



IMC12-08NPPVC0SB00

IMC

INDUCTIVE PROXIMITY SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|--------------------|----------|
| IMC12-08NPPVC0SB00 | 1093141 |

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

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

Illustration may differ



Detailed technical data

Features

| | |
|--|--|
| Housing | Metric |
| Thread size | M12 x 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, Visual 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 |
| 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.

³⁾ According to EN 60529.

⁴⁾ According to ISO 20653:2013-03.

| | |
|-------------------------------|--|
| Special applications | Zones with coolants and lubricants, Difficult application conditions |
| Special characteristic | Resolution 16 digits |
| Pin 2 configuration | External input, Teach-in, switching signal |
| Items supplied | Mounting nut, V2A stainless steel, with locking teeth (2x) |

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

Mechanics/electronics

| | |
|---|--|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | ≤ 10 % |
| Voltage drop | ≤ 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 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, DIN 1.4305 / AISI 303 |
| Sensing face material | Plastic, LCP |
| Housing length | 65 mm |
| Thread length | 43 mm |
| Tightening torque, max. | Typ. 32 Nm ⁷⁾ |
| 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) 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.

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 | 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 |

Smart Task

| | |
|----------------------------|---|
| Smart Task name | Base logics |
| Logic function | AND OR XOR Hysteresis |
| Timer function | Switch-on delay Off delay ON and OFF delay Impulse (one shot) |
| Inverter | Adjustable |
| Switching frequency | SIO Direct: 1000 Hz, SIO Logic: 1000 Hz, IOL: 1000 Hz ^{1) 2) 3)} |

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.

| Switching signal | |
|----------------------------------|------------------|
| Switching signal Q _{L1} | Switching output |
| Switching signal 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").
- 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.

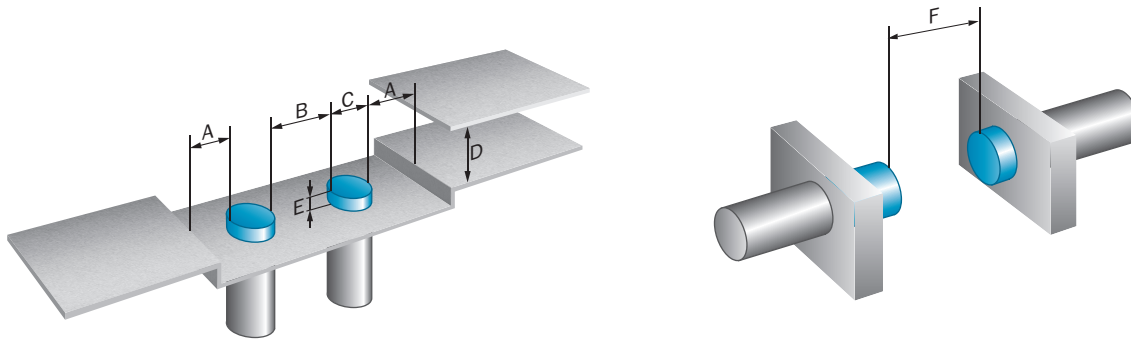
Certificates

| | |
|---|---|
| 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) | ✓ |

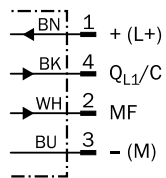
Classifications

| | |
|----------------|----------|
| 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

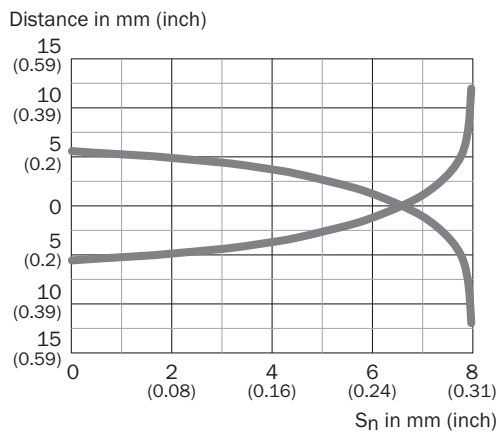


Connection diagram Cd-526

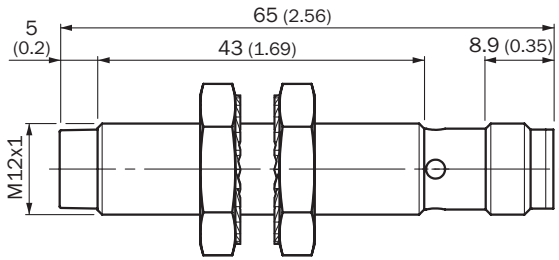


Q_{L1}/C = Switching output,
IO-Link communication
MF = Multifunction

Response diagram








Dimensional drawing IMC12 Standard, connector M12, non-flush











Dimensions in mm (inch)

Recommended accessories

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

| | Brief description | Type | part no. |
|---|---|-----------------------------------|----------|
| network devices | | | |
|  | | IOLA2US-01101 (SiLink2 Master) | 1061790 |
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: Mounting bracket for M12 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware | BEF-WN-M12 | 5308447 |
|  | <ul style="list-style-type: none"> Description: Mounting plate for M12 sensors Material: Stainless steel Details: Stainless steel Items supplied: Without mounting hardware | BEF-WG-M12N | 5320950 |
|  | <ul style="list-style-type: none"> Description: Mounting bracket for M12 housing Material: Stainless steel Details: Stainless steel Items supplied: Without mounting hardware | BEF-WN-M12N | 5320949 |
|  | <ul style="list-style-type: none"> Description: Plate N05N for universal clamp bracket, M12 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: IMA, IMF, M12 round sensors, UC4, V12-2, MultiV, MultiLine, W4-3, MultiV, MultiLine | BEF-KHS-N05N | 2051621 |

| | Brief description | Type | part no. |
|---|--|-----------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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), only suitable for PNP sensors Application: Hygienic and washdown zones, Drag chain operation | DOL-1204-L02MRN | 6058482 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 | Type | part no. |
|---|---|--------------------|----------|
| | <ul style="list-style-type: none"> 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 | | |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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.

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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