



# IQ40-20BPPKK0S

IQG

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

| Type          | Part no. |
|---------------|----------|
| IQ40-20BPPK0S | 1071860  |

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



## Detailed technical data

### Features

|  |                                  |
|--|----------------------------------|
| <b>Housing</b>                             | Rectangular                      |
| <b>Housing</b>                             | Standard design                  |
| <b>Dimensions (W x H x D)</b>              | 40 mm x 40 mm x 118 mm           |
| <b>Sensing range <math>S_n</math></b>      | 20 mm                            |
| <b>Safe sensing range <math>S_a</math></b> | 16.2 mm                          |
| <b>Installation type</b>                   | Flush                            |
| <b>Switching frequency</b>                 | 150 Hz                           |
| <b>Connection type</b>                     | Cable gland                      |
| <b>Switching output</b>                    | PNP                              |
| <b>Output function</b>                     | Complementary                    |
| <b>Electrical wiring</b>                   | DC 4-wire                        |
| <b>Enclosure rating</b>                    | IP67, IP68, IP69K                |
| <b>Special applications</b>                | Difficult application conditions |

### Mechanics/electronics

|  |                            |
|--|----------------------------|
| <b>Supply voltage</b>                          | 10 V DC ... 30 V DC        |
| <b>Ripple</b>                                  | $\leq 10 V_{pp}^{1)}$      |
| <b>Voltage drop</b>                            | $\leq 2 V$                 |
| <b>Time delay before availability</b>          | $\leq 50 ms$               |
| <b>Hysteresis</b>                              | 3 % ... 15 % <sup>2)</sup> |
| <b>Reproducibility</b>                         | $\leq 2 %$                 |
| <b>Temperature drift (of <math>S_r</math>)</b> | $\pm 10 %$                 |
| <b>Continuous current <math>I_a</math></b>     | $\leq 200 mA$              |

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

<sup>2)</sup> Of  $S_r$ .

<sup>3)</sup> Reference voltage: 50 V DC.

|                                       |                                  |
|---------------------------------------|----------------------------------|
| <b>No load current</b>                | 12.5 mA                          |
| <b>Cable gland clamping area</b>      | M20 1.5                          |
| <b>Wire size</b>                      | ≤ 2.5 mm <sup>2</sup>            |
| <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, 1 mm |
| <b>Ambient operating temperature</b>  | -25 °C ... +85 °C                |
| <b>Ambient temperature, storage</b>   | -40 °C ... +85 °C                |
| <b>Housing material</b>               | Plastic, PA 66                   |
| <b>Sensing face material</b>          | Plastic, PA 66                   |
| <b>Tightening torque, max.</b>        | 1.8 Nm                           |
| <b>Protection class</b>               | II <sup>3)</sup>                 |
| <b>UL File No.</b>                    | E348498                          |

<sup>1)</sup> Of Ub.

<sup>2)</sup> Of S<sub>r</sub>.

<sup>3)</sup> Reference voltage: 50 V DC.

#### Safety-related parameters

|                                     |             |
|-------------------------------------|-------------|
| <b>MTTF<sub>D</sub></b>             | 1,125 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. 0.71                                   |
| <b>Aluminum (Al)</b>              | Approx. 0.3                                    |
| <b>Copper (Cu)</b>                | Approx. 0.25                                   |
| <b>Brass (Br)</b>                 | Approx. 0.36                                   |

#### Installation note

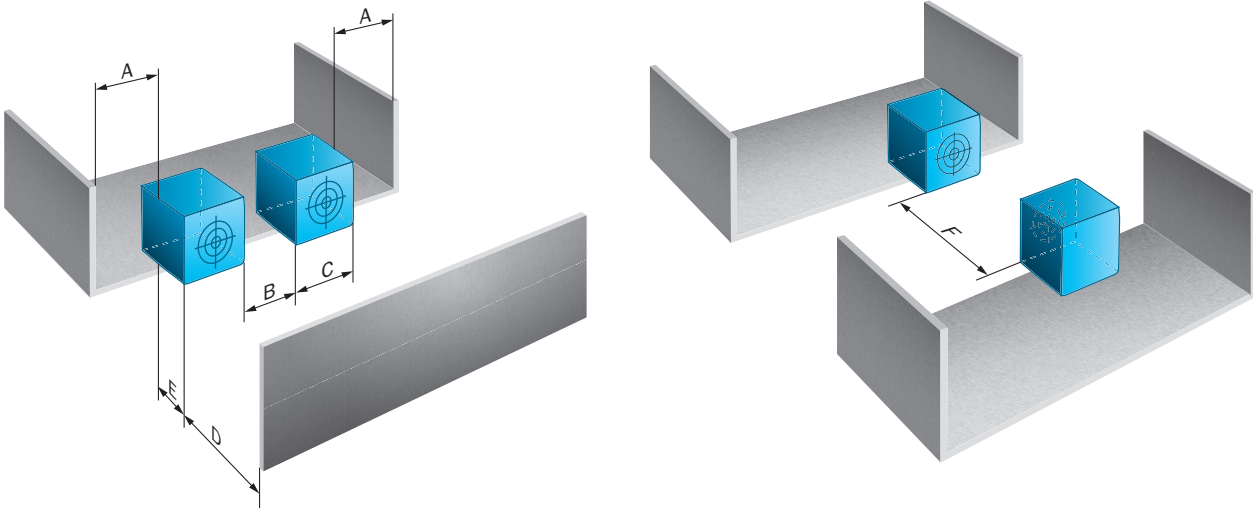
|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>A</b>      | 0 mm                                  |
| <b>B</b>      | 40 mm                                 |
| <b>C</b>      | 40 mm                                 |
| <b>D</b>      | 60 mm                                 |
| <b>E</b>      | 0 mm                                  |
| <b>F</b>      | 70 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 |

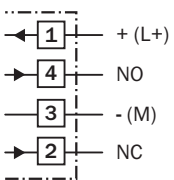
|                       |          |
|-----------------------|----------|
| <b>ECLASS 7.0</b>     | 27270101 |
| <b>ECLASS 8.0</b>     | 27270101 |
| <b>ECLASS 8.1</b>     | 27270101 |
| <b>ECLASS 9.0</b>     | 27270101 |
| <b>ECLASS 10.0</b>    | 27270101 |
| <b>ECLASS 11.0</b>    | 27270101 |
| <b>ECLASS 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

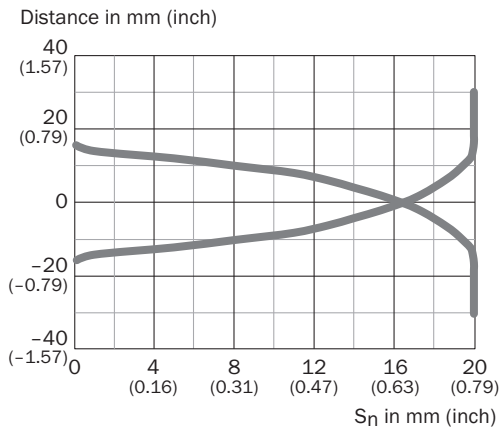


Connection diagram

Cd-030

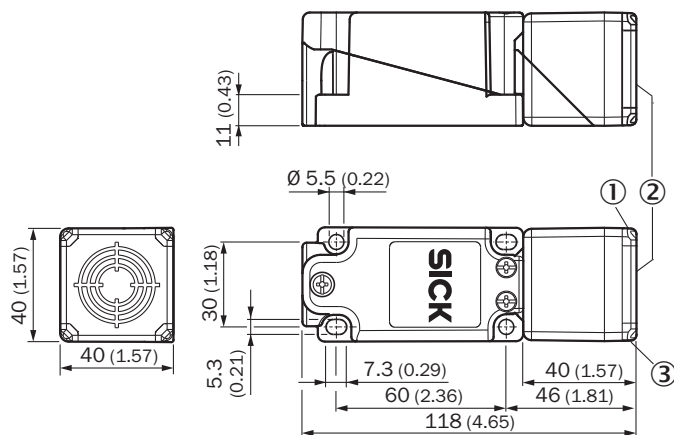


## Response diagram



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


IQG Standard, cable gland






- ① LED output state, yellow
- ② Sensing face
- ③ Operational status LED, green

## Recommended accessories

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

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
| Plug connectors and cables  |   |                    |          |
|  | <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  |

|   | 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>                             | YG2A14-050VB3XLEAX | 2095897  |
|  | <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> <math>\leq 0.75 \text{ mm}^2</math></li> </ul> | DOS-1204-G         | 6007302  |
|  | <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> <math>\leq 0.75 \text{ mm}^2</math></li> </ul>   | STE-1204-G         | 6009932  |

## 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)