

MAGNETIC PROXIMITY SENSORS IN A RECTANGULAR HOUSING



Product description

The MQ magnetic proximity sensors reliably detect permanent magnets through non-magnetic materials such as stainless steel, aluminum, plastic or wood. The MQ sensors feature a square,

compact plastic housing that makes them easy to install. These sensors are resistant to dust, heat and vibration, making them ideal for use in harsh environments.

At a glance

- Type: 10 mm x 28 mm x 16 mm
- Sensing ranges: up to 60 mm
- Electrical configuration: DC, 3-wire
- Enclosure rating: IP 67, IP 68
- Temperature range: -25 °C to +75 °C
- Tough VISTAL™ housing
- Reliable detection of permanent magnets through non-ferromagnetic materials such as stainless steel, aluminum, plastic or wood
- Solves high-temperature applications by installing the permanent magnet in the high-temperature area and the sensor behind an insulated area

Your benefits

- Short-circuit protection (pulsed)
- Large sensing ranges ensure reliable switching, even with target position tolerances
- Low-cost sensor solution saves installation time and costs
- Compact plastic housing makes machine integration easy



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→ www.sick.com/MQ

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



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Detailed technical data

Features

Housing	Rectangular
Dimensions (W x H x D)	10 mm x 16 mm x 28 mm
Sensing range S_n¹⁾	0 mm ... 60 mm
Safe sensing range S_a	48.6 mm
Magnetic sensitivity	≤ 1 mT
Switching frequency	1,000 Hz
Output type	PNP / NPN (depending on type)
Output function	NO
Electrical wiring	DC 3-wire
Enclosure rating²⁾	IP 67, IP 68

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
Ripple¹⁾	≤ 10 %
Voltage drop²⁾	≤ 1.5 V
Current consumption³⁾	≤ 5 mA
Time delay before availability	≤ 26 ms
Hysteresis	1 % ... 10 %
Repeatability⁴⁾	≤ 1 %
Temperature drift (of S_n)	± 10 %
EMC	According to EN 60947-5-2
Continuous current I_a	≤ 200 mA
Connection type	Male connector, M8 Cable, 2 m, PUR/PVC ⁵⁾ Cable with male connector, M12, 1 m, PUR/PVC ⁵⁾ (depending on type)
Short-circuit protection	✓
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	VISTAL™
Sensing face material	Plastic, VISTAL™

¹⁾ Of V_s .

²⁾ At I_a max.

³⁾ Without load.

⁴⁾ Von Sr (VS und Ta constant)

⁵⁾ Do not bend below 0 °C.

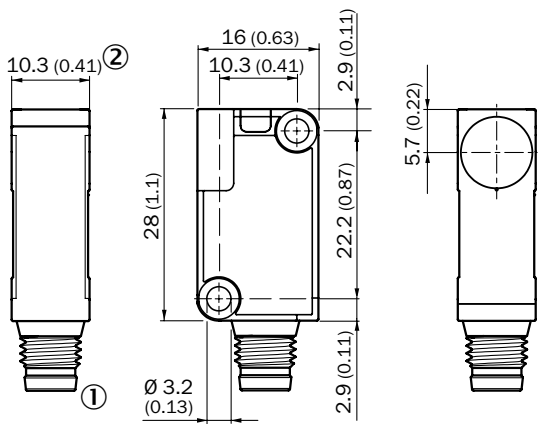
Ordering information

Other models → www.sick.com/MQ

Sensing range S_n	Output function	Output type	Connection	Connection diagram	Type	Part no.
≤ 60 mm	NO	PNP	Connector M8, 3-pin	Cd-002	MQ10-60APSKT0	1078008
			Cable, 3-wire, 2 m, PUR/PVC	Cd-001	MQ10-60APSKU0	1078006
			Cable with connector M12, 3-pin, 1 m, PUR/PVC	Cd-002	MQ10-60AP-SKQDS01	1078005
		NPN	Connector M8, 3-pin	Cd-002	MQ10-60ANSKT0	1078009
			Cable, 3-wire, 2 m, PUR/PVC	Cd-001	MQ10-60ANSKU0	1078007

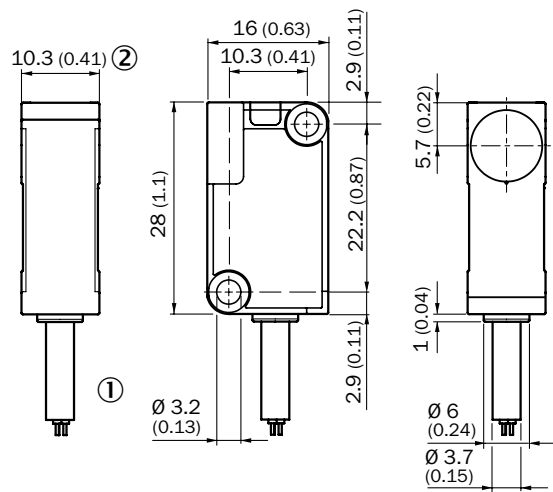
Dimensional drawings (Dimensions in mm (inch))

MQ10, connector



- ① Connection
- ② LED indicator 270°

MQ10, cable

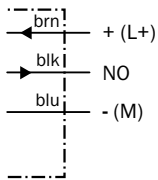


- ① Connection
- ② LED indicator 270°

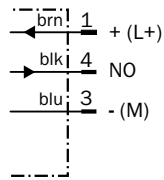
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Connection diagram

Cd-001

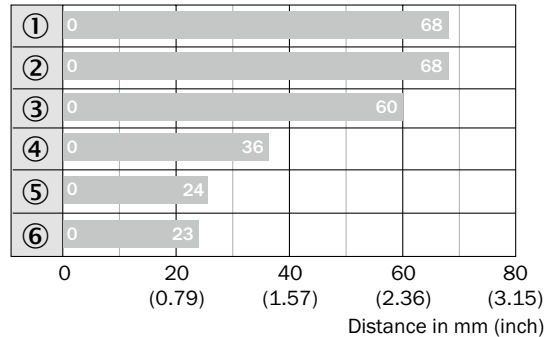


Cd-002



Maximum sensing range

MMxx-60Axx-xxx



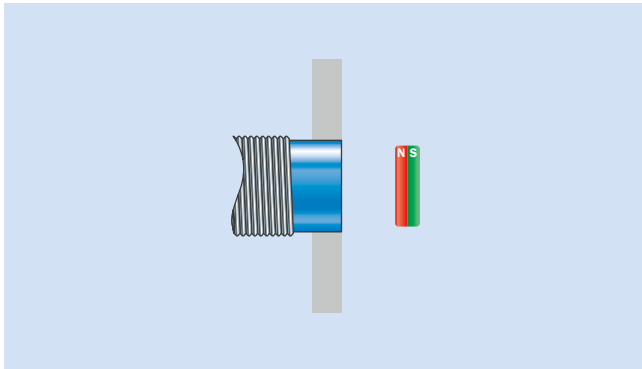
■ Max. sensing range S_n , flush or non-flush installation, non-magnetizable material

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

Installation notes

Flush sensor installation

Magnetic proximity sensors can be installed flush in all materials and metals with affecting the sensing range with the exception of magnetizable materials.



Non-flush sensor installation

The table shows how much the proximity sensor must protrude when installed in magnetic materials to prevent a reduction in the sensing range by more than 5%. Measurement standard MAG-3010-B (M 4.0).

Type	Free zone (a)
MM08-60A-xxx	10 mm
MM12-60A-xxx	10 mm
MM18-70A-xxx	15 mm
MQ10-60A-xxx	10 mm

Recommended accessories

Magnets

Figure	Description	Dimensions	Diameter	Type	Part no.
	Magnet without mounting hole, Ø 6 mm, height 25 mm	25 mm	6 mm	MAG-0625-A	7901783
	Magnet without mounting hole, Ø 10 mm, height 3 mm	3 mm	10 mm	MAG-1003-S	7901782
	Magnet without mounting hole, Ø 30 mm, height 10 mm	10 mm	30 mm	MAG-3010-B	7901785
	Magnet with mounting hole for M4 counter-sunk screw, Ø 20 mm, height 6.5 mm	6.5 mm	20 mm	MAG-2006-B	7901784
	Magnet with mounting hole for M5 flat head screw, Ø 31 mm, height 15 mm	15 mm	31 mm	MAG-3015-B	7901786
	Magnet with mounting hole for M5 flat head screw, Ø 36 mm, height 19.5 mm	19.5 mm	36 mm	MAG-3515-B	7902086

Further accessories

Figure	Accessory	Page
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	Mounting systems	→ H-258
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