Product data sheet



# MM18-70APS-ZCK

MM

MAGNETIC PROXIMITY SENSORS

SICK
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| MM18-70APS-ZCK | 1040072 |

**Included in delivery:** BEF-MU-M18 (1)

Other models and accessories ➜ www.sick.com/MM

## Detailed technical data

### Features

| | |
|---|---|
| **Housing** | Cylindrical thread design |
| **Housing** | Short-body |
| **Thread size** | M18 x 1 |
| **Diameter** | Ø 18 mm |
| **Sensing range $S_n$** | 0 mm ... 70 mm [1] |
| **Safe sensing range $S_a$** | 56.7 mm |
| **Magnetic sensitivity** | 0.7 mT |
| **Switching frequency** | 5,000 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** | 50 mm |
| **Thread length** | 32 mm |
| **Tightening torque, max.** | 40 Nm |

[1] Of $V_S$.
[2] At $I_a$ max.
[3] Without load.
[4] Von Sr (VS und Ta constant).
[5] Pulsed.

## Safety-related parameters

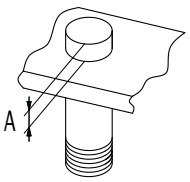
| | |
|---|---|
| **$MTTF_D$** | 1,980 years |
| **$DC_{avg}$** | 0% |
| **$T_M$ (mission time)** | 20 years |

## Classifications

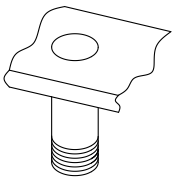
| | |
|---|---|
| **ECl@ss 5.0** | 27270104 |
| **ECl@ss 5.1.4** | 27270104 |
| **ECl@ss 6.0** | 27270104 |
| **ECl@ss 6.2** | 27270104 |
| **ECl@ss 7.0** | 27270104 |
| **ECl@ss 8.0** | 27270104 |
| **ECl@ss 8.1** | 27270104 |
| **ECl@ss 9.0** | 27270104 |
| **ECl@ss 10.0** | 27270104 |
| **ECl@ss 11.0**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

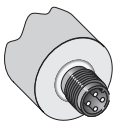



installation in non-magnetizable material



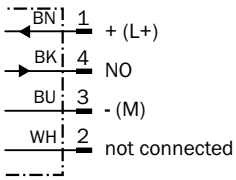
| Ø | A (mm) | M (Nm) |
|---|---|---|
| M18 | 15 | < 40 |

## Connection type



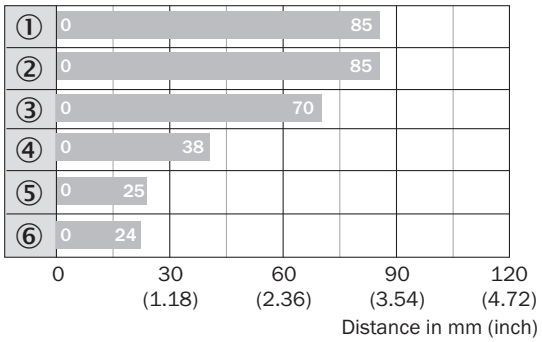
## Connection diagram

Cd-011



## Sensing range diagram

Sensing range

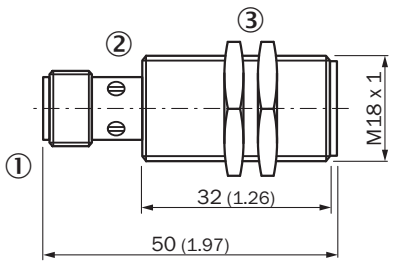



Max. sensing range $S_n$, flush or non-flush installation, non-magnetizable material

| 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))

MM18, 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/MM

| | Brief description | Type | Part no. |
|---|---|---|---|
| **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 N06 for universal clamp bracket, M18, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware | BEF-KHS-N06 | 2051612 |
| | Plate N06N for universal clamp bracket, M18, Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp), Universal clamp (5322627), mounting hardware | BEF-KHS-N06N | 2051622 |
| **Mounting brackets and plates** | | | |
|  | Mounting plate for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WG-M18 | 5321870 |
|  | Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WN-M18 | 5308446 |
| **Plug connectors and cables** | | | |
|  | Head A: female connector, M12, 4-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m | YF2A14-020VB3XLEAX | 2096234 |
| | Head A: female connector, M12, 4-pin, straight, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235 |
|  | Head A: female connector, M12, 4-pin, angled, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 2 m | YG2A14-020VB3XLEAX | 2095895 |
| | Head A: female connector, M12, 4-pin, angled, A-coded<br>Head B: Flying leads<br>Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YG2A14-050VB3XLEAX | 2095897 |
|  | Head A: female connector, M12, 4-pin, straight<br>Cable: unshielded | DOS-1204-G | 6007302 |

| | Brief description | Type | Part no. |
|---|---|---|---|
|  | Head A: female connector, M12, 4-pin, angled<br>Cable: unshielded | DOS-1204-W | 6007303 |
|  | Head A: male connector, M12, 4-pin, straight<br>Cable: unshielded | STE-1204-G | 6009932 |
|  | Head A: male connector, M12, 4-pin, angled<br>Cable: unshielded | STE-1204-W | 6022084 |
| Terminal and alignment brackets | | | |
|  | Clamping block for round sensors M18, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included | BEF-KH-M18 | 2051481 |
| | Clamping block for round sensors M18, with fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included | BEF-KHF-M18 | 2051482 |

# 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:

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