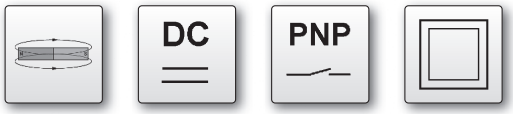
design	**5 x 4.6 x 18mm** **5 x 6.5 x 27mm** **10.2 x 16 x 25mm**	
T-groove cylinder	sensor surface	**middle range**

- ✓ **fully electronic microsensor**
- ✓ **robust metal housing**
- ✓ **high locking power**
- ✓ **quick mounting**
- ✓ **very short design**
- ✓ **short-circuit and reverse polarity protection**
- ✓ **LED-display – except for +130°C version**
- ✓ **connection with M8-, M12-connector or cable**
- ✓ **versions with PUR- or teflon-cable**

mounting from above
temperature range up to +130°C



description

For many tasks in the automation industry it is necessary to know the sequence of movements in the pneumatic cylinders and to detect accurately the position of the pistons. A choice of fully electronic sensors as well as reed switches is available to accomplish this.
Under certain conditions, e.g. high vibration, high switching frequencies or where very precise switch-points are required, reed switches have severe limitations. The lack of short-circuit protection, the high sensitivity to inductive voltage spikes and especially the mechanical wear of the switch contacts all give rise to frequent problems in day-to-day use. These weaknesses have led to a demand from industrial users for a sensor that will guarantee long-term trouble-free operation and avoid machine downtime with the resulting loss of production.

To this end ***ipf electronic*** offers a range of magnetic cylinder sensors, which can be used to detect the position of the pistons within pneumatic cylinders. They guarantee the highest level of operation safety and reliability thanks to the absolutely wear-free mode of operation.
The electronic cylinder sensors have been designed to work with cylinders from all major manufacturers and are directly interchangeable with reed switches that use 3-wire technology.

application examples

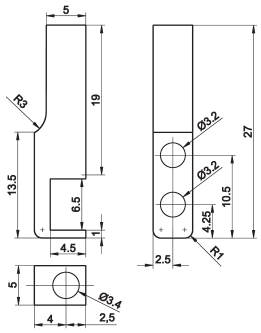
- position recognition of a cylinder piston
- limit of travel enquiry

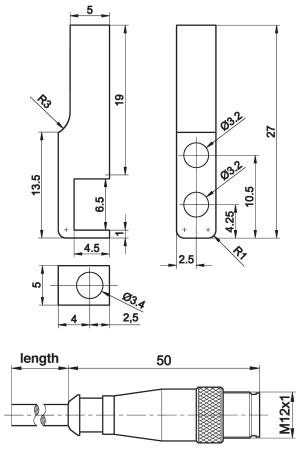
magnetic sensors

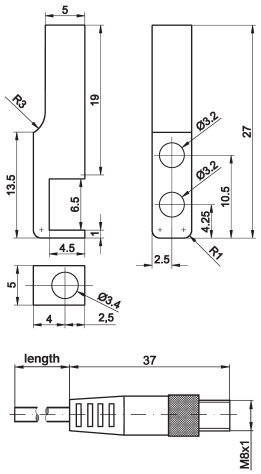
1400 cylinder sensors

article-no.	**MZ0701A2**	**MZ070122**	**MZ070172**
connection	**cable**	**M12-cable connector PUR, 300mm**	**M8-cable connector PUR, 300mm**
operating temperature	**-25 ... +70°C**	**-25 ... +70°C**	**-25 ... +70°C**
article-no.	-	MZ0701E2	MZ0701F2
connection	-	M12-cable connector PUR, 600mm	M8-cable connector PUR, 600mm
operating temperature	-	-25 ... +70°C	-25 ... +70°C
article-no.	-	MZ0701J2	-
connection	-	M12-cable connector PUR, 1000mm	-
operating temperature	-	-25 ... +70°C	-

Preferential types are printed **bold!**



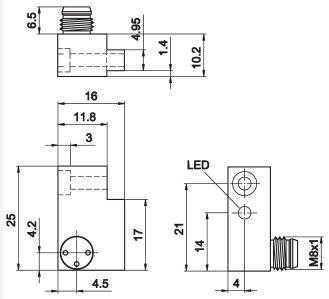


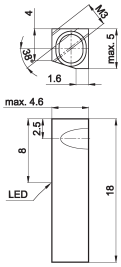


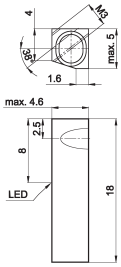
TECHNICAL DATA			
active sensor surface	middle area	middle area	middle area
output signal	pnp, no	pnp, no	pnp, no
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 10mA	≤ 10mA	≤ 10mA
output current (max. load)	200mA	200mA	200mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC
hysteresis	typical 1mm	typical 1mm	typical 1mm
repeatability	± 0.1mm	± 0.1mm	± 0.1mm
sampling frequency	1kHz	1kHz	1kHz
status display	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
housing material	aluminium	aluminium	aluminium
design	5x6.5x27mm	5x6.5x27mm	5x6.5x27mm
operating temperature	-25 ... +70°C	-25 ... +70°C	-25 ... +70°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	cable, 2m, PUR	M12-connector, 3-pin	M8-connector, 3-pin
connection accessories	-	e.g. **VK200025**, 2m, straight, PUR	e.g. **VK200075**, 2m, straight, PUR
mounting accessories	positive stop **AM000076** cable clip **AM000087**	positive stop **AM000076** cable clip **AM000087**	positive stop **AM000076** cable clip **AM000087**

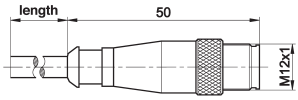
article-no.	**MZ070173**	**MZ0701A6**	**MZ070126**
connection	**M8-connector**	**cable, 2m PUR**	**M12-cable connector PUR, 300mm**
operating temperature	**-25 ... +70°C**	**-25 ... +70°C**	**-25 ... +70°C**
article-no.	-	-	MZ0701E6
connection	-	-	M12-cable connector PUR, 600mm
operating temperature	-	-	-25 ... +70°C
article-no.	-	-	MZ0701J6
connection	-	-	M12-cable connector PUR, 1000mm
operating temperature			

Preferential types are printed **bold!**









TECHNICAL DATA

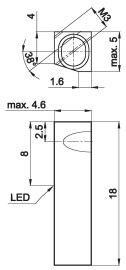
active sensor surface	middle area	middle area	middle area
output signal	pnp, no	pnp, no	pnp, no
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 15mA	≤ 15mA	≤ 15mA
output current (max. load)	200mA	200mA	200mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC
hysteresis	typical 1mm	typical 1mm	typical 1mm
repeatability	± 0.1mm	± 0.1mm	± 0.1mm
sampling frequency	1kHz	1kHz	1kHz
status display	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
housing material	aluminium	aluminium	aluminium
design	10.2x16x25mm	5x4.6x18mm	5x4.6x18mm
operating temperature	-25 ... +70°C	-25 ... +70°C	-25 ... +70°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	M8-connector, 3-pin	cable, 2m, PUR	M12-connector, 3-pin
connection accessories	e.g. **VK200075**, 2m, straight, PUR	-	e.g. **VK200025**, 2m, straight, PUR
mounting accessories	-	positive stop **AM000076**	positive stop **AM000076**
	-	cable clip **AM000087**	cable clip **AM000087**

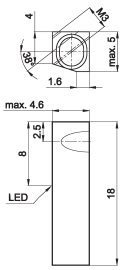
magnetic sensors

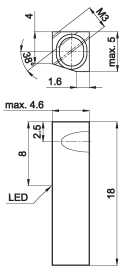
1400 cylinder sensors

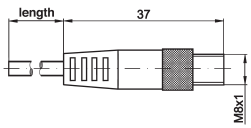
article-no.	**MZ070176**	**MZ070186**	-
connection	**M8-cable connector PUR, 300mm**	**M8-cable connector teflon, 300mm**	**-**
operating temperature	**-25 ... +70°C**	**-25 ... +70°C**	-
article-no.	MZ0701F6	-	**MZ070156**
connection	M8-cable connector PUR, 600mm	-	**M8-cable connector teflon, 600mm**
operating temperature	-25 ... +70°C	-	**-25 ... +130°C**
article-no.	MZ0701K6	-	**-**
connection	M8-cable connector PUR, 1000mm	-	-
operating temperature	-25 ... +70°C	-	-

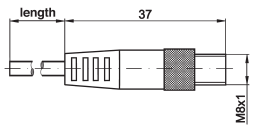
Preferential types are printed **bold!**

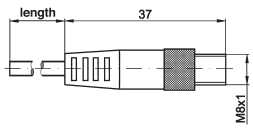












TECHNICAL DATA

active sensor surface	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
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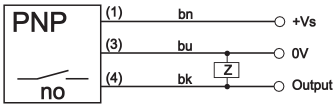
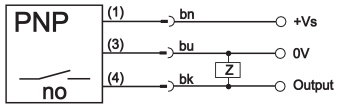
hysteresis	typical 1mm	typical 1mm	typical 1mm
repeatability	± 0.1mm	± 0.1mm	± 0.1mm
sampling frequency	1kHz	1kHz	1kHz
status display	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
housing material	aluminium	aluminium	aluminium
design	5x4.6x18mm	5x4.6x18mm	5x4.6x18mm
operating temperature	-25 ... +70°C	-25 ... +70°C	-25 ... +130°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	M8-connector, 3-pin	M8-connector, 3-pin	M8-connector, 3-pin
connection accessories	e.g. **VK200075**, 2m, straight, PUR	e.g. **VK200075**, 2m, straight, PUR	e.g. **VK200075**, 2m, straight, PUR
mounting accessories	positive stop **AM000076** cable clip **AM000087**	positive stop **AM000076** cable clip **AM000087**	positive stop **AM000076** cable clip **AM000087**

connection cable device



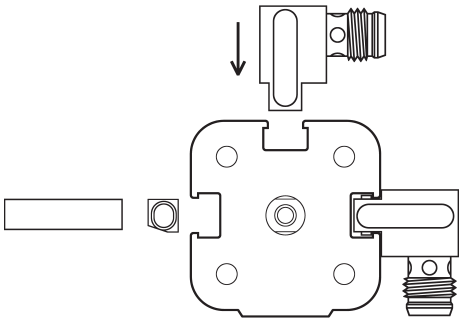
connector device



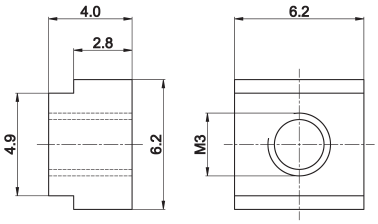
wire colors: bn = brown (1), bu = blue (3), bk = black (4)

cable connector with rotatable outside thread

mounting example



positive stop AM000076



ACCESSORIES

article-no.	description	material
AM000076	positive stop for T-groove	zinc
AM000086	cable clip for T-groove	plastic

This data sheet contains the standard versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets ipf ***-SENSORFLEX®***" or search our website for "VK".

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