

# IMA08-04BE3ZC0K

IMA

**INDUCTIVE PROXIMITY SENSORS**

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
IMA08-04BE3ZC0K	6041782

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

Illustration may differ



## Detailed technical data

### Features

<b>Housing</b>	Metric
<b>Thread size</b>	M8 x 1
<b>Diameter</b>	Ø 8 mm
<b>Sensing range <math>S_n</math></b>	0 mm ... 4 mm
<b>Installation type</b>	Quasi-flush
<b>Connection type</b>	Male connector M12, 4-pin
<b>Output function</b>	Analog
<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>	± 0.01 mm
<b>Resolution</b>	≤ 1 µm
<b>Enclosure rating</b>	IP67 <sup>4)</sup>
<b>Special features</b>	Analog output, quadruple sensing range
<b>Items supplied</b>	Mounting nut, brass, chromium-plated (2x) Toothed washer, stainless steel (2 x)

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

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

<sup>3)</sup>  $T_A$  = 23 °C ± 5 °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>

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

<sup>2)</sup> At 0 °C ... +70 °C.

<sup>3)</sup> At -25 °C ... 0 °C.

<sup>4)</sup> Without load.

<sup>5)</sup> At voltage output QA1.

<sup>6)</sup> -3 dB if  $S_n$  = 2 mm.

<b>Time delay before availability</b>	≤ 50 ms
<b>Temperature drift (of S<sub>r</sub>)</b>	± 5 % <sup>2)</sup> ± 10 % <sup>3)</sup>
<b>No load current</b>	≤ 10 mA <sup>4)</sup>
<b>Load current</b>	± 10 mA <sup>5)</sup>
<b>Output voltage Q<sub>A1</sub></b>	s = 0 mm: 0 V/-0 +0,4 V (23 °C) s = 2 mm: +5,2 V/ +0,4 V (23 °C) s = 4 mm: +10 V/ +0,4 V (23 °C)
<b>Output voltage</b>	0 V ... 10 V
<b>Bandwidth</b>	1,600 Hz <sup>6)</sup>
<b>Short-circuit protection</b>	✓
<b>Ambient operating temperature</b>	-25 °C ... +70 °C
<b>Housing material</b>	Brass, chromium-plated
<b>Sensing face material</b>	Plastic, PTB
<b>Housing length</b>	66 mm
<b>Thread length</b>	44 mm

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

2) At 0 °C ... +70 °C.

3) At -25 °C ... 0 °C.

4) Without load.

5) At voltage output QA1.

6) -3 dB if S<sub>n</sub> = 2 mm.

#### Safety-related parameters

<b>MTTF<sub>D</sub></b>	117 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. 0.68
<b>Aluminum (Al)</b>	Approx. 0.28
<b>Copper (Cu)</b>	Approx. 0.25
<b>Brass (Br)</b>	Approx. 0.4

#### Installation note

<b>Remark</b>	Associated graphic see "Installation"
<b>A</b>	4 mm
<b>B</b>	12 mm
<b>C</b>	8 mm
<b>D</b>	12 mm
<b>E</b>	1 mm
<b>F</b>	40 mm

#### Certificates

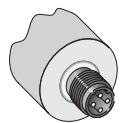
<b>EU declaration of conformity</b>	✓
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UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓

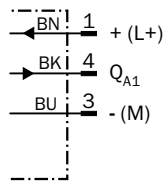
Classifications

ECLASS 5.0	27270101
ECLASS 5.1.4	27270101
ECLASS 6.0	27270101
ECLASS 6.2	27270101
ECLASS 7.0	27270101
ECLASS 8.0	27270101
ECLASS 8.1	27270101
ECLASS 9.0	27270101
ECLASS 10.0	27270101
ECLASS 11.0	27270101
ECLASS 12.0	27274001
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0	EC002714
ETIM 8.0	EC002714
UNSPSC 16.0901	39122230

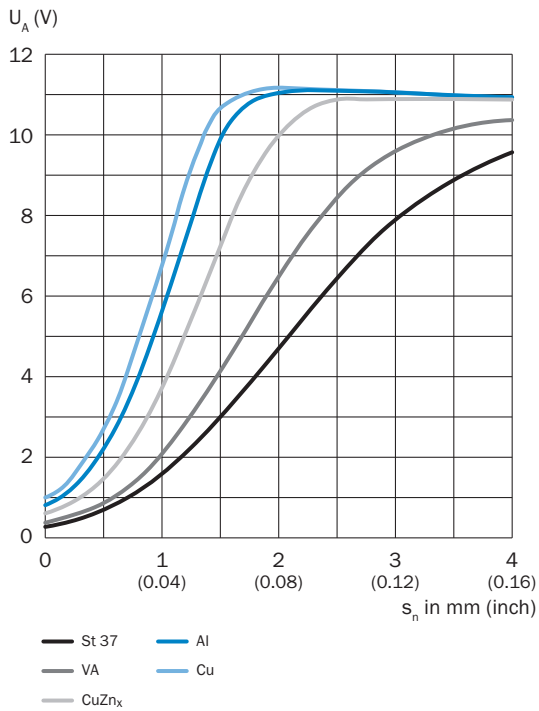
Connection type



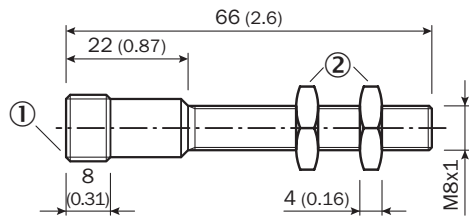
Connection diagram Cd-021



## Response diagram Reduction factors



## Dimensional drawing IMA08, connector, quasi-flush













Dimensions in mm (inch)

① Connection

② Fastening nuts (2x); width across 13, metal

## Recommended accessories

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

	Brief description	Type	part no.
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> 2 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</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, Uncontaminated zones</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, Uncontaminated zones</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, Uncontaminated zones</li> </ul>	YG2A14-050VB3XLEAX	2095897
	<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> 0.6 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-C60VB3XLEAX	2145709
	<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> 1 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-010VB3XLEAX	2145710
	<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> 0.6 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-C60VB3XLEAX	2145707
	<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> 1 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-010VB3XLEAX	2145708
	<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> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</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> </ul>	YF2A14-050UB3XLEAX	2095608

	Brief description	Type	part no.
  	<ul style="list-style-type: none"> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> <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> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</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> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-050UB3XLEAX	2095767
	<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> 0.6 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-C60UB3XLEAX	2145654
	<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> 1 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-010UB3XLEAX	2145655
	<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> 3 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-030UB3XLEAX	2145656
	<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> 0.6 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-C60UB3XLEAX	2145657
	<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> 1 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-010UB3XLEAX	2145658
Mounting systems			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Clamping block for round sensors M8, without fixed stop</li> <li>• <b>Material:</b> Plastic</li> <li>• <b>Details:</b> Plastic (PA12), glass-fiber reinforced</li> <li>• <b>Items supplied:</b> Mounting hardware included</li> </ul>	BEF-KH-M08	2051477
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Clamping block for round sensors M8, with fixed stop</li> <li>• <b>Material:</b> Plastic</li> <li>• <b>Details:</b> Plastic (PA12), glass-fiber reinforced</li> <li>• <b>Items supplied:</b> Mounting hardware included</li> </ul>	BEF-KHF-M08	2051478
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Mounting bracket for M8 sensors</li> <li>• <b>Material:</b> Steel</li> <li>• <b>Details:</b> Steel, zinc coated</li> <li>• <b>Items supplied:</b> Without mounting hardware</li> </ul>	BEF-WN-M08	5321721

## 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)