



# 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>                                  | $\leq 10 \text{ V}_{pp}^{1)}$ |
| <b>Voltage drop</b>                            | $\leq 2 \text{ V}$            |
| <b>Current consumption</b>                     | $20 \text{ mA}^{2)}$          |
| <b>Time delay before availability</b>          | $\leq 50 \text{ ms}$          |
| <b>Hysteresis</b>                              | $3 \% \dots 15 \%^{3)}$       |
| <b>Reproducibility</b>                         | $\leq 2 \%$                   |
| <b>Temperature drift (of <math>S_r</math>)</b> | $\pm 10 \%$                   |
| <b>Continuous current <math>I_a</math></b>     | $\leq 200 \text{ mA}$         |

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

<sup>2)</sup> Without load.

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

<sup>4)</sup> Reference voltage: 50 V DC.

|                                       |                                  |
|---------------------------------------|----------------------------------|
| <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 storage temperature</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>4)</sup>                 |
| <b>UL File No.</b>                    | E348498                          |

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

<sup>2)</sup> Without load.

<sup>3)</sup> Of S<sub>r</sub>.

<sup>4)</sup> Reference voltage: 50 V DC.

#### Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 1,406 years |
| <b>DC<sub>avg</sub></b> | 0%          |

#### 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

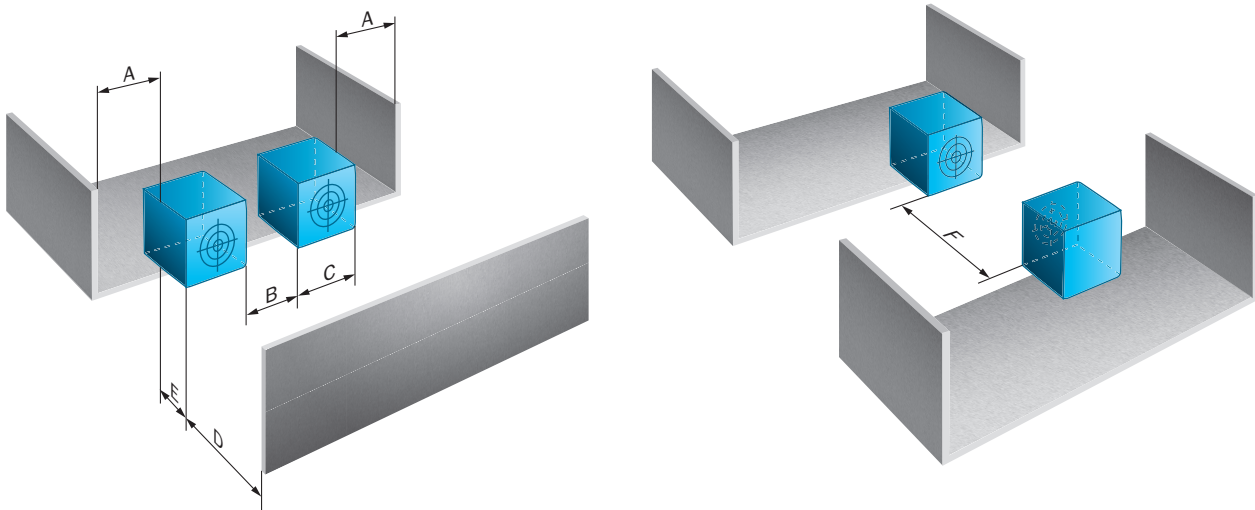
|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
| <b>A</b>      | 0 mm                                  |
| <b>B</b>      | 40 mm                                 |
| <b>C</b>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

#### Classifications

|                     |          |
|---------------------|----------|
| <b>ECI@ss 5.0</b>   | 27270101 |
| <b>ECI@ss 5.1.4</b> | 27270101 |
| <b>ECI@ss 6.0</b>   | 27270101 |
| <b>ECI@ss 6.2</b>   | 27270101 |
| <b>ECI@ss 7.0</b>   | 27270101 |
| <b>ECI@ss 8.0</b>   | 27270101 |

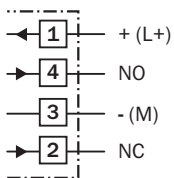
|                       |          |
|-----------------------|----------|
| <b>ECI@ss 8.1</b>     | 27270101 |
| <b>ECI@ss 9.0</b>     | 27270101 |
| <b>ECI@ss 10.0</b>    | 27270101 |
| <b>ECI@ss 11.0</b>    | 27270101 |
| <b>ETIM 5.0</b>       | EC002714 |
| <b>ETIM 6.0</b>       | EC002714 |
| <b>ETIM 7.0</b>       | EC002714 |
| <b>UNSPSC 16.0901</b> | 39122230 |

## Installation note



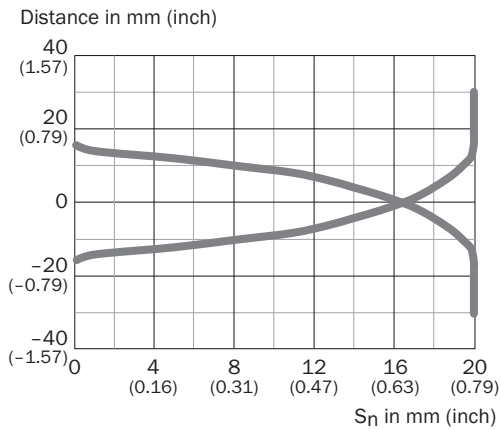
## Connection diagram

Cd-030



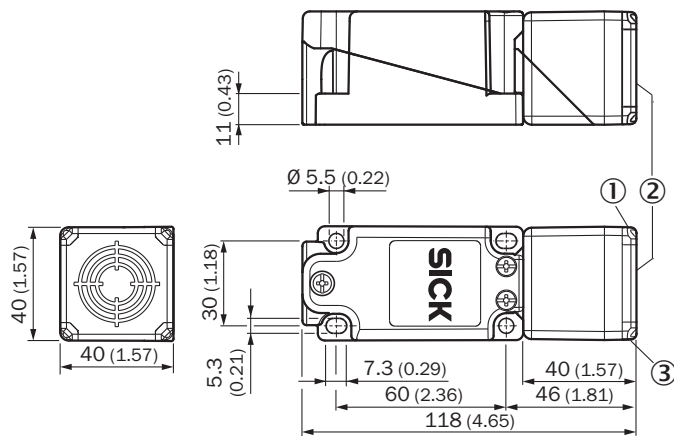
## Characteristic curve

IQ40-20Bxxxxx



## 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                                                          |                                                                                                                                       |                    |          |
|  | Head A: female connector, M12, 4-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235  |

|                                                                                   | Brief description                                                                                                                   | Type               | Part no. |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | Head A: female connector, M12, 4-pin, angled, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YG2A14-050VB3XLEAX | 2095897  |
|  | Head A: female connector, M12, 4-pin, straight<br>Head B: -<br>Cable: unshielded                                                    | DOS-1204-G         | 6007302  |
|  | Head A: male connector, M12, 4-pin, straight<br>Head B: -<br>Cable: unshielded                                                      | 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)