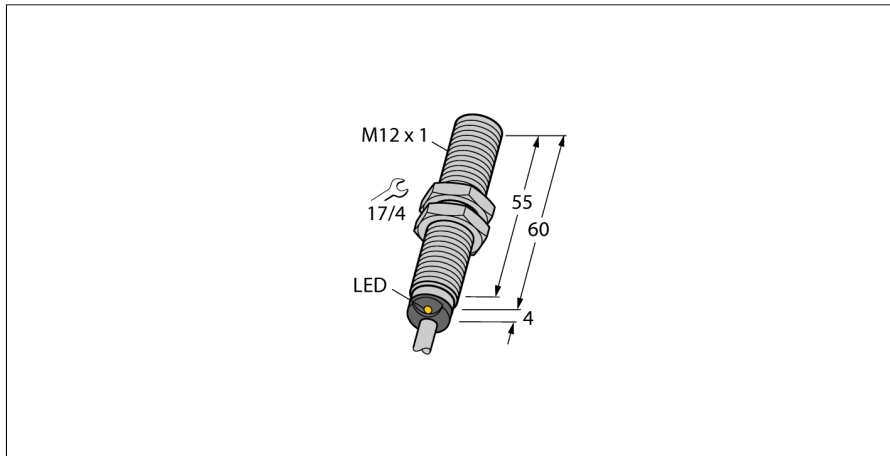


Magnetic field sensor

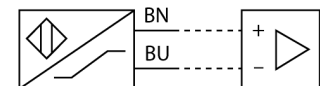
magnet-inductive proximity sensor

BIM-M12E-Y1X



- ATEX category II 1 G, Ex zone 0
- ATEX category II 1 D, Ex zone 20
- SIL2 as per IEC 61508
- Threaded barrel, M12 x 1
- Chrome-plated brass
- Rated operating distance 90 mm with DMR31-15-5 magnet
- DC 2-wire, nom. 8.2 VDC
- Output acc. to DIN EN 60947-5-6 (NAMUR)
- Cable connection

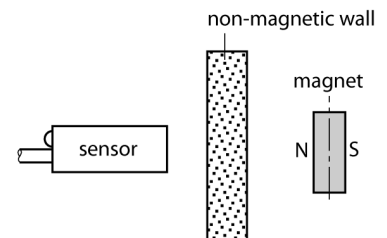
Wiring Diagram



Functional principle

Magnetic inductive proximity sensors are actuated by magnetic fields and are thus capable of detecting permanent magnets through non-ferromagnetic materials (e.g. wood, plastic, non-ferrous metals, aluminium, stainless steel).

Thus it is possible to achieve large switching distances even with smaller housing styles. In combination with the actuation magnet DMR31-15-5 TURCK sensors feature a relatively high switching distance. Thus there are multiple detection possibilities, particularly if the mounting space is limited or other difficult sensing conditions prevail.



| | |
|--|--|
| Type designation | BIM-M12E-Y1X |
| Ident-No. | 1074002 |
| Ident-No (TUSA) | M1074002 |
| Rated switching distance S_n | 90 mm In conjunction with magnet DMR31-15-5 |
| Repeat accuracy | $\leq 0.3\%$ of full scale |
| Temperature drift | $\leq \pm 15\%$ |
| Hysteresis | 1...10 % |
| Ambient temperature | -25...+70 °C |
| Output function | 2-wire, NAMUR |
| Switching frequency | 1 kHz |
| Voltage | Nom. 8.2 VDC |
| Current consumption non-actuated | ≤ 1.2 mA |
| Actuated current consumption | ≥ 2.1 mA |
| Approval acc. to | KEMA 02 ATEX 1090X |
| Design | Threaded barrel, M12 x 1 |
| Dimensions | 64 mm |
| Housing material | Metal, CuZn, Chrome-plated |
| Active area material | Plastic, PA12-GF30 |
| End cap | Plastic, EPTR |
| Max. tightening torque housing nut | 10 Nm |
| Electrical connection | Cable |
| Cable quality | 5.2mm, Blue, LifYY, PVC, 2 |
| Cable cross section | 2 x 0.34 mm ² |
| Vibration resistance | 55 Hz (1 mm) |
| Shock resistance | 30 g (11 ms) |
| Protection class | IP67 |
| MTTF | 6198 years acc. to SN 29500 (Ed. 99) 40 °C |
| Switching state | LED yellow |

**Magnetic field sensor
magnet-inductive proximity sensor
BIM-M12E-Y1X**



Diameter active area B

Ø 12 mm

Magnetic field sensor
magnet-inductive proximity sensor
BIM-M12E-Y1X

Accessories

| Type code | Ident-No. | Description | |
|------------------------------|-----------|--|--|
| IMX12- DI01-2S-2T-0/24VDC | 7580020 | Isolating switching amplifier, 2-channel; SIL2 acc. to IEC 61508; Ex-proof version; 2 transistor outputs; input Namur signal; ON/OFF switchable monitoring of wire-break and short-circuit; toggle between NO/NC mode; signal doubling; removable screw terminals; 12.5 mm wide; 24 VDC power supply | |
| DMR20-10-4 | 6900214 | Actuation magnet; Ø 20 mm (Ø 4 mm), h: 10 mm; sensing range 59 mm on BIM-(E)M12 sensors resp. 50 mm on BIM-EG08 sensors; in combination with Q25L: Recommended distance between sensor and magnet: 3 ... 4 mm | |
| DMR31-15-5 | 6900215 | Actuation magnet, Ø 31 mm (Ø 5 mm), h: 15 mm; sensing range 90 mm on BIM-(E)M12 sensors resp. 78 mm on BIM-EG08 sensors; in combination with Q25L: Recommended distance between sensor and magnet: 3 ... 5 mm | |
| DMR15-6-3 | 6900216 | Actuation magnet, Ø 15 mm (Ø 3 mm), h: 6 mm; sensing range 36 mm on BIM-(E)M12 sensors resp. 32 mm on BIM-EG08 sensors; in combination with Q25L: Recommended distance between sensor and magnet: 3 ... 4 mm | |
| DM-Q12 | 6900367 | Actuation magnet, rectangular, plastic, attainable switching distance 58 mm on BIM-(E)M12 sensors resp. 49 mm on BIM-EG08 sensors; in combination with Q25L: recommended distance between the sensor and magnet: 3...5 mm | |

**Magnetic field sensor
magnet-inductive proximity sensor
BIM-M12E-Y1X**

Accessories

| Type code | Ident-No. | Description | |
|-----------|-----------|--|--|
| BSS-12 | 6901321 | Mounting bracket for smooth and threaded barrel devices; material: Polypropylene | |
| MW-12 | 6945003 | Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304) | |

Magnetic field sensor magnet-inductive proximity sensor BIM-M12E-Y1X

TURCK
works

Industrial
Automation

Operating manual

Intended use

This device fulfills the directive 2014/34/EC and is suited for use in explosion hazardous areas according to EN 60079-0:2012 + A11 and EN 60079-11:2012.

Further it is suited for use in safety-related systems, including SIL2 as per IEC 61508.

In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.

For use in explosion hazardous areas conform to classification

II 1 G and II 1 D (Group II, Category 1 G, electrical equipment for gaseous atmospheres and category 1 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

⊕ II 1 G and Ex ia IIC T6 Ga acc. to EN60079-0 and -26 and ⊕ II 1 D Ex ia IIIC T115°C Da acc. to EN60079-0

Local admissible ambient temperature

-25...+70 °C

Installation / Commissioning

These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas. Please verify that the classification and the marking on the device comply with the actual application conditions.

This device is only suited for connection to approved Exi circuits compliant to EN60079-0 and -11. Please observe the maximum admissible electrical values.

After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).

Attention! When used in safety systems, all content of the security manual must be observed.

Installation and mounting instructions

Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device.

If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields.

The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet.

service / maintenance

Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.