



MM12-60A-N-ZW0

MMN

MAGNETIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
MM12-60A-N-ZW0	7900286

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

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

Detailed technical data

Features

Housing	Metric
Thread size	M12 x 1
Diameter	Ø 12 mm
Sensing range S_n	5 mm ... 60 mm ¹⁾
Safe sensing range S_a	48.6 mm
Magnetic sensitivity	1 mT
Switching frequency	5,000 Hz
Connection type	Cable, 2-wire, 2 m ²⁾
Switching output	NAMUR
Switching output detail	NAMUR
Output characteristic	Control current depending on switching state according to NAMUR EN 60947-5-6
Electrical wiring	DC 2-wire
Magnetic alignment	Axial
Enclosure rating	IP67 ³⁾
Items supplied	Mounting nut, brass, nickel-plated (2x)

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

²⁾ Do not bend below 0 °C.

³⁾ According to EN 60529.

Mechanics/electronics

Ripple	≤ 5 % ¹⁾
Time delay before availability	≤ 2 ms
Hysteresis	1 % ... 10 %
Reproducibility	≤ 1 % ²⁾
Temperature drift (of S_n)	± 10 %

¹⁾ Of V_S .

²⁾ Von S_r (V_S und T_a constant).

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

EMC	According to EN 60947-5-2
Current consumption, sensor is activated	$\geq 2.5 \text{ mA}$
Current consumption, sensor is not activated	$\leq 1 \text{ mA}$
Cable material	PVC
Conductor size	0.34 mm^2
Cable resistance	$\leq 50 \Omega$
Wire-break protection	✓
Reverse polarity protection	Yes
Short-circuit protection	Yes
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
Ambient operating temperature	$-25 \text{ °C} \dots +70 \text{ °C}$
Housing material	Metal, Nickel-plated brass
Housing length	50 mm
Thread length	40 mm
Tightening torque, max.	$\leq 7 \text{ Nm}$
Type approval certificate	TÜV 99 ATEX 1398
ATEX marking	EX II 2G Ex ib IIC T6 Gb Ta: $-25 \text{ °C} \dots +70 \text{ °C}$
Ex area category	2G
Input voltage U_i max.	$16 \text{ V}^{3)}$
Input power P_i max.	$100 \text{ mW}^{3)}$
Input current I_i max.	$30 \text{ mA}^{3)}$
Internal capacitance C_i max.	$15 \text{ nF}^{3)}$
Internal inductance L_i max.	$35 \mu\text{H}^{3)}$
Nominal voltage	8.2 V DC

1) Of V_S .

2) Von Sr (VS und Ta constant).

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

Safety-related parameters

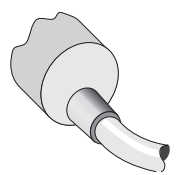
MTTF_D	4,283 years
DC_{avg}	0 %

Classifications

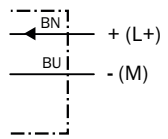
ECLASS 5.0	27270104
ECLASS 5.1.4	27270104
ECLASS 6.0	27270104
ECLASS 6.2	27270104
ECLASS 7.0	27270104
ECLASS 8.0	27270104
ECLASS 8.1	27270104
ECLASS 9.0	27270104
ECLASS 10.0	27270104

ECLASS 11.0	27270104
ECLASS 12.0	27274301
ETIM 5.0	EC002544
ETIM 6.0	EC002544
ETIM 7.0	EC002544
ETIM 8.0	EC002544
UNSPSC 16.0901	39122230

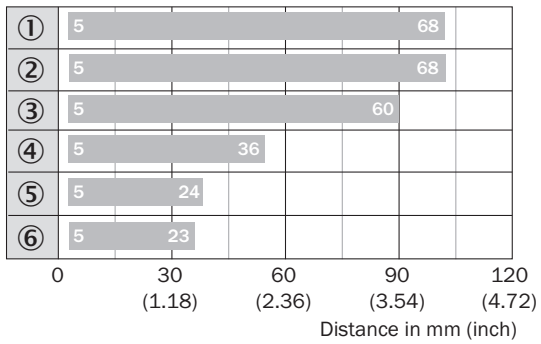
Connection type



Connection diagram Cd-012



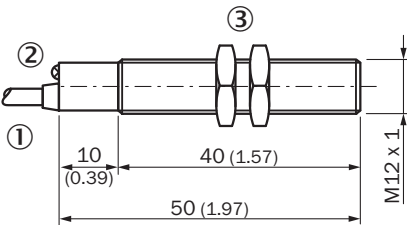
Sensing range diagram



■ 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 MM12 Namur, cable









- Dimensions in mm (inch)
- ① Connection
 - ② Display LED
 - ③ Fastening nuts (2x); width across 17, metal

Recommended accessories

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

	Brief description	Type	part no.
integration modules and adapters			
	<ul style="list-style-type: none">Description: NAMUR isolating 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
	<ul style="list-style-type: none">Description: NAMUR isolating 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

	Brief description	Type	part no.
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: 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
	<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: Mounting plate for M12 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware 	BEF-WG-M12	5321869
	<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
		BEF-KHS-N05N	2051621

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