



# IH06-04NNS-VW1

IMM

**INDUCTIVE PROXIMITY SENSORS**

**SICK**  
Sensor Intelligence.

### Ordering information



| Type           | part no. |
|----------------|----------|
| IH06-04NNS-VW1 | 7900182  |

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

Illustration may differ



### Detailed technical data

#### Features

|                                            |                    |
|--------------------------------------------|--------------------|
| <b>Housing</b>                             | Cylindrical        |
| <b>Housing</b>                             | Standard design    |
| <b>Diameter</b>                            | Ø 6.5 mm           |
| <b>Sensing range <math>S_n</math></b>      | 4 mm               |
| <b>Safe sensing range <math>S_a</math></b> | 3.24 mm            |
| <b>Installation type</b>                   | Non-flush          |
| <b>Switching frequency</b>                 | 1,800 Hz           |
| <b>Connection type</b>                     | Cable, 3-wire, 2 m |
| <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>                    | 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 % <sup>1)</sup> |
| <b>Voltage drop</b>                   | ≤ 2 V <sup>2)</sup>  |
| <b>Time delay before availability</b> | ≤ 50 ms              |
| <b>Hysteresis</b>                     | 1 % ... 20 %         |
| <b>Reproducibility</b>                | ≤ 5 % <sup>3)</sup>  |

<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  $T_a$ .

<sup>4)</sup> Of  $S_r$ .

|                                             |                                                                              |
|---------------------------------------------|------------------------------------------------------------------------------|
|                                             | 4)                                                                           |
| <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>Continuous current I<sub>a</sub></b>     | ≤ 200 mA                                                                     |
| <b>Cable material</b>                       | PVC                                                                          |
| <b>Conductor size</b>                       | 0.14 mm <sup>2</sup>                                                         |
| <b>Cable diameter</b>                       | Ø 3.1 mm                                                                     |
| <b>Short-circuit protection</b>             | ✓                                                                            |
| <b>Power-up pulse 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>                       | 45 mm                                                                        |
| <b>UL File No.</b>                          | NMFT2.E175606                                                                |

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

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

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

4) Of S<sub>r</sub>.

## Reduction factors

|                                   |                                                |
|-----------------------------------|------------------------------------------------|
| <b>Note</b>                       | The values are reference values which may vary |
| <b>Stainless steel (V2A, 304)</b> | Approx. 0.77                                   |
| <b>Aluminum (Al)</b>              | Approx. 0.47                                   |
| <b>Copper (Cu)</b>                | Approx. 0.42                                   |
| <b>Brass (Br)</b>                 | Approx. 0.52                                   |

## Installation note

|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>A</b>      | 6.5 mm                                |
| <b>B</b>      | 13 mm                                 |
| <b>C</b>      | 6.5 mm                                |
| <b>D</b>      | 12 mm                                 |
| <b>E</b>      | 8 mm                                  |
| <b>F</b>      | 32 mm                                 |

## Certificates

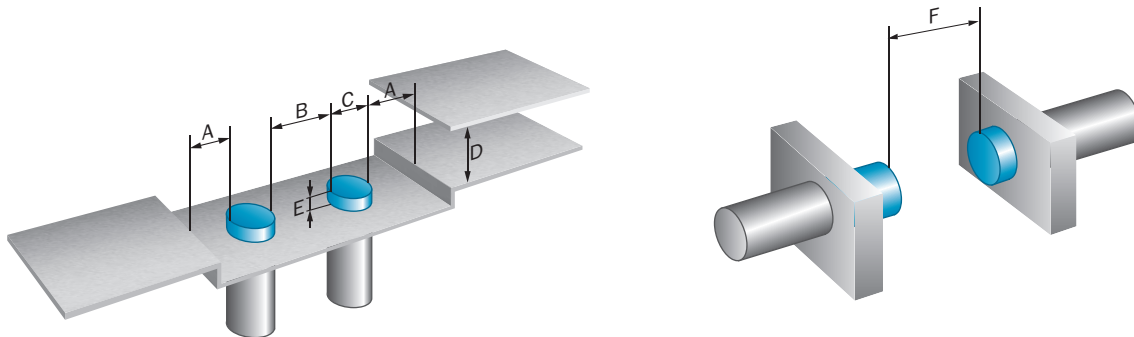
|                                           |   |
|-------------------------------------------|---|
| <b>EU declaration of conformity</b>       | ✓ |
| <b>UK declaration of conformity</b>       | ✓ |
| <b>Moroccan declaration of conformity</b> | ✓ |
| <b>China-RoHS</b>                         | ✓ |

## Classifications

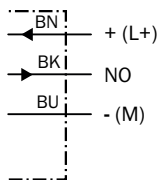
|                   |          |
|-------------------|----------|
| <b>ECLASS 5.0</b> | 27270101 |
|-------------------|----------|

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

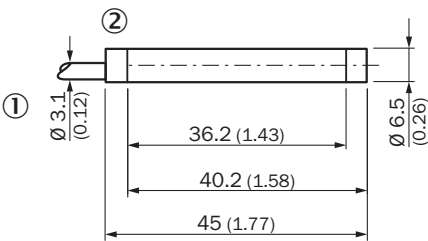
#### Installation note Non-flush installation



#### Connection diagram Cd-001



Dimensional drawing Standard-body, non-flush, cable



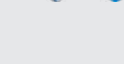
Dimensions in mm (inch)

- ① Connection
- ② Display LED

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 6.5 mm housing diameter without fixed stop</li></ul> | BEF-KH-M06 | 2101067  |

|                                                                                                                                                                            | 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  |
| <br> | <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  |
| <br> | <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)