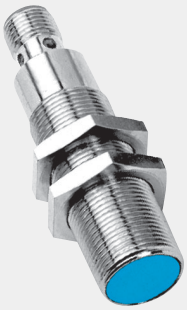
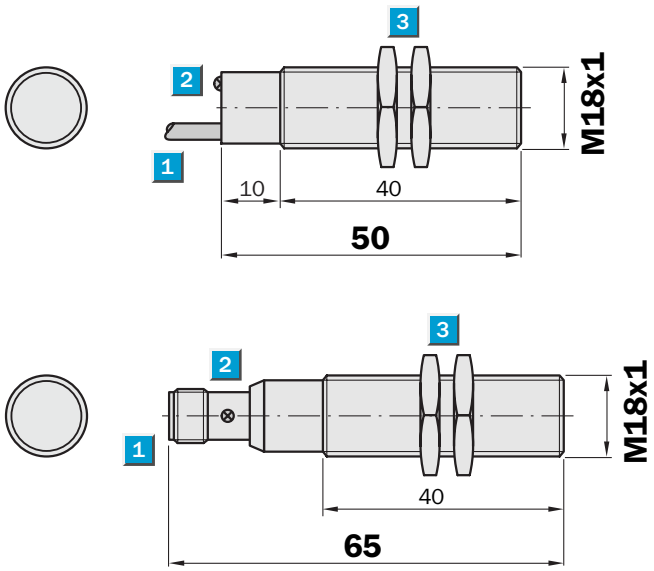
Sensing range 5 ... 70 mm

Magnetic sensor

- Sensing range up to 70 mm
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67

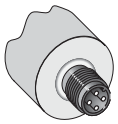
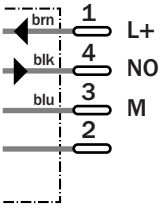
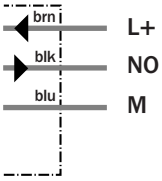


Dimensional drawing



1 Connection
2 Display LED
3 Fastening nuts (2 x); width across 17, metal

Connection type

MM18-70APS-ZC0	MM18-70APS-ZU0
	
M12, 4-pin	3 x 0.25 mm²
	

Accessories

- Connector, M12, 4-pin
- Magnets
- Mounting systems

Technical specifications	MM18-	70APS-ZC0	70APS-ZU0
Sensing range S_n	5 ... 70 mm[1]	■	■
Magnetic alignment	Axial	■	■
Electrical configuration	DC 3-wire	■	■
Supply voltage V_s	DC 10 ... 30 V	■	■
Ripple U_{pp}	≤ 10 %[2]	■	■
Voltage drop U_d	≤ 1.5 V[3]	■	■
Power consumption	≤ 10 mA[4]	■	■
Continuous current I_a	≤ 300 mA	■	■
Time delay before availability t_v	≤ 2 ms	■	■
Hysteresis H, of s_r	1 ... 10 %	■	■
Repeatability R	≤ 1 % (U_b and T_a constant)[5]	■	■
Temperature drift, of s_r	± 10 %	■	■
EMC	According to EN 60947-5-2	■	■
Switching output	PNP[6]	■	■
Output function	Normally open	■	■
Connection type	Connector, M12, 4-pin	■	
	Cable, PVC/PUR, 2 m		■
Enclosure rating	IP 67[7]	■	■
Max. switching frequency	5,000 Hz	■	■
Dimensions	M18 x 1[8]	■	■
Wire-break protection	✓	■	■
Short-circuit protection	✓[9]	■	■
Reverse polarity protection	✓	■	■
Power-up pulse suppression	✓	■	■
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■
Ambient temperature operation	-25 °C ... +75 °C	■	■
Housing material	Brass nickel-plated, plastic	■	■
Tightening torque	25 Nm	■	■

[1] Sensing range based on installation in non-magnetic material using Magnet MAG-3010-B (M 4.0)
[2] of U_b
[3] at I_a max
[4] without load
[5] of s_r
[6] Output NPN on request
[7] according to EN 60529
[8] Thread diameter x pitch (mm)
[9] (pulsed)

Max. sensing ranges(Typical values)

Magnet type	Max. sensing range s_n Any sensor installation version (flush or non-flush) in non-magnetizable material	Max. sensing range s_n Flush sensor installation in magnetizable material (e.g. iron)
MAG-1003-S (M 1.0)	24 mm	20 mm
MAG-0625-A (M 2.0)	25 mm	17 mm
MAG-2006-B (M 3.0)	38 mm	32 mm
MAG-3010-B (M 4.0)	**70 mm**	55 mm
MAG-3015-B (M 5.0)	85 mm	60 mm
MAG-3315-B (M 5.1)		

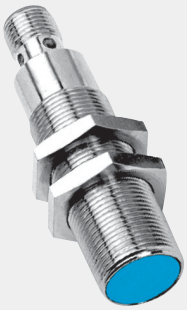
Ordering information

Model Name	Part Number
MM18-70APS-ZC0	7 900 274
MM18-70APS-ZU0	7 900 272

Sensing range 5 ... 120 mm

Magnetic sensor

- Sensing range up to 120 mm
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M18 x 1 mm
- Enclosure rating IP 67

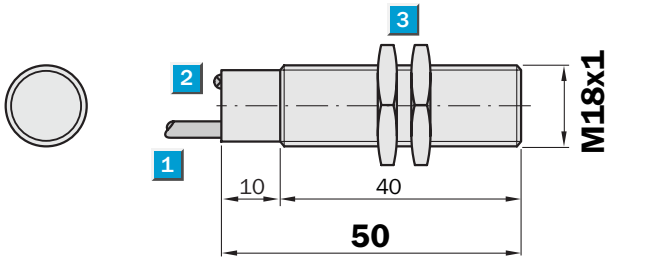


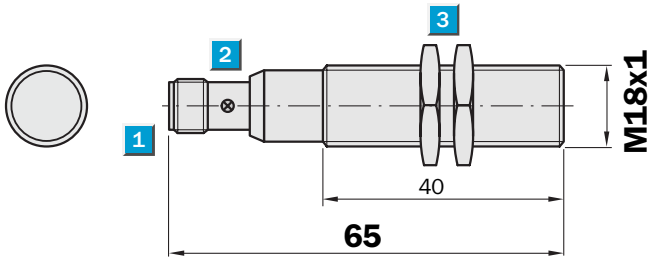
CE

Accessories

- Connector, M12, 4-pin
- Magnets
- Mounting systems

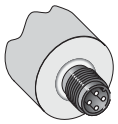
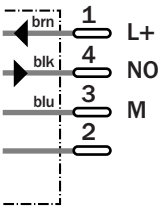
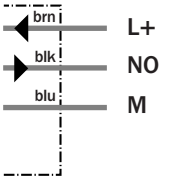
Dimensional drawing





1 Connection
2 Display LED
3 Fastening nuts (2 x); width across 17, metal

Connection type

MM18-00APS-ZC0	MM18-00APS-ZU0
	
M12, 4-pin	3 x 0.25 mm²
	

Technical specifications	MM18-	00APS-ZC0	00APS-ZU0								
Sensing range S_n	5 ... 120 mm										
Magnetic alignment	Axial										
Electrical configuration	DC 3-wire										
Supply voltage V_s	DC 10 ... 30 V										
Ripple U_{pp}	≤ 10 %										
Voltage drop U_d	≤ 1.5 V[1]										
Power consumption	≤ 10 mA[2]										
Continuous current I_a	≤ 300 mA										
Time delay before availability t_v	≤ 2 ms										
Hysteresis H, of s_r	1 ... 10 %										
Repeatability R	≤ 1 % (U_b and T_a constant)[3]										
Temperature drift, of s_r	± 10 %										
EMC	According to EN 60947-5-2										
Switching output	PNP[4]										
Output function	Normally open										
Connection type	Connector, M12, 4-pin										
	Cable, PUR, 2 m										
Enclosure rating	IP 67[5]										
Max. switching frequency	5,000 Hz										
Dimensions	M18 x 1[6]										
Wire-break protection	✓										
Short-circuit protection	✓[7]										
Reverse polarity protection	✓										
Power-up pulse suppression	✓										
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm										
Ambient temperature operation	-25 °C ... +75 °C										
Housing material	Brass nickel-plated, plastic										
Tightening torque	25 Nm										

[1] at I_a max
[2] without load
[3] of s_r
[4] Output NPN on request
[5] according to EN 60529
[6] Thread diameter x pitch (mm)
[7] (pulsed)

Max. sensing ranges(Typical values)

Magnet type	Max. sensing range s_n Any sensor installation version (flush or non-flush) in non-magnetizable material
MAG-1003-S (M 1.0)	45 mm
MAG-0625-A (M 2.0)	50 mm
MAG-2006-B (M 3.0)	70 mm
MAG-3010-B (M 4.0)	**120 mm**
MAG-3015-B (M 5.0)	130 mm
MAG-3315-B (M 5.1)	

Ordering information

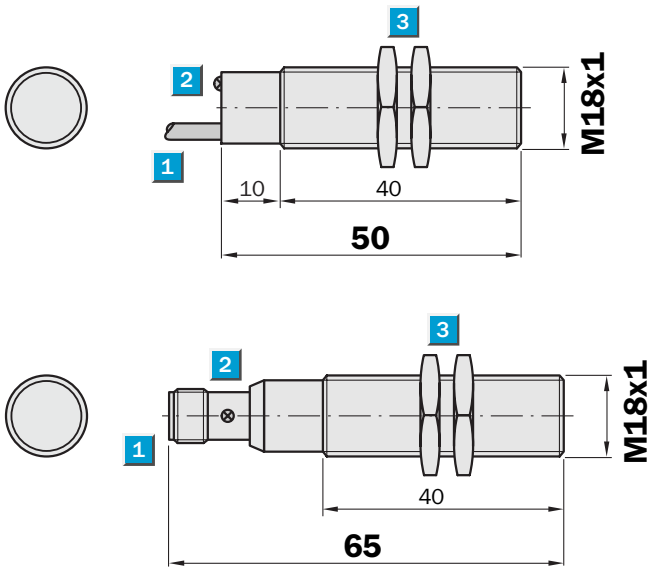
Model Name	Part Number
MM18-00APS-ZC0	1 029 861
MM18-00APS-ZU0	1 029 952

Sensing range 5 ... 70 mm

Magnetic sensor

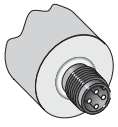
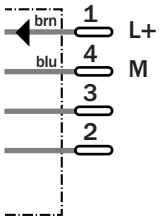
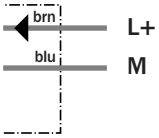
- Sensing ranges up to 70 mm
- NAMUR to EN 60 947-5-6
- High switching frequency
- Robust brass housing, nickel-plated, with fine thread M18 x 1 mm
- Enclosure rating IP 67
- Classification TÜV 99 ATEX 1398 Ex II 2G EEx ib IIC T6

Dimensional drawing



1 Connection
2 Display LED
3 Fastening nuts (2 x); width across 17, metal

Connection type

MM18-70A-N-ZC0	MM18-70A-N-ZW0
	
M12, 4-pin	2 x 0.34 mm²
	

Accessories

- Connector, M12, 4-pin
- Magnets
- Mounting systems
- Switching units

Technical specifications	MM18-70A-	N-ZC0	N-ZW0								
Sensing range S_n	5 ... 70 mm[1]										
Magnetic alignment	Axial										
Electrical configuration	NAMUR										
Supply voltage V_s	DC 5 ... 25 V										
Nominal voltage V_n	DC 8.2 V										
Ripple U_{pp}	≤ 5 %[2]										
Power consumption, attenuated	≥ 2.5 mA										
Power consumption, unattenuated	≤ 1 mA										
Internal capacitance	≤ 15 nF										
Internal inductance	≤ 35 µH										
Cable resistance	≤ 50 Ohm										
Time delay before availability t_v	≤ 2 ms										
Hysteresis H, of s_r	1 ... 10 %										
Repeatability R	≤ 1 % (U_b and T_a constant)[3]										
Temperature drift, of s_r	± 10 %										
EMC	According to EN 60 947-5-6										
Switching output	Control current dependent on switching state[4]										
Output function	NAMUR										
Connection type	Connector, M12, 4-pin										
	Cable, PVC, 2 m										
Enclosure rating	IP 67[5]										
Max. switching frequency	5,000 Hz										
Dimensions	M18 x 1[6]										
short-circuit protected	✓										
Reverse polarity protected	✓										
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm										
Ambient temperature operation	-25 °C ... +70 °C										
Housing material	Brass nickel-plated, plastic										
Tightening torque	25 Nm										

[1] Sensing range based on installation in non-magnetic material using Magnet MAG-3010-B (M 4.0)
[2] of U_b
[3] of s_r
[4] according to NAMUR EN 60947-5-6
[5] according to EN 60529
[6] Thread diameter x pitch (mm)

Max. data for connecting isolating unit EN 2 Ex or other approved isolating amplifier:

Short circuit current 1_{Kmax}	30 mA
No load voltage U_0	16 V
Power loss P_{max}	75 mW

Max. sensing ranges(Typical values)

Magnet type	Max. sensing range s_n Any sensor installation version (flush or non-flush) in non-magnetizable material	Max. sensing range s_n Flush sensor installation in magnetizable material (e.g. iron)
MAG-1003-S (M 1.0)	24 mm	20 mm
MAG-0625-A (M 2.0)	25 mm	17 mm
MAG-2006-B (M 3.0)	38 mm	32 mm
MAG-3010-B (M 4.0)	**70 mm**	**55 mm**
MAG-3015-B (M 5.0)	85 mm	60 mm
MAG-3315-B (M 5.1)		

Ordering information	
Model Name	**Part Number**
MM18-70A-N-ZC0	7 900 289
MM18-70A-N-ZW0	7 900 288