



# IM05-1B5P0VT0S

IMM

**INDUCTIVE PROXIMITY SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type           | part no. |
|----------------|----------|
| IM05-1B5POVT0S | 6049740  |

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

### Detailed technical data

#### Features

|                                            |                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Housing</b>                             | Metric                                                                                         |
| <b>Housing</b>                             | Standard design                                                                                |
| <b>Thread size</b>                         | M5 x 0.5                                                                                       |
| <b>Diameter</b>                            | Ø 5 mm                                                                                         |
| <b>Sensing range <math>S_n</math></b>      | 1.5 mm                                                                                         |
| <b>Safe sensing range <math>S_a</math></b> | 1.215 mm                                                                                       |
| <b>Installation type</b>                   | Flush                                                                                          |
| <b>Switching frequency</b>                 | 3,000 Hz                                                                                       |
| <b>Connection type</b>                     | Connector M8, 3-pin                                                                            |
| <b>Switching output</b>                    | PNP                                                                                            |
| <b>Switching output detail</b>             | PNP                                                                                            |
| <b>Output function</b>                     | NC                                                                                             |
| <b>Electrical wiring</b>                   | DC 3-wire                                                                                      |
| <b>Enclosure rating</b>                    | IP67 <sup>1)</sup>                                                                             |
| <b>Items supplied</b>                      | Mounting nut, V2A stainless steel (2x)<br>Washer, V2A stainless steel, with locking teeth (2x) |

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

#### 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> | ≤ 10 ms              |
| <b>Hysteresis</b>                     | 1 % ... 10 %         |

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

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

<sup>3)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

|                                             |                                                                              |
|---------------------------------------------|------------------------------------------------------------------------------|
| <b>Reproducibility</b>                      | ≤ 2 % <sup>3)</sup>                                                          |
| <b>Temperature drift (of S<sub>r</sub>)</b> | ≤ 10 %                                                                       |
| <b>EMC</b>                                  | EN 60947-5-2<br>IEC 61000-4-2: (Testlevel 2)<br>IEC 61000-4-4: (Testlevel 3) |
| <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 ... +70 °C                                                            |
| <b>Housing material</b>                     | Stainless steel V2A, DIN 1.4305 / AISI 303                                   |
| <b>Sensing face material</b>                | Plastic, POM                                                                 |
| <b>Housing length</b>                       | 38 mm                                                                        |
| <b>Thread length</b>                        | 22 mm                                                                        |
| <b>Tightening torque, max.</b>              | ≤ 1.8 Nm                                                                     |
| <b>UL File No.</b>                          | NRKH.E191603                                                                 |

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

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

<sup>3)</sup> Supply voltage U<sub>B</sub> and constant ambient temperature T<sub>a</sub>.

#### Safety-related parameters

|                                     |           |
|-------------------------------------|-----------|
| <b>MTTF<sub>D</sub></b>             | 186 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>Stainless steel (V2A, 304)</b> | Approx. 0.75                                   |
| <b>Aluminum (Al)</b>              | Approx. 0.4                                    |
| <b>Copper (Cu)</b>                | Approx. 0.4                                    |
| <b>Brass (Br)</b>                 | Approx. 0.5                                    |

#### Installation note

|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>A</b>      | 1.5 mm                                |
| <b>B</b>      | 1 mm                                  |
| <b>C</b>      | 5 mm                                  |
| <b>D</b>      | 4.5 mm                                |
| <b>E</b>      | 0 mm                                  |
| <b>F</b>      | 12 mm                                 |

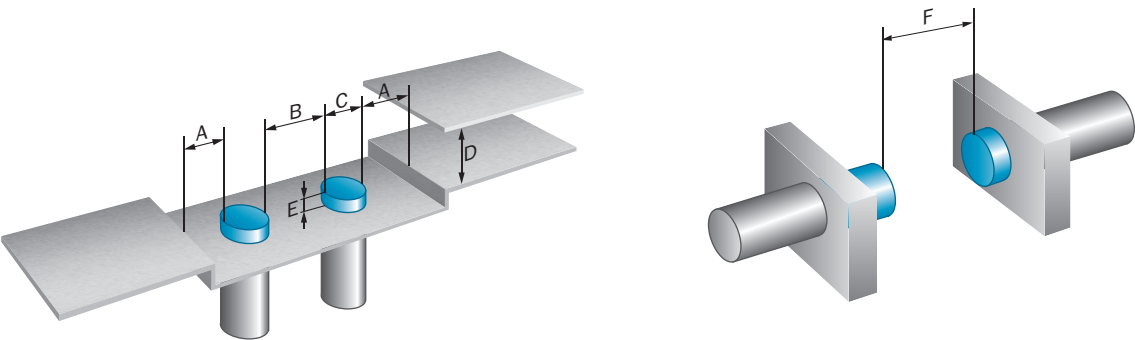
#### Certificates

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

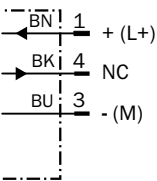
Classifications

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

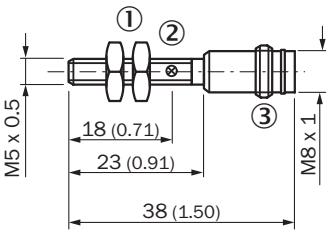
Installation note Flush installation



Connection diagram Cd-004



Dimensional drawing Standard-body, flush, connector



Dimensions in mm (inch)  
① Connection  
② Display LED  
③ fastening nuts (2 x); 7 mm hex, stainless steel

Recommended accessories

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

|                  | Brief description                                                                                                                                                                                                                                                      | Type       | part no. |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| Mounting systems |                                                                                                                                                                                                                                                                        |            |          |
|                  | <ul style="list-style-type: none"><li>• <b>Material:</b> Plastic</li><li>• <b>Details:</b> Plastic (PA6)</li><li>• <b>Items supplied:</b> Without mounting hardware</li><li>• <b>Usable for:</b> Round sensors with 5 mm housing diameter without fixed stop</li></ul> | BEF-KH-M05 | 2101066  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Type               | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                  | YF8U13-020VA1XLEAX | 2095860  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                  | YF8U13-050VA1XLEAX | 2095884  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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> 10 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                 | YF8U13-100VA1XLEAX | 2095885  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                    | YG8U13-020VA1XLEAX | 2096165  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                    | YG8U13-050VA1XLEAX | 2096166  |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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> 10 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                   | YG8U13-100VA1XLEAX | 2096209  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li> </ul>                                                                                                                                                                | STE-0803-G         | 6037322  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li> </ul>                                                                                                                                                              | DOS-0803-G         | 7902077  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, angled, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Solder connection</li> <li>• <b>Permitted cross-section:</b> ≤ 0.25 mm²</li> </ul>                                                                                                                                                                             | DOS-0803-W         | 7902078  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 3-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF8U13-020VA1M2A13 | 2096605  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 3-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF8U13-050VA1M2A13 | 2096606  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> </ul>                                                                                                                                                                           | YF8U13-C60VA1XLEAX | 2146368  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                       | Type               | part no. |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|                                                                                   | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                                                                                                                                                                                                                                                         |                    |          |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                    | YG8U13-010VA1XLEAX | 2146371  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-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> 3 m, 3-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                    | YG8U13-030VA1XLEAX | 2146372  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>                                  | YG8U13-C60VA1XLEAX | 2146370  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 3-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 3-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF8U13-010VA1M2A13 | 2146381  |

## 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)