

IMC18-12NPPVCOSA00

IMC

INDUCTIVE PROXIMITY SENSORS





Ordering information

Туре	part no.
IMC18-12NPPVC0SA00	1079295

Included in delivery: BEF-MU-M18N (1)

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

Illustration may differ



Detailed technical data

Features

Housing	Metric
Thread size	M18 x 1
Diameter	Ø 18 mm
Sensing range S _n	0 mm 12 mm ¹⁾
Safe sensing range S _a	9.72 mm
Number of switching points	Up to 4 adjustable switching points or windows
Switching modes	Single point, Window mode, Two point mode, Visual adjustment indicator
Switching frequency Qint.1 $/$ Qint.2 on Pin2	250 Hz
Installation type	Non-flush
Connection type	Male connector M12, 4-pin ²⁾
Switching output	PNP
Switching output detail	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 Task, Resistant against coolant lubricants, IO-Link

¹⁾ Adjustable.

²⁾ With gold plated contact pins.

 $^{^{}m 3)}$ According to EN 60529.

⁴⁾ According to ISO 20653:2013-03.

Special applications	Zones with coolants and lubricants, Difficult application conditions
Special characteristic	Resistant against coolant lubricants
Pin 2 configuration	External input, Teach-in, switching signal
Items supplied	Mounting nut, V2A stainless steel, with locking teeth (2x)

¹⁾ Adjustable.

Mechanics/electronics

Supply voltage	10 V DC 30 V DC ¹⁾
Ripple	≤ 10 %
Voltage drop	\leq 2 V $^{2)}$
Hysteresis	Programmable ³⁾
Reproducibility	≤ 5 % ⁴⁾ 5)
Temperature drift (of S _r)	± 10 %
EMC	According to EN 60947-5-2
Continuous current I _a	≤ 200 mA ⁶⁾
Short-circuit protection	✓
Power-up pulse protection	✓
Shock and vibration resistance	$100~{\rm g}/2~{\rm ms}/500$ 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, DIN 1.4305 / AISI 303
Sensing face material	Plastic, LCP
Housing length	65 mm
Thread length	39 mm
Tightening torque, max.	Typ. 90 Nm ⁷⁾
UL File No.	E181493
Teach-in accuracy	+/- 3% of Sr
Resolution, typical (range)	40 μm (0 mm 8 mm) 75 μm (8 mm 10 mm) 150 μm (10 mm 12 mm)
Resolution, maximum (area)	75 μm (8 mm 10 mm) 150 μm (10 mm 12 mm) 300 μm (10 mm 12 mm)

¹⁾ IO-Link mode: 18 VDC ... 30 VDC.

²⁾ With gold plated contact pins.

³⁾ According to EN 60529.

⁴⁾ According to ISO 20653:2013-03.

²⁾ At I_a max.

³⁾ To comply with EN 60947-5-2, a hysteresis of approx. 10% must be set.

 $^{^{4)}}$ Supply voltage U_{B} and constant ambient temperature Ta.

⁵⁾ Of Sr.

^{6) 200} mA total for both switching outputs.

 $^{^{7)}}$ Valid if toothed side of nut is used.

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INDUCTIVE PROXIMITY SENSORS

Safety-related parameters

MTTF _D	688 years
DC _{avg}	0 %
T _M (mission time)	20 years

Communication interface

Communication interface	IO-Link V1.1
Communication Interface detail	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 16 31 = distance value
Factory setting	Switching Point 1: reference value 1 Output: normally open Pin 2 configuration: input

Reference values

Note	Reference value in Digits for switching point in mm stored in the sensor
Reference value 1	12 mm
Reference value 2	10 mm
Reference value 3	8 mm
Reference value 4	5 mm

Reduction factors

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

Installation note

Remark	Associated graphic see "Installation"
A	18 mm
В	45 mm
C	18 mm
D	36 mm
E	12 mm
F	96 mm

Smart Task

Smart Task name	Base logics
Logic function	AND OR

¹⁾ SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

²⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

³⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

	XOR Hysteresis
Timer function	Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Adjustable
Switching frequency	SIO Direct: 250 Hz, SIO Logic: 250 Hz, IOL: 250 Hz ^{1) 2) 3)}
Switching signal	
Switching sig	gnal Q _{L1} Switching output
Switching sig	gnal Q _{L2} Switching output

¹⁾ SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

Certificates

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

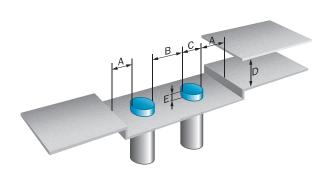
Classifications

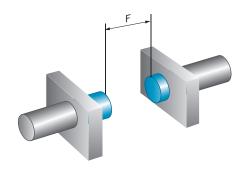
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ECLASS 5.1.4	27270101
ECLASS 6.0	27270101
ECLASS 6.2	27270101
ECLASS 7.0	27270101
ECLASS 8.0	27270101
ECLASS 8.1	27270101
ECLASS 9.0	27270101
ECLASS 10.0	27270101
ECLASS 11.0	27270101
ECLASS 12.0	27274001
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0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

²⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

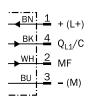
³⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Installation note Non-flush installation





Connection diagram Cd-526

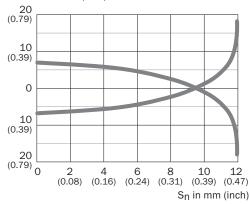


 Q_{L1}/C = Switching output, IO-Link communication

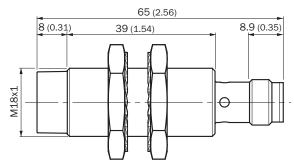
MF = Multifunction

Response diagram

Distance in mm (inch)



Dimensional drawing IMC18 Standard, connector M12, non-flush



Dimensions in mm (inch)

Recommended accessories

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

	Brief description	Туре	part no.	
network devices				
		IOLA2US-01101 (SiLink2 Master)	1061790	
Mounting syst	tems			
40	 Description: Mounting bracket for M18 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware Suitable for: GR18, V180-2, V18, W15, Z1, Z2 	BEF-WN-M18	5308446	
	 Description: Mounting plate for M18 sensors Material: Stainless steel Details: Stainless steel Items supplied: Without mounting hardware 	BEF-WG-M18N	5320948	
40	Description: Mounting bracket for M18 sensors Material: Stainless steel Details: Stainless steel Items supplied: Without mounting hardware	BEF-WN-M18N	5320947	
	 Description: Plate N06N for universal clamp bracket, M18 Material: Stainless steel, stainless steel Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) Items supplied: Universal clamp (5322627), mounting hardware Usable for: MH15, MH15V, V180-2, V18V, W15, GR18, V18, V18 Laser, V12-2, SimpleSense, SureSense, M18 round sensors 	BEF-KHS-N06N	2051622	

	Brief description	Туре	part no.		
connectors and cables					
	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 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	DOL-1204-G02MRN	6058291		
	 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 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 	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 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 	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 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 	DOL-1204-W05MRN	6058477		
50	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), only suitable for PNP sensors Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-L02MRN	6058482		
	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 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), only suitable for PNP sensors Application: Hygienic and washdown zones, Drag chain operation	DOL-1204-L05MRN	6058483		
100	 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 	DSL-1204-G02MRN	6058499		

	Brief description	Туре	part no.
	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		
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 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-G05MRN	6058500
	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
	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: 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 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-B05MRN	6058503
No.	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A14-050UB3XLEAX	2095608
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: 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 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	YF2AP4-020PA2M2AP4	2143765
P	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235
	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: 3 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	YG2AP4-030PA2M2AP4	2151191

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.

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