



Inductive proximity sensors  
Cylindrical threaded housing, IM12

IM12-10NNS-ZW1



**Model Name** > **IM12-10NNS-ZW1**  
**Part No.** > **6027513**



**At a glance**

- Triple operating distance up to 10 mm
- Operating temperature from -25 °C to +70 °C
- High switching frequencies
- Sizes M12

**Your benefits**

- Reduced machine downtime and maintenance costs
- Large operating reserve due to triple operating distance improves machine throughput - no missed targets
- Saves installation space on the machine. Less space required for the same operating distance when compared with standard sensors
- Lower risk of mechanical damage due their ability to be mounted further from the target
- High level of sensitivity makes them suitable for detecting difficult parts such as wires, thin sheets, small screws – reduces design and installation time



**Features**

Design:	Cylindrical
Thread size:	M12 x 1
Sensing range Sn:	10 mm
Assured sensing range Sa:	8.1 mm
Installation type:	Non-flush
Switching frequency:	400 Hz
Output type:	NPN
Output function:	NO
Electrical wiring:	DC 3-wire
Enclosure rating:	IP 67 <sup>1)</sup>
Electrical connection:	Cable, 3-wire, 2 m
Housing:	Standard

<sup>1)</sup> According to EN 60529

**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC
Residual ripple:	≤ 10 % <sup>1)</sup>
Voltage drop:	≤ 2 V <sup>2)</sup>
Power consumption:	≤ 10 mA <sup>3)</sup>

Time delay before availability:	≤ 50 ms
Hysteresis:	1 % ... 15 %
Repeatability::	≤ 5 % <sup>4) 5)</sup>
Temperature drift (of Sr):	± 10 %
EMC:	According to EN 60947-5-2
Output current I <sub>a</sub> :	≤ 200 mA
Cable material:	PVC
Conductor cross-section:	0.34 mm <sup>2</sup>
Cable diameter:	5 mm
Short-circuit protection:	✓
Reverse polarity protection:	✓
Power-up pulse protection:	✓
Shock and vibration resistance:	30 g, 11 ms/10 ... 55 Hz, 1 mm
Adjustment indicator:	-
Ambient temperature operation:	-25 °C ... +70 °C
Housing material:	Metal, Chrome-plated brass
Housing cap material:	Plastic, PBTP
Housing length:	52 mm
Thread length:	44 mm
Tightening torque, max.:	10 Nm

1) Of V<sub>S</sub> <sup>2)</sup> At I<sub>a</sub> max <sup>3)</sup> Without load <sup>4)</sup> Of Sr <sup>5)</sup> UB = 20 V DC ... 30 V DC, TA = 23 °C ± 5 °C <sup>6)</sup> LED lights continuously (0 ≤ s ≤ 0.8 Sr); LED flashing (0.8 Sr < s ≤ Sr)

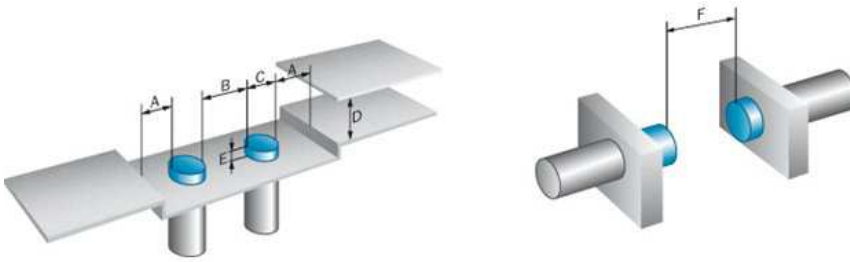
### Reduction factors

Note:	The values are reference values which may vary
Stainless steel (V2A, 304):	Ca. 0.77
Copper (Cu):	Ca. 0.45
Aluminum (Al):	Ca. 0.49
Brass (Br):	Ca. 0.56

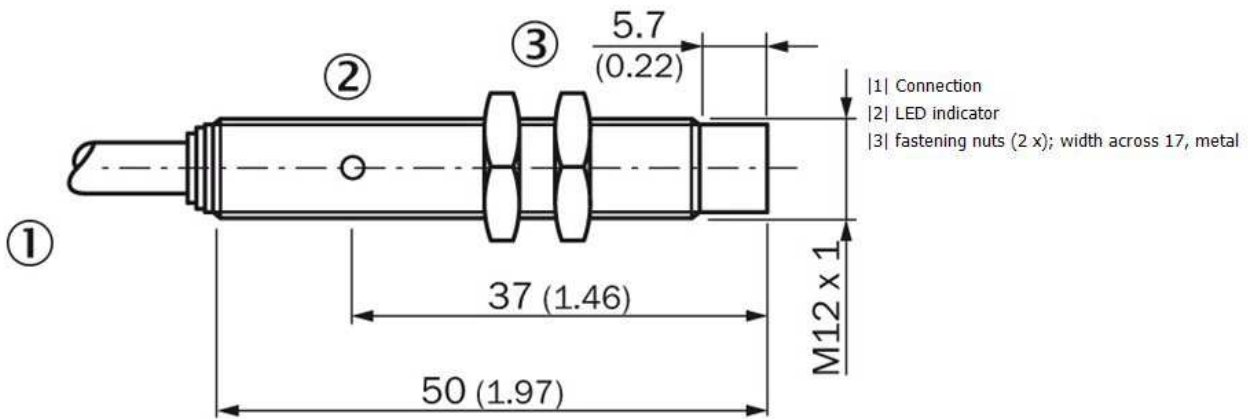
### Installation note

A:	10 mm
B:	30 mm
C:	12 mm
D:	30 mm
E:	13 mm
F:	100 mm
Remark:	Associated graphic see "Installation"

## Installation note



## Dimensional drawing



All dimensions in mm (inch)

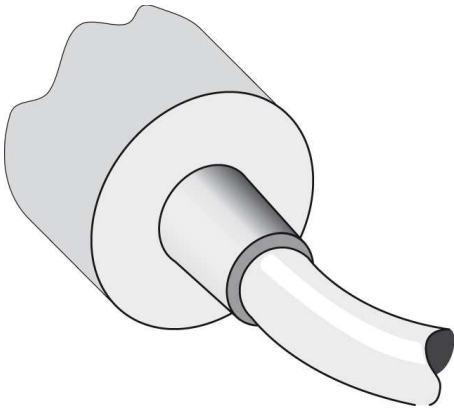
Connection diagram

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Connection type

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