

# IM30-20B-A-ZC1

**INDUCTIVE PROXIMITY SENSORS** 



## INDUCTIVE PROXIMITY SENSORS



## Ordering information

Туре	part no.
IM30-20B-A-ZC1	6033125

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

Illustration may differ



#### Detailed technical data

#### **Features**

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

<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>
Time delay before availability	≤ 50 ms

 $<sup>^{1)}</sup>$  Of V<sub>S</sub>.

<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> At voltage output QA1.

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

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

 $<sup>^{\</sup>rm 6)}$  QA1 loaded, QA2 loaded: see temperature reduction.

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

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

## Safety-related parameters

MTTF <sub>D</sub>	87 years
DC <sub>avg</sub>	0%
T <sub>M</sub> (mission time)	20 years

#### **Reduction factors**

Note	The values are reference values which may vary
Stainless steel (V2A, 304)	Approx. 0.65
Aluminum (AI)	Approx. 0.2
Copper (Cu)	Approx. 0.17
Brass (Br)	Approx. 0.3

#### Installation note

Remark	Associated graphic see "Installation"
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## Certificates

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

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

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

 $<sup>^{4)}</sup>$  -3 dB if S<sub>n</sub> = 10 mm.

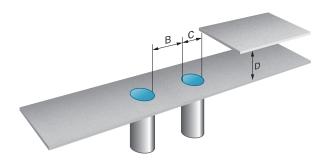
<sup>&</sup>lt;sup>5)</sup> QA1 loaded, QA2 unloaded.

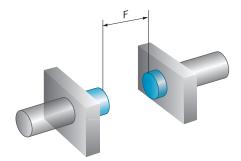
<sup>6)</sup> QA1 loaded, QA2 loaded: see temperature reduction.

#### 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





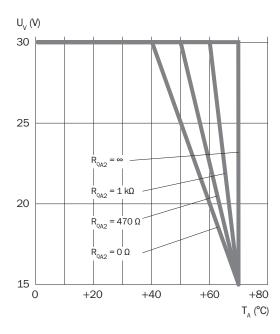
## Connection type



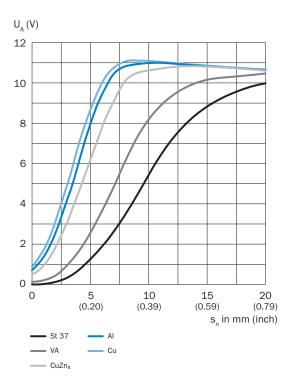
## Connection diagram Cd-022



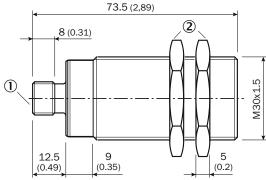
## Temperature derating



## Response diagram Reduction factors



## Dimensional drawing IMA30, connector, quasi-flush



Dimensions in mm (inch)

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

#### Recommended accessories

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

	Brief description	Туре	part no.	
connectors a	onnectors and cables			
000	<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	
0	<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	
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: 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	
0	<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	
	<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	

# IM30-20B-A-ZC1 | IMA

## INDUCTIVE PROXIMITY SENSORS

	Brief description	Туре	part no.
	Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation		
0	<ul> <li>Connection type head A: Fernale 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, 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>	YF2A14-010UB3XLEAX	2145655
	<ul> <li>Connection type head A: Fernale 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
	<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, 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>	YG2A14- C60UB3XLEAX	2145657
	<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, 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>	YG2A14-010UB3XLEAX	2145658
Mounting syst	rems		
<b>(</b> a)	Description: Mounting bracket for M30 sensors     Material: Steel     Details: Steel, zinc coated     Items supplied: Without mounting hardware	BEF-WN-M30	5308445
0	<ul> <li>Description: Mounting plate for M30 sensors</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Without mounting hardware</li> </ul>	BEF-WG-M30	5321871

## 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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