



# IM18-10NPP-ZC1

IM Standard

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type           | Part no. |
|----------------|----------|
| IM18-10NPP-ZC1 | 6020965  |

Other models and accessories → [www.sick.com/IM\\_Standard](http://www.sick.com/IM_Standard)

Illustration may differ



### Detailed technical data

#### Features

|  |                           |
|--|---------------------------|
| <b>Housing</b>                             | Cylindrical thread design |
| <b>Housing</b>                             | Standard design           |
| <b>Thread size</b>                         | M18 x 1                   |
| <b>Diameter</b>                            | Ø 18 mm                   |
| <b>Sensing range <math>S_n</math></b>      | 10 mm                     |
| <b>Safe sensing range <math>S_a</math></b> | 8 mm                      |
| <b>Installation type</b>                   | Non-flush                 |
| <b>Switching frequency</b>                 | 300 Hz                    |
| <b>Connection type</b>                     | Male connector M12, 4-pin |
| <b>Switching output</b>                    | PNP                       |
| <b>Output function</b>                     | Complementary             |
| <b>Electrical wiring</b>                   | DC 4-wire                 |
| <b>Enclosure rating</b>                    | IP67 <sup>1)</sup>        |

<sup>1)</sup> According to EN 60529.

#### Mechanics/electronics

|  |                        |
|--|------------------------|
| <b>Supply voltage</b>                          | 10 V DC ... 30 V DC    |
| <b>Ripple</b>                                  | ≤ 10 %                 |
| <b>Voltage drop</b>                            | ≤ 1 V <sup>1)</sup>    |
| <b>Time delay before availability</b>          | ≤ 100 ms               |
| <b>Hysteresis</b>                              | 1 % ... 20 %           |
| <b>Reproducibility</b>                         | ≤ 5 % <sup>2) 3)</sup> |
| <b>Temperature drift (of <math>S_n</math>)</b> | ± 10 %                 |

<sup>1)</sup> At  $I_a$  max.

<sup>2)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

<sup>3)</sup> Of  $S_r$ .

|  |                            |
|--|----------------------------|
| <b>EMC</b>                                 | According to EN 60947-5-2  |
| <b>Continuous current <math>I_a</math></b> | $\leq 400$ mA              |
| <b>Short-circuit protection</b>            | ✓                          |
| <b>Reverse polarity protection</b>         | ✓                          |
| <b>Power-up pulse protection</b>           | ✓                          |
| <b>Shock and vibration resistance</b>      | 30 g, 11 ms/10 ... 55 Hz   |
| <b>Ambient operating temperature</b>       | -25 °C ... +70 °C          |
| <b>Housing material</b>                    | Brass, Nickel-plated brass |
| <b>Sensing face material</b>               | Plastic                    |
| <b>Housing length</b>                      | 64 mm                      |
| <b>Thread length</b>                       | 40 mm                      |
| <b>Tightening torque, max.</b>             | $\leq 30$ Nm               |

<sup>1)</sup> At  $I_a$  max.

<sup>2)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

<sup>3)</sup> Of  $S_r$ .

### Safety-related parameters

|                         |          |
|-------------------------|----------|
| <b>MTTF<sub>D</sub></b> | 93 years |
| <b>DC<sub>avg</sub></b> | 0 %      |

### Reduction factors

|                                   |              |
|-----------------------------------|--------------|
| <b>St37 steel (Fe)</b>            | 1            |
| <b>Stainless steel (V2A, 304)</b> | Approx. 0.8  |
| <b>Aluminum (Al)</b>              | Approx. 0.45 |
| <b>Copper (Cu)</b>                | Approx. 0.4  |
| <b>Brass (Br)</b>                 | Approx. 0.4  |

### Installation note

|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>A</b>      | 18 mm                                 |
| <b>B</b>      | 36 mm                                 |
| <b>C</b>      | 18 mm                                 |
| <b>D</b>      | 24 mm                                 |
| <b>E</b>      | 12 mm                                 |
| <b>F</b>      | 64 mm                                 |

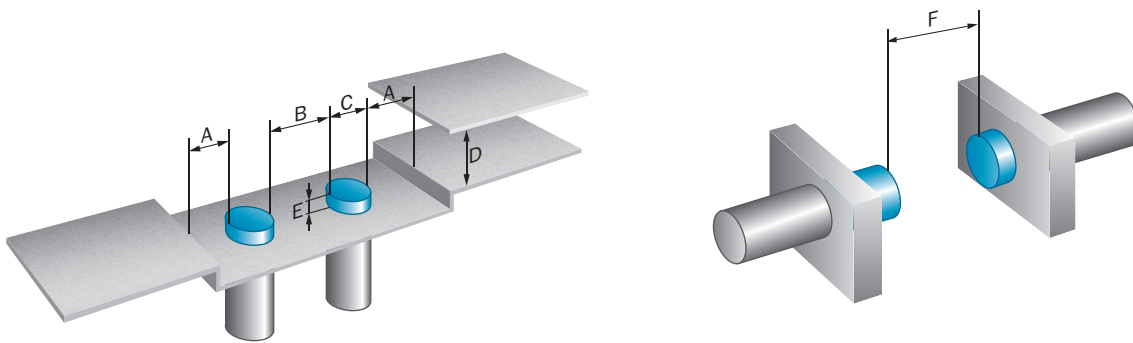
### Classifications

|                     |          |
|---------------------|----------|
| <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 |

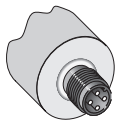
|                       |          |
|-----------------------|----------|
| <b>ECLASS 9.0</b>     | 27270101 |
| <b>ECLASS 10.0</b>    | 27270101 |
| <b>ECLASS 11.0</b>    | 27270101 |
| <b>ECLASS 12.0</b>    | 27274001 |
| <b>ETIM 5.0</b>       | EC002714 |
| <b>ETIM 6.0</b>       | EC002714 |
| <b>ETIM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

### Installation note

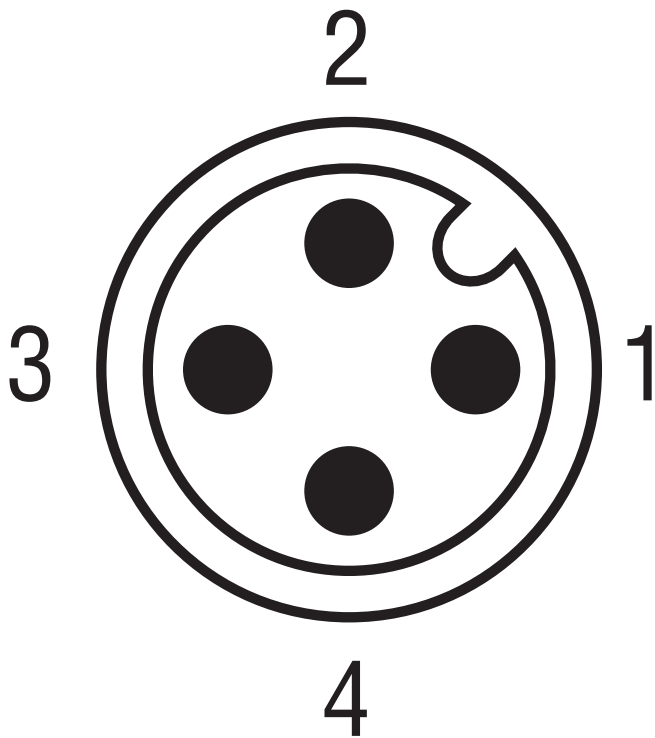
Non-flush installation



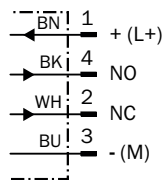
### Connection type



Connection diagram

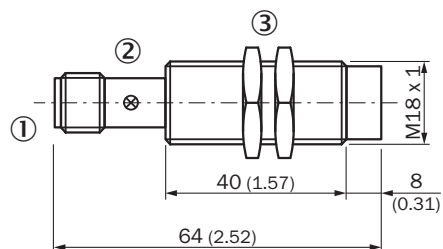


Cd-006



Dimensional drawing (Dimensions in mm (inch))

IM18, DC 2-wire, male connector, non-flush






- ① Connection
- ② Display LED
- ③ Fastening nuts (2x); width across 24, metal

### Recommended accessories

Other models and accessories → [www.sick.com/IM\\_Standard](http://www.sick.com/IM_Standard)

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
| <b>Mounting brackets and plates</b>   |   |                    |          |
|    | Mounting plate for M18 sensors, steel, zinc coated, without mounting hardware   | BEF-WG-M18         | 5321870  |
|    | Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware   | BEF-WN-M18         | 5308446  |
| <b>Plug connectors and cables</b>   |   |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 4-pin, straight, unshielded, for power supply, for cable diameter 4 mm ... 6 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul> | DOS-1204-G         | 6007302  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, angled</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 4-pin, angled, unshielded, for power supply, for cable diameter 3 mm ... 6.5 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>   | DOS-1204-W         | 6007303  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>   | STE-1204-G         | 6009932  |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, angled</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>   | STE-1204-W         | 6022084  |
| <b>Terminal and alignment brackets</b>  |   |                    |          |
|  | Clamping block for round sensors M18, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included  | BEF-KH-M18         | 2051481  |
| <b>Others</b>   |   |                    |          |
|  | <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  |

|   | 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> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>   | <p>YG2A14-050VB3XLEAX</p> | <p>2095897</p> |
|  | <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, LED function display</li> <li>• <b>Note:</b> Only suitable for PNP sensors</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | <p>Y12A14-020VB3XLEAX</p> | <p>2096222</p> |
|  | <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, LED function display</li> <li>• <b>Note:</b> Only suitable for PNP sensors</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | <p>Y12A14-050VB3XLEAX</p> | <p>2096223</p> |

## SICK AT A GLANCE

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