



# IMP12-1B5NOVC0B

IMP

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type            | Part no. |
|-----------------|----------|
| IMP12-1B5NOVC0B | 6050116  |

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 S<sub>n</sub></b>      | 1.5 mm                    |
| <b>Safe sensing range S<sub>a</sub></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>Output function</b>                  | NC                        |
| <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>        |
| <b>Time delay before availability</b> | ≤ 50 ms                    |
| <b>Hysteresis</b>                     | 1 % ... 15 % <sup>3)</sup> |

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

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

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

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

<sup>5)</sup> T<sub>a</sub> = 23 °C ± 5 °C.

<sup>6)</sup> Front.

|                                             |                                            |
|---------------------------------------------|--------------------------------------------|
| <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.

### Safety-related parameters

|                                     |           |
|-------------------------------------|-----------|
| <b>MTTF<sub>D</sub></b>             | 171 years |
| <b>DC<sub>avg</sub></b>             | 0%        |
| <b>T<sub>M</sub> (mission time)</b> | 20 years  |

### 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                                 |

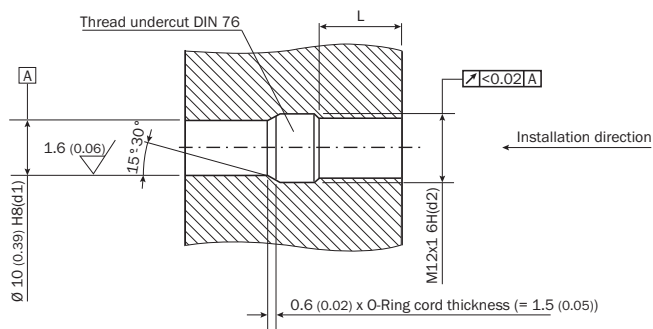
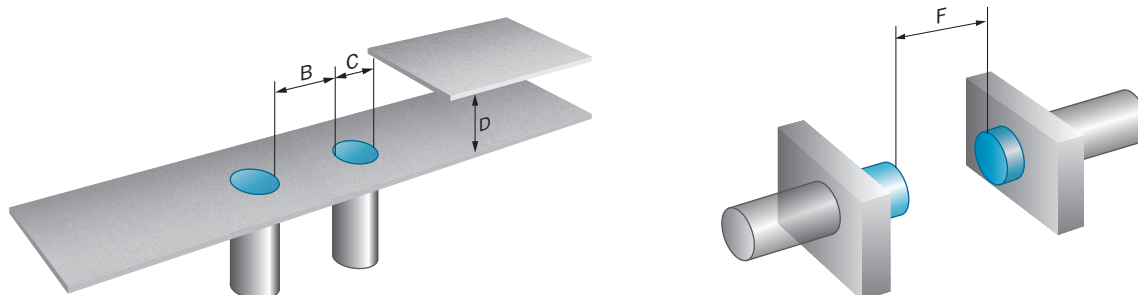
### Classifications

|                   |          |
|-------------------|----------|
| <b>ECLASS 5.0</b> | 27270101 |
|-------------------|----------|

|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.1.4</b>   | 27270101 |
| <b>ECLASS 6.0</b>     | 27270101 |
| <b>ECLASS 6.2</b>     | 27270101 |
| <b>ECLASS 7.0</b>     | 27270101 |
| <b>ECLASS 8.0</b>     | 27270101 |
| <b>ECLASS 8.1</b>     | 27270101 |
| <b>ECLASS 9.0</b>     | 27270101 |
| <b>ECLASS 10.0</b>    | 27270101 |
| <b>ECLASS 11.0</b>    | 27270101 |
| <b>ECLASS 12.0</b>    | 27274001 |
| <b>ETIM 5.0</b>       | EC002714 |
| <b>ETIM 6.0</b>       | EC002714 |
| <b>ETIM 7.0</b>       | EC002714 |
| <b>ETIM 8.0</b>       | EC002714 |
| <b>UNSPSC 16.0901</b> | 39122230 |

### Installation note

Flush installation



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

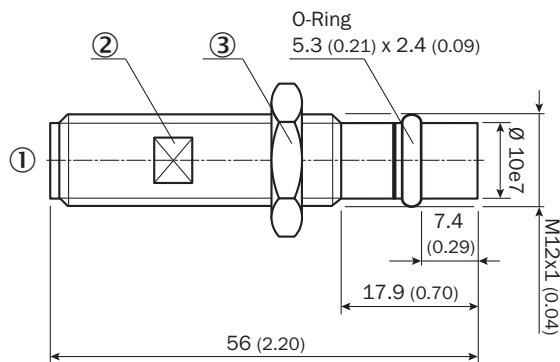
## Connection diagram

Cd-008



## Dimensional drawing (Dimensions in mm (inch))



IMP12-xxxxxxxB, 56 mm









- 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. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Other mounting accessories                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |          |
|                                                                                     | 5327494                                                                                                                                                                                                                                                                                                                                                                                                                                                            | O-ring IMP12       | 5327494  |
|                                                                                     | 5327496                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Support ring IMP12 | 5327496  |
| Others                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |          |
|  | <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> Zones with oils and lubricants, Drag chain operation, Robot</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> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                | Type               | Part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|    | <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> Zones with oils and lubricants, Drag chain operation, Robot</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> Zones with oils and lubricants, Drag chain operation, Robot</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</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</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</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</li> </ul>                                                      | YG2A14-050VB3XLEAX | 2095897  |

## 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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