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DATA SHEET

OD200-0301W15

OD200
Displacement Sensors

SICK

Sensor Intelligence



DISPLACEMENT SENSORS

OD200-0301W15

ORDERING INFORMATION

Type	part no.
OD200-0301W15	6086978

Further device versions and accessories at www.sick.com/OD200



DETAILED TECHNICAL DATA

FEATURES

Measuring range	25 mm ... 35 mm ¹⁾
Repeatability	2 µm ^{2) 3) 4)}
Linearity	± 10 µm ^{2) 4) 5)}
Response time	≥ 1 ms ⁶⁾
Measuring frequency	≤ 3 kHz
Output time	≥ 0.5 ms
Emitted beam	Light source Laser, red Typ. light spot size (distance) 0.2 mm x 0.5 mm (30 mm)
Key laser figures	Normative reference IEC 60825-1:2014, EN 60825-1:2014 Laser class 1 ⁷⁾ 8)
Additional function	Adjustable average value or median filter, Switching mode: one-point mode/window mode/two-point mode, Teach-in of digital output, peak value
Safety-related parameters	MTTF _D 101 years DC _{avg} 0%

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

²⁾ Measurement on 60 % 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⁾ At T = +25 °C, under constant general conditions.

⁶⁾ Dependent on the set average or sensitivity.

⁷⁾ Visible, wavelength: 655 nm, max. average power: 0.31 mW, max. pulse power: 0.62 mW, max. pulse duration: 2 ms.

⁸⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

INTERFACES

IO-Link	Function	✓, IO-Link V1.1
	Data transmission rate	Process data, parameterization, diagnosis, data storage 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_s	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
Cable material	PVC
Cable diameter	5.5 mm
Conductor cross section	0.128 mm ²
Pinouts for Supply voltage & I/O	
BN 1	+ (L+)
BU 3	- (M)
BK 4	Q/C
WH 2	Q_A
GY 5	In

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	60 g

AMBIENT DATA

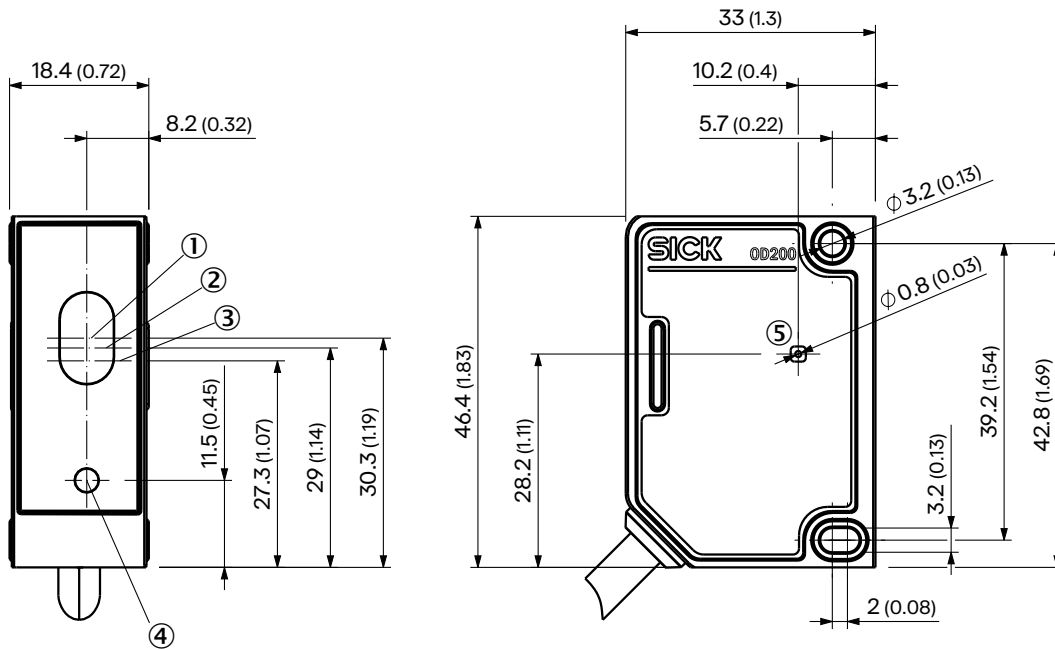
Ambient temperature, operation	-10 °C ... +50 °C, Operating temperature at V _s = 24 V
Ambient temperature, storage	-20 °C ... +60 °C
Relative air humidity (non-condensing)	35 % ... 85 %
Temperature drift	3 µm/K ¹⁾
Typ. Ambient light immunity	Artificial light: 10,000 lx ²⁾ Sunlight: 10,000 lx
Vibration 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.

CERTIFICATES

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

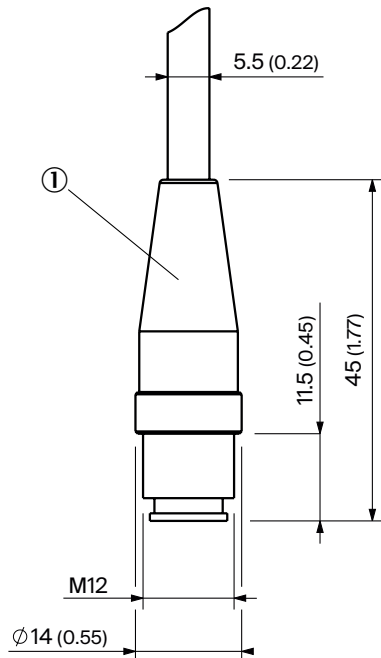
DIMENSIONAL DRAWING, SENSOR



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

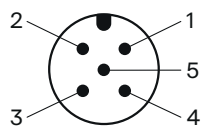


Dimensions in mm (inch)

Cable with M12 male connector

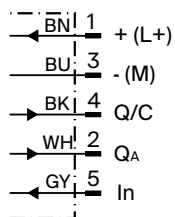
- ① connection (see technical data for length of cable)

PINOUTS, SEE TABLE TECHNICAL DATA: ELECTRONICS

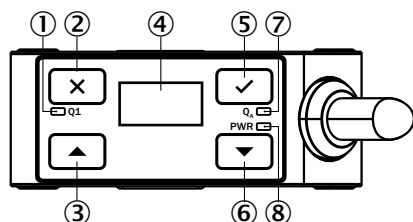


Connector M12, 5-pin, A-coded

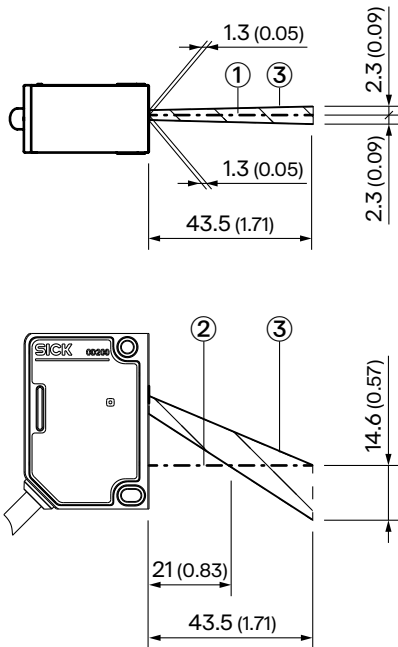
CONNECTION DIAGRAM



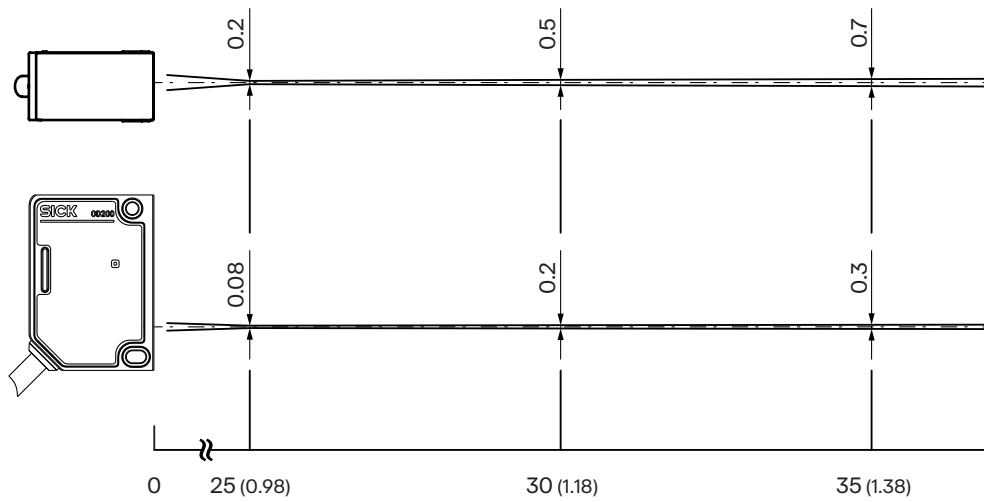
DISPLAY AND CONTROL ELEMENTS



- 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)

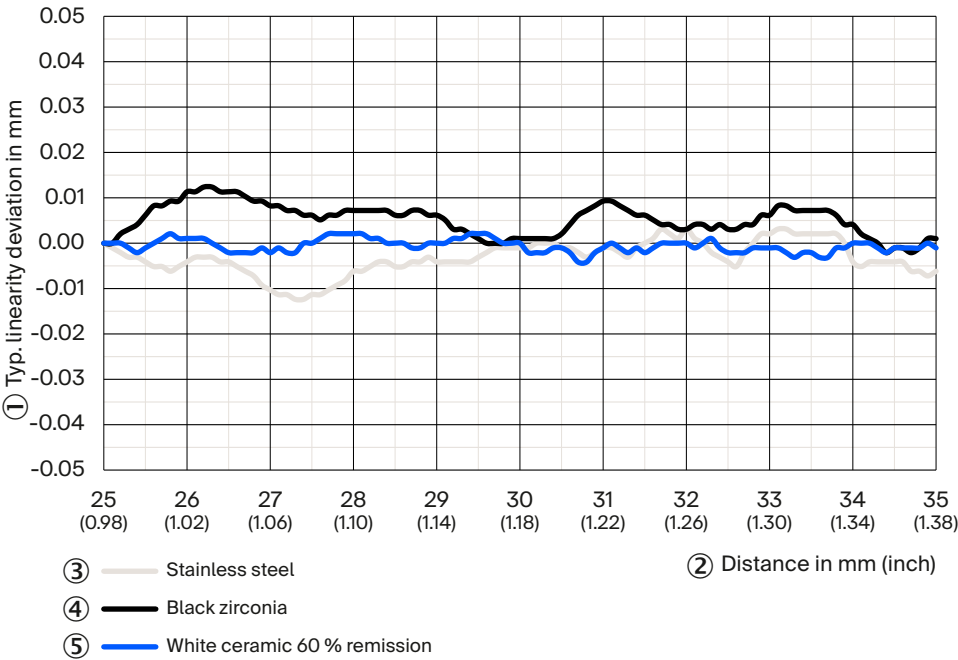
INTERFERENCE DIAGRAM

dimensions in mm (inch)
 ① optical axis, sender and receiver
 ② optical axis, sender
 ③ Interference range

LIGHT SPOT SIZE

dimensions in mm (inch)

LINEARITY



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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6086978



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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