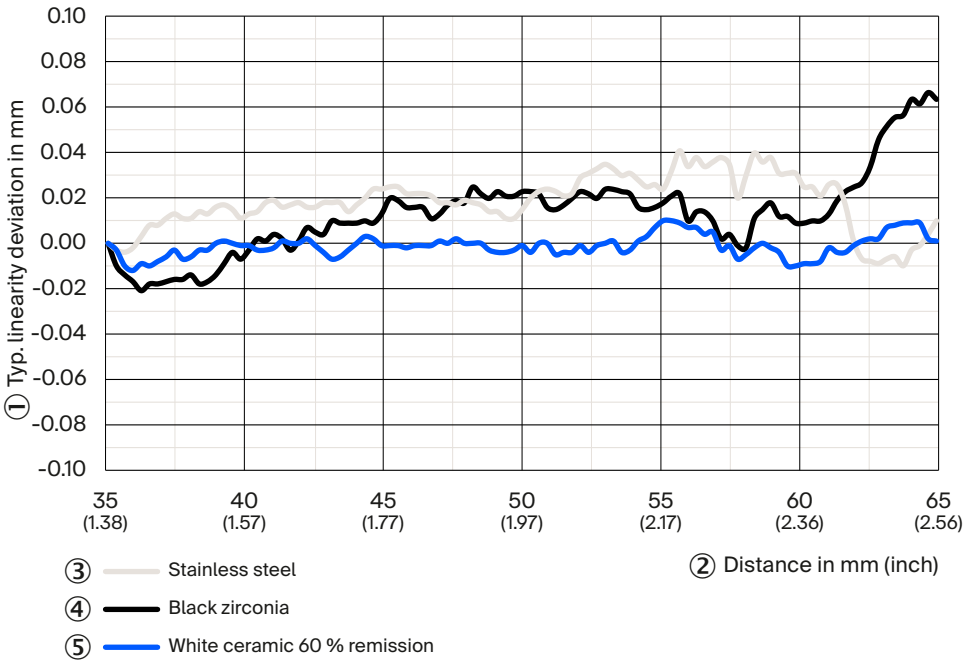


① optical axis, sender and receiver
② optical axis, sender
③ Interference range

Light spot size



Linearity



① Typical linearity deviation in mm
② Distance in mm (inch)
③ stainless steel
④ Black Zirconia
⑤ White ceramic 60 % remission

Recommended accessories

Other models and accessories ➜ www.sick.com/OD200

	Brief description	Type	part no.
connectors and cables			
	• **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, Uncontaminated zones	YF2A15-020VB5XLEAX	2096239
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-050VB5XLEAX	2096240
	• **Connection type head A:** Female connector, M12, 5-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A15-100VB5XLEAX	2096241

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Stainless-steel mounting bracket (OD200) • **Material:** Stainless steel • **Details:** Stainless steel	BEF-WN-OD200	2149444

SICK AT A GLANCE

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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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