

# IM30-20B-A-ZC1

IMA

**INDUCTIVE PROXIMITY SENSORS**

**SICK**  
Sensor Intelligence.

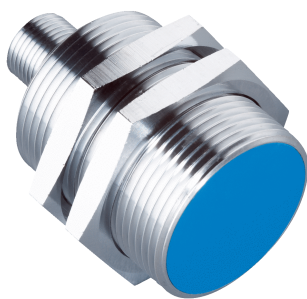


Illustration may differ



## Ordering information

| Type           | Part no. |
|----------------|----------|
| IM30-20B-A-ZC1 | 6033125  |

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

## Detailed technical data

### Features

|  |  |
|--|--|
| <b>Housing</b>                                       | Metric   |
| <b>Thread size</b>                                   | M30 x 1.5  |
| <b>Diameter</b>                                      | Ø 30 mm  |
| <b>Sensing range <math>S_n</math></b>                | 0 mm ... 20 mm   |
| <b>Installation type</b>                             | Quasi-flush  |
| <b>Connection type</b>                               | Male connector M12, 4-pin  |
| <b>Repeatability (<math>T_a</math> not constant)</b> | 0.3 mm <sup>1) 2) 3)</sup>   |
| <b>Repeatability (<math>T_a</math> constant)</b>     | ± 0.05 mm  |
| <b>Resolution</b>                                    | ≤ 5 µm   |
| <b>Enclosure rating</b>                              | IP67 <sup>4)</sup>   |
| <b>Special features</b>                              | Analog output  |
| <b>Items supplied</b>                                | Mounting nut, brass, chromium-plated (2x)<br>Toothed washer, stainless steel (2 x) |

<sup>1)</sup> As per IEC 60947-5-2.

<sup>2)</sup>  $U_b = DC 20 V \dots 30 V$ .

<sup>3)</sup>  $T_A = 23 \text{ °C} \pm 5 \text{ °C}$ .

<sup>4)</sup> According to EN 60529: 2000-09.

### Mechanics/electronics

|  |                      |
|--|----------------------|
| <b>Supply voltage</b>                          | 15 V DC ... 30 V DC  |
| <b>Ripple</b>                                  | ≤ 20 % <sup>1)</sup> |
| <b>Time delay before availability</b>          | ≤ 50 ms              |
| <b>Temperature drift (of <math>S_n</math>)</b> | ≤ 10 %               |

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

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

<sup>3)</sup> At voltage output QA1.

<sup>4)</sup> -3 dB if  $S_n = 10 \text{ mm}$ .

<sup>5)</sup> QA1 loaded, QA2 unloaded.

<sup>6)</sup> QA1 loaded, QA2 loaded: see temperature reduction.

|                                      |  |
|--------------------------------------|--|
| <b>No load current</b>               | $\leq 12 \text{ mA}^{2)}$  |
| <b>Load current</b>                  | $\pm 10 \text{ mA}^{3)}$   |
| <b>Max. load resistance</b>          | $\leq 400 \Omega \text{ Ub} = 15 \text{ V}$<br>$\leq 1,000 \Omega \text{ Ub} = 30 \text{ V}$             |
| <b>Output voltage Q<sub>A1</sub></b> | s = 0 mm: 0 V/-0 +0,4 V (23 °C)<br>s = 10 mm: +5,2 V/ +0,4 V (23 °C)<br>s = 20 mm: +10 V/ +0,4 V (23 °C) |
| <b>Output current Q<sub>A2</sub></b> | s = 0 mm: 4 mA/ +0,8 mA (23 °C)<br>s = 20 mm: 20 mA +/-0,8 mA (23 °C)                                    |
| <b>Output voltage</b>                | 0 V ... 10 V   |
| <b>Bandwidth</b>                     | 200 Hz <sup>4)</sup>   |
| <b>Short-circuit protection</b>      | ✓  |
| <b>Ambient operating temperature</b> | -25 °C ... +70 °C <sup>5) 6)</sup>   |
| <b>Housing material</b>              | Brass, chromium-plated   |
| <b>Sensing face material</b>         | Plastic, PTB   |
| <b>Housing length</b>                | 73.5 mm  |
| <b>Thread length</b>                 | 52 mm  |

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

2) Without load.

3) At voltage output QA1.

4) -3 dB if S<sub>n</sub> = 10 mm.

5) QA1 loaded, QA2 unloaded.

6) QA1 loaded, QA2 loaded: see temperature reduction.

#### Safety-related parameters

|                                     |          |
|-------------------------------------|----------|
| <b>MTTF<sub>D</sub></b>             | 87 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. 0.65                                   |
| <b>Aluminum (Al)</b>              | Approx. 0.2                                    |
| <b>Copper (Cu)</b>                | Approx. 0.17                                   |
| <b>Brass (Br)</b>                 | Approx. 0.3                                    |

#### Installation note

|               |                                       |
|---------------|---------------------------------------|
| <b>Remark</b> | Associated graphic see "Installation" |
|---------------|---------------------------------------|

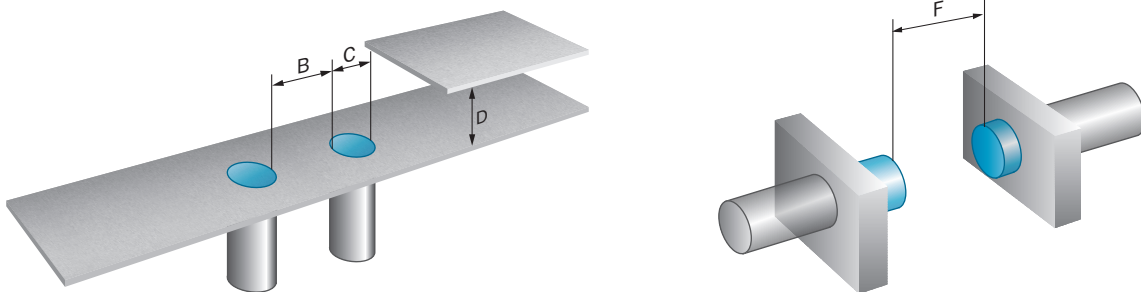
#### Classifications

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

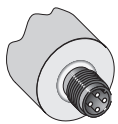
|                       |          |
|-----------------------|----------|
| <b>ECLASS 9.0</b>     | 27270101 |
| <b>ECLASS 10.0</b>    | 27270101 |
| <b>ECLASS 11.0</b>    | 27270101 |
| <b>ECLASS 12.0</b>    | 27274001 |
| <b>ETIM 5.0</b>       | EC002714 |
| <b>ETIM 6.0</b>       | EC002714 |
| <b>ETIM 7.0</b>       | EC002714 |
| <b>ETIM 8.0</b>       | EC002714 |
| <b>UNSPSC 16.0901</b> | 39122230 |

### Installation note

Flush installation

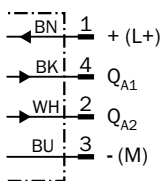


### Connection type

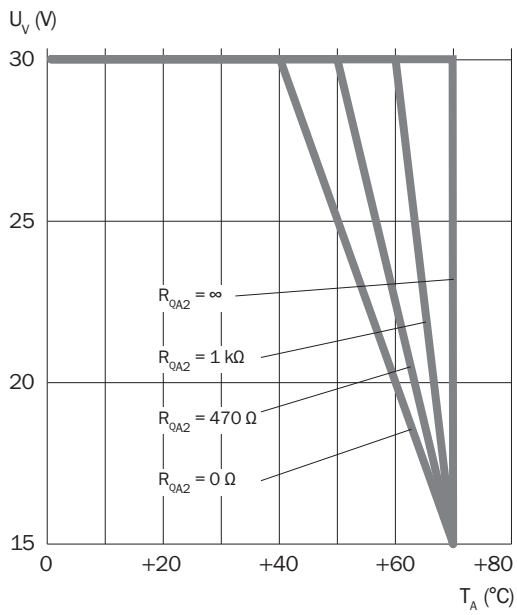


### Connection diagram

Cd-022

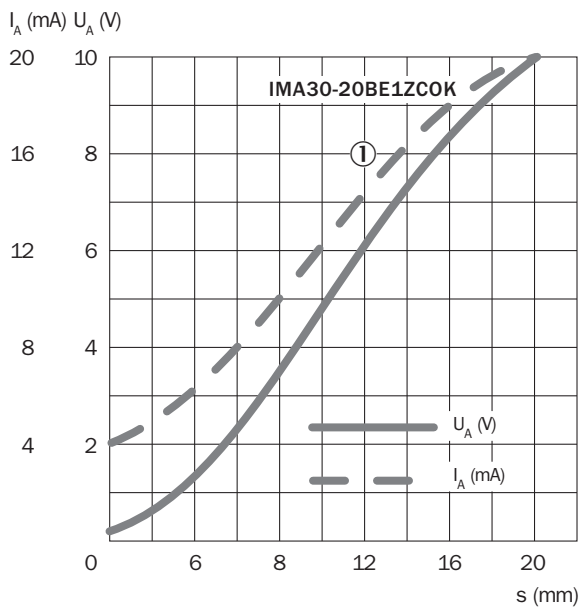


### Temperature derating



### Response diagram

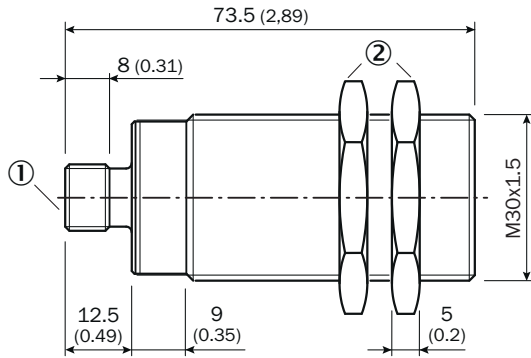
IMA30



① St37 (FE)

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

IMA30, connector, quasi-flush







- ① Connection
- ② Fastening nuts (2x); width across 36, metal

**Recommended accessories**

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

|                                     | Brief description   | Type               | Part no. |
|-------------------------------------|---|--------------------|----------|
| <b>Mounting brackets and plates</b> |   |                    |          |
|                                     | Mounting plate for M30 sensors, steel, zinc coated, without mounting hardware   | BEF-WG-M30         | 5321871  |
|                                     | Mounting bracket for M30 sensors, steel, zinc coated, without mounting hardware   | BEF-WN-M30         | 5308445  |
| <b>Others</b>                       |   |                    |          |
|                                     | <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> 2 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF2A14-020VB3XLEAX | 2096234  |
|                                     | <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  |
|                                     | <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> 2 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>   | YG2A14-020VB3XLEAX | 2095895  |
|                                     | <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  |

|   | Brief description  | Type               | Part no. |
|---|--|--------------------|----------|
|  | <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> 2 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A14-020UB3XLEAX | 2095607  |
|  | <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, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |
|  | <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> 2 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>   | YG2A14-020UB3XLEAX | 2095766  |
|  | <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, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>   | YG2A14-050UB3XLEAX | 2095767  |

## SICK AT A GLANCE

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