



Magnetic proximity sensors  
Cylindrical threaded housing, MM12 NAMUR

MM12-60A-N-ZC0



**Model Name** > **MM12-60A-N-ZC0**  
**Part No.** > **7900287**



#### At a glance

- Detection of magnets
- Operating distances up to 60 mm or more based on the magnet strength
- NAMUR as per EN 60 947-5-6
- High switching frequency
- Rugged nickel-plated brass housing with fine thread M12 x 1 mm
- IP 67 enclosure rating
- EC-type test certificate Ex II 2G EEx ib IIC T6 TÜV 99 ATEX 1398
- Cylindrical design

#### Your benefits

- NAMUR design ensures safe operation in highly explosive areas
- Non-contact operation ensures resistance to dirt, dust and vibration, increasing sensor life and reducing maintenance costs
- Large operating distances ensure reliable switching, even with target position tolerances
- Non-contact, universal detection through several substances, including plastic containers and pipes and protective PTFE walls



#### Features

Thread size:	M12 x 1
Design:	Cylindrical
Sensing range Sn:	60 mm <sup>1)</sup>
Assured sensing range Sa:	48.6 mm
Magnetic sensitivity:	≤ 1 mT
Switching frequency:	5,000 Hz
Output type:	NAMUR
Electrical wiring:	NAMUR
Enclosure rating:	IP 67 <sup>2)</sup>
Magnetic alignment:	Axial
Electrical connection:	Connector M12, 4-pin
Output characteristic:	Control current depending on switching state according to NAMUR EN 60947-5-6

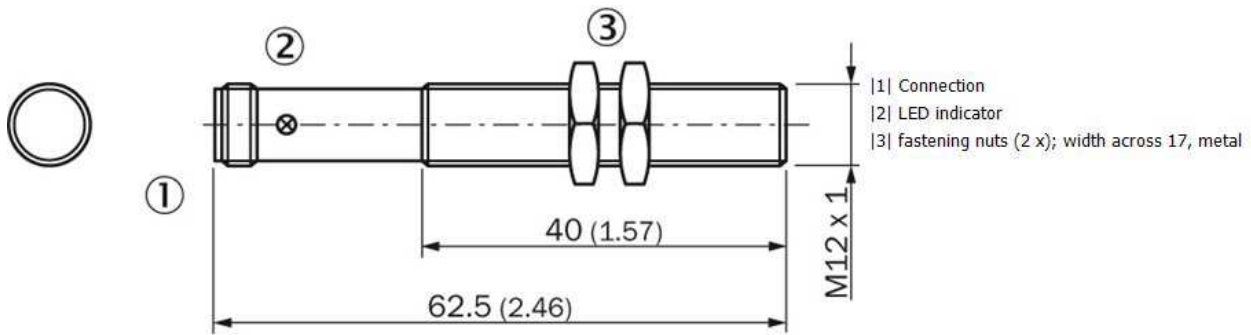
<sup>1)</sup> Sensing range based on installation in non-magnetic material using Magnet MAG-3010-B (M4.0) <sup>2)</sup> According to EN 60529

#### Mechanics/electronics

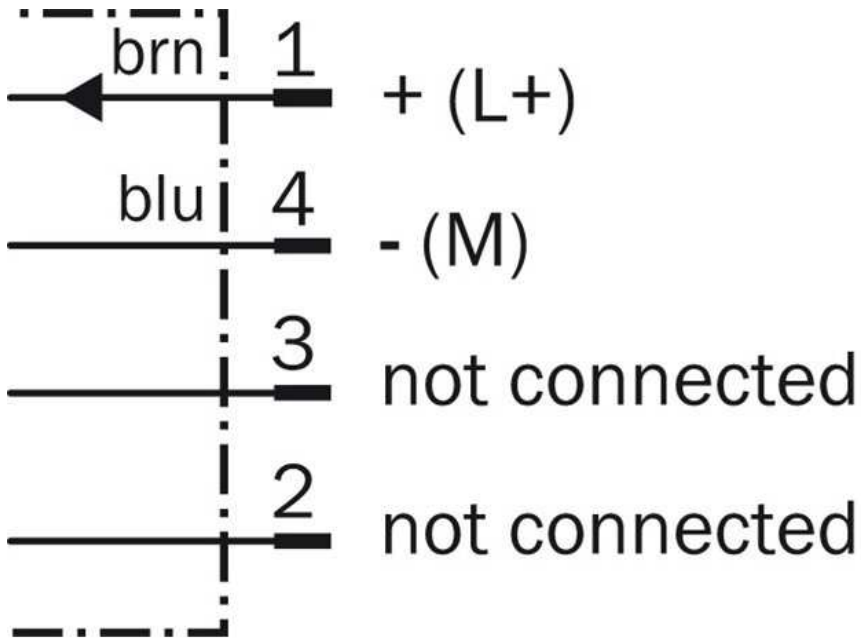
Housing length:	62.5 mm
Residual ripple:	$\leq 5\%$ <sup>1)</sup>
Hysteresis:	1 % ... 10 %
Repeatability:	$\leq 1\%$ <sup>2)</sup>
Temperature drift (of Sr):	$\pm 10\%$
EMC:	According to EN 60947-5-2
Tightening torque, max.:	$\leq 7\text{ Nm}$
Reverse polarity protection:	✓
Short-circuit protection:	✓
Housing material:	Metal, Nickel-plated brass
Time delay before availability:	$\leq 2\text{ ms}$
Ambient temperature operation:	-25 °C ... 75 °C
Shock and vibration resistance:	30 g, 11 ms/10 ... 55 Hz, 1 mm
Current consumption, sensor is activated:	$\geq 2.5\text{ mA}$
Current consumption, sensor is not activated:	$\leq 1\text{ mA}$
Cable resistance:	$\leq 50\ \Omega$
EC Approval Certificate:	TÜV 99 ATEX 1398
ATEX marking:	EX II 2G Ex ia IIC T6 Ta: -20 °C ... 70 °C
Hazardous area category:	2G
Input voltage $U_i$ max.:	16 V <sup>3)</sup>
Input power $P_i$ max.:	100 mW <sup>4)</sup>
Input current $I_i$ max.:	30 mA <sup>5)</sup>
Internal capacitance $C_i$ max.:	15 nF <sup>6)</sup>
Internal inductance $L_i$ max.:	35 $\mu\text{H}$ <sup>7)</sup>
Nominal voltage:	8.2 V DC
Wire-break protection:	1
Items supplied:	Fastening nuts (2 x)

<sup>1)</sup> Of  $V_S$  <sup>2)</sup> Von Sr (VS und Ta constant) <sup>3) 4) 5) 6) 7)</sup> For connection to a sperately certified intrinsically safe circuit only

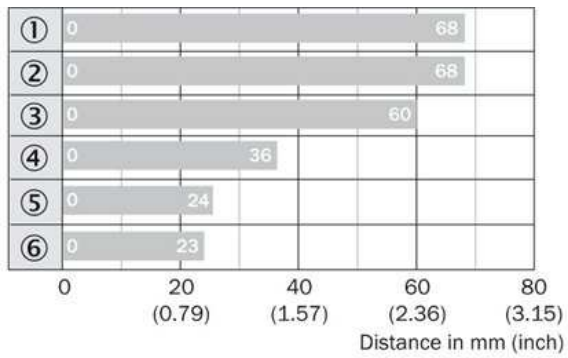
## Dimensional drawing



## Connection diagram



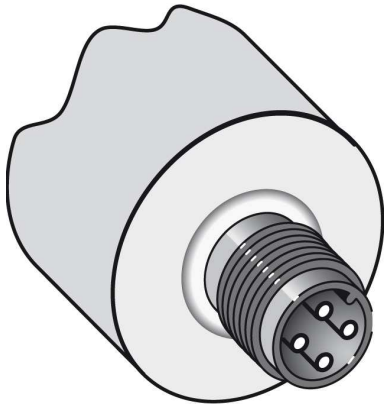
## Operating distance



■ Max. sensing range S<sub>n</sub>, 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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