



MM12-60A-N-ZC0

MM Namur

MAGNETIC PROXIMITY SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
MM12-60A-N-ZCO	7900287

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

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

Illustration may differ



Detailed technical data

Features

Housing	Cylindrical thread design
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	Male connector M12, 4-pin
Switching output	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 ²⁾

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

²⁾ 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_r)	± 10 %
EMC	According to EN 60947-5-2
Current consumption, sensor is activated	≥ 2.5 mA

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.

Current consumption, sensor is not activated	≤ 1 mA
Cable resistance	≤ 50 Ω
Wire-break protection	✓
Short-circuit protection	✓
Reverse polarity protection	✓
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
Ambient operating temperature	-25 °C ... +70 °C
Housing material	Metal, Nickel-plated brass
Housing length	62.5 mm
Thread length	40 mm
Tightening torque, max.	≤ 7 Nm
Items supplied	Mounting nut, brass, nickel-plated (2x)
Type approval certificate	TÜV 99 ATEX 1398
ATEX marking	EX II 2G Ex ib IIC T6 Gb Ta: - 25 °C ... + 70 °C
Ex area category	2G
Input voltage U_i max.	16 V ³⁾
Input power P_i max.	100 mW ³⁾
Input current I_i max.	30 mA ³⁾
Internal capacitance C_i max.	15 nF ³⁾
Internal inductance L_i max.	35 μH 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

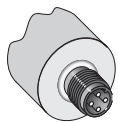
MTTF_D	4,283 years
DC_{avg}	0 %

Classifications

ECl@ss 5.0	27270104
ECl@ss 5.1.4	27270104
ECl@ss 6.0	27270104
ECl@ss 6.2	27270104
ECl@ss 7.0	27270104
ECl@ss 8.0	27270104
ECl@ss 8.1	27270104
ECl@ss 9.0	27270104
ECl@ss 10.0	27270104
ECl@ss 11.0	27270104
ETIM 5.0	EC002544
ETIM 6.0	EC002544

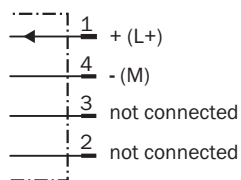
ETIM 7.0	EC002544
ETIM 8.0	EC002544
UNSPSC 16.0901	39122230

Connection type

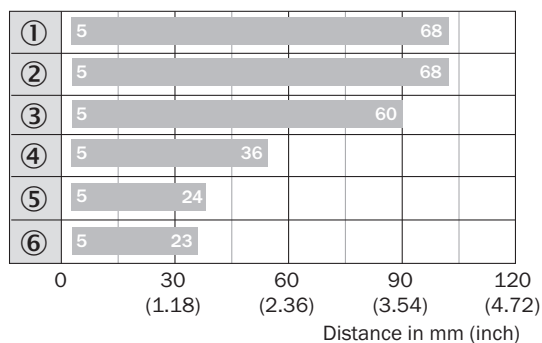


Connection diagram

Cd-015



Sensing range diagram



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

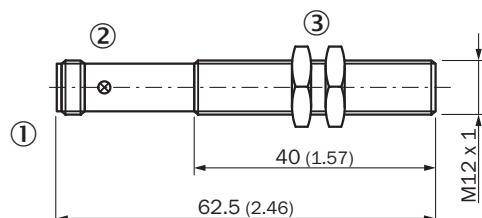
Magnet type

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, connector




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

Recommended accessories

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

	Brief description	Type	Part no.
Power supply modules			
	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
	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
Magnets			
	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
	Magnet with mounting hole for M5 flat head screw, Ø 36 mm, height 19.5 mm	MAG-3515-B	7902086
Universal bar clamp systems			
	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

	Brief description	Type	Part no.
	Mounting bar, straight, 200 mm, stainless steel, Stainless steel (1.4571)	BEF-MS12G-NA	4058914
Mounting brackets and plates			
	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
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A14-020UB3XLEAX	2095607
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A14-020VB3XLEAX	2096234
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A14-050UB3XLEAX	2095608
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YG2A14-020UB3XLEAX	2095766
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A14-020VB3XLEAX	2095895
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YG2A14-050UB3XLEAX	2095767
	Head A: female connector, M12, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A14-050VB3XLEAX	2095897
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
	Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded	DOS-1204-W	6007303
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932
	Head A: male connector, M12, 4-pin, angled Head B: - Cable: unshielded	STE-1204-W	6022084

	Brief description	Type	Part no.
Terminal and alignment brackets			
	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

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