

# IMA12-02BE1ZCOS

**INDUCTIVE PROXIMITY SENSORS** 



#### Ordering information

Туре	part no.
IMA12-02BE1ZCOS	1107314

Other models and accessories → www.sick.com/IMA

Illustration may differ



#### Detailed technical data

#### **Features**

Housing	Metric
Thread size	M12 x 1
Diameter	Ø 12 mm
Sensing range S <sub>n</sub>	0 mm 2 mm
Installation type	Flush
Connection type	Male connector M12, 4-pin
Output function	Analog
Repeatability (T <sub>a</sub> not constant)	0.3 mm <sup>1) 2) 3)</sup>
Repeatability (T <sub>a</sub> constant)	± 0.1 mm
Enclosure rating	IP67 <sup>4)</sup>
Special features	Analog output
Items supplied	Mounting nut, brass, nickel-plated (2x)

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

#### Mechanics/electronics

Supply voltage	15 V DC 30 V DC
Ripple	≤ 20 % <sup>1)</sup>

 $<sup>^{1)}</sup>$  Of  $V_S$ .

<sup>&</sup>lt;sup>2)</sup> Ub = DC 20 V ... 30 V.

 $<sup>^{3)}</sup>$  TA = 23 °C ± 5 °C.

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

<sup>&</sup>lt;sup>2)</sup> Without load.

 $<sup>^{3)}</sup>$  -3 dB if  $S_n$  = 1 mm.

 $<sup>^{4)}</sup>$  QA1 loaded, QA2 unloaded.

 $<sup>^{5)}</sup>$  QA1 loaded, QA2 loaded: see temperature reduction.

Time delay before availability	≤ 30 ms
Temperature drift (of S <sub>r</sub> )	≤ 10 %
No load current	$\leq$ 12 mA $^{2)}$
Max. load resistance on Q <sub>A1</sub>	≥ 2 kΩ
Max. load resistance on Q <sub>A2</sub>	400 Ω Ub = 15 V
Output voltage Q <sub>A1</sub>	s = 0 mm: 0 V -0/+0,6 V (23 °C) s = 1 mm: +4,9 V +/-0,6 V (23 °C) s = 2 mm: +10 V +/-0,6 V (23 °C)
Output current Q <sub>A2</sub>	s = 0 mm: 4 mA +/-0.8 mA (23 °C) s = 2 mm: 20 mA +/-0,8 mA (23 °C)
Output voltage	0 V 10 V
Output current	4 mA 20 mA
Bandwidth	1,000 Hz <sup>3)</sup>
Short-circuit protection	<b>✓</b>
Ambient operating temperature	-25 °C +70 °C <sup>4) 5)</sup>
Housing material	Brass, chromium-plated
Sensing face material	Plastic
Housing length	65 mm
Thread length	48 mm

 $<sup>^{1)}</sup>$  Of  $V_{\mbox{\scriptsize S}}.$ 

#### Safety-related parameters

MTTF <sub>D</sub>	1,149 years
DC <sub>avg</sub>	0 %
$T_{\mathrm{M}}$ (mission time)	20 years

#### Installation note

Remark	Associated graphic see "Installation"
В	24 mm
c	12 mm
D	12 mm
F	32 mm

#### Certificates

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

#### Classifications

ECLASS 5.0	27270101
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<sup>&</sup>lt;sup>2)</sup> Without load.

 $<sup>^{3)}</sup>$  –3 dB if  $S_n$  = 1 mm.

<sup>&</sup>lt;sup>4)</sup> QA1 loaded, QA2 unloaded.

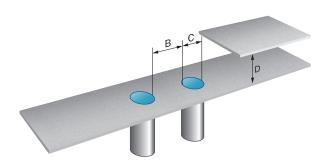
<sup>5)</sup> QA1 loaded, QA2 loaded: see temperature reduction.

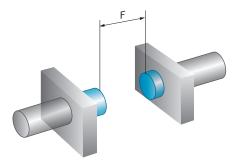
# IMA12-02BE1ZCOS | IMA

INDUCTIVE PROXIMITY SENSORS

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

#### Installation note Flush installation



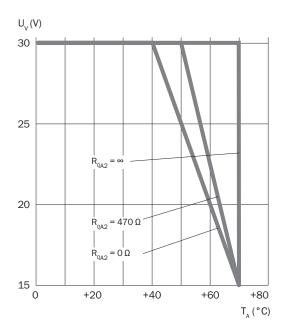


#### Connection type

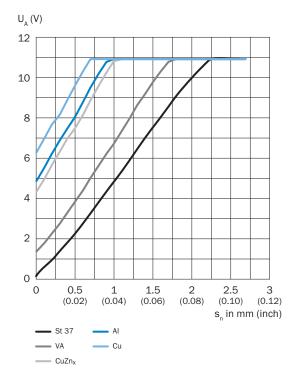


#### Connection diagram Cd-022

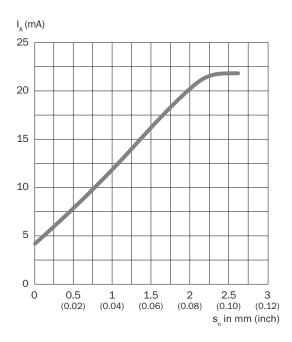
### Temperature derating Temperature derating



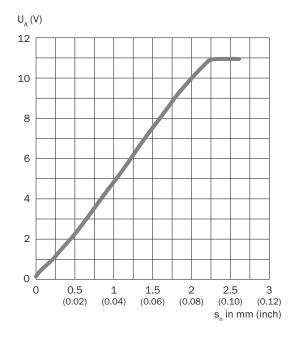
#### Response diagram Reduction factors



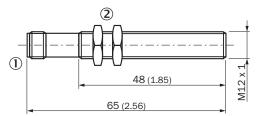
#### Response diagram Output current



#### Response diagram Output voltage



#### Dimensional drawing IMA12, male connector, flush



Dimensions in mm (inch)

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

#### Recommended accessories

Other models and accessories → www.sick.com/IMA

	Brief description	Туре	part no.
connectors and cables			
Q.O.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-020VB3XLEAX	2096234
<b>P</b>	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-050VB3XLEAX	2096235
1	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-020VB3XLEAX	2095895
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-050VB3XLEAX	2095897
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 0.6 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14- C60VB3XLEAX	2145709
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 1 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YG2A14-010VB3XLEAX	2145710
Q.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 0.6 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14- C60VB3XLEAX	2145707
Q. CO	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 1 m, 4-wire, PVC</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-010VB3XLEAX	2145708
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-050UB3XLEAX	2095608
No.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 0.6 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> </ul>	YF2A14- C60UB3XLEAX	2145654

	Brief description	Туре	part no.
	Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation		
1	Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A14-010UB3XLEAX	2145655
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 3 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-030UB3XLEAX	2145656
	Connection type head A: Female connector, M12, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG2A14- C60UB3XLEAX	2145657
	Connection type head A: Female connector, M12, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG2A14-010UB3XLEAX	2145658
Mounting syst	tems		
	Description: Clamping block for round sensors M12, without fixed stop     Material: Plastic     Details: Plastic (PA12), glass-fiber reinforced     Items supplied: Mounting hardware included	BEF-KH-M12	2051479
40	Description: Mounting bracket for M12 sensors     Material: Steel     Details: Steel, zinc coated     Items supplied: Without mounting hardware	BEF-WN-M12	5308447
	<ul> <li>Description: Plate N05 for universal clamp bracket, M12</li> <li>Material: Steel, zinc diecast</li> <li>Details: Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li> <li>Items supplied: Universal clamp (5322626), mounting hardware</li> <li>Usable for: IMA, IMF, M12 round sensors, UC4, V12-2, MultiV, MultiLine, W4-3, MultiV, MultiLine</li> </ul>	BEF-KHS-N05	2051611
	Description: Clamping block for round sensors M12, with fixed stop     Material: Plastic     Details: Plastic (PA12), glass-fiber reinforced     Items supplied: 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."

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