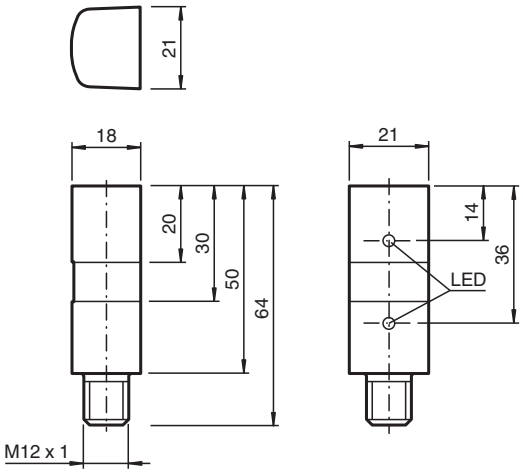
Magnetic field sensor

MB-F32-A2-V1

- 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 : pin 4 Switching output 2 : pin 2
Installation		on the cylinder
Output polarity		DC
Switching range	s_b	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
Functional safety related parameters		

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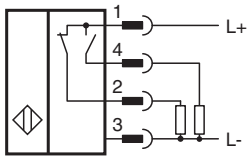
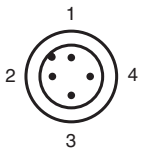
Technical Data

$MTTF_d$		739 a
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		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		Connector plug
Housing material		Polyamide (PA)
Sensing face		Polyamide (PA)
Degree of protection		IP67
Connector		
Threading		M12 x 1
Number of pins		4
Dimensions		
Height		21 mm
Width		18 mm
Length		50 mm

Connection



Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

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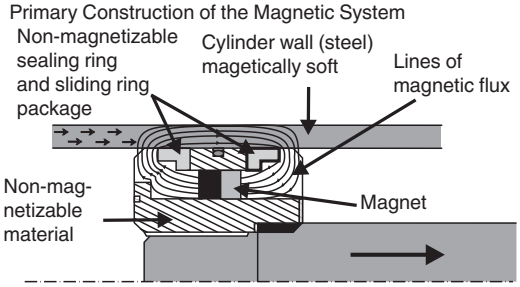
Additional Information

Magnetic System

Primary Construction of the Magnetic System



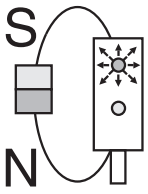
For this sensor principle it is not sufficient to simply mount the permanent magnet onto the piston. A magnetic system has to be constructed which conducts the magnetic flux of the permanent magnets directlt into the cylinder wall in order to achieve the strongest possible magnetization. For further 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.



Antivalient output

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.

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