



# IHM04-1B5PSVR8K

IMM

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

| Type            | part no. |
|-----------------|----------|
| IHM04-1B5PSVR8K | 1108726  |

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



### Detailed technical data

#### Features

|  |                                       |
|--|---------------------------------------|
| <b>Housing</b>                             | Cylindrical                           |
| <b>Housing</b>                             | Short-body                            |
| <b>Diameter</b>                            | Ø 4 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>                 | 4,800 Hz                              |
| <b>Connection type</b>                     | Cable with connector M8, 3-pin, 0.2 m |
| <b>Switching output</b>                    | PNP                                   |
| <b>Switching output detail</b>             | PNP                                   |
| <b>Output function</b>                     | NO                                    |
| <b>Electrical wiring</b>                   | DC 3-wire                             |
| <b>Enclosure rating</b>                    | IP67 <sup>1)</sup>                    |
| <b>Special features</b>                    | Visual adjustment indicator           |
| <b>Items supplied</b>                      | Cable flag, Polymatic 50 (1 x)        |

<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              |

<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>Hysteresis</b>                           | 1 % ... 15 %                               |
| <b>Reproducibility</b>                      | ≤ 2.5 % <sup>3)</sup>                      |
| <b>Temperature drift (of S<sub>r</sub>)</b> | ≤ 10 %                                     |
| <b>EMC</b>                                  | EN 60947-5-2                               |
| <b>Continuous current I<sub>a</sub></b>     | ≤ 200 mA                                   |
| <b>Cable material</b>                       | PUR  |
| <b>Cable diameter</b>                       | Ø 2.9 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, LCP                               |
| <b>Housing length</b>                       | 12 mm                                      |
| <b>UL File No.</b>                          | NRKH.E348498                               |

<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>             | 1,662 years |
| <b>DC<sub>avg</sub></b>             | 0 %         |
| <b>T<sub>M</sub> (mission time)</b> | 20 years    |

#### Communication interface

|                                       |  |
|---------------------------------------|--|
| <b>Communication interface</b>        | IO-Link V1.1                             |
| <b>Communication Interface detail</b> | COM2 (38,4 kBaud)                        |
| <b>Cycle time</b>                     | 10.4 ms                                  |
| <b>Process data length</b>            | 1 Byte                                   |
| <b>Process data structure</b>         | Bit 0 = Sr reached<br>Bit 1 = Sa reached |

#### 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. 0.78                                   |
| <b>Aluminum (Al)</b>              | Approx. 0.48                                   |
| <b>Copper (Cu)</b>                | Approx. 0.41                                   |
| <b>Brass (Br)</b>                 | Approx. 0.54                                   |

#### Installation note

|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>B</b>      | 5 mm                                  |
| <b>C</b>      | 4 mm                                  |
| <b>D</b>      | 4.5 mm                                |

|          |        |
|----------|--------|
| <b>F</b> | 8.5 mm |
|----------|--------|

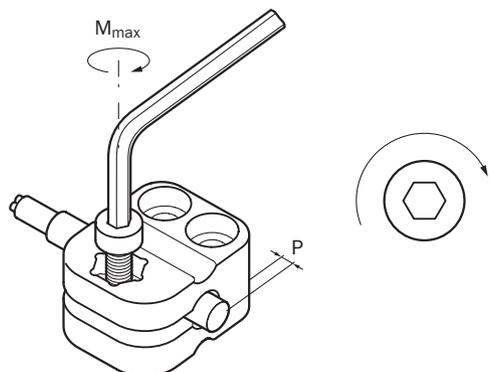
Certificates

|   |   |
|---|---|
| <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>                         | ✓ |
| <b>cULus certificate</b>                  | ✓ |
| <b>IO-Link certificate</b>                | ✓ |

Classifications

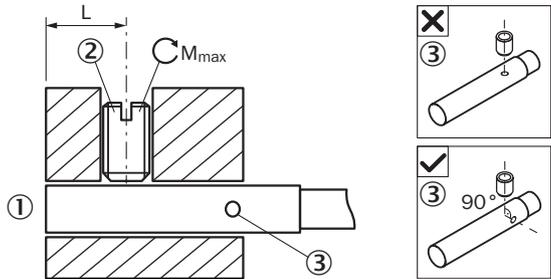
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270101 |
| <b>ECLASS 5.1.4</b>   | 27270101 |
| <b>ECLASS 6.0</b>     | 27270101 |
| <b>ECLASS 6.2</b>     | 27270101 |
| <b>ECLASS 7.0</b>     | 27270101 |
| <b>ECLASS 8.0</b>     | 27270101 |
| <b>ECLASS 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 Mounting using BEF-KH-M04 bracket



| Sensor type                      | Mounting adapter             | Overrun (P)                 | Max. tightening torque ( $M_{max}$ ) |
|----------------------------------|------------------------------|-----------------------------|--------------------------------------|
| IHM04-0B8*****<br>IHM04-1B5***** | BEF-KH-M04, part no. 2101065 | 0 mm ... 2 mm / $\geq 2$ mm | $\leq 0.4$ Nm / $\leq 0.6$ Nm        |

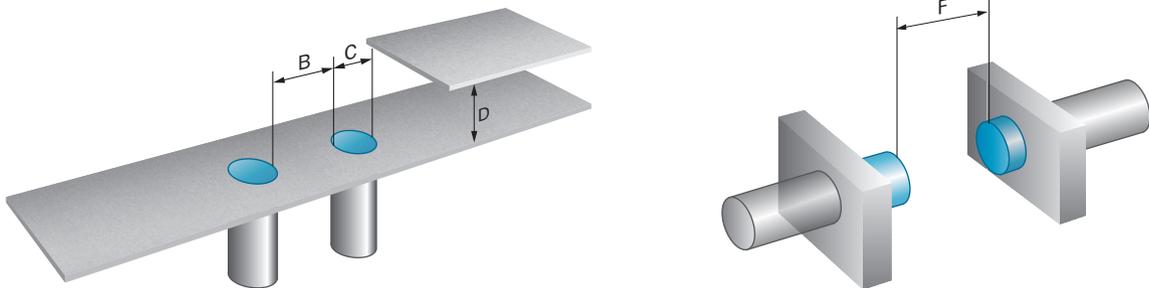
Installation note Fixing with setscrew



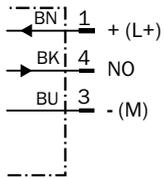
- ① Sensing face
- ② Recommended setscrew: M3, flat point
- ③ Display LED

| Sensor type                        | Mounting area (L) | Max. tightening torque ( $M_{max}$ ) |
|------------------------------------|-------------------|--------------------------------------|
| IHM04-1B5****K                     | 5.5 mm ... 9 mm   | $\leq 0.2$ Nm                        |
| IHM04-0B8****S<br>IHM04-1B5****S   | 5.5 mm ... 19 mm  | $\leq 0.2$ Nm                        |
| IHM04-0B8***TOS<br>IHM04-1B5***TOS | 5.5 mm ... 18 mm  | $\leq 0.2$ Nm                        |

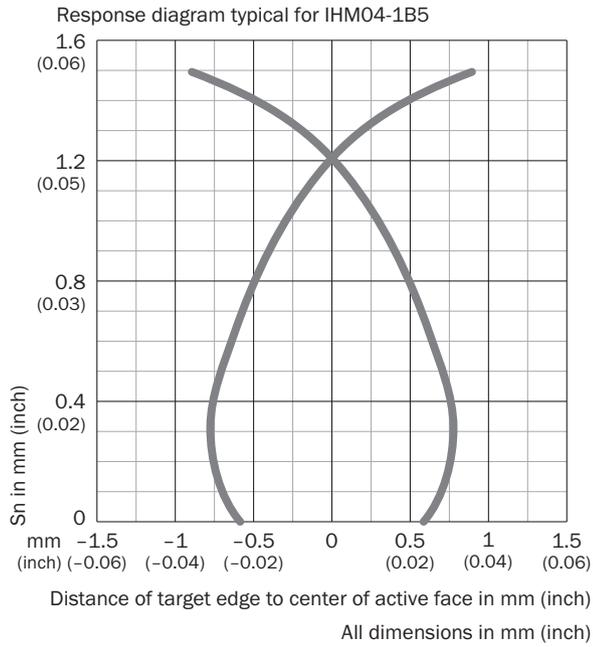
Installation note Flush installation



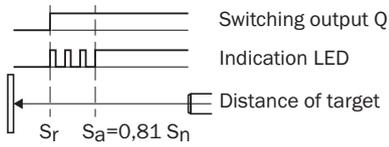
Connection diagram Cd-002



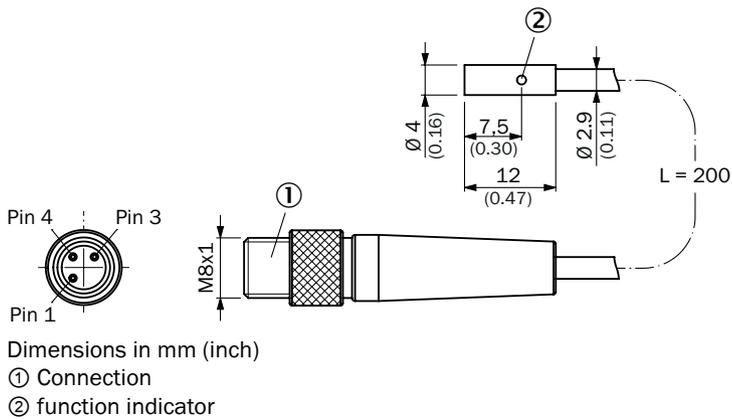
Response diagram



Functional principle Installation aid



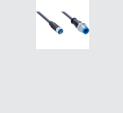
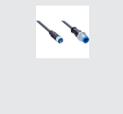
Dimensional drawing IHM04, short variant, flush, pigtail



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 4 mm housing diameter without fixed stop</li></ul> | BEF-KH-M04 | 2101065  |

|   | Brief description  | Type               | part no. |
|---|--|--------------------|----------|
| connectors and cables   |  |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Number of slots:</b> 4</li> <li>• <b>Slot connection type:</b> M8, 3-pin, A-coded, female connector</li> <li>• <b>Items supplied:</b> 5 x labeling plates</li> <li>• <b>Description:</b> Unshielded</li> </ul>   | Y8A34A2-C2A8000XXX | 2115733  |
|    | <ul style="list-style-type: none"> <li>• <b>Number of slots:</b> 4</li> <li>• <b>Slot connection type:</b> M8, 3-pin, A-coded, female connector</li> <li>• <b>Items supplied:</b> 5 x labeling plates</li> <li>• <b>Cable:</b> 5 m, 6-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Application:</b> Drag chain operation</li> </ul>   | Y8A34A2-LXXXUAA050 | 2115727  |
|    | <ul style="list-style-type: none"> <li>• <b>Number of slots:</b> 6</li> <li>• <b>Slot connection type:</b> M8, 3-pin, A-coded, female connector</li> <li>• <b>Items supplied:</b> 5 x labeling plates</li> <li>• <b>Description:</b> Unshielded</li> </ul>   | Y8A36A2-C2A8000XXX | 2115734  |
|    | <ul style="list-style-type: none"> <li>• <b>Number of slots:</b> 6</li> <li>• <b>Slot connection type:</b> M8, 3-pin, A-coded, female connector</li> <li>• <b>Items supplied:</b> 5 x labeling plates</li> <li>• <b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Application:</b> Drag chain operation</li> </ul>   | Y8A36A2-LXXXUBA050 | 2115728  |
|    | <ul style="list-style-type: none"> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection type head A:</b> Male connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul>   | STE-0803-G         | 6037322  |
|   | <ul style="list-style-type: none"> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection type head A:</b> Male connector, M8, 3-pin, angled, A-coded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul>   | STE-0803-WSK       | 6053170  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                  | YF8U13-020UA1XLEAX | 2094782  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                  | YF8U13-050UA1XLEAX | 2094788  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                    | YG8U13-020UA1XLEAX | 2094794  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                    | YG8U13-050UA1XLEAX | 2095586  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF8U13-020UA1M2A13 | 2096169  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> </ul>  | YF8U13-050UA1M2A13 | 2096170  |

|   | Brief description   | Type               | part no. |
|---|---|--------------------|----------|
|    | <ul style="list-style-type: none"> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, angled, 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, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YG8U13-020UA1M2A13 | 2095748  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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, M8, 3-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 3-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YF8U13-020UA1M8U13 | 2096304  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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, M8, 3-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 3-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YF8U13-050UA1M8U13 | 2096308  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Male connector, M8, 3-pin, straight, A-coded</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 3-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YG8U13-020UA1M8U13 | 2107781  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M8, 3-pin, angled, 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, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>  | YG8U13-050UA1M2A13 | 2122842  |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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> 3 m, 3-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>  | YF8U13-030UA1M2A13 | 2144589  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YG8U13-C60UA1XLEAX | 2145889  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <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, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>   | YG8U13-030UA1XLEAX | 2145891  |

## 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)