

# IMB12-08NPOVCOKS20

IMB

**INDUCTIVE PROXIMITY SENSORS** 



### Ordering information

Туре	Part no.
IMB12-08NPOVC0KS20	1132991

Included in delivery: BEF-MU-M12N (1)

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

Illustration may differ



#### Detailed technical data

#### Features

Housing	Metric
Housing	Short-body Short-body
Thread size	M12 x 1
Diameter	Ø 12 mm
Sensing range S <sub>n</sub>	8 mm
Safe sensing range S <sub>a</sub>	6.48 mm
Installation type	Non-flush
Switching frequency	25 Hz
Connection type	Male connector M12, 4-pin <sup>1)</sup>
Switching output	PNP
Output function	NC
Electrical wiring	DC 3-wire
Enclosure rating	IP68 <sup>2)</sup> IP69K <sup>3)</sup>
Special features	Resistant against coolant lubricants, Visual adjustment indicator, Temperature resistance
Special applications	Zones with coolants and lubricants, Mobile machines, Difficult application conditions
Items supplied	Mounting nut, V2A stainless steel, with locking teeth (2x)

<sup>1)</sup> With gold plated contact pins.

<sup>&</sup>lt;sup>2)</sup> According to EN 60529.

<sup>3)</sup> According to ISO 20653:2013-03.

#### Mechanics/electronics

Supply voltage	10 V DC 30 V DC
Ripple	≤ 10 %
Voltage drop	$\leq$ 2 V $^{1)}$
Hysteresis	3 % 20 %
Reproducibility	≤ 2 % <sup>2) 3)</sup>
Temperature drift (of S <sub>r</sub> )	± 10 %
EMC	According to EN 60947-5-2
Continuous current I <sub>a</sub>	≤ 200 mA
No load current	≤ 10 mA
Short-circuit protection	<b>√</b>
Power-up pulse protection	✓
Shock and vibration resistance	$100\mathrm{g}/2\mathrm{ms}/500$ cycles; 150 g / 1 Mio cycles; 10 Hz 55 Hz / 1 mm; 55 Hz 500 Hz / 60 g
Ambient operating temperature	-40 °C +100 °C
Housing material	Stainless steel V2A, DIN 1.4305 / AISI 303
Sensing face material	Plastic, LCP
Housing length	45 mm
Thread length	23 mm
Tightening torque, max.	Typ. 20 Nm <sup>4)</sup> Typ. 32 Nm <sup>5)</sup>
Protection class	III
UL File No.	E181493

 $<sup>^{1)}</sup>$  At  $I_a$  max.

#### Safety-related parameters

MTTF <sub>D</sub>	1,971 years
<b>DC</b> <sub>avg</sub>	0 %

#### Reduction factors

Note	The values are reference values which may vary
St37 steel (Fe)	1
Stainless steel (V2A, 304)	Approx. 0.67
Aluminum (AI)	Approx. 0.42
Copper (Cu)	Approx. 0.35
Brass (Br)	Approx. 0.42

#### Installation note

Remark	Associated graphic see "Installation"
Α	12 mm
В	24 mm

 $<sup>^{2)}\,\</sup>mbox{Supply}$  voltage  $\mbox{U}_{\mbox{\footnotesize B}}$  and constant ambient temperature Ta.

<sup>&</sup>lt;sup>3)</sup> Of Sr.

 $<sup>^{4)}</sup>$  When using the non-toothed side of the nut.

<sup>5)</sup> Valid if toothed side of nut is used.

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### INDUCTIVE PROXIMITY SENSORS

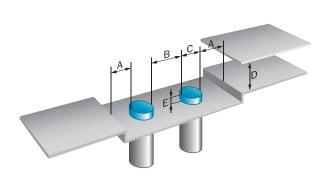
C	12 mm
D	24 mm
E	16 mm
F	64 mm

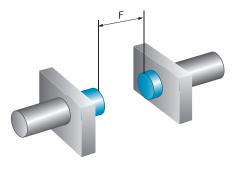
#### Classifications

ECLASS 5.0	27270101
ECLASS 5.1.4	27270101
ECLASS 6.0	27270101
ECLASS 6.2	27270101
ECLASS 7.0	27270101
ECLASS 8.0	27270101
ECLASS 8.1	27270101
ECLASS 9.0	27270101
ECLASS 10.0	27270101
ECLASS 11.0	27270101
ECLASS 12.0	27274001
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0	EC002714
ETIM 8.0	EC002714
UNSPSC 16.0901	39122230

#### Installation note

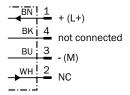
Non-flush installation





#### Connection diagram

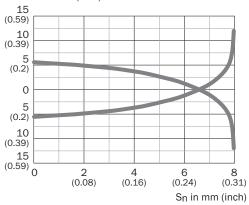
#### Cd-008



#### Response diagram

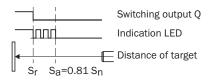
#### Response diagram

#### Distance in mm (inch)



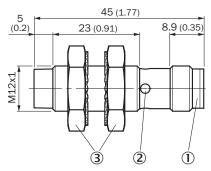
### Functional principle

#### Installation aid



#### Dimensional drawing (Dimensions in mm (inch))

IMB12 Short-body housing, connector M12, non-flush



- ① Connection
- ② Display LED
- 3 Fastening nuts (2 x); width across 17, stainless steel V2A

#### Recommended accessories

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

	Brief description	Туре	Part no.	
Universal bar clamp systems				
	Plate N05N for universal clamp bracket, M12, Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp), Universal clamp (5322627), mounting hardware	BEF-KHS-N05N	2051621	
Mounting bra	ckets and plates			
	Mounting plate for M12 sensors, stainless steel, without mounting hardware	BEF-WG-M12N	5320950	
40	Mounting bracket for M12 housing, stainless steel, without mounting hardware	BEF-WN-M12N	5320949	
Others				
•	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Connection systems: Flying leads Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-G02MRN	6058291	

	Brief description	Туре	Part no.
•	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Connection systems: Flying leads Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-G05MRN	6058476
	Connection type head A: Female connector, M12, 4-pin, angled Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Connection systems: Flying leads Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-W02MRN	6058474
	Connection type head A: Female connector, M12, 4-pin, angled Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Connection systems: Flying leads Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-W05MRN	6058477
500	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 4-wire, PP</li> <li>Description: Sensor/actuator cable, unshielded, LED function display</li> <li>Connection systems: Flying leads</li> <li>Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid &amp; hydrogen peroxide (H202), only suitable for PNP sensors</li> <li>Application: Hygienic and washdown zones, Drag chain operation</li> </ul>	DOL-1204-L02MRN	6058482
50	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PP</li> <li>Description: Sensor/actuator cable, unshielded, LED function display</li> <li>Connection systems: Flying leads</li> <li>Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid &amp; hydrogen peroxide (H2O2), only suitable for PNP sensors</li> <li>Application: Hygienic and washdown zones, Drag chain operation</li> </ul>	DOL-1204-L05MRN	6058483

	Brief description	Туре	Part no.
	Connection type head A: Female connector, M12, 4-pin, angled Connection type head B: Male connector, M12, 4-pin, straight Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2) Application: Hygienic and washdown zones, Drag chain operation	DSL-1204-B02MRN	6058502
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled</li> <li>Connection type head B: Male connector, M12, 4-pin, straight</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PP</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid &amp; hydrogen peroxide (H2O2)</li> <li>Application: Hygienic and washdown zones, Drag chain operation</li> </ul>	DSL-1204-B05MRN	6058503
6	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Male connector, M12, 4-pin, straight Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	DSL-1204-G02MRN	6058499
6	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Male connector, M12, 4-pin, straight Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	DSL-1204-G05MRN	6058500
1	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YM2A14- 100UB3XLEAX	2095859
1	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 15 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YM2A14- 150UB3XLEAX	2095866
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YN2A14- 100UB3XLEAX	2096629

	Brief description	Туре	Part no.
No.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 020UB3XLEAX	2095607
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 050UB3XLEAX	2095608
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 100UB3XLEAX	2095609
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 15 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 150UB3XLEAX	2095610
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 20 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 200UB3XLEAX	2095611
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 25 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 250UB3XLEAX	2095615
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 050UB3XLEAX	2095767
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 100UB3XLEAX	2095768
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 15 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 15OUB3XLEAX	2095769
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 20 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 200UB3XLEAX	2095770

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	Brief description	Туре	Part no.
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 25 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 250UB3XLEAX	2095771
60	Connection type head A: Female connector, M12, 4-pin, straight Connection type head B: Male connector, M12, 4-pin, straight Signal type: Sensor/actuator cable Cable: 20 m, 4-wire, PP Description: Sensor/actuator cable, unshielded Note: This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H202 and CH202. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H202) Application: Hygienic and washdown zones, Drag chain operation	YF2AP4- 020PA2M2AP4	2143765

## 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:**

Contacts and other locations -www.sick.com

