Online data sheet



IMC12-08NPPVC0SA70

IMC

INDUCTIVE PROXIMITY SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
IMC12-08NPPVC0SA70	1079290

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

Detailed technical data

Features

Housing	Cylindrical thread design
Thread size	M12 1
Diameter	Ø 12 mm
Sensing range S_n	0 mm ... 8 mm [1]
Safe sensing range S_a	6.48 mm
Number of switching points	Up to 4 adjustable switching points or windows
Switching modes	Single point, Window mode, Two point mode, Optical adjustment indicator
Switching frequency Qint.1 / Qint.2 on Pin2	1,000 Hz
Installation type	Non-flush
Connection type	Male connector M12, 4-pin [2]
Switching output	PNP
Output Q/C	Switching output or IO-Link mode
Output MFC	Switching output or input
Output function	NC / NO
Output characteristic	Programmable
Electrical wiring	DC 4-wire
Enclosure rating	IP68 [3] IP69K [4]
Special features	Smart TaskResistant against coolant lubricants
Diagnosis	Chip temperature

[1] Adjustable.
[2] With gold plated contact pins.
[3] According to EN 60529.
[4] According to ISO 20653:2013-03.

Pin 2 configuration	External input, Teach-in, switching signal

[1] Adjustable.
[2] With gold plated contact pins.
[3] According to EN 60529.
[4] According to ISO 20653:2013-03.

Communication interface

Communication interface	IO-Link V1.1
Mode	COM2 (38,4 kBaud)
Cycle time	5 ms
Process data length	32 Bit
Process data structure	Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = switching signal Q_{Int3} Bit 3 = switching signal Q_{Int4} Bit 18 ... 31 = time value
Factory setting	Switching Point 1: reference value 1 Output: normally open Pin 2 configuration: input

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	≤ 10 %
Voltage drop	≤ 2 V [2]
Current consumption	≤ 35 mA [3]
Hysteresis	Programmable [4]
Reproducibility	≤ 5 % [5] [6]
Temperature drift (of S_r)	± 10 %
EMC	According to EN 60947-5-2
Continuous current I_a	≤ 200 mA [7]
Short-circuit protection	✓
Reverse polarity protection	✓
Power-up pulse protection	✓
Shock and vibration resistance	100 g / 2 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 ... +75 °C
Housing material	Stainless steel, V2A (1.4305)
Sensing face material	Plastic, LCP
Housing length	65 mm

[1] IO-Link mode: 18 VDC ... 30 VDC.
[2] At I_a max.
[3] Without load.
[4] To comply with EN 60947-5-2, a hysteresis of approx. 10% must be set.
[5] Ub and Ta constant.
[6] Of Sr.
[7] 200 mA total for both switching outputs.
[8] Valid if toothed side of nut is used.

Thread length	43 mm
Tightening torque, max.	Typ. 32 Nm [8]
UL File No.	E181493
Teach-in accuracy	+/- 3% of Sr
Resolution, typical (range)	20 µm (0 mm ... 4 mm) 50 µm (4 mm ... 6 mm) 100 µm (6 mm ... 8 mm)
Resolution, maximum (area)	40 µm (0 mm ... 4 mm) 100 µm (4 mm ... 6 mm) 200 µm (6 mm ... 8 mm)

[1] IO-Link mode: 18 VDC ... 30 VDC.
[2] At I_a max.
[3] Without load.
[4] To comply with EN 60947-5-2, a hysteresis of approx. 10% must be set.
[5] Ub and Ta constant.
[6] Of Sr.
[7] 200 mA total for both switching outputs.
[8] Valid if toothed side of nut is used.

Reference values

Note	Reference value in Digits for switching point in mm stored in the sensor
Reference value 1	8 mm
Reference value 2	6 mm
Reference value 3	4 mm
Reference value 4	2 mm

Reduction factors

Stainless steel (V2A, 304)	Approx. 0.7
Aluminum (Al)	Approx. 0.4
Copper (Cu)	Approx. 0.4
Brass (Br)	Approx. 0.4

Installation note

Remark	Associated graphic see "Installation"
A	12 mm
B	24 mm
C	12 mm
D	24 mm
E	16 mm
F	64 mm

Classifications

ECl@ss 5.0	27270101
ECl@ss 5.1.4	27270101
ECl@ss 6.0	27270101
ECl@ss 6.2	27270101
ECl@ss 7.0	27270101
ECl@ss 8.0	27270101

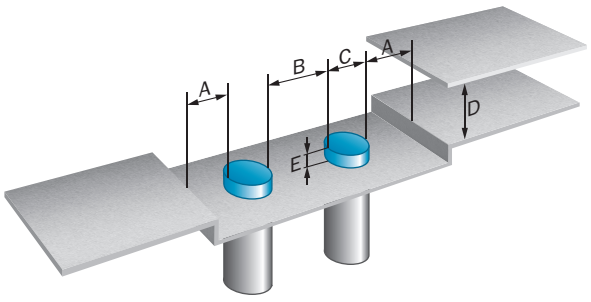
ECl@ss 8.1	27270101
ECl@ss 9.0	27270101
ETIM 5.0	EC002714
ETIM 6.0	EC002714
UNSPSC 16.0901	39122230

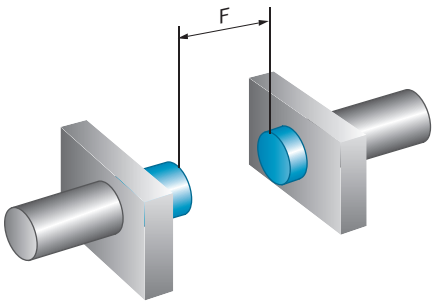
Smart Task

Smart Task name	Time measurement + debouncing
Logic function	Window Direct
Timer function	Deactivated On delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Adjustable
Time measurement accuracy	SIO Logic: (-1,2 ... 0) x time base ± 1 % of time measurement value [1] IOL: (-1,2 ... 0) x time base ± 1 % of time measurement value [2]
Time measurement accuracy (e.g. accuracy for time measurement value = 1 s)	Time base 1 ms: –11,2 ms ... 10 ms
Resolution time measuring value	1 ms
Min. Time between two process events (switches)	SIO Logic: 0.5 ms [1] IOL: 0.5 ms [2]
Debounce time max.	SIO Logic: 30 s [1] IOL: 30 s [2]
Switching signal Q_{L1}	Output type (dependant on the adjusted threshold)
Switching signal Q_{L2}	Output type (dependant on the adjusted threshold)
Measuring value	Time measurement value

[1] SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.
[2] IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

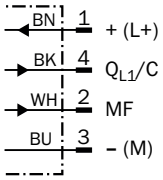
Installation note





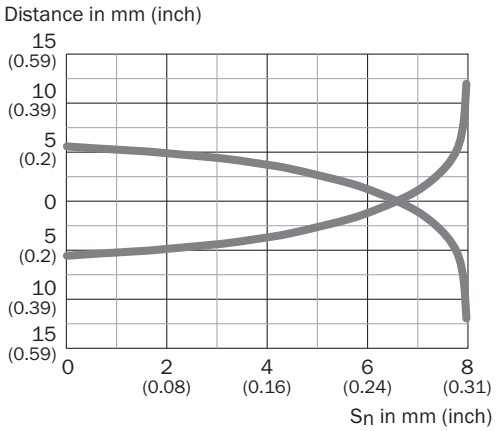
Connection diagram

cd-367



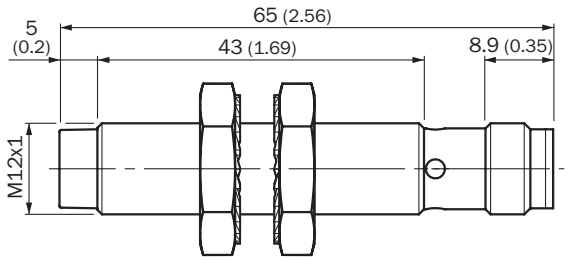
Characteristic curve

Non-flush installation



Dimensional drawing (Dimensions in mm (inch))

IMC12 Standard, connector M12, non-flush



Recommended accessories

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

	Brief description	Type	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 (5322626), mounting hardware	BEF-KHS-N05N	2051621
	Plate N11N for universal clamp bracket, Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp), Universal clamp (5322626), mounting hardware	BEF-KHS-N11N	2071081
Mounting brackets and plates			
	Mounting plate for M12 sensors, stainless steel, without mounting hardware	BEF-WG-M12N	5320950
	Mounting bracket for M12 housing, stainless steel, without mounting hardware	BEF-WN-M12N	5320949
Modules and gateways			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
	EtherCAT IO-Link Master, IO-Link V1.1, Port Class A, power supply via 7/8" cable 24 V / 8 A, fieldbus connection via M12 cable	IOLG2EC-03208R01 (IO-Link Master)	6053254
	EtherNet/IP IO-Link Master, IO-Link V1.1, Port Class A, power supply via 7/8" cable 24 V / 8 A, fieldbus connection via M12-cable	IOLG2EI-03208R01 (IO-Link Master)	6053255
	PROFINET IO-Link Master, IO-Link V1.1, Port Class A, power supply via 7/8" cable 24 V / 8 A, fieldbus connection via M12 cable	IOLG2PN-03208R01 (IO-Link Master)	6053253
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PP, unshielded, 2 m 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)	DOL-1204-G02MRN	6058291
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PP, unshielded, 5 m 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)	DOL-1204-G05MRN	6058476
	Head A: female connector, M12, 4-pin, angled with LED Head B: Flying leads Cable: PP, unshielded, 2 m 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)	DOL-1204-L02MRN	6058482

	Brief description	Type	Part no.
	Head A: female connector, M12, 4-pin, angled with LED Head B: Flying leads Cable: PP, unshielded, 5 m 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)	DOL-1204-L05MRN	6058483
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 2 m 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)	DOL-1204-W02MRN	6058474
	Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PP, unshielded, 5 m 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)	DOL-1204-W05MRN	6058477
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 2 m 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)	DSL-1204-B02MRN	6058502
	Head A: female connector, M12, 4-pin, angled Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 5 m 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)	DSL-1204-B05MRN	6058503
	Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 2 m 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)	DSL-1204-G02MRN	6058499
	Head A: female connector, M12, 4-pin, straight Head B: male connector, M12, 4-pin, straight Cable: PP, unshielded, 5 m 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)	DSL-1204-G05MRN	6058500

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