



# MM12-90A-N-ZUD

MM Namur

**MAGNETIC PROXIMITY SENSORS**

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
MM12-90A-N-ZUD	1046761

Other models and accessories → [www.sick.com/MM\\_Namur](http://www.sick.com/MM_Namur)

Illustration may differ



### Detailed technical data

#### Features

<b>Housing</b>	Cylindrical thread design
<b>Thread size</b>	M12 1
<b>Diameter</b>	Ø 12 mm
<b>Sensing range <math>S_n</math></b>	5 mm ... 90 mm <sup>1)</sup>
<b>Safe sensing range <math>S_a</math></b>	72.9 mm
<b>Magnetic sensitivity</b>	≤ 0.6 mT
<b>Switching frequency</b>	5,000 Hz
<b>Connection type</b>	Cable with connector M9, 5-pin, with knurled nuts, 0.8 m
<b>Switching output</b>	NAMUR
<b>Output characteristic</b>	Control current depending on switching state according to NAMUR EN 60947-5-6
<b>Electrical wiring</b>	DC 2-wire
<b>Magnetic alignment</b>	Axial
<b>Enclosure rating</b>	IP67 <sup>2)</sup>

<sup>1)</sup> Sensing range based on installation in non-magnetic material using Magnet MAG-3010-B (M4.0).

<sup>2)</sup> According to EN 60529.

#### Mechanics/electronics

<b>Ripple</b>	≤ 5 % <sup>1)</sup>
<b>Time delay before availability</b>	≤ 2 ms
<b>Hysteresis</b>	1 % ... 10 %
<b>Reproducibility</b>	≤ 1 % <sup>2)</sup>
<b>Temperature drift (of <math>S_r</math>)</b>	± 10 %
<b>EMC</b>	According to EN 60947-5-2

<sup>1)</sup> Of  $V_S$ .

<sup>2)</sup> Von  $S_r$  ( $V_S$  und  $T_a$  constant).

<sup>3)</sup> For connection to a separately certified intrinsically safe circuit only.

<b>Current consumption, sensor is activated</b>	≥ 2.5 mA
<b>Current consumption, sensor is not activated</b>	≤ 1 mA
<b>Cable material</b>	PUR
<b>Conductor size</b>	0.25 mm <sup>2</sup>
<b>Cable resistance</b>	≤ 50 Ω
<b>Wire-break protection</b>	✓
<b>Short-circuit protection</b>	✓
<b>Reverse polarity protection</b>	✓
<b>Shock and vibration resistance</b>	30 g, 11 ms / 10 ... 55 Hz, 1 mm
<b>Ambient operating temperature</b>	-25 °C ... +70 °C
<b>Housing material</b>	Metal, Nickel-plated brass
<b>Housing length</b>	50 mm
<b>Thread length</b>	40 mm
<b>Tightening torque, max.</b>	≤ 7 Nm
<b>Items supplied</b>	Fastening nuts (2 x)
<b>EC Approval Certificate</b>	TÜV 99 ATEX 1398
<b>ATEX marking</b>	EX II 2G Ex ib IIC T6 Gb Ta: - 25 °C ... + 70 °C
<b>Ex area category</b>	2G
<b>Input voltage U<sub>i</sub> max.</b>	16 V <sup>3)</sup>
<b>Input power P<sub>i</sub> max.</b>	100 mW <sup>3)</sup>
<b>Input current I<sub>i</sub> max.</b>	30 mA <sup>3)</sup>
<b>Internal capacitance C<sub>i</sub> max.</b>	15 nF <sup>3)</sup>
<b>Internal inductance L<sub>i</sub> max.</b>	35 μH <sup>3)</sup>
<b>Nominal voltage</b>	8.2 V DC

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

2) Von Sr (VS und Ta constant).

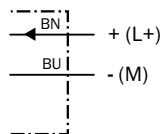
3) For connection to a separately certified intrinsically safe circuit only.

## Classifications

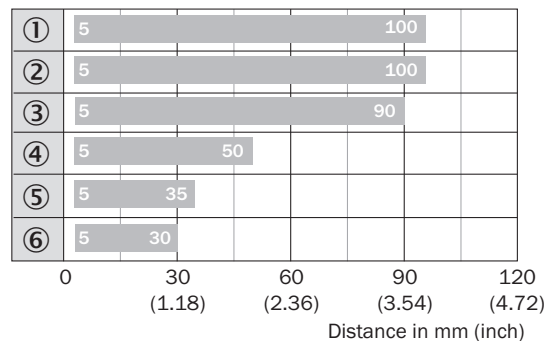
<b>ECl@ss 5.0</b>	27270104
<b>ECl@ss 5.1.4</b>	27270104
<b>ECl@ss 6.0</b>	27270104
<b>ECl@ss 6.2</b>	27270104
<b>ECl@ss 7.0</b>	27270104
<b>ECl@ss 8.0</b>	27270104
<b>ECl@ss 8.1</b>	27270104
<b>ECl@ss 9.0</b>	27270104
<b>ETIM 5.0</b>	EC002544
<b>ETIM 6.0</b>	EC002544
<b>UNSPSC 16.0901</b>	39122230

### Connection diagram

Cd-012



### Sensing range diagram

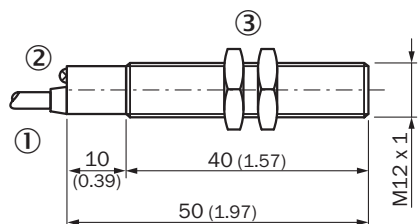


■ Max. sensing range  $S_n$ , flush or non-flush installation, non-magnetizable material

Magnet type	Part no.
① MAG-3315-B (M 5.1)	7902086
② MAG-3015-B (M 5.0)	7901786
③ MAG-3010-B (M 4.0)	7901785
④ MAG-2006-B (M 3.0)	7901784
⑤ MAG-0625-A (M 2.0)	7901783
⑥ MAG-1003-S (M 1.0)	7901782

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

MM12 Namur, cable



- ① Connection
- ② Indication LED
- ③ Fastening nuts (2x); width across 17, metal


## Recommended accessories

Other models and accessories → [www.sick.com/MM\\_Namur](http://www.sick.com/MM_Namur)

	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	Plate N05 for universal clamp bracket, M12, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N05	2051611
	Plate N05N for universal clamp bracket, M12, Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp), Universal clamp (5322626), mounting hardware	BEF-KHS-N05N	2051621
	Mounting bar, straight, 200 mm, stainless steel, Stainless steel (1.4571)	BEF-MS12G-NA	4058914
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-A	4056052
<b>Mounting brackets and plates</b>			
	Mounting plate for M12 sensors, steel, zinc coated, without mounting hardware	BEF-WG-M12	5321869
	Mounting bracket for M12 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M12	5308447
<b>Terminal and alignment brackets</b>			
	Clamping block for round sensors M12, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KH-M12	2051479
	Clamping block for round sensors M12, with fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KHF-M12	2051480
<b>Modules and gateways</b>			
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 24 V ... 230 V, Voltage type: AC/DC	EN2-2EX1	6041096
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 19,2 V ... 30 V, Voltage type: DC	EN2-2EX3	6041095
<b>Magnets</b>			
	Magnet without mounting hole, Ø 6 mm, height 25 mm	MAG-0625-A	7901783
	Magnet without mounting hole, Ø 10 mm, height 3 mm	MAG-1003-S	7901782
	Magnet with mounting hole for M4 countersunk screw, Ø 20 mm, height 6.5 mm	MAG-2006-B	7901784
	Magnet without mounting hole, Ø 30 mm, height 10 mm	MAG-3010-B	7901785
	Magnet with mounting hole for M5 flat head screw, Ø 31 mm, height 15 mm	MAG-3015-B	7901786

# MM12-90A-N-ZUD | MM Namur

## MAGNETIC PROXIMITY SENSORS

	Brief description	Type	Part no.
	Magnet with mounting hole for M5 flat head screw, Ø 36 mm, height 19.5 mm	MAG-3515-B	7902086

## 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)