



Magnetic proximity sensors
Cylindrical threaded housing, MM12

MM12-60ANO-ZU0



Model Name > **MM12-60ANO-ZU0**
Part No. > **1016927**



At a glance

- Detection of magnets
- Operating distances up to 90 mm or more based on the magnet strength
- High switching frequency
- Short-circuit, reverse polarity and power-up pulse suppression protection
- Robust nickel-plated brass housing with fine thread M12 x 1 mm
- IP 67 enclosure rating
- Cylindrical design
- PNP or NPN output

Your benefits

- Non-contact operation eliminates interference from dirt, dust and vibrations, increasing sensor life and reducing maintenance costs
- Space-saving installation due to small design
- Large operating distances with reliable switching increase throughput
- Non-contact, universal detection through several substances, including plastic containers and pipes protective PTFE walls and non-magnetic metal walls



Features

Thread size:	M12 x 1
Design:	Cylindrical
Sensing range Sn:	60 mm ¹⁾
Assured sensing range Sa:	48.6 mm
Magnetic sensitivity:	1 mT
Switching frequency:	5,000 Hz
Output type:	NPN
Output function:	NC
Electrical wiring:	DC 3-wire
Enclosure rating:	IP 67 ²⁾
Magnetic alignment:	Axial
Connection type:	Cable, 3-wire, 2 m ³⁾
Housing:	Advanced

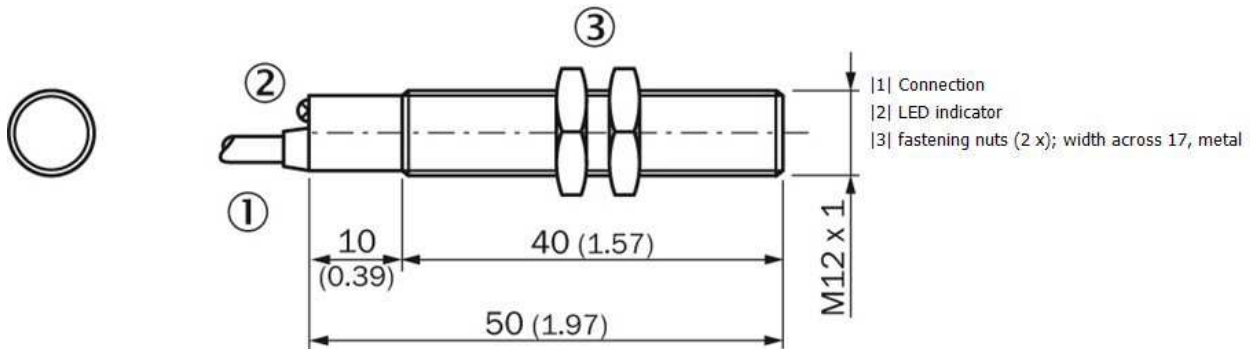
¹⁾ Sensing range based on installation in non-magnetic material using Magnet MAG-3010-B (M4.0) ²⁾ According to EN 60529 ³⁾ Do not bend below 0 °C

Mechanics/electronics

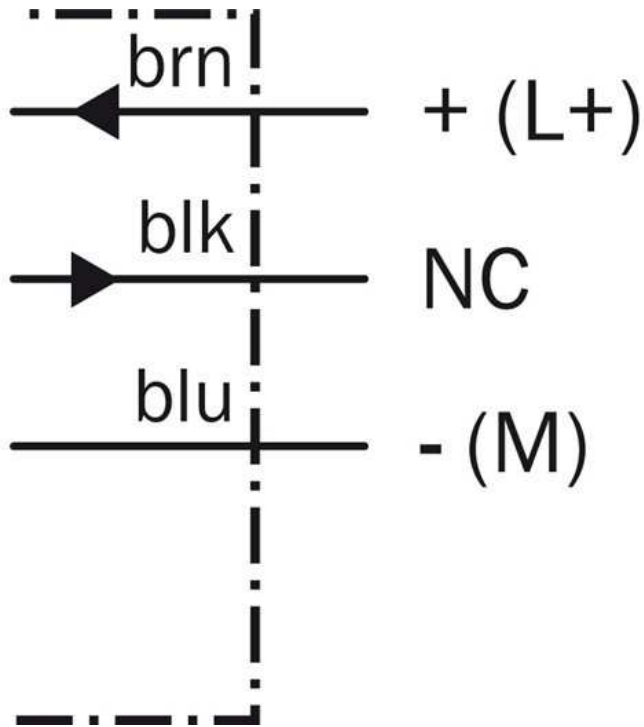
Housing length:	50 mm
Supply voltage:	10 V DC ... 30 V DC
Ripple:	$\leq 10\%$ ¹⁾
Current consumption:	$\leq 10\text{ mA}$ ²⁾
Voltage drop:	$\leq 1.5\text{ V}$ ³⁾
Output current I _a :	$\leq 300\text{ mA}$
Hysteresis:	1 % ... 10 %
Repeatability:	$\leq 1\%$ ⁴⁾
Temperature drift (of Sr):	$\pm 10\%$
EMC:	According to EN 60947-5-2
Tightening torque, max.:	7 Nm
Reverse polarity protection:	✓
Short-circuit protection ⁵⁾ :	✓
Housing material:	Metal, Nickel-plated brass
Power-up pulse protection:	✓
Time delay before availability:	$\leq 2\text{ ms}$
Ambient operating temperature:	-25 °C ... 75 °C
Shock and vibration resistance:	30 g, 11 ms/10 ... 55 Hz, 1 mm
Cable material:	PUR/PVC
Wire-break protection:	1
Items supplied:	Fastening nuts (2 x)

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

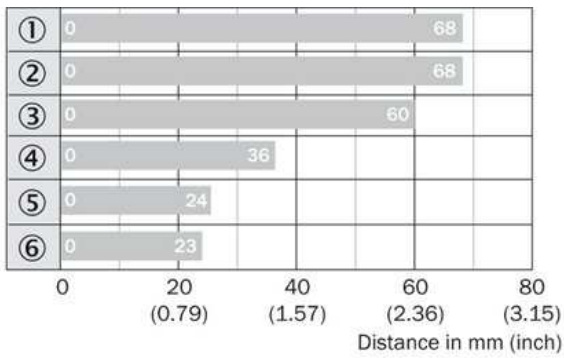
Dimensional drawing



Connection diagram



Operating distance



■ 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

Connection type



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