

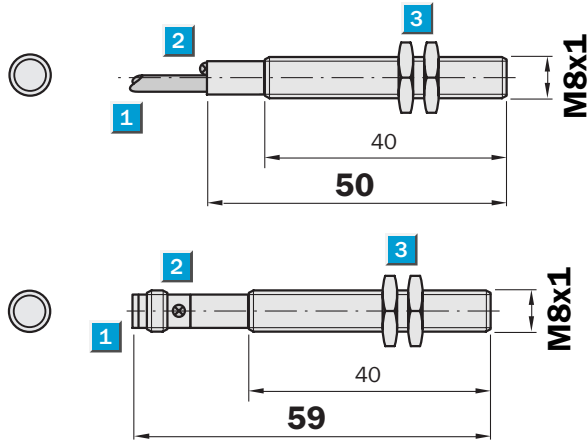
Magnetic sensor, MM08, DC 3-wire

Sensing range
5 ... 60 mm

Magnetic sensor

- Sensing range up to 60 mm
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M8 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



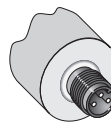
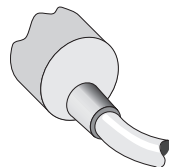
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 13, plastic



Connection type

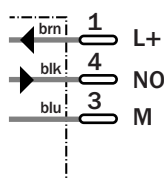
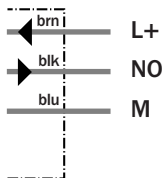
MM08-60ANS-ZUO
MM08-60APS-ZUO

MM08-60APS-ZTO



3 x 0.25 mm²

M8, 3-pin



See chapter Accessories

Connector, M8, 3-pin
Magnets

Technical specifications		MM08-	60ANS-ZUO	60APS-ZTO	60APS-ZUO							
Sensing range s_n	5 ... 60 mm ¹⁾											
Magnetic alignment	Axial											
Electrical configuration	DC 3-wire											
Supply voltage V_s	DC 10 ... 30 V											
Ripple U_{pp}	$\leq 10\%$ ²⁾											
Voltage drop U_d	$\leq 1.5\text{ V}$ ³⁾											
Power consumption	$\leq 10\text{ mA}$ ⁴⁾											
Continuous current I_a	$\leq 300\text{ mA}$											
Time delay before availability t_v	$\leq 2\text{ ms}$											
Hysteresis H, of s_r	1 ... 10 %											
Repeatability R	$\leq 1\%$ (U_b and T_a constant) ⁵⁾											
Temperature drift, of s_r	$\pm 10\%$											
EMC	According to EN 60947-5-2											
Switching output	NPN											
	PNP											
Output function	Normally open											
Connection type	Cable, PVC/PUR, 2 m											
	Connector, M8, 3-pin											
Enclosure rating	IP 67 ⁶⁾											
Max. switching frequency	5,000 Hz											
Dimensions	M8 x 1 ⁷⁾											
Wire-break protection	✓											
Short-circuit protection	✓ ⁸⁾											
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	0.8 Nm ⁹⁾											

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⁾ according to EN 60529

⁷⁾ Thread diameter x pitch (mm)
⁸⁾ (pulsed)
⁹⁾ with plastic nuts, included with delivery

Max. sensing ranges (Typical values)

Magnet type	Max. sensing range s_n	Max. sensing range s_n
	Any sensor installation type (flush or non-flush) in non-magnetizable material	Flush sensor installation in magnetizable material (e.g. iron)
MAG-1003-S (M 1.0)	23 mm	22 mm
MAG-0625-A (M 2.0)	24 mm	10 mm
MAG-2006-B (M 3.0)	36 mm	15 mm
MAG-3010-B (M 4.0)	60 mm	20 mm
MAG-3015-B (M 5.0)	68 mm	25 mm
MAG-3315-B (M 5.1)		

Order information

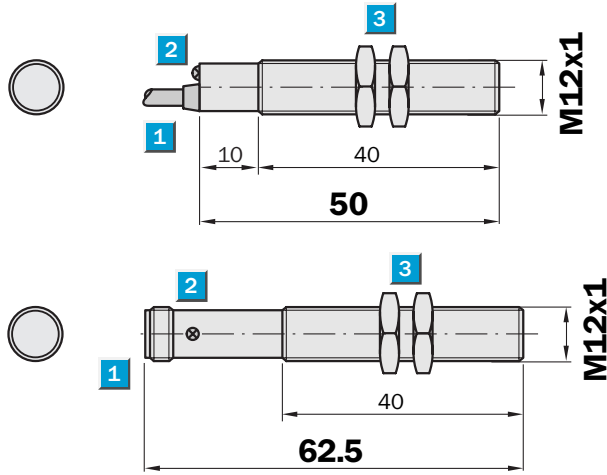
Type	Order no.
MM08-60ANS-ZUO	7 900 265
MM08-60APS-ZTO	7 900 266
MM08-60APS-ZUO	7 900 264

Sensing range
5 ... 60 mm

Magnetic sensor

- Sensing range up to 60 mm
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



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



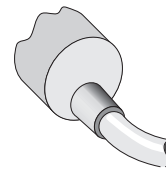
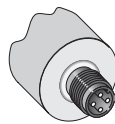
See chapter Accessories

Connector, M12, 4-pin
Magnets
Mounting systems

Connection type

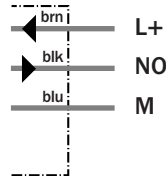
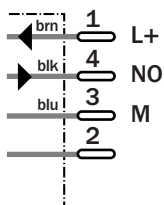
MM12-60APS-ZC0

MM12-60APS-ZU0



M12, 4-pin

3 x 0.25 mm²



Technical specifications		MM12-	60APS-ZCO	60APS-ZUO									
Sensing range s_n	5 ... 60 mm ¹⁾												
Magnetic alignment	Axial												
Electrical configuration	DC 3-wire												
Supply voltage V_s	DC 10 ... 30 V												
Ripple U_{pp}	$\leq 10\%$ ²⁾												
Voltage drop U_d	$\leq 1.5\text{ V}$ ³⁾												
Power consumption	$\leq 10\text{ mA}$ ⁴⁾												
Continuous current I_a	$\leq 300\text{ mA}$												
Time delay before availability t_v	$\leq 2\text{ ms}$												
Hysteresis H, of s_r	1 ... 10 %												
Repeatability R	$\leq 1\%$ (U_b and T_a constant) ⁵⁾												
Temperature drift, of s_r	$\pm 10\%$												
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	M12 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	7 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	Max. sensing range s_n
	Any sensor installation version (flush or non-flush) in non-magnetizable material	Flush sensor installation in magnetizable material (e.g. iron)
MAG-1003-S (M 1.0)	23 mm	17 mm
MAG-0625-A (M 2.0)	24 mm	14 mm
MAG-2006-B (M 3.0)	36 mm	23 mm
MAG-3010-B (M 4.0)	60 mm	37 mm
MAG-3015-B (M 5.0)	68 mm	44 mm
MAG-3315-B (M 5.1)		

Order information

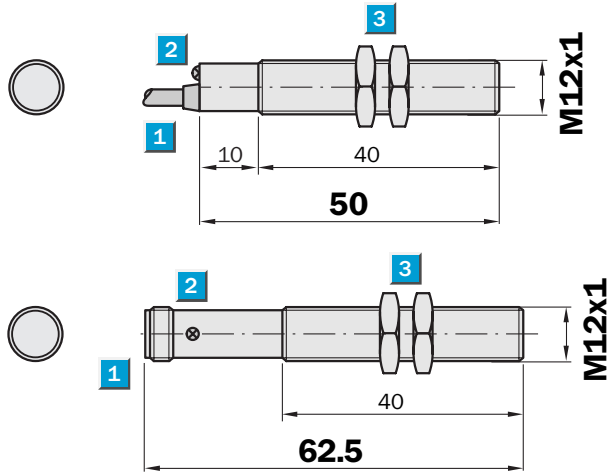
Type	Order no.
MM12-60APS-ZCO	7 900 270
MM12-60APS-ZUO	7 900 268

Sensing range
5 ... 90 mm

Magnetic sensor

- Sensing range up to 90 mm
- High switching frequency
- Short-circuit protection (pulsed)
- Robust brass housing, nickel-plated with fine thread M12 x 1 mm
- Enclosure rating IP 67

Dimensional drawing



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



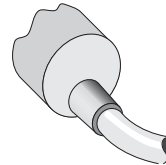
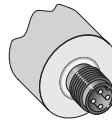
See chapter Accessories

Connector, M12, 4-pin
Magnets
Mounting systems

Connection type

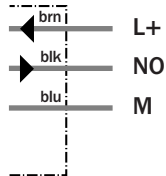
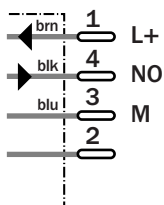
MM12-90APS-ZC0

MM12-90APS-ZU0



M12, 4-pin

3 x 0.25 mm²



Technical specifications		MM12-	90APS-ZCO	90APS-ZUO								
Sensing range s_n	5 ... 90 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	M12 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	7 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)	30 mm
MAG-0625-A (M 2.0)	35 mm
MAG-2006-B (M 3.0)	50 mm
MAG-3010-B (M 4.0)	90 mm
MAG-3015-B (M 5.0)	100 mm
MAG-3315-B (M 5.1)	

Order information

Type	Order no.
MM12-90APS-ZCO	1 029 950
MM12-90APS-ZUO	1 029 951

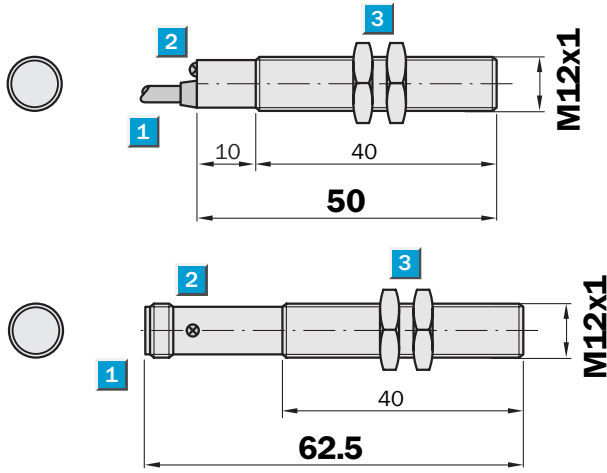
Magnetic sensor, MM12, NAMUR

Sensing range
5 ... 60 mm

Magnetic sensor

- Sensing ranges up to 60 mm
 - NAMUR to EN 60 947-5-6
 - High switching frequency
 - Robust brass housing, nickel-plated, with fine thread M12 x 1 mm
 - Enclosure rating IP 67
 - Classification TÜV 99 ATEX 1398
- Ex II 2G EEx ib IIC T6

Dimensional drawing



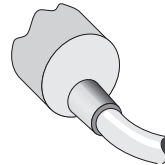
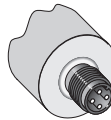
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



Connection type

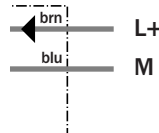
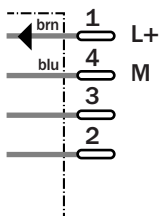
MM12-60A-N-ZC0

MM12-60A-N-ZW0



M12, 4-pin

2 x 0.34 mm²



See chapter Accessories

Connector, M12, 4-pin

Magnets

Mounting systems

Switching units

Technical specifications		MM12-60A-	N-ZCO	N-ZW0									
Sensing range S_n	5 ... 60 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	M12 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	7 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 I_{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	Max. sensing range s_n
	Any sensor installation version (flush or non-flush) in non-magnetizable material	Flush sensor installation in magnetizable material (e.g. iron)
MAG-1003-S (M 1.0)	23 mm	17 mm
MAG-0625-A (M 2.0)	24 mm	14 mm
MAG-2006-B (M 3.0)	36 mm	23 mm
MAG-3010-B (M 4.0)	60 mm	37 mm
MAG-3015-B (M 5.0)	68 mm	44 mm
MAG-3315-B (M 5.1)		

Order information

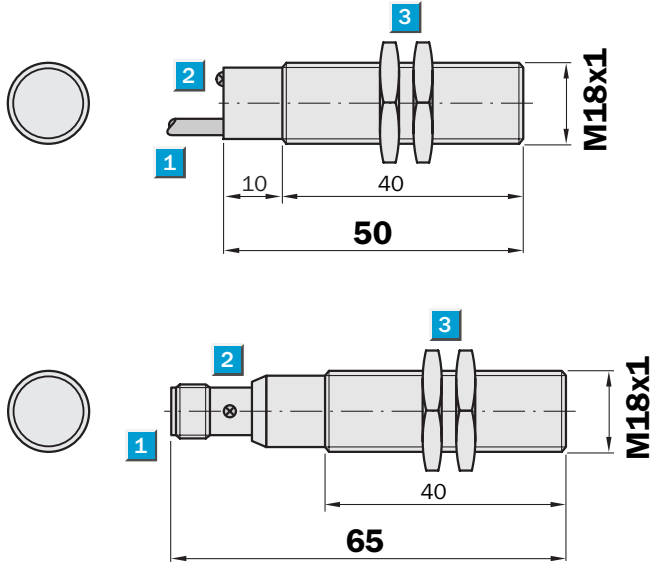
Type	Order no.
MM12-60A-N-ZCO	7 900 287
MM12-60A-N-ZW0	7 900 286

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



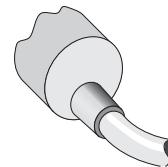
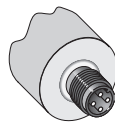
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



Connection type

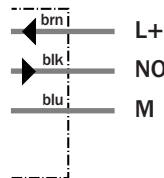
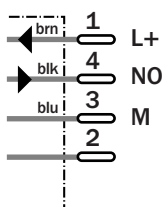
MM18-70APS-ZC0

MM18-70APS-ZU0



M12, 4-pin

3 x 0.25 mm²



See chapter Accessories

Connector, M12, 4-pin

Magnets

Mounting systems

Technical specifications		MM18-	70APS-ZCO	70APS-ZUO									
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}	$\leq 10\%$ ²⁾												
Voltage drop U_d	$\leq 1.5\text{ V}$ ³⁾												
Power consumption	$\leq 10\text{ mA}$ ⁴⁾												
Continuous current I_a	$\leq 300\text{ mA}$												
Time delay before availability t_v	$\leq 2\text{ ms}$												
Hysteresis H, of s_r	1 ... 10 %												
Repeatability R	$\leq 1\%$ (U_b and T_a constant) ⁵⁾												
Temperature drift, of s_r	$\pm 10\%$												
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	Max. sensing range s_n
	Any sensor installation version (flush or non-flush) in non-magnetizable material	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)		

Order information

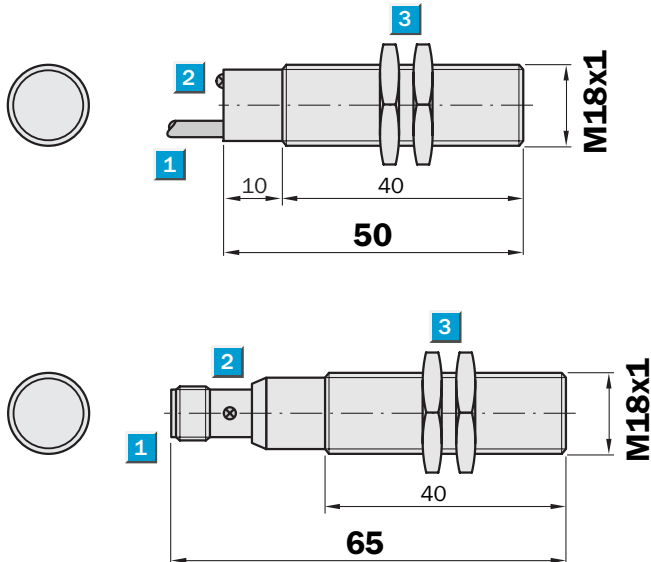
Type	Order no.
MM18-70APS-ZCO	7 900 274
MM18-70APS-ZUO	7 900 272

Sensing range
5 ... 120 mm

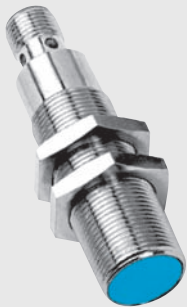
Magnetic sensor

- 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

Dimensional drawing



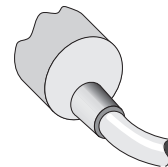
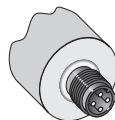
- 1 Connection
- 2 Display LED
- 3 Fastening nuts (2 x); width across 17, metal



Connection type

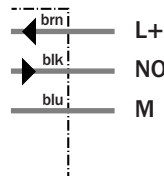
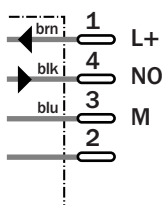
MM18-00APS-ZC0

MM18-00APS-ZU0



M12, 4-pin

3 x 0.25 mm²



See chapter Accessories

Connector, M12, 4-pin

Magnets

Mounting systems

Technical specifications		MM18-	OOAPS-ZCO	OOAPS-ZUO									
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}	$\leq 10 \%$												
Voltage drop U_d	$\leq 1.5 V^{1)}$												
Power consumption	$\leq 10 mA^{2)}$												
Continuous current I_a	$\leq 300 mA$												
Time delay before availability t_v	$\leq 2 ms$												
Hysteresis H, of s_r	1 ... 10 %												
Repeatability R	$\leq 1 \%$ (U_b and T_a constant) ³⁾												
Temperature drift, of s_r	$\pm 10 \%$												
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)	

Order information

Type	Order no.
MM18-00APS-ZCO	1 029 861
MM18-00APS-ZUO	1 029 952

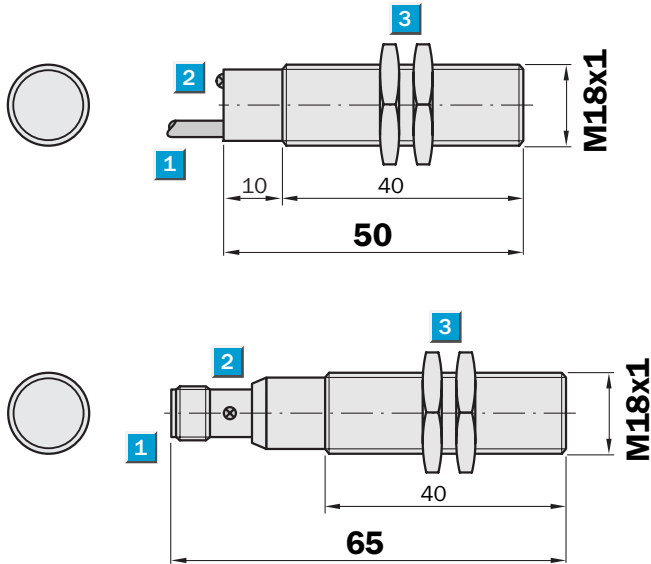
Magnetic sensor, MM18, NAMUR

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



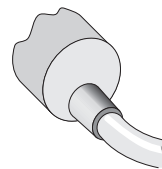
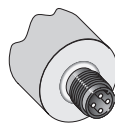
- 1** Connection
- 2** Display LED
- 3** Fastening nuts (2 x); width across 17, metal



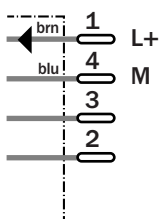
Connection type

MM18-70A-N-ZC0

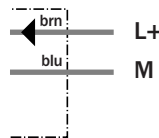
MM18-70A-N-ZW0



M12, 4-pin



2 x 0.34 mm²



See chapter Accessories

Connector, M12, 4-pin

Magnets

Mounting systems

Switching units

Technical specifications		MM18-70A-	N-ZCO	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 I_{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	Max. sensing range s_n
	Any sensor installation version (flush or non-flush) in non-magnetizable material	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)		

Order information

Type	Order no.
MM18-70A-N-ZCO	7 900 289
MM18-70A-N-ZW0	7 900 288

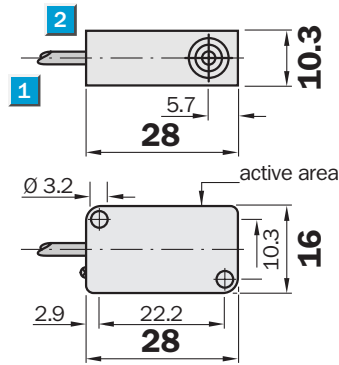
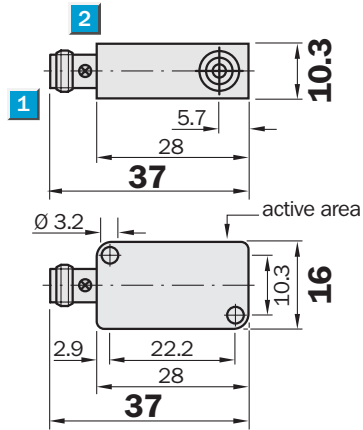
Magnetic sensor, MQ10, DC 3-wire

Sensing range
5 ... 60 mm

Magnetic sensor

- Sensing range up to 60 mm
- High switching frequency
- Short-circuit protection (pulsed)
- Plastic housing
- Enclosure rating IP 67

Dimensional drawing

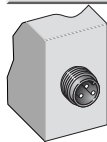


- 1 Connection
- 2 Display LED

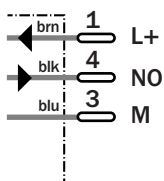


Connection type

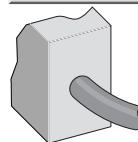
MQ10-60ANS-KTO
MQ10-60APS-KTO



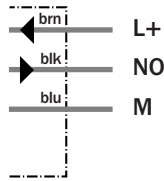
M8, 3-pin



MQ10-60ANS-KUO
MQ10-60APS-KUO



3 x 0.25 mm²



See chapter Accessories

Connector, M8, 3-pin
Magnets

Technical specifications		MQ10-	60ANS-KTO	60ANS-KUO	60APS-KTO	60APS-KUO						
Sensing range s_n	5 ... 60 mm ¹⁾											
Magnetic alignment	Axial											
Electrical configuration	DC 3-wire											
Supply voltage V_s	DC 10 ... 30 V											
Ripple U_{pp}	$\leq 10\%$ ²⁾											
Voltage drop U_d	$\leq 1.5\text{ V}$ ³⁾											
Power consumption	$\leq 5\text{ mA}$ ⁴⁾											
Continuous current I_a	$\leq 300\text{ mA}$											
Time delay before availability t_v	$\leq 2\text{ ms}$											
Hysteresis H, of s_r	1 ... 10 %											
Repeatability R	$\leq 1\%$ (U_b and T_a constant) ⁵⁾											
Temperature drift, of s_r	$\pm 10\%$											
EMC	According to EN 60947-5-2											
Switching output	NPN											
	PNP											
Output function	Normally open											
Connection type	Connector, M8, 3-pin											
	Cable, PVC/PUR, 2 m											
Enclosure rating	IP 67 ⁶⁾											
Max. switching frequency	5,000 Hz											
Dimensions	10.3 x 16 x 28 mm ⁷⁾											
	10.3 x 16 x 37 mm ⁷⁾											
Wire-break protection	✓											
Short-circuit protection	✓ ⁸⁾											
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	Plastic											

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⁾ according to EN 60529

⁷⁾ Width x height x depth
⁸⁾ (pulsed)

Max. sensing ranges (typical values)

Magnet type	Max. sensing range s_n	Max. sensing range s_n
	Any sensor installation version (flush or non-flush) in non-magnetizable material	Flush sensor installation in magnetizable material (e.g. iron)
MAG-1003-S (M 1.0)	23 mm	12 mm
MAG-0625-A (M 2.0)	24 mm	10 mm
MAG-2006-B (M 3.0)	36 mm	15 mm
MAG-3010-B (M 4.0)	60 mm	20 mm
MAG-3015-B (M 5.0)	68 mm	25 mm
MAG-3315-B (M 5.1)		

Order information

Type	Order no.
MQ10-60ANS-KTO	7 900 281
MQ10-60ANS-KUO	7 900 279
MQ10-60APS-KTO	7 900 280
MQ10-60APS-KUO	7 900 278