

IMA12-06BE1ZC0S

IMA

INDUCTIVE PROXIMITY SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
IMA12-06BE1ZC0S	6056420

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_n	0 mm ... 6 mm
Installation type	Quasi-flush
Connection type	Male connector M12, 4-pin
Output function	Analog
Repeatability (T_a not constant)	0.3 mm ^{1) 2) 3)}
Repeatability (T_a constant)	± 0.01 mm
Resolution	≤ 1 µm
Enclosure rating	IP67 ⁴⁾
Special features	Analog output, triple sensing range
Items supplied	Mounting nut, brass, chromium-plated (2x) Toothed washer, stainless steel (2 x)

¹⁾ As per IEC 60947-5-2.

²⁾ $U_b = DC\ 20\ V \dots 30\ V$.

³⁾ $T_A = 23\ ^\circ C \pm 5\ ^\circ C$.

⁴⁾ According to EN 60529: 2000-09.

Mechanics/electronics

Supply voltage	15 V DC ... 30 V DC
Ripple	≤ 20 % ¹⁾

¹⁾ Of V_S .

²⁾ At 0 °C ... +70 °C.

³⁾ At -25 °C ... 0 °C.

⁴⁾ Without load.

⁵⁾ At voltage output QA1.

⁶⁾ -3 dB if $S_n = 3$ mm.

Time delay before availability	≤ 50 ms
Temperature drift (of S_i)	± 5 % ²⁾ ± 10 % ³⁾
No load current	≤ 12 mA ⁴⁾
Load current	± 10 mA ⁵⁾
Output voltage Q_{A1}	$s = 0 \text{ mm: } 0 \text{ V} / -0.4 \text{ V (23 }^{\circ}\text{C)}$ $s = 3 \text{ mm: } +5.2 \text{ V} / +0.4 \text{ V (23 }^{\circ}\text{C)}$ $s = 6 \text{ mm: } +10 \text{ V} / +0.4 \text{ V (23 }^{\circ}\text{C)}$
Output current Q_{A2}	$s = 0 \text{ mm: } 4 \text{ mA} / +0.8 \text{ mA (23 }^{\circ}\text{C)}$ $s = 6 \text{ mm: } 20 \text{ mA} / +0.8 \text{ mA (23 }^{\circ}\text{C)}$
Output voltage	0 V ... 10 V
Bandwidth	1,000 Hz ⁶⁾
Short-circuit protection	✓
Ambient operating temperature	-25 °C ... +70 °C
Housing material	Brass, chromium-plated
Sensing face material	Plastic, PTB
Housing length	50 mm
Thread length	50 mm

1) Of V_S .

2) At 0 °C ... +70 °C.

3) At -25 °C ... 0 °C.

4) Without load.

5) At voltage output Q_{A1} .

6) -3 dB if $S_n = 3 \text{ mm}$.

Safety-related parameters

MTTF_D	88 years
DC_{avg}	0%
T_M (mission time)	20 years

Reduction factors

Note	The values are reference values which may vary
Stainless steel (V2A, 304)	Approx. 0.47
Aluminum (Al)	Approx. 0.28
Copper (Cu)	Approx. 0.2
Brass (Br)	Approx. 0.35

Installation note

Remark	Associated graphic see "Installation"
A	6 mm
B	30 mm
C	12 mm
D	18 mm
E	2 mm
F	60 mm

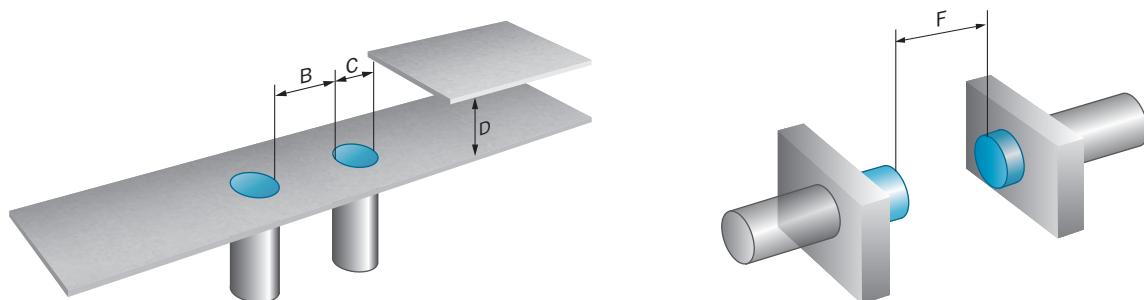
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓

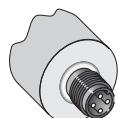
Classifications

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

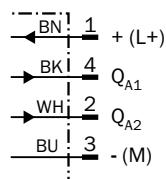
Installation note Flush installation



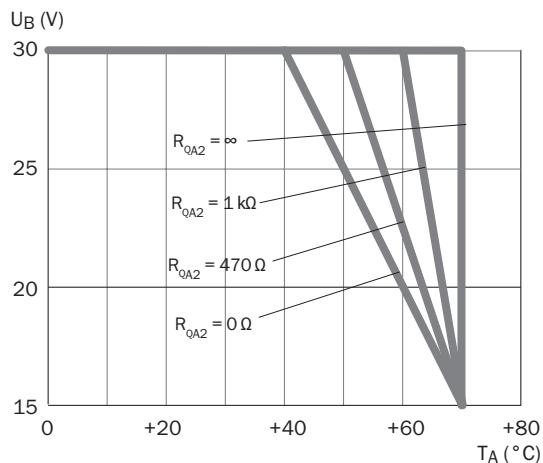
Connection type



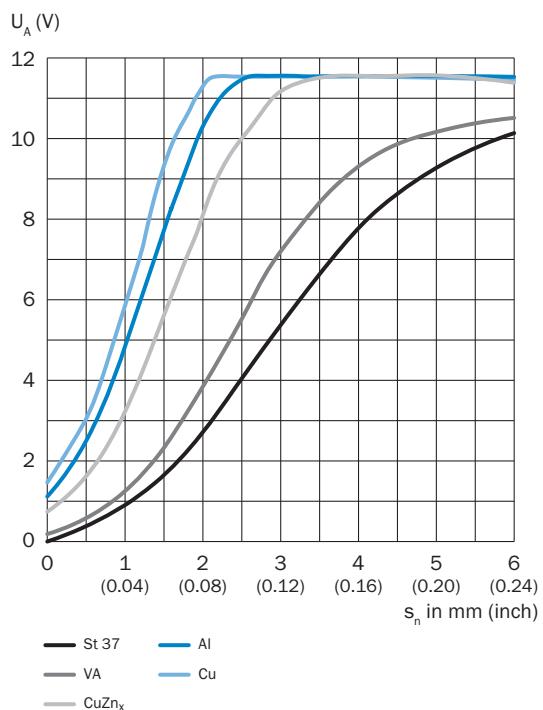
Connection diagram Cd-022



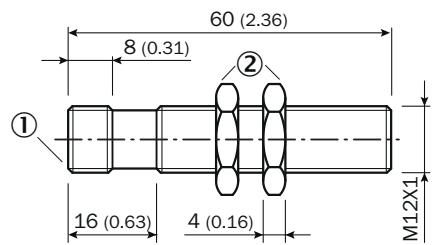
Temperature derating



Response diagram Reduction factors



Dimensional drawing IMA12, connector, quasi-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	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-020VB3XLEAX	2096234
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YG2A14-020VB3XLEAX	2095895
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YG2A14-050VB3XLEAX	2095897
	<ul style="list-style-type: none"> 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, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YG2A14-C60VB3XLEAX	2145709
	<ul style="list-style-type: none"> 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, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YG2A14-010VB3XLEAX	2145710
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-C60VB3XLEAX	2145707
	<ul style="list-style-type: none"> 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, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-010VB3XLEAX	2145708
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A14-020UB3XLEAX	2095607
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded 	YF2A14-050UB3XLEAX	2095608

	Brief description	Type	part no.
	<ul style="list-style-type: none"> Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation Connection type head A: Female connector, M12, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A14-020UB3XLEAX	2095766
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A14-050UB3XLEAX	2095767
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, 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 	YF2A14-C60UB3XLEAX	2145654
	<ul style="list-style-type: none"> 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 style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A14-030UB3XLEAX	2145656
	<ul style="list-style-type: none"> 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
	<ul style="list-style-type: none"> 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 systems

	<ul style="list-style-type: none"> 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
	<ul style="list-style-type: none"> Description: Mounting bracket for M12 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware 	BEF-WN-M12	5308447
	<ul style="list-style-type: none"> Description: Plate N05 for universal clamp bracket, M12 Material: Steel, zinc diecast Details: Zinc plated steel (sheet), Zinc die cast (clamping bracket) Items supplied: Universal clamp (5322626), mounting hardware Usable for: IMA, IMF, M12 round sensors, UC4, V12-2, MultiV, MultiLine, W4-3, MultiV, MultiLine 	BEF-KHS-N05	2051611
	<ul style="list-style-type: none"> 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.

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