



MM12-70A-N-ZC0

MMN

MAGNETIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
MM12-70A-N-ZCO	1102540

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

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

Illustration may differ



Detailed technical data

Features

Housing	Metric
Thread size	M12 x 1
Diameter	Ø 12 mm
Sensing range S_n	5 mm ... 70 mm ¹⁾
Safe sensing range S_a	56.7 mm
Magnetic sensitivity	≤ 0.7 mT
Switching frequency	1,000 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⁾
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⁾ According to EN 60529.

Mechanics/electronics

Ripple	≤ 5 % ¹⁾
Time delay before availability	≤ 2 ms
Hysteresis	≤ 25 %
Reproducibility	≤ 1 % ²⁾
Temperature drift (of S_r)	± 10 %
EMC	According to EN 60947-5-2

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 activated	≥ 2.3 mA
Current consumption, sensor is not activated	≤ 1 mA
Cable resistance	≤ 50 Ω
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 °C ... +70 °C
Housing material	Metal, Nickel-plated brass
Housing length	62.5 mm
Thread length	40 mm
Tightening torque, max.	≤ 7 Nm
Type approval certificate	TÜV 19 ATEX 241335
UK type examination certificate	UL22UKEX2385
ATEX marking	EX II 1G Ex ia IIC T6 Ga EX II 1D Ex ia IIIC T ₂₀₀ 85 °C Da Ta: -25 °C ... +70 °C
Ex area category	1G, 1D
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.	130 nF ³⁾
Internal inductance L_i max.	10 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	2,828 years
DC_{avg}	0 %
T_M (mission time)	20 years

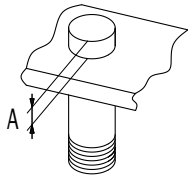
Classifications

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

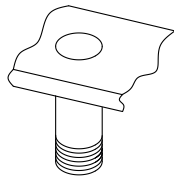
ECLASS 10.0	27270104
ECLASS 11.0	27270104
ECLASS 12.0	27274301
ETIM 5.0	EC002544
ETIM 6.0	EC002544
ETIM 7.0	EC002544
ETIM 8.0	EC002544
UNSPSC 16.0901	39122230

Installation note

installation in magnetizable material



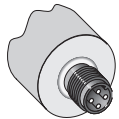
installation in non-magnetizable material



Ø	A (mm)	M (Nm)
M12	15	< 7

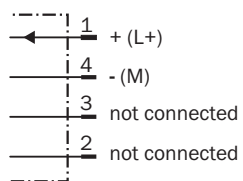


Connection type



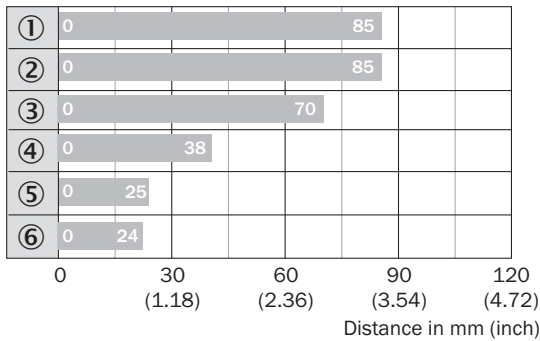
Connection diagram

Cd-015



Sensing range diagram

Sensing range

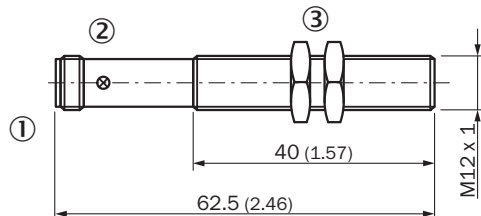


■ Max. sensing range S_n, flush or non-flush installation, non-magnetizable material

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/MMN

	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

	Brief description	Type	Part no.
	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
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 (5322627), mounting hardware	BEF-KHS-N05N	2051621
	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
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
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, angled, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	STE-1204-W	6022084
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Description: Unshielded, Head A: female connector, M12, 4-pin, straight, unshielded, for power supply, for cable diameter 4 mm ... 6 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	DOS-1204-G	6007302
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Description: Unshielded, Head A: female connector, M12, 4-pin, angled, unshielded, for power supply, for cable diameter 3 mm ... 6.5 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	DOS-1204-W	6007303
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot 	YF2A14-020UB3XLEAX	2095607
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot 	YF2A14-050UB3XLEAX	2095608

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot 	YG2A14-020UB3XLEAX	2095766
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Zones with oils and lubricants, Drag chain operation, Robot 	YG2A14-050UB3XLEAX	2095767
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF2A14-020VB3XLEAX	2096234
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YG2A14-020VB3XLEAX	2095895
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YG2A14-050VB3XLEAX	2095897

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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