



# IMP12-1B5NSVC0B

IMP

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type            | part no. |
|-----------------|----------|
| IMP12-1B5NSVC0B | 6050115  |

Other models and accessories → [www.sick.com/IMP](http://www.sick.com/IMP)

### Detailed technical data

#### Features

|                                            |                           |
|--------------------------------------------|---------------------------|
| <b>Housing</b>                             | Metric                    |
| <b>Thread size</b>                         | M12 x 1                   |
| <b>Diameter</b>                            | Ø 12 mm                   |
| <b>Pressure resistance</b>                 | ≤ 500 bar                 |
| <b>Sensing range <math>S_n</math></b>      | 1.5 mm                    |
| <b>Safe sensing range <math>S_a</math></b> | 1.2 mm                    |
| <b>Installation type</b>                   | Flush                     |
| <b>Switching frequency</b>                 | 600 Hz                    |
| <b>Connection type</b>                     | Male connector M12, 4-pin |
| <b>Switching output</b>                    | NPN                       |
| <b>Switching output detail</b>             | NPN                       |
| <b>Output function</b>                     | NO                        |
| <b>Electrical wiring</b>                   | DC 3-wire                 |
| <b>Enclosure rating</b>                    | IP68 <sup>1)</sup>        |
| <b>Special features</b>                    | High pressure resistant   |
| <b>Special applications</b>                | Hydraulic application     |

<sup>1)</sup> Sensing face.

#### Mechanics/electronics

|                       |                      |
|-----------------------|----------------------|
| <b>Supply voltage</b> | 10 V DC ... 30 V DC  |
| <b>Ripple</b>         | ≤ 20 % <sup>1)</sup> |
| <b>Voltage drop</b>   | ≤ 2 V <sup>2)</sup>  |

<sup>1)</sup> Of  $V_S$ .

<sup>2)</sup> With  $I_a = 200$  mA.

<sup>3)</sup> Typ. 8%.

<sup>4)</sup>  $U_b = 20 \dots 30$  VDC.

<sup>5)</sup>  $T_a = 23 \text{ °C} \pm 5 \text{ °C}$ .

<sup>6)</sup> Front.

|                                             |                                            |
|---------------------------------------------|--------------------------------------------|
| <b>Time delay before availability</b>       | ≤ 50 ms                                    |
| <b>Hysteresis</b>                           | 1 % ... 15 % <sup>3)</sup>                 |
| <b>Reproducibility</b>                      | ≤ 7 % <sup>4) 5)</sup>                     |
| <b>Temperature drift (of S<sub>r</sub>)</b> | ≤ 15 %                                     |
| <b>EMC</b>                                  | According to EN 60947-5-2                  |
| <b>Continuous current I<sub>a</sub></b>     | ≤ 200 mA                                   |
| <b>Vacuum resistance</b>                    | 10 <sup>-8</sup> Torr <sup>6)</sup>        |
| <b>Large sealing ring</b>                   | 5.3 mm x 2.4 mm                            |
| <b>Size support ring</b>                    | 10 mm x 5.9 mm x 1 mm                      |
| <b>Short-circuit protection</b>             | ✓                                          |
| <b>Shock and vibration resistance</b>       | 30 g, 11 ms / 10 ... 55 Hz, 1 mm           |
| <b>Ambient operating temperature</b>        | -25 °C ... +80 °C                          |
| <b>Housing material</b>                     | Stainless steel V2A, DIN 1.4305 / AISI 303 |
| <b>Sensing face material</b>                | Ceramics, ZrO <sub>2</sub>                 |
| <b>Sealing ring material</b>                | FPM                                        |
| <b>Housing length</b>                       | 56 mm                                      |
| <b>Thread length</b>                        | 28 mm                                      |
| <b>Tightening torque, max.</b>              | ≤ 40 Nm                                    |

1) Of V<sub>S</sub>.

2) With I<sub>a</sub> = 200 mA.

3) Typ. 8%.

4) U<sub>b</sub> = 20 ... 30 VDC.

5) T<sub>a</sub> = 23 °C ± 5 °C.

6) Front.

## Reduction factors

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

## Installation note

|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>B</b>      | 8 mm                                  |
| <b>C</b>      | 12 mm                                 |
| <b>D</b>      | 6 mm                                  |
| <b>F</b>      | 12 mm                                 |

## Certificates

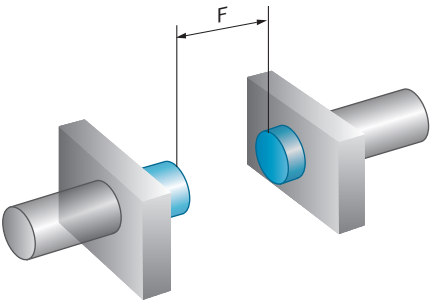
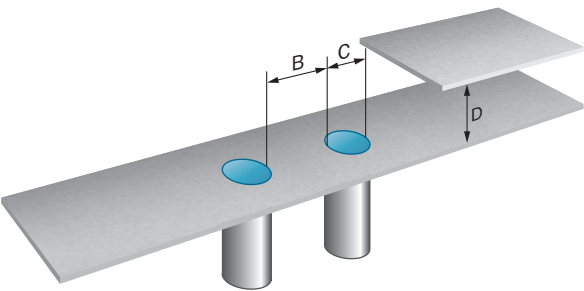
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |

|            |   |
|------------|---|
| China-RoHS | ✓ |
|------------|---|

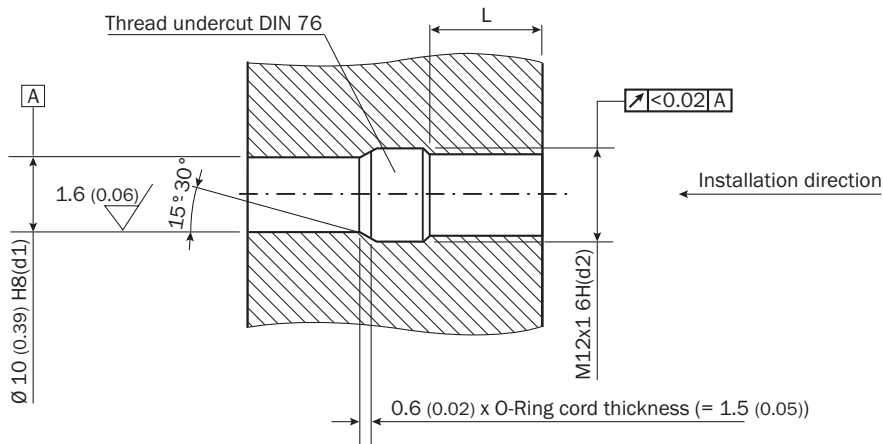
Classifications

|                |          |
|----------------|----------|
| 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 Flush installation

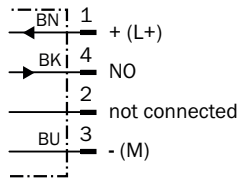


## Installation note

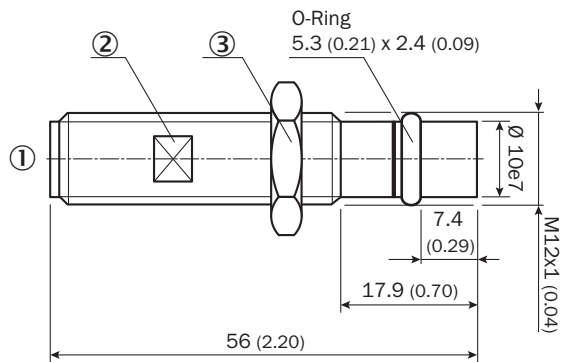


L: recommended installation depth:  $L \geq 0.8 (0.03) \times d2$

## Connection diagram Cd-007



## Dimensional drawing IMP12-xxxxxxxB, 56 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](http://www.sick.com/IMP)

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

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Type               | part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YF2A14-020UB3XLEAX | 2095607  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YF2A14-050UB3XLEAX | 2095608  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>     | YG2A14-020UB3XLEAX | 2095766  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>     | YG2A14-050UB3XLEAX | 2095767  |
|    | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                        | YF2A14-020VB3XLEAX | 2096234  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                        | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                          | YG2A14-020VB3XLEAX | 2095895  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                          | YG2A14-050VB3XLEAX | 2095897  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-C60UB3XLEAX | 2145654  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YF2A14-010UB3XLEAX | 2145655  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> </ul>                                                                                                                  | YF2A14-030UB3XLEAX | 2145656  |

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

## 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](http://www.sick.com)