



# IMX12-09BNSZU2S

IMX

INDUCTIVE PROXIMITY SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
IMX12-09BNSZU2S	1134185

**Included in delivery:** BEF-MU-M12 (1)

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

Illustration may differ



### Detailed technical data

#### Features

<b>Housing</b>	Metric
<b>Housing</b>	Standard design
<b>Thread size</b>	M12 x 1
<b>Diameter</b>	Ø 12 mm
<b>Sensing range <math>S_n</math></b>	9 mm
<b>Safe sensing range <math>S_a</math></b>	7.29 mm
<b>Installation type</b>	Quasi-flush
<b>Switching frequency</b>	25 Hz
<b>Connection type</b>	Cable, 3-wire, 2 m
<b>Switching output</b>	NPN
<b>Switching output detail</b>	NPN
<b>Output function</b>	NO
<b>Electrical wiring</b>	DC 3-wire
<b>Enclosure rating</b>	IP68 <sup>1)</sup>
<b>Special features</b>	Quadruple sensing range, Resistant against coolant lubricants, Visual adjustment indicator
<b>Special applications</b>	Zones with coolants and lubricants
<b>Items supplied</b>	Mounting nut, brass, nickel-plated (2x)

<sup>1)</sup> According to EN 60529.

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Ripple</b>	≤ 10 %
<b>Voltage drop</b>	≤ 2 V <sup>1)</sup>

<sup>1)</sup> At  $I_a$  max.

<sup>2)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

<sup>3)</sup> Of  $S_r$ .

<b>Time delay before availability</b>	$\leq 150$ ms	
<b>Hysteresis</b>	5 % ... 15 %	
<b>Reproducibility</b>	$\leq 5$ % <sup>2)</sup> <sup>3)</sup>	
<b>Temperature drift (of <math>S_r</math>)</b>	$\pm 10$ %	
<b>EMC</b>	According to EN 60947-5-2	
<b>Continuous current <math>I_a</math></b>	$\leq 200$ mA	
<b>No load current</b>	$\leq 50$ mA	
<b>Cable material</b>	PUR	
<b>Conductor size</b>	0.34 mm <sup>2</sup>	
<b>Cable diameter</b>	$\varnothing 4.5$ mm	
<b>Short-circuit protection</b>	✓	
<b>Power-up pulse protection</b>	✓	
<b>Shock and vibration resistance</b>	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
<b>Display</b>		
	LED yellow	Output state (on/off)
	LED green	Stable on/off state
<b>Ambient operating temperature</b>	-25 °C ... +75 °C	
<b>Housing material</b>	Nickel-plated brass	
<b>Sensing face material</b>	Plastic, LCP	
<b>Housing length</b>	58.1 mm	
<b>Thread length</b>	54.1 mm	
<b>Tightening torque, max.</b>	$\leq 12$ Nm	
<b>Protection class</b>	III	
<b>UL File No.</b>	E181493	
<b>Service interface</b>	IO-Link as a service interface. The interface can only be used by SICK Service.	

<sup>1)</sup> At  $I_a$  max.

<sup>2)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

<sup>3)</sup> Of  $S_r$ .

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	411 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>St37 steel (Fe)</b>	1
<b>Stainless steel (V2A, 304)</b>	0.6
<b>Aluminum (Al)</b>	0.4
<b>Copper (Cu)</b>	0.3
<b>Brass (Br)</b>	0.5

## Installation note

Remark	Associated graphic see "Installation"
<b>A</b>	14 mm
<b>B</b>	12 mm
<b>C</b>	12 mm
<b>D</b>	27 mm
<b>E</b>	6 mm
<b>F</b>	27 mm

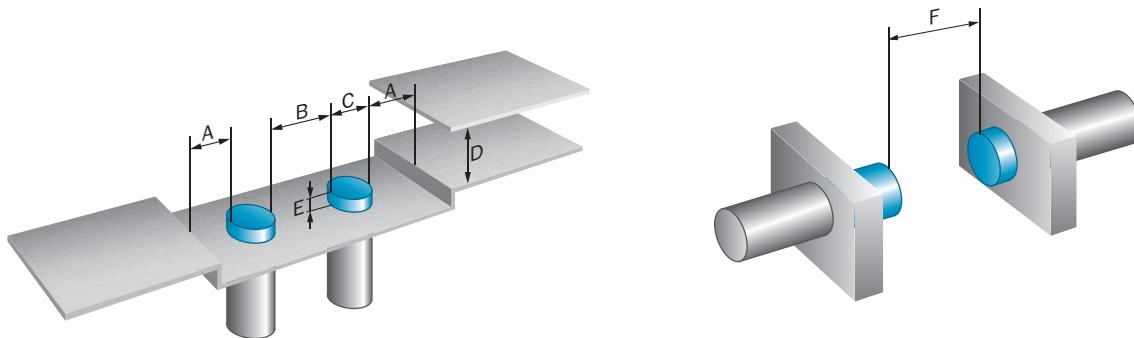
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓

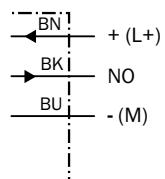
## Classifications

<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

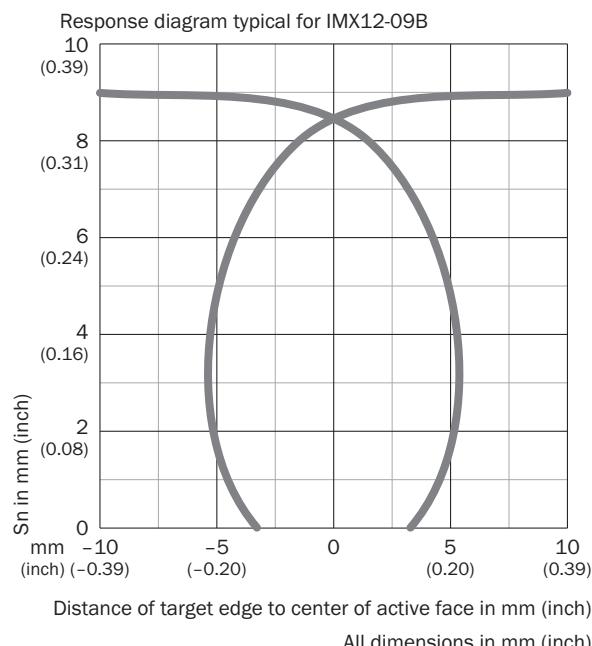
## Installation note Quasi-flush installation



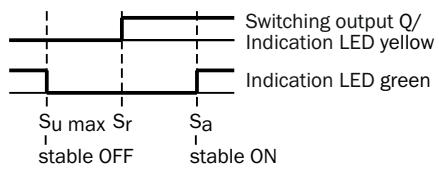
## Connection diagram Cd-001



## Response diagram

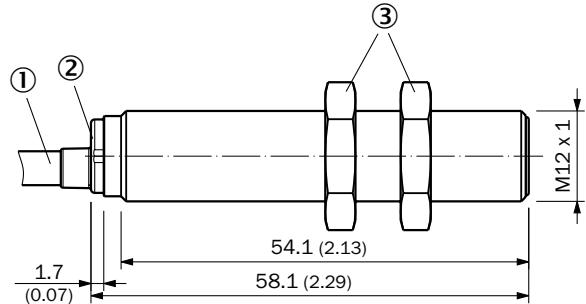


Functional principle Installation aid



LED indicator green	LED indicator yellow	Status
ON	OFF	Output is deactivated (OFF), sensor in stable OFF state
OFF	OFF	Output is deactivated (OFF), no object detected
OFF	ON	Output is activated (ON), object detected
ON	ON	Output is activated (ON), sensor in stable ON state

Dimensional drawing IMX12, standard variant, cable, quasi-flush



## Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li><b>Application:</b> Hygienic and washdown zones</li> </ul>	STE-1204-GN	6028359
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li><b>Note:</b> For 2 cable connections</li> <li><b>Application:</b> Hygienic and washdown zones</li> </ul>	STE-1204-TN	6028360
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li><b>Application:</b> Hygienic and washdown zones</li> </ul>	DOS-1204-GN	6028357
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> <li><b>Application:</b> Hygienic and washdown zones</li> </ul>	DOS-1204-WN	6028358
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting plate for M12 sensors</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Without mounting hardware</li> </ul>	BEF-WG-M12	5321869
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for M12 sensors</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Without mounting hardware</li> </ul>	BEF-WN-M12	5308447

## 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)