

IMA12-06BE3ZC0K

IMA

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
IMA12-06BE3ZCOK	6041792

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

## Detailed technical data

### Features

<b>Housing</b>	Cylindrical thread design
<b>Thread size</b>	M12 x 1
<b>Diameter</b>	Ø 12 mm
<b>Sensing range <math>S_n</math></b>	0 mm ... 6 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

<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>
<b>Time delay before availability</b>	≤ 50 ms
<b>Temperature drift (of <math>S_r</math>)</b>	± 5 % <sup>2)</sup> ± 10 % <sup>3)</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  $S_n = 3 mm$ .

<b>Current consumption, no load</b>	≤ 12 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 = 3 mm: +5,2 V/ +0,4 V (23 °C) s = 6 mm: +10 V/ +0,4 V (23 °C)
<b>Output voltage</b>	0 V ... 10 V
<b>Bandwidth</b>	1,000 Hz <sup>6)</sup>
<b>Short-circuit protection</b>	✓
<b>Reverse polarity 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>	45 mm
<b>Thread length</b>	29 mm
<b>Items supplied</b>	Mounting nut, brass, chromium-plated (2x) Washer, brass, chromium-plated, with locking teeth (2x)

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

<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<sub>n</sub> = 3 mm.

#### Safety-related parameters

<b>MTTF<sub>D</sub></b>	88 years
<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. 0.47
<b>Aluminum (Al)</b>	Approx. 0.28
<b>Copper (Cu)</b>	Approx. 0.2
<b>Brass (Br)</b>	Approx. 0.35

#### Installation note

<b>Remark</b>	Associated graphic see "Installation"
<b>A</b>	6 mm
<b>B</b>	18 mm
<b>C</b>	12 mm
<b>D</b>	18 mm
<b>E</b>	2 mm
<b>F</b>	60 mm

#### Classifications

<b>ECl@ss 5.0</b>	27270101
<b>ECl@ss 5.1.4</b>	27270101

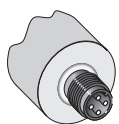
<b>ECl@ss 6.0</b>	27270101
<b>ECl@ss 6.2</b>	27270101
<b>ECl@ss 7.0</b>	27270101
<b>ECl@ss 8.0</b>	27270101
<b>ECl@ss 8.1</b>	27270101
<b>ECl@ss 9.0</b>	27270101
<b>ECl@ss 10.0</b>	27270101
<b>ECl@ss 11.0</b>	27270101
<b>ETIM 5.0</b>	EC002714
<b>ETIM 6.0</b>	EC002714
<b>ETIM 7.0</b>	EC002714
<b>ETIM 8.0</b>	EC002714
<b>UNSPSC 16.0901</b>	39122230

### Installation note

Flush installation

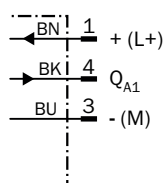


### Connection type



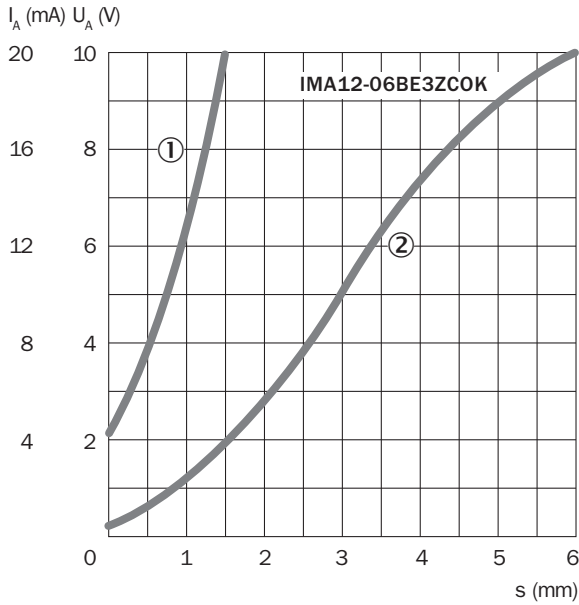
### Connection diagram

Cd-021



## Response diagram

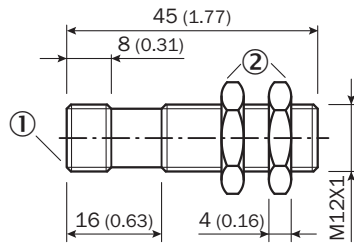
IMA12



- ① Aluminium (AL)
- ② St37 (FE)

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


IMA12, connector, quasi-flush













- ① Connection
- ② Fastening nuts (2x); width across 17, metal

## Recommended accessories

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

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N05 for universal clamp bracket, M12, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N05	2051611

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
<b>Mounting brackets and plates</b>			
	Mounting bracket for M12 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M12	5308447
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A14-020UB3XLEAX	2095607
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A14-020VB3XLEAX	2096234
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A14-050UB3XLEAX	2095608
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YG2A14-020UB3XLEAX	2095766
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A14-020VB3XLEAX	2095895
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YG2A14-050UB3XLEAX	2095767
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A14-050VB3XLEAX	2095897
<b>Terminal and alignment brackets</b>			
	Clamping block for round sensors M12, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KH-M12	2051479
	Clamping block for round sensors M12, with fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KHF-M12	2051480

## 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)