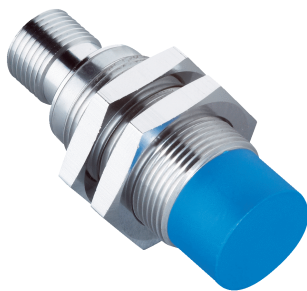


# IMA18-20NE1ZC0K

IMA

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
IMA18-20NE1ZCOK	6041794

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

Illustration may differ



### Detailed technical data

#### Features

<b>Housing</b>	Cylindrical thread design
<b>Thread size</b>	M18 x 1
<b>Diameter</b>	Ø 18 mm
<b>Sensing range <math>S_n</math></b>	0 mm ... 20 mm
<b>Installation type</b>	Non-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>	± 0.05 mm
<b>Resolution</b>	≤ 5 µm
<b>Enclosure rating</b>	IP67 <sup>4)</sup>
<b>Special features</b>	Analog output
<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>  $U_b = DC\ 20\ V \dots 30\ V$ .

<sup>3)</sup>  $T_A = 23\ ^\circ C \pm 5\ ^\circ C$ .

<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> Without load.

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

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

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

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

<b>Time delay before availability</b>	≤ 60 ms
<b>Temperature drift (of S<sub>i</sub>)</b>	≤ 10 %
<b>No load current</b>	≤ 12 mA <sup>2)</sup>
<b>Load current</b>	± 10 mA <sup>3)</sup>
<b>Max. load resistance</b>	≤ 400 Ω U <sub>b</sub> = 15 V ≤ 1,000 Ω U <sub>b</sub> = 30 V
<b>Output voltage Q<sub>A1</sub></b>	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)
<b>Output current Q<sub>A2</sub></b>	s = 0 mm: 4 mA/ +0,8 mA (23 °C) s = 20 mm: 20 mA +/-0,8 mA (23 °C)
<b>Output voltage</b>	0 V ... 10 V
<b>Bandwidth</b>	250 Hz <sup>4)</sup>
<b>Short-circuit protection</b>	✓
<b>Reverse polarity protection</b>	✓
<b>Ambient operating temperature</b>	-25 °C ... +70 °C <sup>5) 6)</sup>
<b>Housing material</b>	Brass, chromium-plated
<b>Sensing face material</b>	Plastic, PTB
<b>Housing length</b>	48.5 mm
<b>Thread length</b>	22 mm

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

2) Without load.

3) At voltage output QA1.

4) -3 dB if S<sub>n</sub> = 10 mm.

5) QA1 loaded, QA2 unloaded.

6) QA1 loaded, QA2 loaded: see temperature reduction.

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	88 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. 0.69
<b>Aluminum (Al)</b>	Approx. 0.38
<b>Copper (Cu)</b>	Approx. 0.36
<b>Brass (Br)</b>	Approx. 0.46

### Installation note

<b>Remark</b>	Associated graphic see "Installation"
<b>A</b>	21 mm
<b>B</b>	60 mm
<b>C</b>	18 mm
<b>D</b>	60 mm
<b>E</b>	20 mm

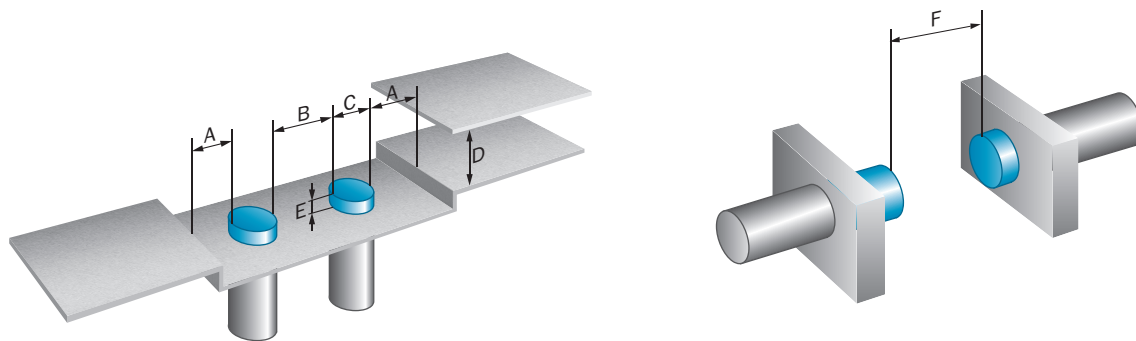
<b>F</b>	200 mm
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Classifications

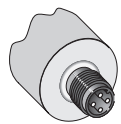
<b>ECLASS 5.0</b>	27270101
<b>ECLASS 5.1.4</b>	27270101
<b>ECLASS 6.0</b>	27270101
<b>ECLASS 6.2</b>	27270101
<b>ECLASS 7.0</b>	27270101
<b>ECLASS 8.0</b>	27270101
<b>ECLASS 8.1</b>	27270101
<b>ECLASS 9.0</b>	27270101
<b>ECLASS 10.0</b>	27270101
<b>ECLASS 11.0</b>	27270101
<b>ECLASS 12.0</b>	27274001
<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

Non-flush installation

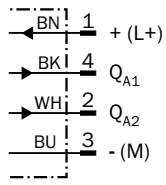


Connection type



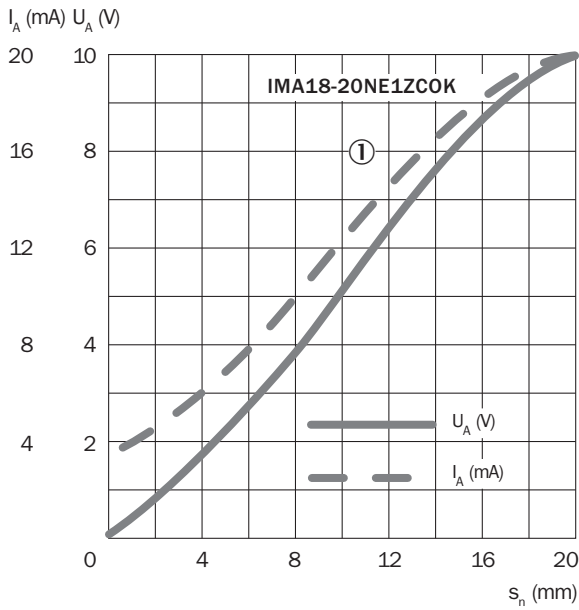
### Connection diagram

Cd-022



### Response diagram

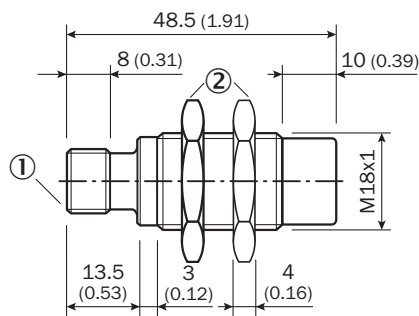
IMA18



① St37 (FE)

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

IMA18, connector, non-flush








① Connection

② Fastening nuts (2x); width across 24, 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 N06 for universal clamp bracket, M18, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N06	2051612
Mounting brackets and plates			
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
Terminal and alignment brackets			
	Mounting bracket with ball-and-socket, plastic, mounting hardware included	BEF-WN-M18-ST02	5312973
	Clamping block for round sensors M18, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KH-M18	2051481
	Clamping block for round sensors M18, with fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KHF-M18	2051482
Others			
	<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</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</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</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</li> </ul>	YG2A14-050VB3XLEAX	2095897
	<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> Zones with oils and lubricants, Drag chain operation, Robot</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> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14-050UB3XLEAX	2095608

	Brief description	Type	Part no.
	<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, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</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> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14-050UB3XLEAX	2095767

## 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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