

# Magnetic field sensor

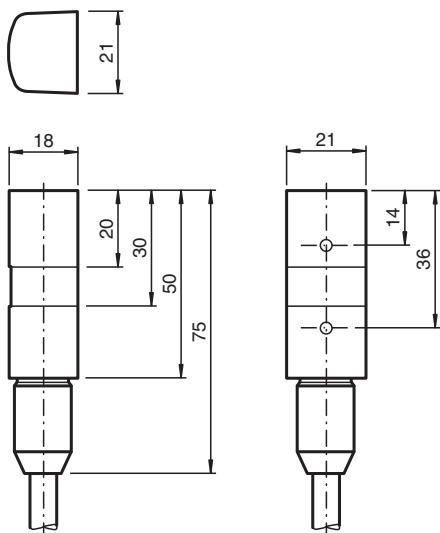
## MB-F32-A2



- 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

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

#### 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	$s_b$	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	$U_d$	$\leq 1.5$ V
Operating current	$I_L$	0 ... 100 mA
No-load supply current	$I_0$	$\leq 30$ mA

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

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## Technical Data

### Functional safety related parameters

MTTF <sub>d</sub>	739 a
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Mission Time (T <sub>M</sub> )	20 a
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Diagnostic Coverage (DC)	0 %
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### Indicators/operating means

LED indication	red: switching state output 1 yellow: switching state output 2
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### 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 $\leq$ 36 V
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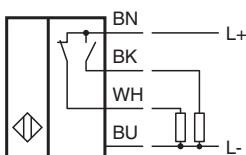
### Ambient conditions

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 $\pm$ 0.2 mm
Bending radius	> 10 x cable diameter
Material	PVC
Color	black
Number of cores	4
Core cross section	0.5 mm <sup>2</sup>
Length	L 2 m
Dimensions	
Height	21 mm
Width	18 mm
Length	50 mm

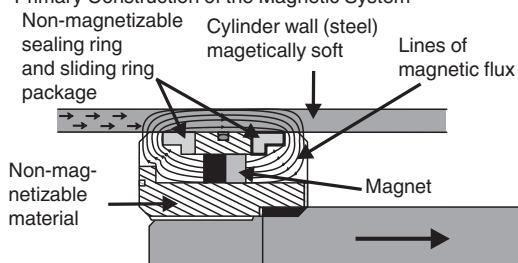
## Connection



## Additional Information

## Magnetic System

## Primary Construction of the Magnetic System



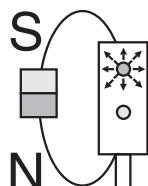
For this sensor principle it is not sufficient to simply mount the permanent magnet onto the piston. A magnetic system has to be constructed which conducts the magnetic flux of the permanent magnets directly into the cylinder wall in order to achieve the strongest possible magnetization. For further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

## Magnets

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

### Definition of 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.



## EEB to light: Antivalent output

**Antivariant Output**  
By means of the sensor's antivariant output stage the appropriate output can be chosen depending on the polarity of the magnetic system or the mounting location of the sensor.

## the sensor Mounting

**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.