Data sheet

OD200-0301W15

OD200

DISPLACEMENT MEASUREMENT SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
OD200-0301W15	6086978

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

Detailed technical data

Features

Measuring range	25 mm ... 35 mm [1]
Target	Natural objects
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
Light source	Laser, red
Type of light	Visible red light
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014) [7]
Typ. light spot size (distance)	200 µm x 500 µm (30 mm)
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
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.

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
Pinouts	
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	55 g

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 diameter	5.5 mm
Conductor cross section	0.128 mm²
Cable material	PVC

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

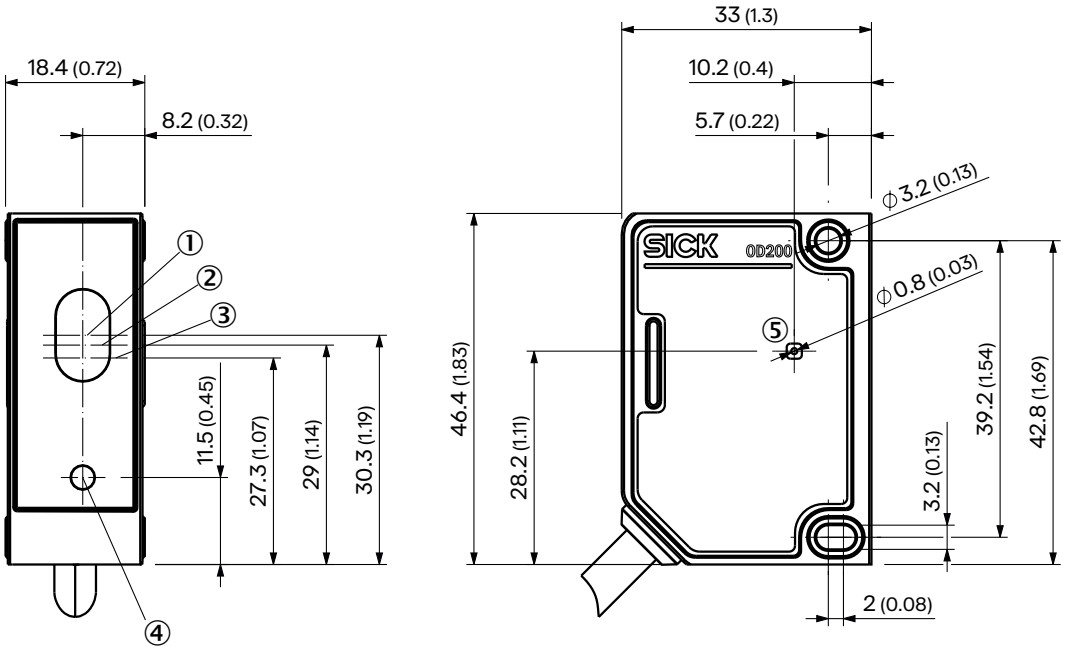
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
IO-Link	✓

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

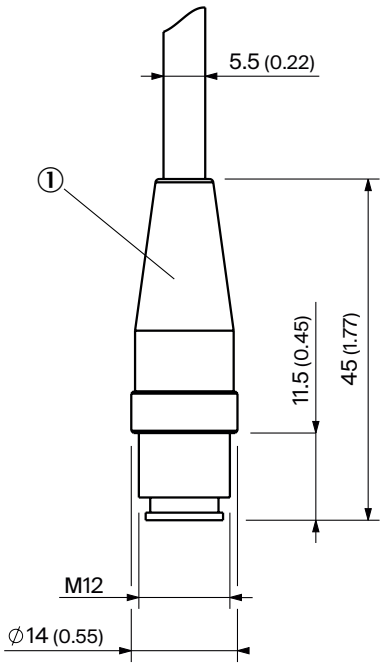
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	41111613

Dimensional drawing, sensor



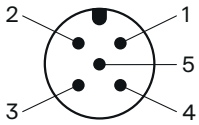
Dimensions in mm (inch)
① optical axis, receiver (OD200-110xxxx)
② optical axis, receiver (OD200-050xxxx)
③ optical axis, receiver (OD200-030xxxx)
④ optical axis, sender
⑤ Ventilation element (membrane)

dimensional drawing, connection type



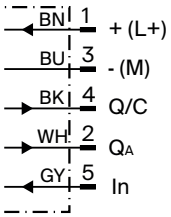
Dimensions in mm (inch)
Cable with M12 male connector
① connection (see technical data for length of cable)

pinouts

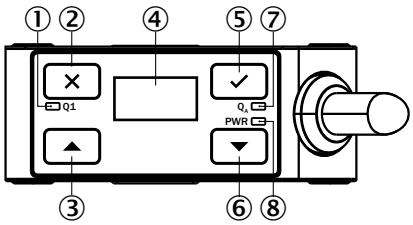


Male connector, M12, 5-pin, A-coded

Connection diagram

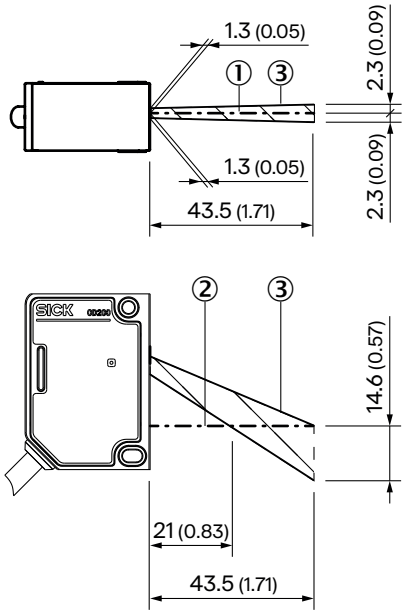


Display and control elements



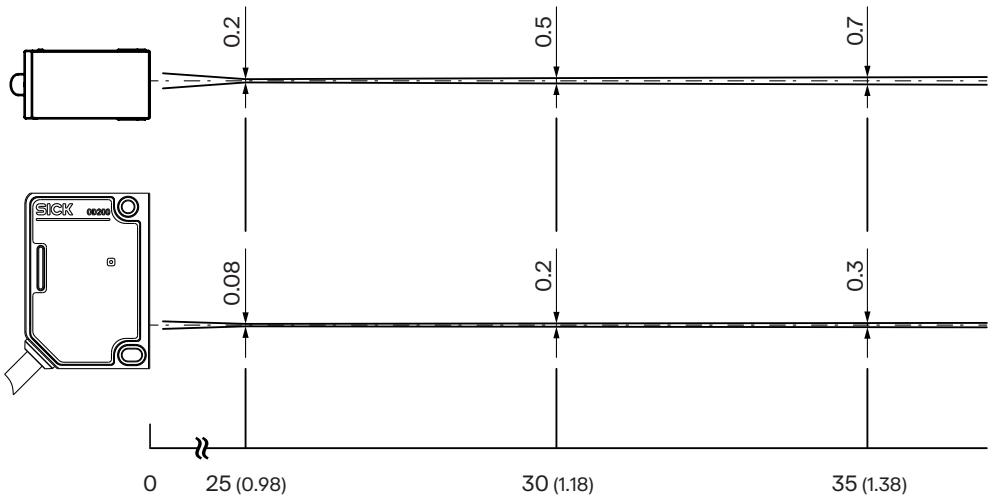
① Q1 status LED (orange)
② Cross pushbutton
③ UP pushbutton
④ Display
⑤ Tick pushbutton
⑥ DOWN pushbutton
⑦ Status LED QA (yellow)
⑧ PWR status LED (green)

Interference diagram

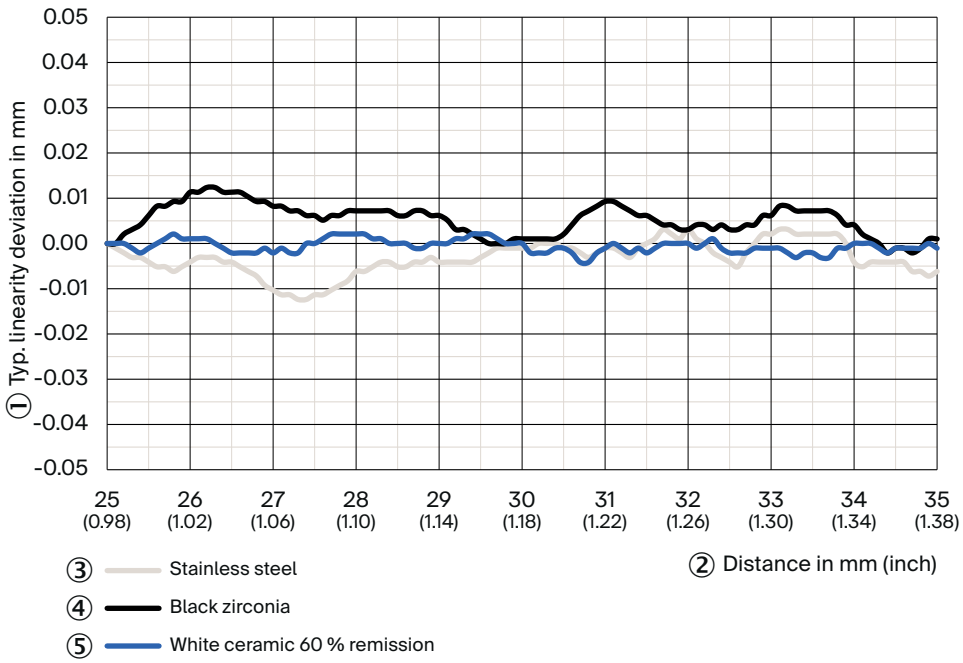


① optical axis, sender and receiver
② optical axis, sender
③ Interference range

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
Mounting systems			
	• **Description:** Stainless-steel mounting bracket (OD200) • **Material:** Stainless steel • **Details:** Stainless steel	BEF-WN-OD200	2149444

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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