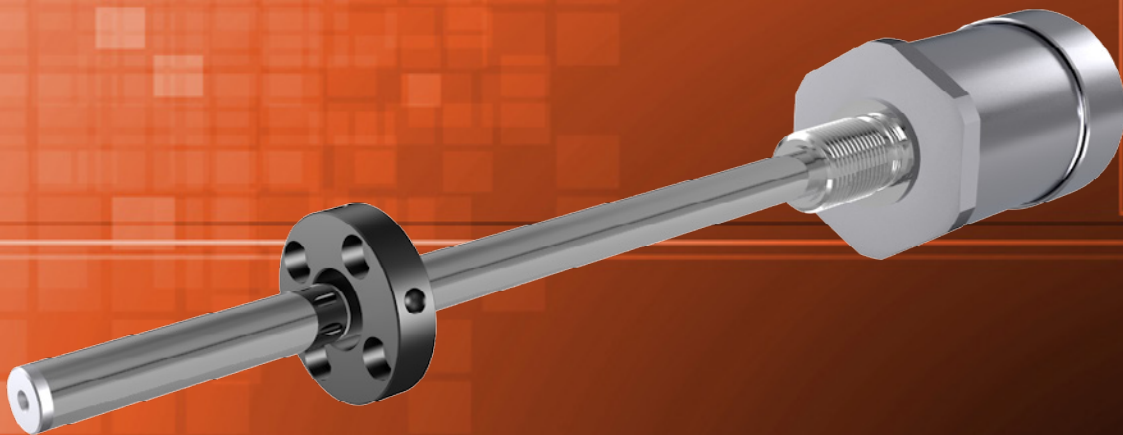


# MAGNETOSTRICTIVE TRANSDUCER



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## **Series MAZ**

### **Key-Features:**

- **Measurement ranges from 50 to 2500 mm**
- **Distance and speed (with CANopen) measurement**
- **Magnetic cursor, or floating cursor for liquids**
- **Displacement speed up to 10 m/s**
- **Linearity up to  $\pm 0.02$  %**
- **Operating pressure up to 350 bar**
- **Operating temperature -30...+75 °C**
- **Protection class IP67**
- **Output signals: Analog, SSI, CANopen**

## TECHNICAL DATA

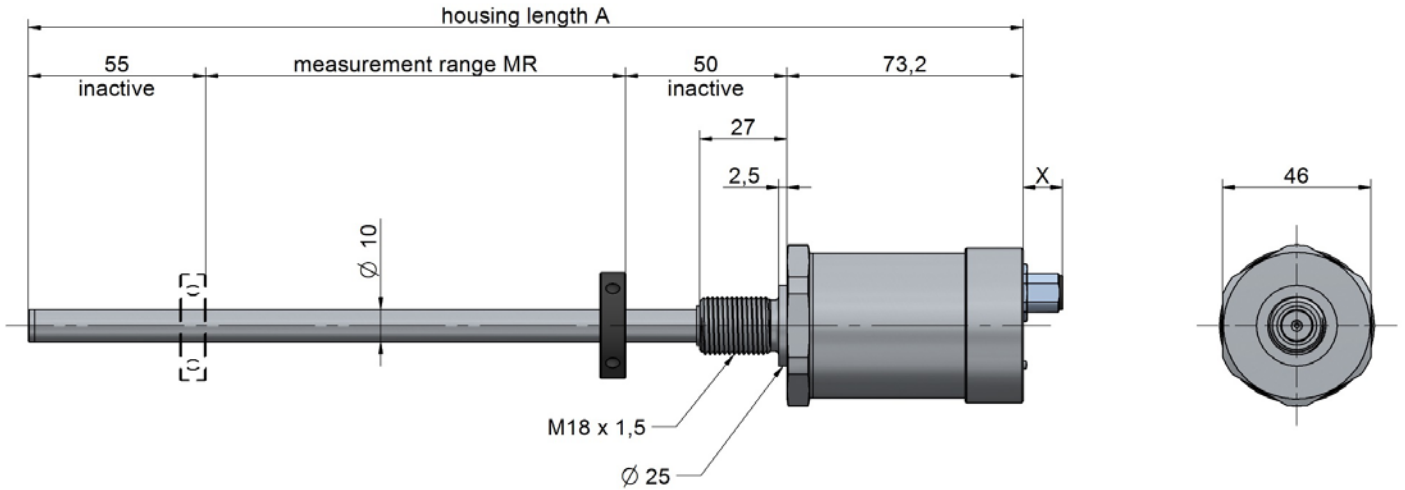
		MAZ-A	MAZ-C	MAZ-S
Measurement range	[mm]	50 / 100 / 130 / 150 / 200 / 225 / 300 / 400 / 450 / 500 / 600 / 700 / 750 / 800 / 900 / 1000 / 1250 / 1500 / 1750 / 2000 / 2250 / 2500		
Measured dimension		position	position / speed	position
Measurement range speed		-	depending on the scale	-
Accuracy of speed output	[%]	-	<2	-
Displacement speed	[m/s]	≤10		
Acceleration max.	[m/s <sup>2</sup> ]	≤100		
Linearity	[%]	±0.02 (min. ±0.06 mm)	±0.02 (max. ±0.04)	±0.02 (min. ±0.06 mm)
Resolution		16 bit (noise max. 5 mVpp)	5 μm (2 μm on request)	
Repeatability	[mm]	<0.01		
Hysteresis		<0.01 mm		≤±0.005 %
Sampling time position (table below)	[ms]	0.5 to 2		1 to 4
Output signal		0...10 V	4...20 mA	0...20 mA
Output value max.		12 V	30 mA	-
Current consumption max.	[mA]	70	90	100
Output load max.		5 kΩ	<0.5 kΩ	-
Power supply	[VDC]	24 ±20 %		10...32
Protection against polarity inversion		yes		
Protection against overvoltage		yes		
Operating temperature	[°C]	-30...+75		-30...+90
Storage temperature	[°C]	-40...+100		
Temperature coefficient		≤ 0.01 %/°C		20 ppm/°C
Operating pressure	[bar]	350		
Protection class		IP67		
Shock resistance acc. DIN IEC68T2-27		100 g - 11 ms - single shock		
Vibration resistance acc. DIN IEC68T2-6		12 g / 10...2000 Hz		15 g / 10...2000 Hz
Electrical connection		connector M12/M16 or cable		connector M16 or cable
Housing material		stainless steel AISI 316		

## SAMPLING TIME AND DIMENSIONS

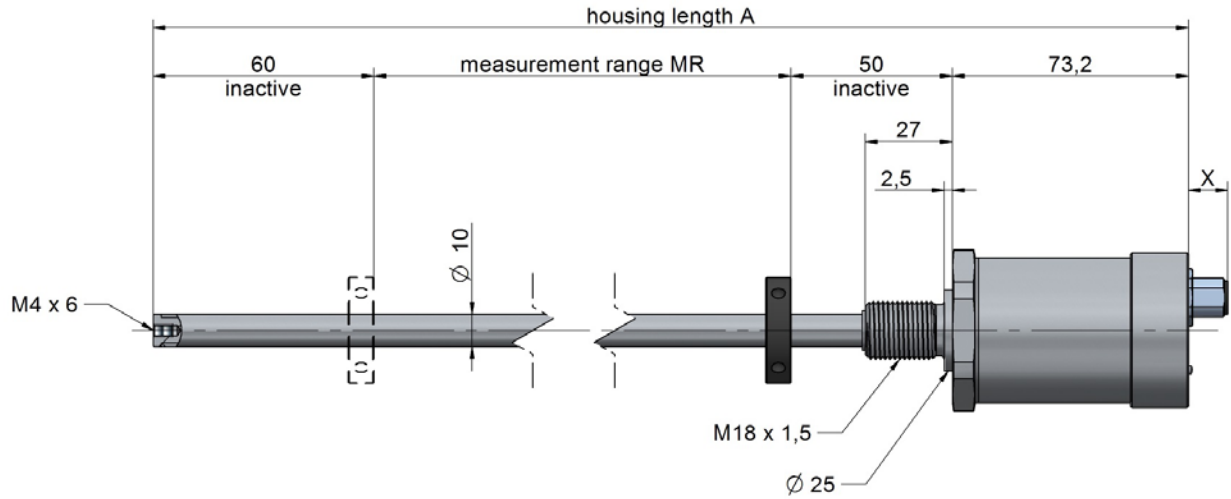
MAZ-A					
Measurement range	[mm]	up to 300	400 to 1000	1250 to 2000	2250 to 2500
Sampling time	[ms]	0.5	1	1.5	2
Overall housing length	[mm]	measurement range + 178.2		measurement range + 183.2	
MAZ-C					
Measurement range	[mm]	up to 1000	1250 to 2250	2500	
Sampling time	[ms]	1	2	4	
Overall housing length	[mm]	measurement range + 187.2			
MAZ-S					
Measurement range	[mm]	up to 1000	1250 to 2000	2250 to 2500	
Sampling time	[ms]	1	2	4	
Overall housing length	[mm]	measurement range + 178.2	measurement range + 183.2		

## TECHNICAL DRAWING

### MAZ-A, MAZ-S: Measurement ranges 50 to 1000 mm

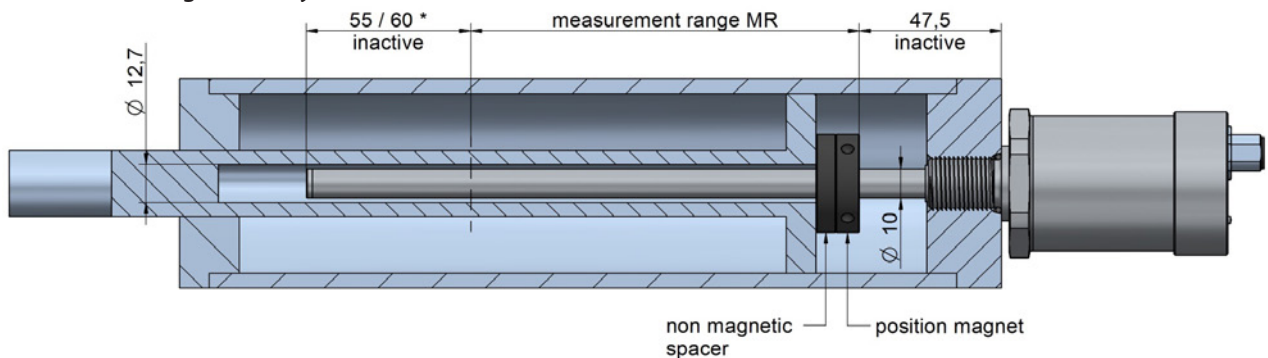


### MAZ-A, MAZ-S: Measurement ranges 1250 to 2500 mm



Version	X	A (measurement ranges up to 1000 mm)	A (measurement ranges from 1000 mm)
MAZ-A/S-A	12.2 mm	measurement range + 178.2	measurement range + 183.2
MAZ-A/S-B	9.5 mm	measurement range + 178.2	measurement range + 183.2

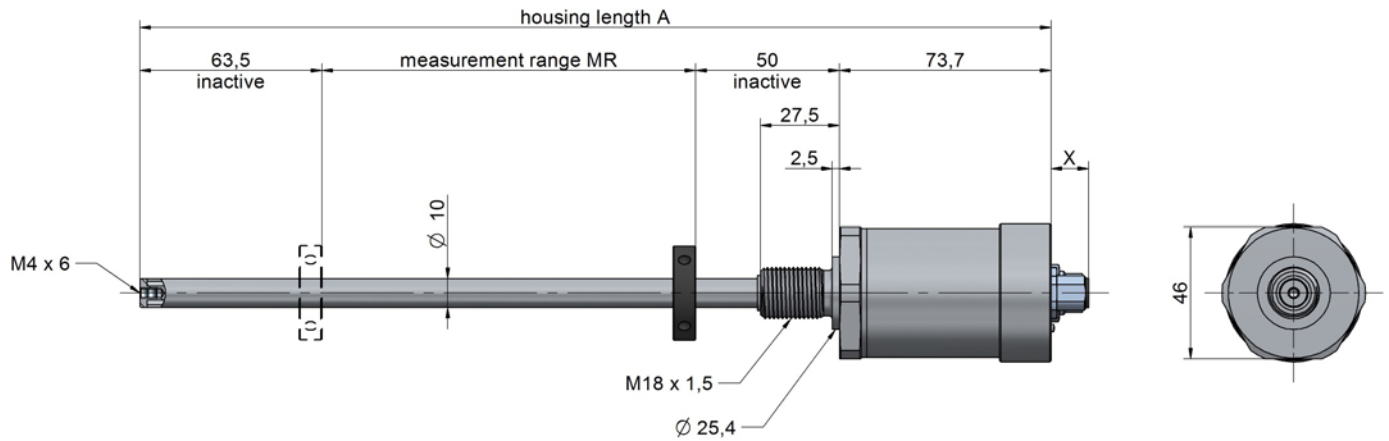
### MAZ-A, MAZ-S: mounting inside a cylinder



\*for strokes over 1000 mm, the non-active zone (55 mm) increases to 60 mm because the tip includes a M4 threaded hole.

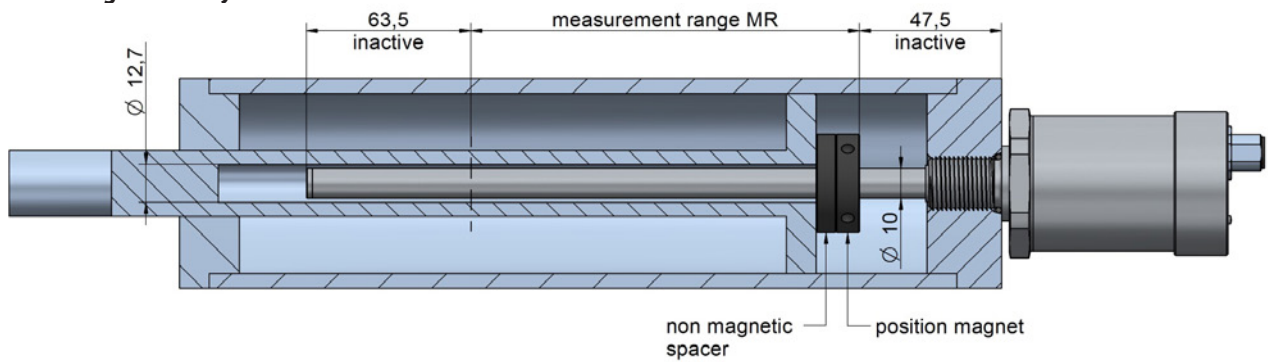
## TECHNICAL DRAWING

### MAZ-C:

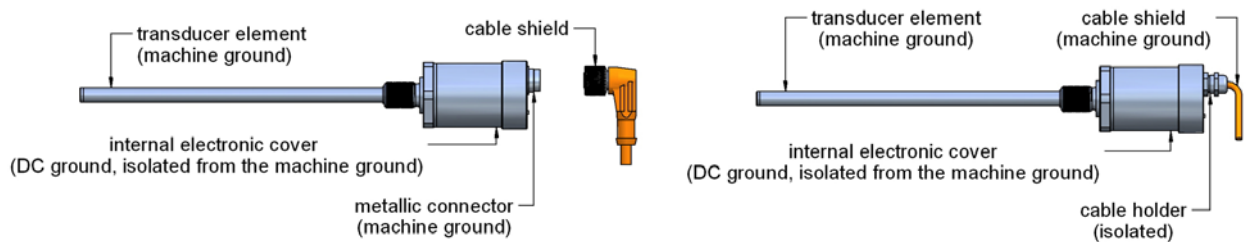


Version	X	A
MAZ-C-A	12.2 mm	measurement range + 187.2
MAZ-C-B	9.5 mm	measurement range + 187.2

### MAZ-C: mounting inside a cylinder

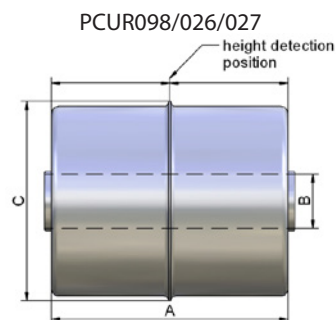
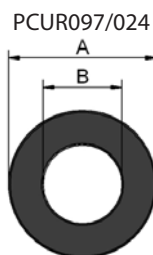
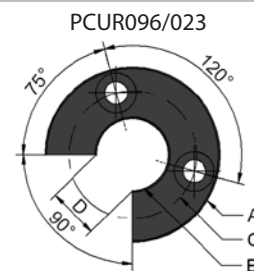
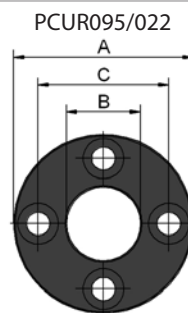


## GROUNDING



## MAGNETIC CURSORS

Magnetic cursor	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	-	-

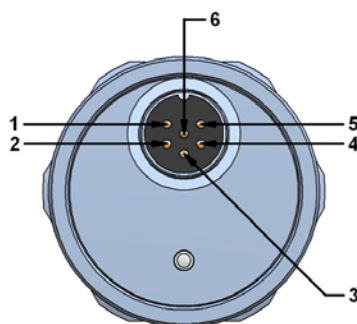
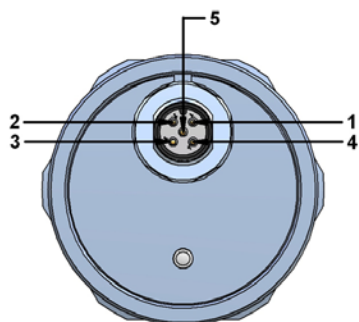


Magnetic cursor	Scope of delivery
PCUR095 PCUR022	<ul style="list-style-type: none"> <li>N° 8 brass nuts M4</li> <li>N° 8 brass washers D4</li> <li>N° 4 brass screws M4x25</li> </ul>
PCUR096 PCUR023	<ul style="list-style-type: none"> <li>N° 4 brass nuts M4</li> <li>N° 4 brass washers D4</li> <li>N° 2 brass screws M4x25</li> </ul>
PCUR098 PCUR026 PCUR027	<ul style="list-style-type: none"> <li>stopper sets (PKIT036)</li> </ul>

## ELECTRICAL CONNECTION

### MAZ-A

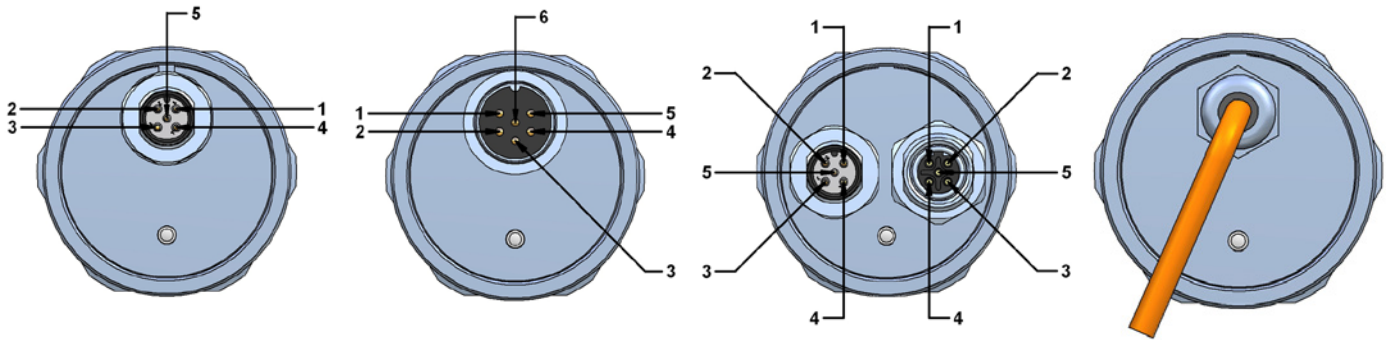
Function	MAZ-A-A connector M12	MAZ-A-B connector M16	MAZ-A-F cable output	Accessory cable for MAZ-A-A: K5P...
Output 1: 0...10 V, 4...20 mA, 0...20 mA	1	1	GY	BN
Output 1: GND	2	2	PK	WH
Output 2: 10...0 V, 20...4 mA, 20...0 mA	3	3	YE	BU
Output 2: GND	2	4	GN	WH
Supply +	5	5	BN	GY
Supply GND	4	6	WH	BK



## ELECTRICAL CONNECTION

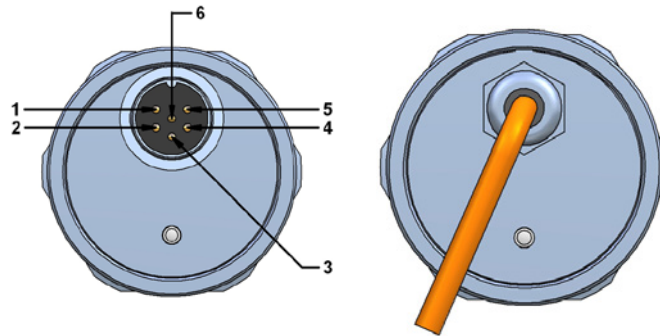
### MAZ-C

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

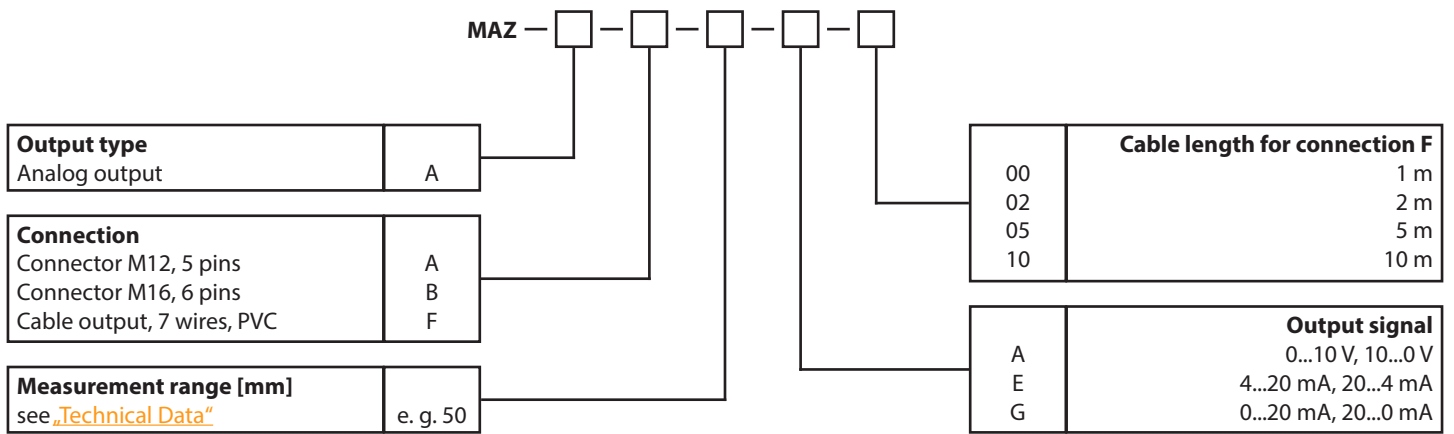


### MAZ-S

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

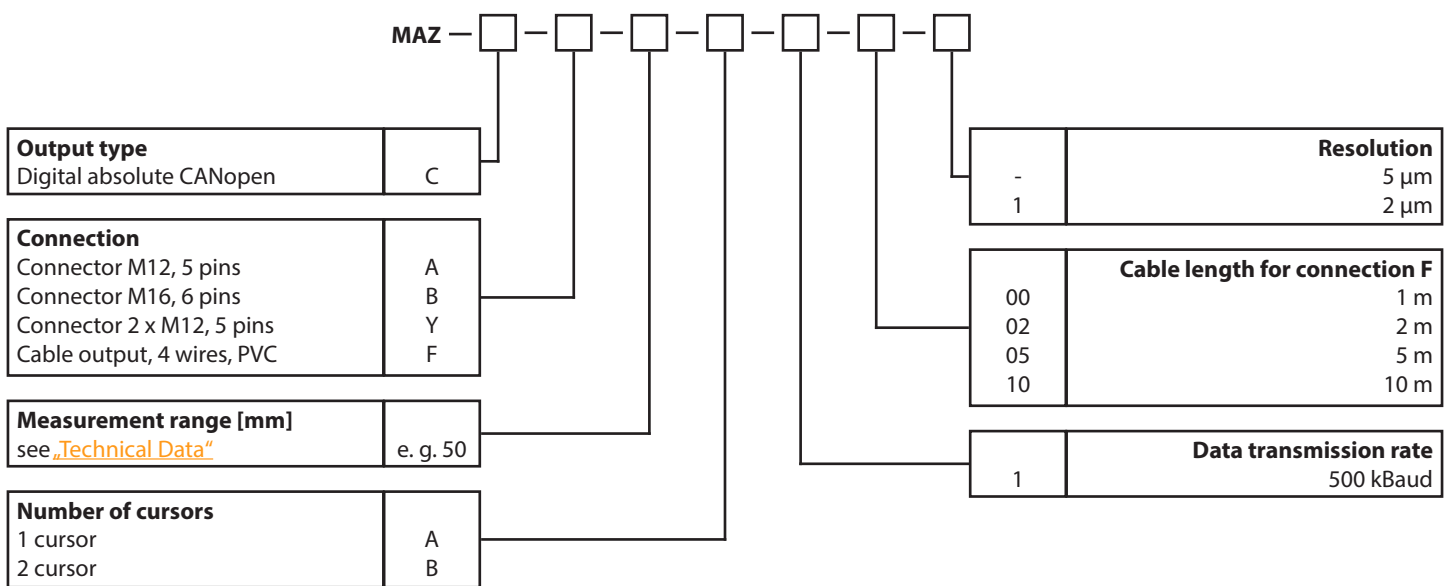


## ORDER CODE ANALOG OUTPUT



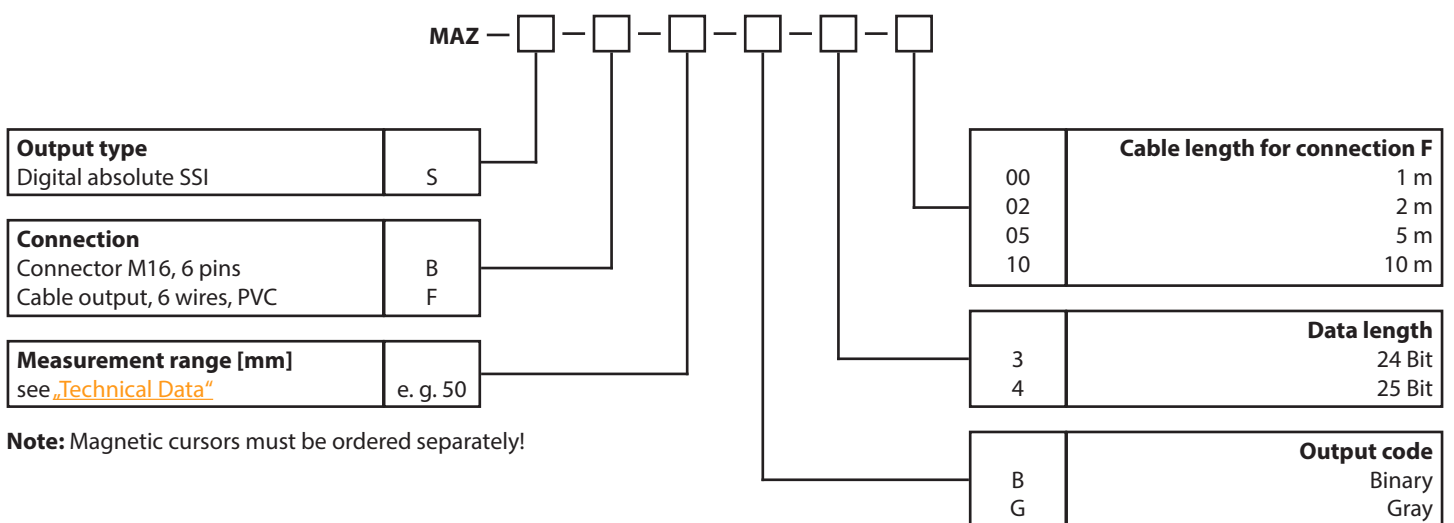
**Note:** Magnetic cursors must be ordered separately!

## ORDER CODE DIGITAL ABSOLUTE CANOPEN



**Note:** Magnetic cursors must be ordered separately!

## ORDER CODE DIGITAL ABSOLUTE SSI



**Note:** Magnetic cursors must be ordered separately!

## ACCESSORIES

### Magnetic cursors for analog output and SSI

PCUR095	magnetic cursor Ø32.8 mm
PCUR096	magnetic cursor Ø32.8 mm, slit 90°
PCUR097	magnetic cursor Ø25.4 mm
PCUR098	floating cursor, hole Ø12 mm
CUR022	non-magnetic spacer for PCUR095

### Cable with mating connector M12 (female) for analog output

K5P2M-S-M12	2 m, straight connector, 5 pins, shielded
K5P5M-S-M12	5 m, straight connector, 5 pins, shielded
K5P10M-S-M12	10 m, straight connector, 5 pins, shielded
K5P2M-SW-M12	2 m, angular connector, 5 pins, shielded
K5P5M-SW-M12	5 m, angular connector, 5 pins, shielded
K5P10M-SW-M12	10 m, angular connector, 5 pins, shielded

### Connector (female) for self assembly

D5-G-M12-S	straight connector M12, 5 pins, IP67
D5-W-M12-S	angular connector M12, 5 pins, IP67

### Digital displays for sensors with analog output, 2 channel

WAY-AX-S	touch screen, supply: 18...30 VDC
WAY-AX-S-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

### Magnetic cursors for CANopen

PCUR022	magnetic cursor Ø32.8 mm
PCUR023	magnetic cursor Ø32.8 mm, slit 90°
PCUR024	magnetic cursor Ø25.4 mm
PCUR026	floating cursor, hole Ø12 mm
PCUR027	floating cursor, hole Ø15 mm
CUR022	non-magnetic spacer for PCUR095

### Cable with mating connector M12 (female) for CANopen

K5P2M-SB-M12-CAN	2 m, connector male, plug female
K5P2M-S-M12-CAN	2 m, connector male, open ends
K5P2M-B-M12-CAN	2 m, plug female, open ends

### Connector (female) for self assembly

CON022	straight connector M16, 6 pins, IP67
CON023	angular connector M16, 6 pins, IP67

### Digital displays for sensors with SSI output, 2 channel

WAY-SX-S	touch screen, supply: 18...30 VDC
WAY-SX-S-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-SX data sheet](#).

Subject to change without prior notice.

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