

INSTALLATION GUIDE

Magnetostrictive Sensor Series MAZ

For more information please see the data sheet at
www.waycon.biz/products/magnetostrictive-transducers/

FIRST STEPS

WayCon Positionsmesstechnik GmbH would like to thank you for the trust you have placed in us and our products. This manual will make you familiar with the installation and operation of our magnetostrictive sensors. Please read this manual carefully before initial operation!

Unpacking and checking:

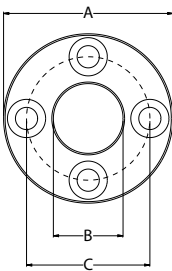
Carefully lift the device out of the box by grabbing the housing. After unpacking the device, check it for any visible damage as a result of rough handling during the shipment. Check the delivery for completeness.

If necessary consult the transportation company, or contact WayCon directly for further assistance.

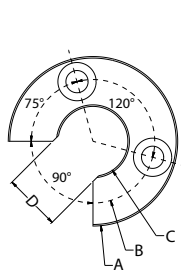
MAGNETIC CURSORS

Cursors for MAZ-A / MAZ-S	Cursors for MAZ-C	A [mm]	B [mm]	C [mm]	D [mm]	thickness [mm]
PCUR095	PCUR022	32.8	13.5	23.9	-	7.9
PCUR096	PCUR023	32.8	13.5	23.9	11	7.9
PCUR097	PCUR024	25.4	13.5	-	-	7.9
PCUR098	PCUR026	52.4	12	44	-	-
-	PCUR027	52.4	15	44	-	-

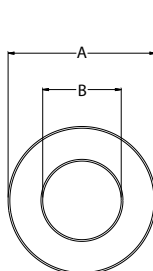
PCUR095/022



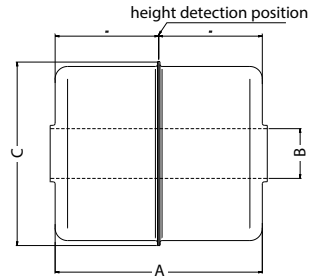
PCUR096/023



PCUR097/024



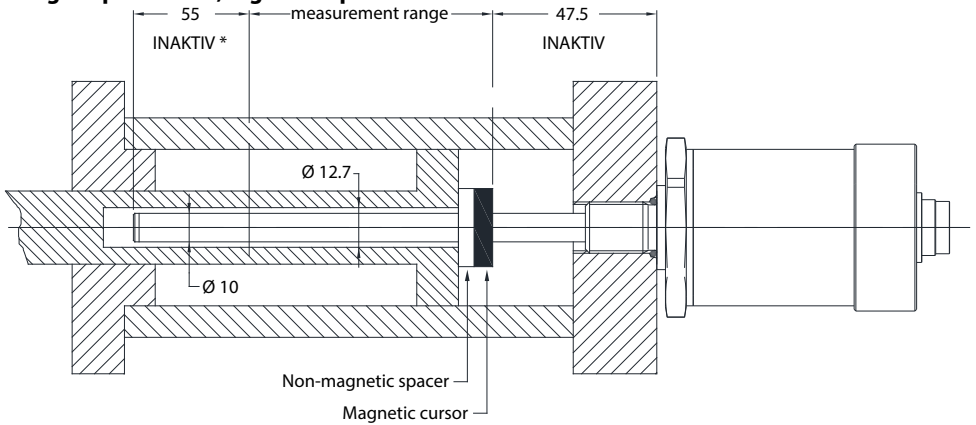
PCUR098/026/027



MOUNTING INSIDE A CYLINDER

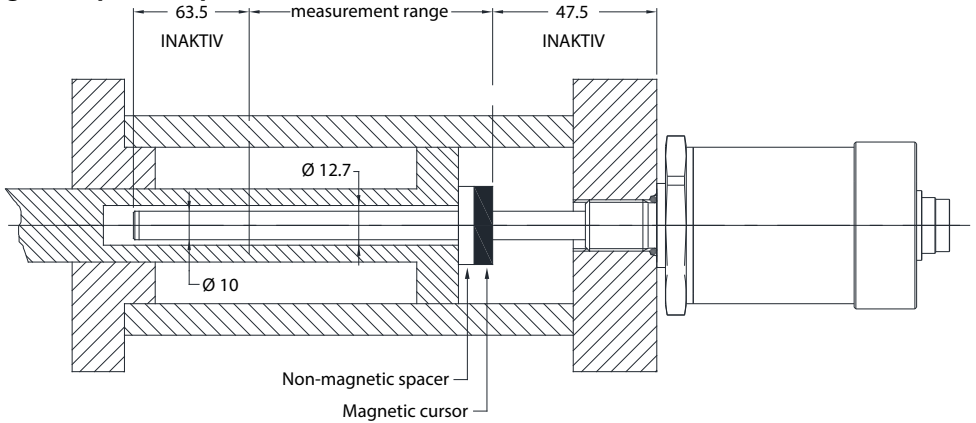
The cylinder head (in which the threaded hole will be drilled for inserting the transducer) must be made of non-magnetic material. The residual magnetization caused by drilling the threaded hole must be less than 4 Gauss.

Analog output MAZ-A, digital output SSI MAZ-S



* for strokes over 1000 mm, the non-active zone of 55 mm becomes 60 mm because the tip includes a M4x6 threaded hole.

Digital output CANopen MAZ-C



MOUNTING INSIDE A CYLINDER

Thread M18x1.5

The sealing surface must be free from scratches.

Ro 1.6 μm for seals with non-pulsing pressure

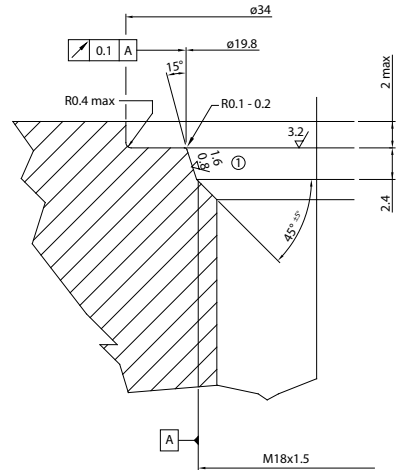
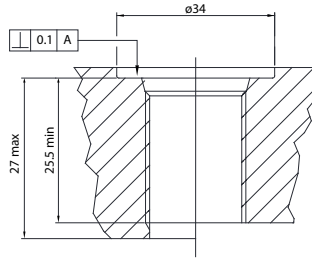
Ro 0.8 μm for seals with pulsing pressure

Suggested O-ring:

PARKER 6-349 15.4x2.1

Material: Viton 90 ° Shore-A

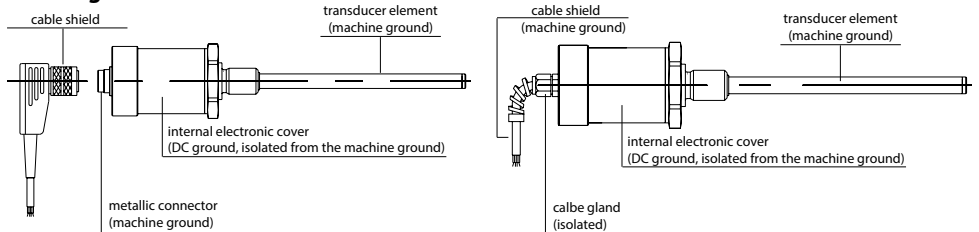
Mix: PARKER N522-90



ELECTRICAL CONNECTION

- The transducer must be installed away from sources of magnetic fields, both static and 50 Hz (electromotors, solenoids, etc.).
- The 24 VDC feed must be dedicated to the transducer or must be drawn directly from the power terminals and as near as possible.
- The sensor must be powered with non-distributed networks and always at lengths of less than 30 m.

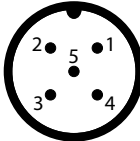
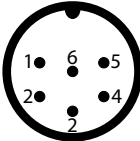
Grounding



ELECTRICAL CONNECTION

Analog output MAZ-A

Function	MAZ-A-A 5 pins, M12, male	MAZ-A-B 6 pins, M16, male	MAZ-A-F cable, 7 poles
Output 1: 0...10 V, 4...20 mA, 0...20 mA	1	1	GY
Output 1: GND	2	2	PK
Output 2: 10...0 V, 20...4 mA, 20...0 mA	3	3	YE
Output 2: GND	2	4	GN
Supply +	5	5	BN
Supply GND	4	6	WH

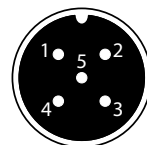
Accessories connection cables

Cable with mating connector M12, female, 5 pins, IP67

K5PXM-S-M12 X m, straight connector, shielded

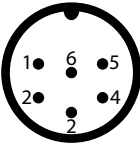
K5PXM-SW-M12 X m, angular connector, shielded

Pin	1	2	3	4	5
Cable colour	BN	WH	BU	BK	GY



Digital output SSI MAZ-S

Function	MAZ-S-B 6 pins, M16, male	MAZ-S-F cable, 6 poles
Data -	1	OG
Data +	2	OG / WH
Clock +	3	GN / WH
Clock -	4	GN
Supply +	5	BU / WH
Supply GND	6	BU



ELECTRICAL CONNECTION

MAZ-C: Digital output CANopen

Supply: 24 VDC, $\pm 20\%$
 Interface: CANopen DS-301 V4.01
 Device Profile: DS-406 V2.0

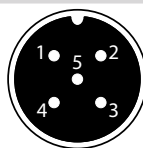
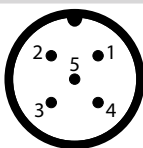
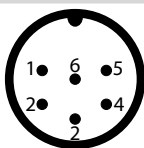
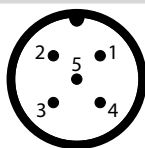
Baud rate: 500 kBaud
 Node: default setting 127

CANopen Data Protocol

SOF	Arbitration	Control	Data Field	CRC	ACK	EOF	Interframe Space
1	11	1	0...8 Bytes	15	1 1 1	7	≥ 3 Bits

Type	Cursors	PD01	PD02	PD03 / PD04
A	1	Position 4 Byte integer Speed 2 Byte integer Cams, 1 Byte integer	no data	no data
B	2	Position 1, 4 Byte integer Speed 2 Byte integer Cams 1 Byte integer	Position 2, 4 Byte integer Speed 2 Byte integer Cams 1 Byte integer	no data

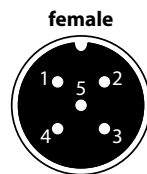
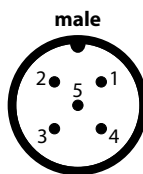
Function	MAZ-C-A 5 pins, M12, male	MAZ-C-B 6 pins, M16, male	MAZ-C-Y 2 x M12, 5 pins		MAZ-C-F cable, 4 poles
			male	female	
CAN L	1	1	5	5	BU
CAN H	2	2	4	4	WH
CAN GND	3	3	1	1	-
n. c.	2	4	-	-	-
Supply +	5	5	2	2	RD
Supply GND	4	6	3	3	BK



Accessories connection cables

Cable with mating connector M12, 5 pins, IP67, shielded

K5P2M-SB-M12-CAN	2 m, male to female, straight
K5P2M-S-M12-CAN	2 m, male to open ends, straight
K5P2M-B-M12-CAN	2 m, female to open ends, straight



Pin	1	2	3	4	5
Cable colour	shield	RD	BK	WH	BU

More information on the CANopen digital output can be found in the [manual CANopen MAZ-C](http://www.waycon.biz/downloads) at www.waycon.biz/downloads.



DIAGNOSTIC LEDS

Red LED	Meaning analog output	Meaning digital output CANopen / SSI
on	Transducer powered and working correctly	Echo absent (cursor out of measurement range or internal device error)
off	Transducer not powered	Transducer working correctly
flashing	Echo absent (cursor out of measurement range or internal device error)	-

DECLARATION OF EU-CONFORMITY

WayCon Positionsmesstechnik GmbH
Mehlbeerenstrasse 4
82024 Taufkirchen / Germany

This is to certify that the products

Classification
Series

Magnetostrictive Sensors
MAZ

fulfill the current request of the following EU-directives:

EMV-directive 2004/108/EG (until April 19th 2016)

2014/30/EU (from April 20th 2016)

applied harmonized standards:

EN 61000-6-2:2005, EN 61000-6-4:2007, EN 61326-1:2006

The declaration of conformity loses its validity if the product is misused or modified without proper authorisation.

Taufkirchen, 24.02.2016

Andreas Täger
CEO