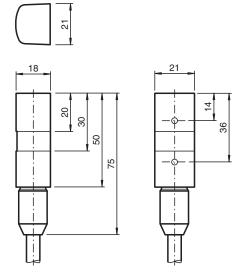


Magnetic field sensor

MB-F32-A2

- For mounting on a hydraulic cylinder
- Detects the piston position through the cylinder wall
- Suitable for magnetic, hydraulic cylinders made of steel

Dimensions



Technical Data

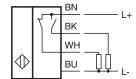
General specifications		
Switching function		complementary
Output type		PNP
Connection		Switching output 1 : black Switching output 2 : white
Installation		on the cylinder
Output polarity		DC
Switching range	Sb	typ. 50 mm
Output type		4-wire
Nominal ratings		
Operating voltage	U_B	10 30 V DC
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U_{d}	≤1.5 V
Operating current	I_{L}	0 100 mA
No-load supply current	I ₀	≤ 30 mA

Release date: 2025-02-27 Date of issue: 2025-02-27 Filename: 037712_eng.pdf

Technical Data

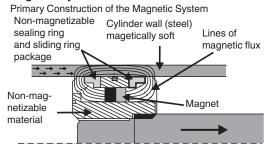
MTTF _d 739 a Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means red: switching state output 1 yellow: switching state output 2 Compliance with standards and directives Standard conformity Image: Standard standards and certificates CCC approval and certificates CCC approval / marking not required for products rated ≤36 V Ambient conditions CCC approval / marking not required for products rated ≤36 V Ambient temperature -25 85 °C (-13 185 °F) Storage temperature -25 85 °C (-40 185 °F) Mechanical specifications Connection type Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Sensing face Polyamide (PA) Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length	First North and a state will be discovered as		
Mission Time (T _M) 20 a Diagnostic Coverage (DC) 0 % Indicators/operating means LED indication red: switching state output 1 yellow: switching state output 2 Compliance with standards and directives Standard conformity Standards EN IEC 60947-5-2 Approvals and certificates CCC approval / marking not required for products rated ≤36 V Ambient conditions Ambient conditions Ambient conditions -25 85 °C (-13 185 °F) Storage temperature -25 85 °C (-13 185 °F) Mechanical specifications Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Sensing face Polyamide (PA) Wire end ferrules yes Cable diameter 9 (-2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores <td>Functional safety related parameters</td> <td></td> <td>300</td>	Functional safety related parameters		300
Diagnostic Coverage (DC) 0 % Indicators/operating means LED Indication red: switching state output 1 yellow: switching state output 2 Compliance with standards and directives Standards conformity Standards and certificates CCC approval CCC approval required for products rated ≤36 V Ambient conditions Ambient conditions Ambient temperature -25 85 °C (-13 185 °F) Storage temperature -25 85 °C (-40 185 °F) Storage temperature Polyamide (PA) Bensing face Polyamide (PA) Degree of protection Per Cable diameter Polyamide (PA) Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Leight Leight 21 mm Width 18 mm	-		
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LED indication red: switching state output 1 yellow: switching state output 2 Compliance with standards and directives Standard conformity Standards EN IEC 60947-5-2 Approvals and certificates CCC approval / marking not required for products rated ≤36 V Ambient conditions Ambient conditions Ambient temperature -25 85 °C (-13 185 °F) Storage temperature -40 85 °C (-40 185 °F) Mechanical specifications Connection type Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Wire end ferrules Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Height 21 mm Width 18 mm			0 %
yellow: switching state output 2 Compliance with standards and directives Standard conformity Standards EN IEC 60947-5-2 Approvals and certificates CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Ambient temperature -25 85 °C (-13 185 °F) Storage temperature -40 85 °C (-40 185 °F) Mechanical specifications Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length 2 m Dimensions Height 2 1 mm Width 18 mm			
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Standards EN IEC 60947-5-2 Approvals and certificates CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Ambient temperature -25 85 °C (-13 185 °F) Storage temperature -40 85 °C (-40 185 °F) Mechanical specifications Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Height 21 mm Width 18 mm	Compliance with standards and directives		
Approvals and certificates CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions Ambient temperature -25 85 °C (-13 185 °F) Storage temperature -40 85 °C (-40 185 °F) Mechanical specifications Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Height 21 mm Width 18 mm	Standard conformity		
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Storage temperature -40 85 °C (-40 185 °F) Mechanical specifications cable Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Wire end ferrules Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Height 21 mm Width 18 mm	Ambient conditions		
Mechanical specifications Cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Wire end ferrules Value Ves Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions 21 mm Width 18 mm	Ambient temperature		-25 85 °C (-13 185 °F)
Connection type cable Housing material Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Verend ferrules Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions 21 mm Width 18 mm	Storage temperature		-40 85 °C (-40 185 °F)
Housing material Polyamide (PA) Sensing face Polyamide (PA) Degree of protection IP67 Cable Vire end ferrules Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions 21 mm Width 18 mm	Mechanical specifications		
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Degree of protection IP67 Cable Yes Wire end ferrules yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions 21 mm Width 18 mm	Housing material		Polyamide (PA)
Cable yes Cable diameter 6.2 mm ± 0.2 mm Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions 4 Height 21 mm Width 18 mm	Sensing face		Polyamide (PA)
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Bending radius > 10 x cable diameter Material PVC Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Height 21 mm Width 18 mm	Wire end ferrules		yes
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Color black Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Fleight 21 mm Width 18 mm	Bending radius		> 10 x cable diameter
Number of cores 4 Core cross section 0.5 mm² Length L 2 m Dimensions Elight 21 mm Width 18 mm	Material		PVC
Core cross section 0.5 mm² Length L 2 m Dimensions Vidth 21 mm Width 18 mm	Color		black
Length L 2 m Dimensions Height 21 mm Width 18 mm	Number of cores		4
Dimensions Height 21 mm Width 18 mm	Core cross section		0.5 mm ²
Height 21 mm Width 18 mm	Length	L	2 m
Width 18 mm	Dimensions		
	Height		21 mm
Length 50 mm	Width		18 mm
	Length		50 mm

Connection



Additional Information

Magnetic System



For this sensor principle it is not sufficient to simply mount the permanent magnet onto the piston. A magnetic system has to be constructed which conducts the magnetic flux of the permanent magnets directlt into the cylinder wall in order to achieve the strongest possible magnetization. For further details regarding the construction of magnetic systems, refer to the manual. A field trial is generally recommended before practical operation!

Magnets

The magnets are axially magnetized. It must be ensured that all magnets are mounted with the same polarity!

Definition of polarity

An approaching permanent magnet with the north pole pointing towards the cable connection of the sensor causes output 1 to respond and the red LED to light.



By means of the sensor's antivalent output stage the appropriate output can be chosen depending on the polarity of the magnetic system or the mounting location of the sensor

Mounting

The sensor is mounted directly on the surface towards the cylinder axis. For this purpose, pressure bands, tightening straps, or hose band clamps can be used.