



### Model Number

MB-F32-A2-V1

### Features

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

### Accessories

#### V1-G

Female connector, M12, 4-pin, field attachable

#### V1-W

Female connector, M12, 4-pin, field attachable

#### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

#### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

## Technical Data

### General specifications

Switching element function	PNP	NO/NC
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

### 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

### Functional safety related parameters

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

### Indicators/operating means

LED indicator	red: switching state output 1 yellow: switching state output 2
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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	Connector M12 x 1, 4-pin
Housing material	Polyamide (PA)
Sensing face	Polyamide (PA)
Degree of protection	IP67

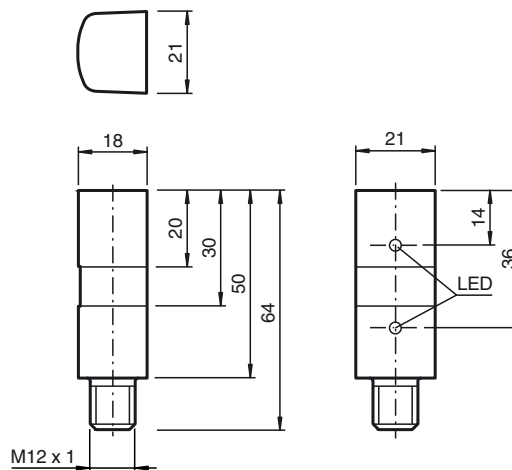
### Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

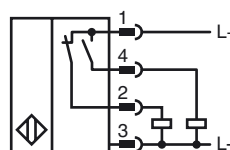
### Approvals and certificates

EAC conformity	TR CU 020/2011
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

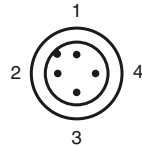
## Dimensions



## Electrical Connection



## Pinout

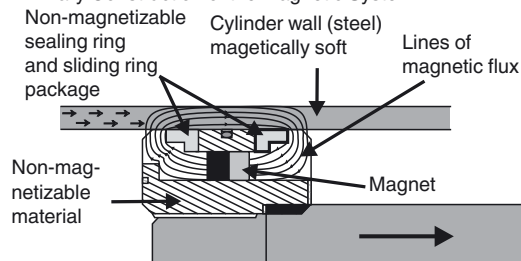


Wire colors in accordance with EN 60947-5-2

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

### Magnetic System

Primary Construction of the Magnetic System



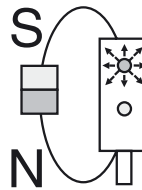
For this sensor principle it is not sufficient to simply mount the permanent magnet onto the piston. A magnetic system has to be constructed which conducts the magnetic flux of the permanent magnets directly into the cylinder wall in order to achieve the strongest possible magnetization. For further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

### Magnets

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.



### Antivalent 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.