



MM12-60APS-ZCK

MME

MAGNETIC PROXIMITY SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|----------------|----------|
| MM12-60APS-ZCK | 1040070 |

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

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

Detailed technical data

Features

| | |
|--|---|
| Housing | Cylindrical thread design |
| Housing | Short-body |
| Thread size | M12 x 1 |
| Diameter | Ø 12 mm |
| Sensing range S_n | 0 mm ... 60 mm ¹⁾ |
| Safe sensing range S_a | 48.6 mm |
| Magnetic sensitivity | ≤ 1 mT |
| Switching frequency | 1,000 Hz |
| Connection type | Male connector M12, 4-pin |
| Switching output | PNP |
| Output function | NO |
| Electrical wiring | DC 3-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

| | |
|----------------------------|----------------------|
| Supply voltage | 10 V DC ... 30 V DC |
| Ripple | ≤ 10 % ¹⁾ |
| Voltage drop | ≤ 2 V ²⁾ |
| Current consumption | 10 mA ³⁾ |

¹⁾ Of V_S .

²⁾ At I_a max.

³⁾ Without load.

⁴⁾ Von Sr (VS und Ta constant).

⁵⁾ Pulsed.

| | |
|---|----------------------------------|
| Time delay before availability | ≤ 20 ms |
| Hysteresis | 1 % ... 10 % |
| Reproducibility | ≤ 1 % ⁴⁾ |
| Temperature drift (of S_r) | ± 10 % |
| EMC | According to EN 60947-5-2 |
| Continuous current I_a | ≤ 200 mA |
| Short-circuit protection | ✓ ⁵⁾ |
| Reverse polarity protection | ✓ |
| Power-up pulse protection | ✓ |
| Shock and vibration resistance | 30 g, 11 ms / 10 ... 55 Hz, 1 mm |
| Ambient operating temperature | -25 °C ... +75 °C |
| Housing material | Metal, Nickel-plated brass |
| Housing length | 46 mm |
| Thread length | 28 mm |
| Tightening torque, max. | 15 Nm |

¹⁾ Of V_S.

²⁾ At I_a max.

³⁾ Without load.

⁴⁾ Von S_r (V_S und T_a constant).

⁵⁾ Pulsed.

Safety-related parameters

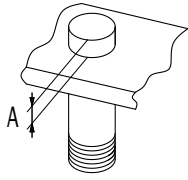
| | |
|-------------------------------------|-------------|
| MTTF_D | 1,980 years |
| DC_{avg} | 0% |
| T_M (mission time) | 20 years |

Classifications

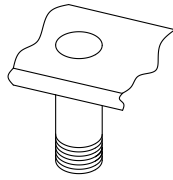
| | |
|-----------------------|----------|
| eCl@ss 5.0 | 27270104 |
| eCl@ss 5.1.4 | 27270104 |
| eCl@ss 6.0 | 27270104 |
| eCl@ss 6.2 | 27270104 |
| eCl@ss 7.0 | 27270104 |
| eCl@ss 8.0 | 27270104 |
| eCl@ss 8.1 | 27270104 |
| eCl@ss 9.0 | 27270104 |
| eCl@ss 10.0 | 27270104 |
| eCl@ss 11.0 | 27270104 |
| eCl@ss 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



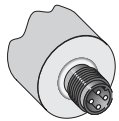
installation in non-magnetizable material



| \emptyset | A (mm) | M (Nm) |
|-------------|-----------|-----------|
| M12 | 10 | < 15 |

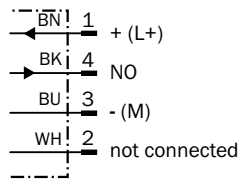


Connection type



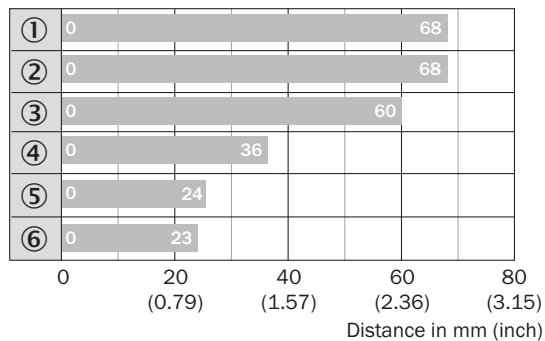
Connection diagram

Cd-011



Sensing range diagram

Sensing range

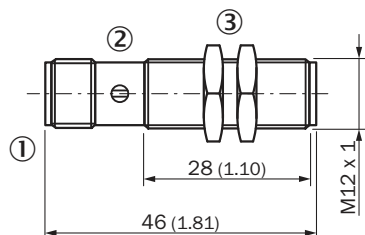


■ Max. sensing range S_n , flush or non-flush installation, non-magnetizable material

| 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, connector, short-body housing



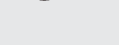


- ① Connection
- ② Display LED
- ③ Fastening nuts (2x); width across 17, metal

Recommended accessories

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

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| 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 |
| 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 Cable: unshielded | DOS-1204-G | 6007302 |
|  | Head A: male connector, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |

| | Brief description | Type | Part no. |
|---|--|-------------|----------|
|  | Head A: male connector, M12, 4-pin, angled Cable: unshielded | STE-1204-W | 6022084 |
| 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

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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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