



IMP12-1B5NPVC0F

IMP

INDUCTIVE PROXIMITY SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|-----------------|----------|
| IMP12-1B5NPVCOF | 6050136 |

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

Detailed technical data

Features

| | |
|--|---|
| Housing | Metric |
| Thread size | M12 x 1 |
| Diameter | Ø 12 mm |
| Pressure resistance | ≤ 500 bar |
| Sensing range S_n | 1.5 mm |
| Safe sensing range S_a | 1.2 mm |
| Installation type | Flush |
| Switching frequency | 600 Hz |
| Connection type | Male connector M12, 4-pin |
| Switching output | NPN |
| Switching output detail | NPN |
| Output function | Complementary |
| Electrical wiring | DC 4-wire |
| Enclosure rating | IP68 ¹⁾ |
| Special features | High pressure resistant, Temperature resistance |
| Special applications | Hydraulic application |

¹⁾ Sensing face.

Mechanics/electronics

| | |
|-----------------------|----------------------|
| Supply voltage | 10 V DC ... 30 V DC |
| Ripple | ≤ 20 % ¹⁾ |

¹⁾ Of V_S .

²⁾ With $I_a = 200$ mA.

³⁾ Typ. 8%.

⁴⁾ $U_b = 20 \dots 30$ VDC.

⁵⁾ $T_a = 23 \text{ °C} \pm 5 \text{ °C}$.

⁶⁾ $-25 \text{ °C} \dots +70 \text{ °C}$.

⁷⁾ $+70 \text{ °C} \dots +100 \text{ °C}$.

⁸⁾ Front.

| | |
|--|--|
| Voltage drop | $\leq 2 \text{ V}^{2)}$ |
| Time delay before availability | $\leq 50 \text{ ms}$ |
| Hysteresis | $1 \% \dots 15 \%^{3)}$ |
| Reproducibility | $\leq 7 \%^{4)}$ 5) |
| Temperature drift (of S_r) | $\pm 10 \%^{6)}$ $\pm 15 \%^{7)}$ |
| EMC | According to EN 60947-5-2 |
| Continuous current I_a | $\leq 200 \text{ mA}$ |
| Vacuum resistance | $10^{-8} \text{ Torr}^{8)}$ |
| Large sealing ring | 5.3 mm x 2.4 mm |
| Size support ring | 10 mm x 5.9 mm x 1 mm |
| Short-circuit protection | ✓ |
| Shock and vibration resistance | 30 g, 11 ms / 10 ... 55 Hz, 1 mm |
| Ambient operating temperature | $-25 \text{ }^\circ\text{C} \dots +100 \text{ }^\circ\text{C}$ |
| Housing material | Stainless steel V2A, DIN 1.4305 / AISI 303 |
| Sensing face material | Ceramics, ZrO2 |
| Sealing ring material | FPM |
| Housing length | 93 mm |
| Thread length | 75 mm |
| Tightening torque, max. | $\leq 40 \text{ Nm}$ |

1) Of V_S .

2) With $I_a = 200 \text{ mA}$.

3) Typ. 8%.

4) $U_b = 20 \dots 30 \text{ VDC}$.

5) $T_a = 23 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$.

6) $-25 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$.

7) $+70 \text{ }^\circ\text{C} \dots +100 \text{ }^\circ\text{C}$.

8) Front.

Safety-related parameters

| | |
|-------------------------------------|-----------|
| MTTF_D | 156 years |
| DC_{avg} | 0% |
| T_M (mission time) | 20 years |

Reduction factors

| | |
|-----------------------------------|--|
| Note | The values are reference values which may vary |
| St37 steel (Fe) | 1 |
| Stainless steel (V2A, 304) | Approx. 0.75 |
| Aluminum (Al) | Approx. 0.2 |
| Copper (Cu) | Approx. 0.12 |
| Brass (Br) | Approx. 0.34 |

Installation note

| | |
|---------------|---------------------------------------|
| Remark | Associated graphic see "Installation" |
|---------------|---------------------------------------|

| | |
|----------|-------|
| B | 8 mm |
| C | 12 mm |
| D | 6 mm |
| F | 12 mm |

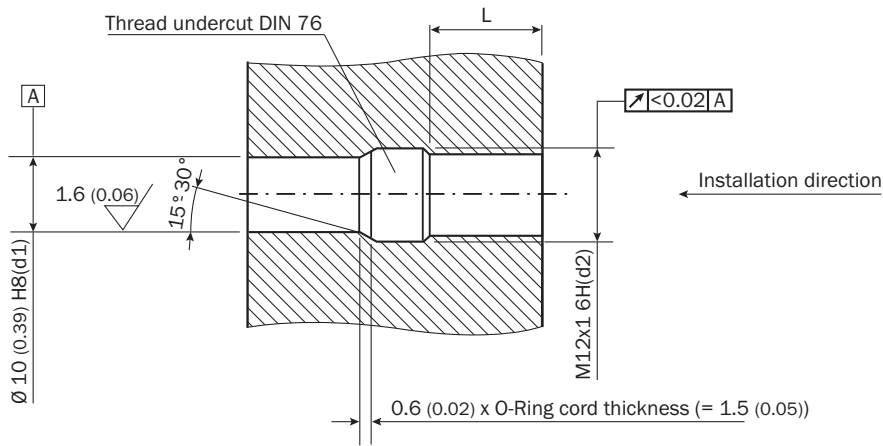
Certificates

| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |

Classifications

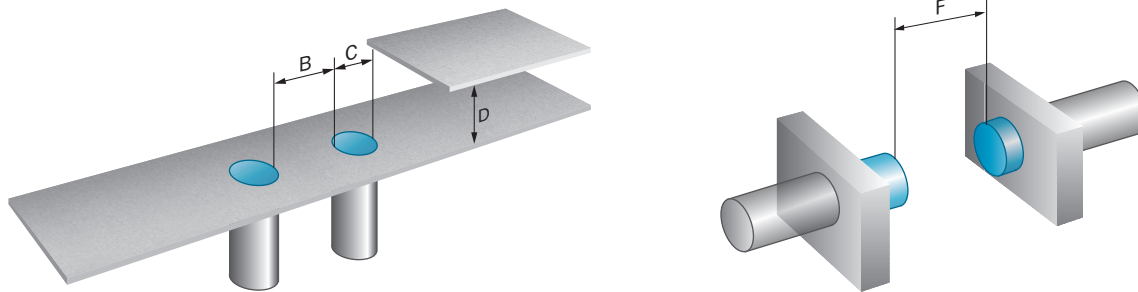
| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270101 |
| ECLASS 5.1.4 | 27270101 |
| ECLASS 6.0 | 27270101 |
| ECLASS 6.2 | 27270101 |
| ECLASS 7.0 | 27270101 |
| ECLASS 8.0 | 27270101 |
| ECLASS 8.1 | 27270101 |
| ECLASS 9.0 | 27270101 |
| ECLASS 10.0 | 27270101 |
| ECLASS 11.0 | 27270101 |
| 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

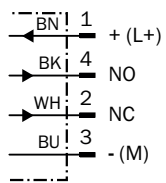


L: recommended installation depth: $L \geq 0.8 (0.03) \times d2$

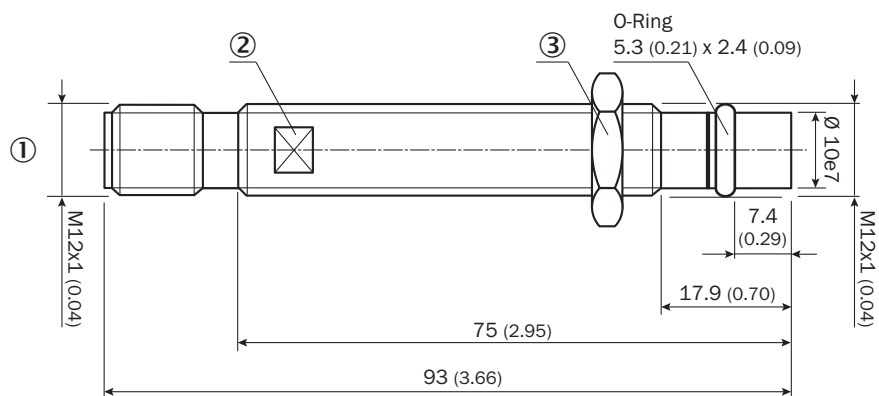
Installation note Flush installation



Connection diagram Cd-006



Dimensional drawing IMP12-xxxxxxxF, 93 mm



Dimensions in mm (inch)

- ① male connector M12, 4-pin
- ② width across 10
- ③ width across 17

Recommended accessories

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

| Brief description | Type | part no. |
|--|--------------------|----------|
| Mounting systems | | |
| <ul style="list-style-type: none"> • Dimensions (W x H x L): 5.3 mm x 2.4 mm • Suitable for: IMP12 | O-ring IMP12 | 5327494 |
| <ul style="list-style-type: none"> • Dimensions (W x H x L): 10 mm x 5.9 mm x 1 mm • Suitable for: IMP12 | Support ring IMP12 | 5327496 |

| | Brief description | Type | part no. |
|---|--|--------------------|----------|
| connectors and cables | | | |
|  | <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: Drag chain operation, 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, 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: Uncontaminated zones, Zones with chemicals | YF2A14-050VB3XLEAX | 2096235 |
|  | <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: 0.6 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-C60UB3XLEAX | 2145654 |
|  | <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: 1 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-010UB3XLEAX | 2145655 |
|  | <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: 3 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-030UB3XLEAX | 2145656 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 0.6 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-C60UB3XLEAX | 2145657 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 1 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-010UB3XLEAX | 2145658 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 0.6 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with chemicals | YG2A14-C60VB3XLEAX | 2145709 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 1 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with chemicals | YG2A14-010VB3XLEAX | 2145710 |
|  | <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: 0.6 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with chemicals | YF2A14-C60VB3XLEAX | 2145707 |
|  | <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: 1 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with chemicals | YF2A14-010VB3XLEAX | 2145708 |

SICK AT A GLANCE

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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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