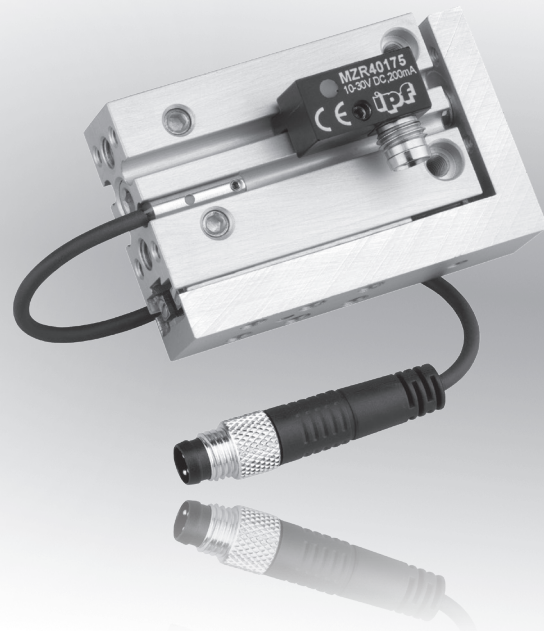


dimensions **10 x 16 x 19.5mm**
 ∅ 3.6 x 20.5mm
 ∅ 4.0 x 20.5mm

C-groove cylinders sensor surface **middle area**

- ✓ temperature range up to +130°C
- ✓ wear-free and impact-resistant since fully electronic
- ✓ robust metal housing
- ✓ high locking power
- ✓ fast mounting
- ✓ very short design
- ✓ LED display, except for the +130°C version
- ✓ connection via cable, M8-connector, M8- or M12-cable connector



cylinder sensors for 4mm round groove for Festo or SMC cylinders



description

For many tasks in automation technology, it is necessary to detect movements in pneumatic and hydraulic cylinders and to precisely detect the position of the piston. Here, magnetic cylinder sensors are used.

The electronic cylinder sensors of the **MZR4** series are used for contactless and wear-free position detection in control technology. They offer a large switching distance yet still have a small design.

Because magnetic fields penetrate all non-magnetizable materials, the cylinder magnets are detected through walls made of non-ferrous metal, stainless steel and aluminum.

The electronic cylinder sensors can be used on all cylinders

from leading manufacturers and are directly interchangeable with reed switches that use three-wire system technology. Through the absolute wear-free mode of operation, they ensure maximum operational dependability and reliability.

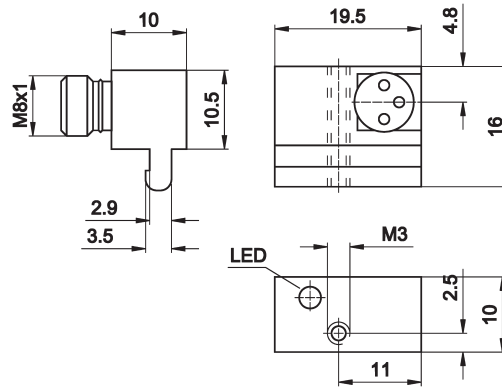
To retain the same position when replacing a cylinder switch, the locking stop

AM000111 is available as an accessory.

application examples

- ▶ position detection of a cylinder piston
- ▶ end position sensing

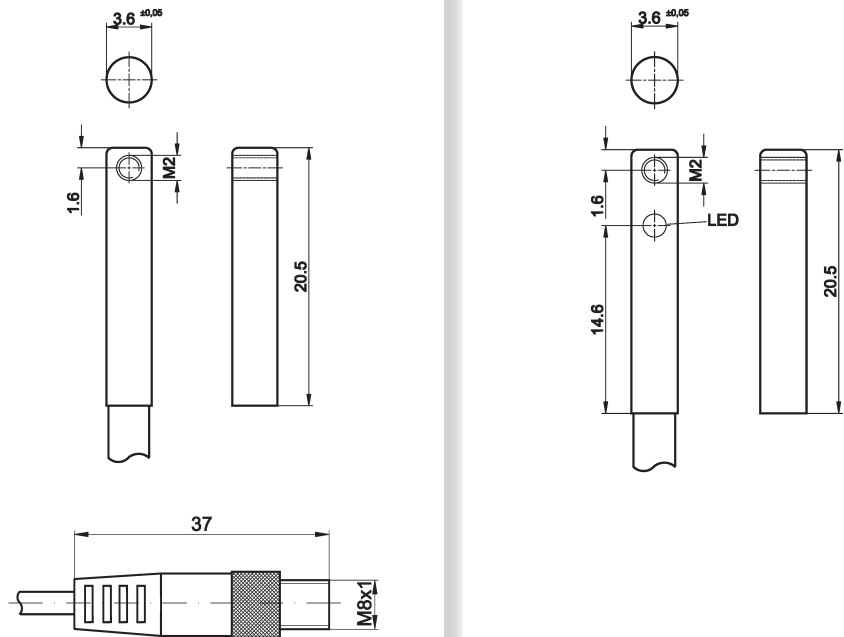
| | |
|-----------------------|---------------------|
| article-no. | MZR40175 |
| version | for Festo cylinders |
| operating temperature | -25 ... +70°C |
| connection | M8-connector |



TECHNICAL DATA

| | |
|---------------------------------|---------------------|
| sensor surface (active) | middle area |
| output signal | npn, no |
| operating voltage | 10 ... 30V DC |
| current consumption (w/o load) | ≤ 15mA |
| output current (max. load) | 200mA |
| voltage drop (max. load) | 2.0V DC |
| hysteresis | typ. 1mm |
| repeatability | ±0.1mm |
| switching frequency | 1kHz |
| display (signal) | yellow LED |
| short-circuit protection | + |
| reverse polarity protection | + |
| housing material | zinc diecast |
| dimensions | 10x16x19.5mm |
| operating temperature | -25 ... +70°C |
| degree of protection (EN 60529) | IP67 |
| connection | M8-connector, 3-pin |
| connection accessories | e.g. VK200075 |
| mounting accessories | - |

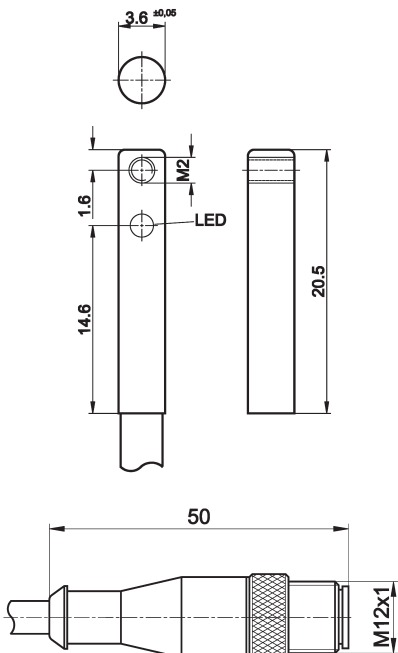
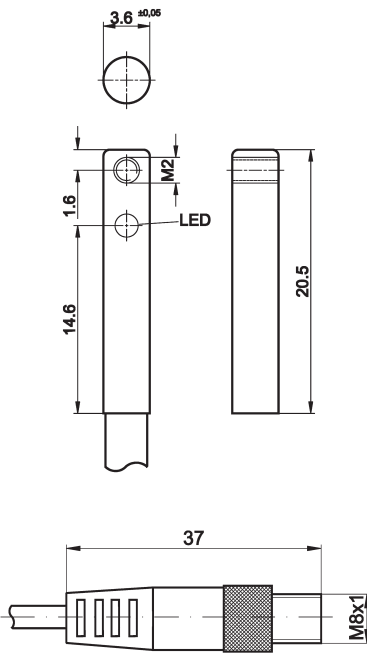
| | | |
|-----------------------|-----------------------------------|---------------------|
| article-no. | MZR40158 | MZR401A8 |
| version | for Festo cylinders | for Festo cylinders |
| operating temperature | -25 ... +130°C | -25 ... +70°C |
| connection | M8-cable connector, teflon, 300mm | 2m cable |



TECHNICAL DATA

| | | |
|--|--|--|
| sensor surface (active) | middle area | middle area |
| output signal | pnp, no | pnp, no |
| operating voltage | 10 ... 30V DC | 10 ... 30V DC |
| current consumption (w/o load) | ≤ 15mA | ≤ 15mA |
| output current (max. load) | 150mA | 150mA |
| voltage drop (max. load) | 2.0V DC | 2.0V DC |
| hysteresis | typ. 1mm | typ. 1mm |
| repeatability | ±0.1mm | ±0.1mm |
| switching frequency | 1kHz | 1kHz |
| display (signal) | - | yellow LED |
| short-circuit protection | + | + |
| reverse polarity protection | + | + |
| housing material | zinc diecast | stainl. steel |
| dimensions | ∅ 3.6x20.5mm | ∅ 3.6x20.5mm |
| operating temperature | -25 ... +130°C | -25 ... +70°C |
| degree of protection (EN 60529) | IP67 | IP67 |
| connection | M8-cable connector, teflon, 3-pin | 2m cable, PUR, 3-wire |
| connection accessories | e.g. VK200075 | - |
| mounting accessories | AM000081 adapter, AM000111 positive stop | AM000081 adapter, AM000111 positive stop |
| Note: The output stage is located in the connector! | | |



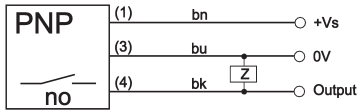
| | | |
|---|--|--|
| article-no. | MZR40128 | MZR40178 |
| version | for Festo cylinders | for Festo cylinders |
| operating temperature | -25 ... +70°C | -25 ... +70°C |
| connection | M12-cable connector, PUR, 300mm | M8-cable connector, PUR, 300mm |
| article-no. | MZR401E8 | MZR401F8 |
| version | for Festo cylinders | for Festo cylinders |
| operating temperature | -25 ... +70°C | -25 ... +70°C |
| connection | M12-cable connector, PUR, 600mm | M8-cable connector, PUR, 600mm |
| article-no. | - | MZR401K8 |
| version | - | for Festo cylinders |
| operating temperature | - | -25 ... +70°C |
| connection | - | M8-cable connector, PUR, 1000mm |
| preferred types are shown in bold! |  |  |
| TECHNICAL DATA | | |
| sensor surface (active) | middle area | middle area |
| output signal | npn, no | npn, no |
| operating voltage | 10 ... 30V DC | 10 ... 30V DC |
| current consumption (w/o load) | ≤ 10mA | ≤ 10mA |
| output current (max. load) | 200mA | 200mA |
| voltage drop (max. load) | 2.0V DC | 2.0V DC |
| hysteresis | typ. 1mm | typ. 1mm |
| repeatability | ±0.1mm | ±0.1mm |
| switching frequency | 1kHz | 1kHz |
| display (signal) | yellow LED | yellow LED |
| short-circuit protection | + | + |
| reverse polarity protection | + | + |
| housing material | stainl. steel | stainl. steel |
| dimensions | ∅ 3.6x20.5mm | ∅ 3.6x20.5mm |
| operating temperature | -25 ... +70°C | -25 ... +70°C |
| degree of protection (EN 60529) | IP67 | IP67 |
| connection | M12-cable connector, PUR, 3-pin | M8-cable connector, PUR, 3-pin |
| connection accessories | e.g. VK200025 | e.g. VK200075 |
| mounting accessories | AM000081 adapter, AM000111 positive stop | AM000081 adapter, AM000111 positive stop |

| | | | |
|---|-------------------------------|---------------------------------|--------------------------------|
| article-no. | MZR401A9 | MZR40129 | MZR40179 |
| version | for SMC cylinders | for SMC cylinders | for SMC cylinders |
| operating temperature | -25 ... +70°C | -25 ... +70°C | -25 ... +70°C |
| connection | 2m PUR cable | M12-cable connector, 300mm | M8-cable connector, 300mm |
| article-no. | - | MZR401E9 | MZR401F9 |
| version | - | for SMC cylinders | for SMC cylinders |
| operating temperature | - | -25 ... +70°C | -25 ... +70°C |
| connection | - | M12-cable connector, 600mm | M8-cable connector, 600mm |
| preferred types are shown in bold! | | | |
| TECHNICAL DATA | | | |
| sensor surface (active) | middle area | middle area | middle area |
| output signal | pnp, no | pnp, no | pnp, no |
| operating voltage | 10 ... 30V DC | 10 ... 30V DC | 10 ... 30V DC |
| current consumption (w/o load) | ≤ 10mA | ≤ 10mA | ≤ 10mA |
| output current (max. load) | 150mA | 150mA | 150mA |
| voltage drop (max. load) | 2.0V DC | 2.0V DC | 2.0V DC |
| hysteresis | typ. 1mm | typ. 1mm | typ. 1mm |
| repeatability | ±0.1mm | ±0.1mm | ±0.1mm |
| switching frequency | 1kHz | 1kHz | 1kHz |
| display (signal) | yellow LED | yellow LED | yellow LED |
| short-circuit protection | + | + | + |
| reverse polarity protection | + | + | + |
| housing material | stainl. steel | stainl. steel | stainl. steel |
| dimensions | Ø 4.0x20.5mm | Ø 4.0x20.5mm | Ø 4.0x20.5mm |
| operating temperature | -25 ... +70°C | -25 ... +70°C | -25 ... +70°C |
| degree of protection (EN 60529) | IP67 | IP67 | IP67 |
| connection | 2m PUR cable, 3-wire | M12-cable connector, PUR, 3-pin | M8-cable connector, PUR, 3-pin |
| connection accessories | - | e.g. VK200025 | e.g. VK200075 |
| mounting accessories | AM000111 positive stop | AM000111 positive stop | AM000111 positive stop |



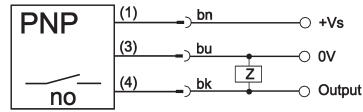
connection

cable device



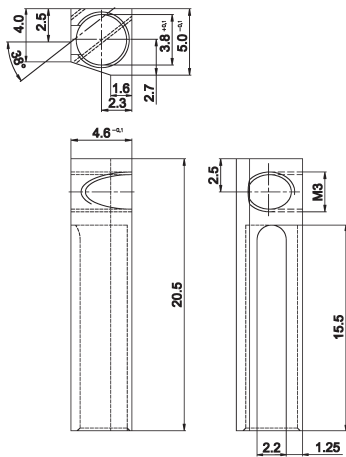
wire colors: bn = brown (1), bu = blue (3), bk = black (4)

connector device

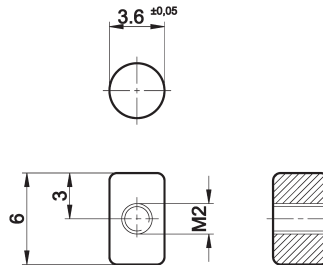


cable connector with rotatable outside thread

AM000081 adapter



AM000111 positive stop



ACCESSORIES

| article-no. | description | material |
|-------------|----------------------------|---------------|
| AM000081 | adapter for T-groove | aluminum |
| AM000111 | positive stop for C-groove | stainl. steel |

This data sheet only contains the available standard variants. For other output / connection variants, we kindly ask that you contact us.

We are happy to supply the right cable socket for the plug equipment. You will find a list in the "accessories" section of the catalog under **ipf-SENSORFLEX®** "cable sockets" or in the search window on our homepage www.ipf-electronic.com (using the search term "VK").

Warning: Never use these devices in applications where the safety of a person depends on their functionality.

This data sheet as well as your personal contact can be found at www.ipf-electronic.com