IPF FI FCTRONIC

dimensions 10 x 16 x 19.5mm

> Ø 3.6 x 20.5mm Ø 4.0 x 20.5mm

C-groove cylinders sensor surface middle area



- √ 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

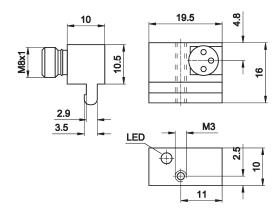
AM000111 is available as an accessory.

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

TECHNICAL DATA	
sensor surface (active)	middle area
output signal	pnp, 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. version	MZR40158 for Festo cylinders	MZR401A8 for Festo cylinders
operating temperature	-25 +130°C	-25 +70°C
TECHNICAL DATA	M8-cable connector, teflon, 300mm	2m cable
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

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	Ø 3.6x20.5mm	Ø 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!		

MAGNETIC SENSORS





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 operating temperature	for Festo cylinders -25 +70°C	for Festo cylinders -25 +70°C	
connection	M12-cable connector, PUR, 600mm	M8-cable connector, PUR, 600mm	
article-no.	Wilz Cable Connector, Fort, Goodinii	MZR401K8	
version		for Festo cylinders	
operating temperature		-25 +70°C	
connection		M8-cable connector, PUR, 1000mm	
preferred types are shown in bold !	14.6 14.6 14.6 14.6 14.6 14.6 14.6 14.6	3.6 ±0.05 WED 37	
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)	≤ 10mA	≤ 10mA	
output current (max. load)	200mA	200mA	
voltage drop (max. load) hysteresis	2.0V DC typ. 1mm	2.0V DC	
repeatability	±0.1mm	typ. 1mm ±0.1mm	
switching frequency	±0.1mm 1kHz	1kHz	
display (signal)	yellow LED	yellow LED	
short-circuit protection	yellow LED +	yellow LED +	
reverse polarity protection	+	+	
	stainl. steel	stainl. steel	
housing material dimensions	ø 3.6x20.5mm	Ø 3.6x20.5mm	
operating temperature	<i>ψ</i> 3.0x20.5⊞Π -25 +70°C	<i>y</i> 5.0x20.5πππ -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	



CYLINDER SENSORS 1200

version	MZR401A9 for SMC cylinders	MZR40129	MZR40179 for SMC cylinders
	-25 +70°C	for SMC cylinders -25 +70°C	-25 +70°C
operating temperature connection	-25 +70 C	M12-cable connector, 300mm	M8-cable connector, 300mm
	ZIII FOR Cable		
article-no.	· ·	MZR401E9	MZR401F9
version		for SMC cylinders	for SMC cylinders
operating temperature connection	-	-25 +70°C	-25 +70°C
connection		M12-cable connector, 600mm	M8-cable connector, 600mm
preferred types are shown in bold !	14.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1	14.6 THE	14.6 The state of
		50 W 721 W 7	37
TECHNICAL DATA	matelella cons	MIZXI	Wax
ensor surface (active)	middle area	middle area	middle area
ensor surface (active) output signal	pnp, no	middle area pnp, no	middle area pnp, no
pensor surface (active) putput signal poperating voltage	pnp, no 10 30V DC	middle area pnp, no 10 30V DC	middle area pnp, no
sensor surface (active) output signal operating voltage current consumption (w/o load)	pnp, no 10 30V DC ≤ 10mA	middle area pnp, no 10 30V DC ≤ 10mA	middle area pnp, no 10 30V DC ≤ 10mA
sensor surface (active) output signal operating voltage current consumption (w/o load) output current (max. load)	pnp, no 10 30V DC ≤ 10mA 150mA	middle area pnp, no 10 30V DC ≤ 10mA 150mA	middle area pnp, no 10 30V DC ≤ 10mA 150mA
censor surface (active) coutput signal coperating voltage current consumption (w/o load) coutput current (max. load) voltage drop (max. load)	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC
censor surface (active) coutput signal coperating voltage current consumption (w/o load) coutput current (max. load) voltage drop (max. load) nysteresis	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm
censor surface (active) coutput signal coperating voltage current consumption (w/o load) coutput current (max. load) coltage drop (max. load) costeresis cepeatability	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm
censor surface (active) coutput signal coperating voltage current consumption (w/o load) coutput current (max. load) coltage drop (max. load)	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz
pensor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) nysteresis repeatability switching frequency display (signal)	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED
ensor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) roltage drop (max. load) pysteresis epeatability witching frequency display (signal) hort-circuit protection	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED +	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED +	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED +
pensor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) potage drop (max. load) posteresis repeatability rewitching frequency display (signal) chort-circuit protection reverse polarity protection	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + +	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + +	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + +
pensor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) postage drop (max. load) pysteresis repeatability switching frequency display (signal) short-circuit protection reverse polarity protection mousing material	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + + stainl. steel	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel
persor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) postage drop (max. load) posteresis repeatability switching frequency display (signal) short-circuit protection reverse polarity protection mousing material dimensions	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + + stainl. steel Ø 4.0x20.5mm	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel ∅ 4.0x20.5mm
persor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) postage drop (max. load) postage drop (max. load) posteresis repeatability switching frequency display (signal) short-circuit protection reverse polarity protection mousing material dimensions operating temperature	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + + stainl. steel Ø 4.0x20.5mm -25 +70°C	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C
pensor surface (active) putput signal perating voltage current consumption (w/o load) putput current (max. load) putput current (pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67
censor surface (active) coutput signal coperating voltage current consumption (w/o load) coutput current (max. load) coutage drop (max. load) cout	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67 2m PUR cable, 3-wire	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67 M12-cable connector, PUR, 3-pin	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67 M8-cable connector, PUR, 3-pir
rechnical data sensor surface (active) putput signal operating voltage current consumption (w/o load) putput current (max. load)	pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C IP67	middle area pnp, no 10 30V DC ≤ 10mA 150mA 2.0V DC typ. 1mm ±0.1mm 1kHz yellow LED + + stainl. steel Ø 4.0x20.5mm -25 +70°C

MAGNETIC SENSORS

1200 CYLINDER SENSORS



connection

cable device



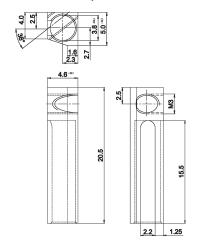
wire colors: bn = brown (1), bu = blue (3), bk = black (4)

connector device

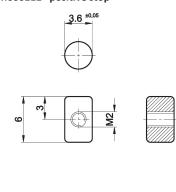


cable connector with rotatable outside thread

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.