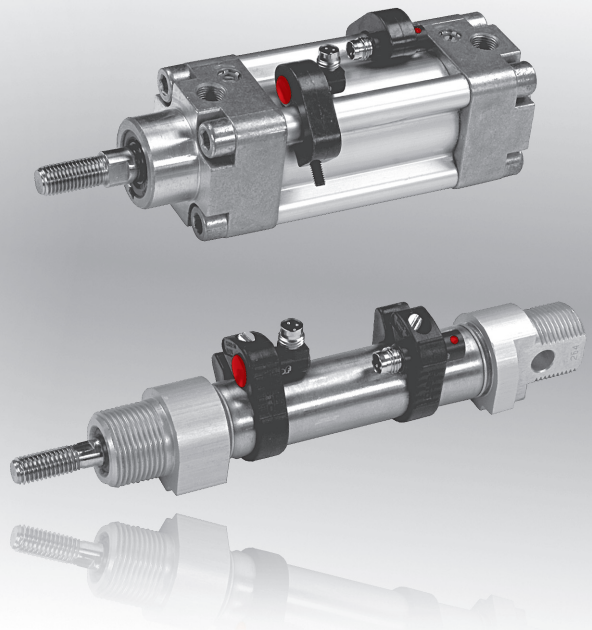
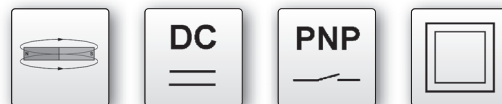


design	Ø9mm
round cylinder	clamp
profiled cylinder	bracket



- ✓ robust metal housing (shock and vibration proof)
- ✓ easy mounting even with extremely short cylinders
- ✓ high switching accuracy with small hysteresis
- ✓ status display by LED
- ✓ integrated amplifier
- ✓ short-circuit and reverse polarity protection
- ✓ connection with cable, M8- or M12-connector

**for operation with profiled and round cylinders**



**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 gmbh** 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.

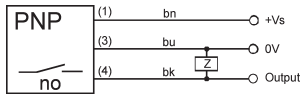
The electronic cylinder sensors have been designed to work with cylinders from all major manufacturers.

**application examples**

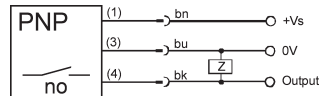
- ▶ position recognition of a cylinder piston
- ▶ limit of travel enquiry

TECHNICAL DATA	
current consumption	< 15mA
voltage drop (max. load)	< 2V
operating voltage	see article list
current-carrying capacity	see article list
sampling frequency	1kHz
repeatability	± 0.1mm
hysteresis	≤ 1mm
system of protection (EN 60529)	IP67
ambient temperature	-25 ... +75°C
connection	2m cable, M8-connector, M12-connector-cable connector

**connection** cable device

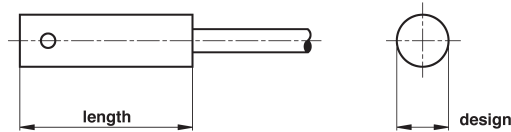


**connector device**

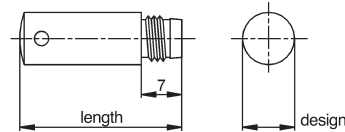


**wire colors:** bn = brown (1), bu = blue (3), bk = black (4)

**fig. 1** cable device



**fig. 2** connector device



For design and length see article list.

**fig. 3** MZR90185

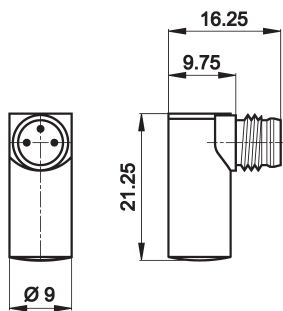
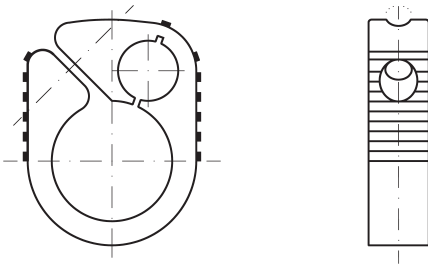


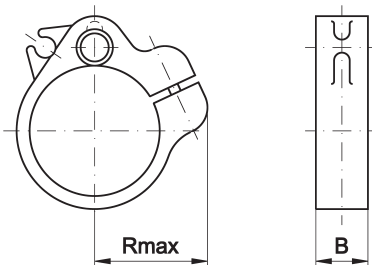
fig. 4 clip for MZR9



	piston Ø	cylinder Ø
<b>AM000011</b>	8	approx. 9.5
<b>AM000012</b>	10	approx. 11.0
<b>AM000013</b>	12	approx. 13.0
<b>AM000014</b>	16	approx. 17.0
<b>AM000015</b>	20	approx. 21.0
<b>AM000016</b>	25	approx. 26.0
<b>AM000047</b>	32	approx. 36.0
<b>AM000048</b>	40	approx. 44.0

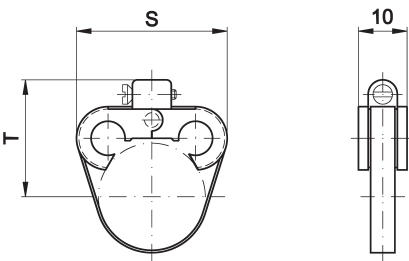
Kindly request a list of the available dimensions!

fig. 5 clip for MZR9



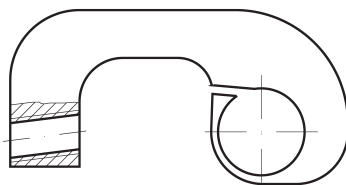
	piston Ø	cylinder Ø	Rmax	B
<b>AM000023</b>	32	approx. 36	29	10
<b>AM000024</b>	40	approx. 44	32	10
<b>AM000025</b>	50	approx. 54	38	10
<b>AM000026</b>	63	approx. 68	46	10
<b>AM000027</b>	80	approx. 86	54	12
<b>AM000028</b>	100	approx. 107	64	12

fig. 6 twin clip for MZR9



	piston Ø	S	T
<b>AAM000029</b>	8/10	27.4	19.6
<b>AM000030</b>	12	28.5	21.4
<b>AM000031</b>	16	29.4	23.4
<b>AM000032</b>	20	29.7	25.8
<b>AM000033</b>	25	31.4	28.7

fig. 7 clamp for MZR9



**AM000021** for cylinder rails up to 12mm diameter

**AM000022** for cylinder rails up to 14mm diameter

Kindly request a list of the available dimensions!

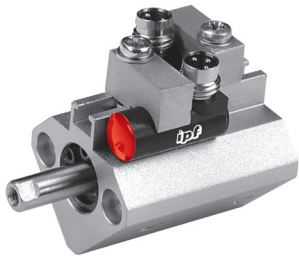


fig. 8 clamp 1 for MZR9

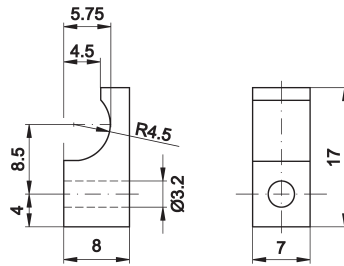
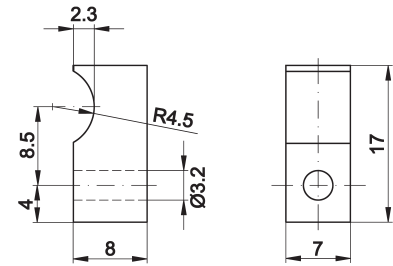


fig. 9 clamp 2 for MZR9



article-no.	design	description, comment	length	housing	voltage	output	current	connection	fig.
MZR901A8	Ø9	magnetic cylinder, 1kHz	20	st. steel	10 ... 30V DC	pnp,no	200mA	2m PUR-cable	1
MZR90179	Ø9	magnetic cylinder, 1kHz	28	st. steel	10 ... 30V DC	pnp,no	200mA	M8-connector	2
MZR90120	Ø9	magnetic cylinder, 1kHz	20	st. steel	10 ... 30V DC	pnp,no	200mA	M12-cable con.	1
MZR90185	Ø9	magnetic cylinder, 1kHz	21.25	st. steel	10 ... 30V DC	pnp,no	200mA	M8-con. 90°	3
AM000011	Ø8	accessories clip		plastic				sensor Ø9	4
AM000012	Ø10	accessories clip		plastic				sensor Ø9	4
AM000013	Ø12	accessories clip		plastic				sensor Ø9	4
AM000014	Ø16	accessories clip		plastic				sensor Ø9	4
AM000015	Ø20	accessories clip		plastic				sensor Ø9	4
AM000016	Ø25	accessories clip		plastic				sensor Ø9	4
AM000047	Ø32	accessories clip		plastic				sensor Ø9	4
AM000048	Ø40	accessories clip		plastic				sensor Ø9	4
AM000023	Ø32	accessories clip		plastic				sensor Ø9	5
AM000024	Ø40	accessories clip		plastic				sensor Ø9	5
AM000025	Ø50	accessories clip		plastic				sensor Ø9	5
AM000026	Ø63	accessories clip		plastic				sensor Ø9	5
AM000027	Ø80	accessories clip		plastic				sensor Ø9	5
AM000028	Ø100	accessories clip		plastic				sensor Ø9	5
AM000029	Ø8/10	accessories twin clip		plastic/st. steel		strap retainer		sensor Ø9	16
AM000030	Ø12	accessories twin clip		plastic/st. steel		strap retainer		sensor Ø9	6
AM000031	Ø16	accessories twin clip		plastic/st. steel		strap retainer		sensor Ø9	6
AM000032	Ø20	accessories twin clip		plastic/st. steel		strap retainer		sensor Ø9	6
AM000033	Ø25	accessories twin clip		plastic/st. steel		strap retainer		sensor Ø9	6
AM000021	1/MZR9	accessories clamp		zinc		rail Ø12		sensor Ø9	7
AM000022	2/MZR9	accessories clamp		zinc		rail Ø14		sensor Ø9	7
AM000053	MZR9/1	accessories clamp 1		aluminium		for SMC-cylinder			8
AM000054	MZR9/2	accessories clamp 2		aluminium		for SMC-cylinder			9

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.