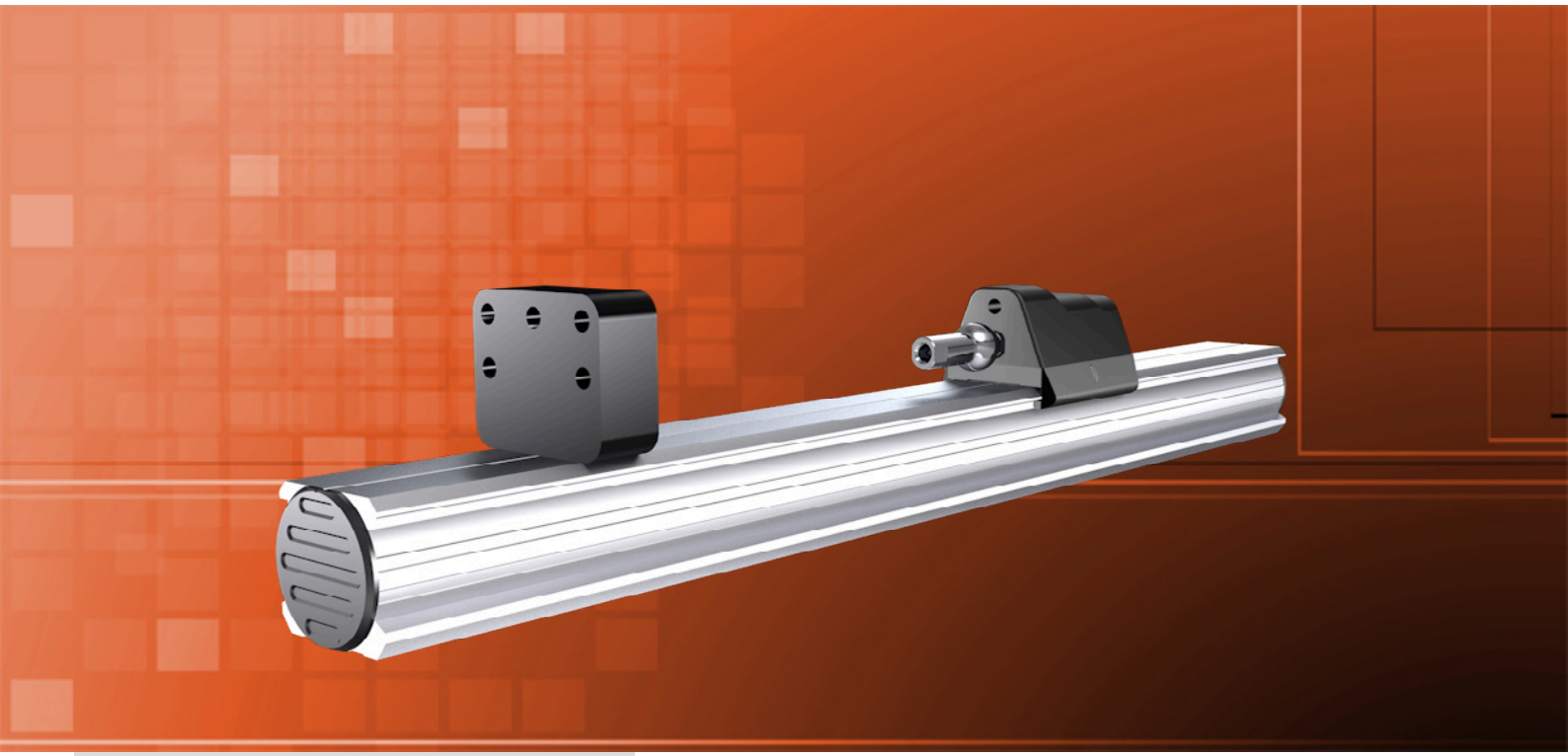
MAGNETOSTRICTIVE TRANSDUCER



Series MAB

Key-Features:

- Measurement ranges from 50 to 2500 mm
- Distance and speed measurement
- Sliding or floating magnetic cursor
- Displacement speed up to 10 m/s
- Linearity up to ±0.01 %
- Operating temperature -30...+75 °C
- Protection class IP67
- Output signals: Analog, SSI, CANopen

Content:

Technical Data	2
Sampling Time And Dimensions	2
Technical Drawing	3
Electrical connection	4
Accessories	4
Order Code	5

20.11.19

WayCon Positionsmesstechnik

TECHNICAL DATA

		MAB-A		MAB-C	MAB-S
Measurement range	[mm]	50 / 75 / 100 / 130 / 150 / 175 / 200 / 225 / 250 / 300 / 350 / 360 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000 / 1100 / 1200 / 1250 / 1300 / 1400 / 1500 / 1750 / 2000 / 2500			
Measured dimension		position / speed			position
Measurement range speed		min. 0...0.1 m/s, max. 0...10 m/s		depending on the scale	-
Accuracy of speed output	[%]	<2			-
Displacement speed	[m/s]	≤10			
Acceleration max.	[m/s²]	≤100			
Linearity sliding magnetic cursor	[%]	±0.01 (min. ±0.06 mm)		±0.02	±0.01 (min. ±0.06 mm)
Linearity floating magnetic cursor	[%]	±0.02 (at a distance of 2...5 mm) ±0.04 (at a distance of 5...7 mm)		±0.02	±0.02 (min. ±0.06 mm) [1]
Resolution		16 bit (noise max. 5 mVpp)		5 µm (2 µm on request)	
Repeatability	[mm]	<0.01			
Hysteresis		<0.01 mm			≤±0.005 % (min. 0.01 mm)
Sampling time position (table below)	[ms]	0.5 to 2		1 to 4	
Output signal		0...10 V	4...20 mA	CANopen DS 301	SSI: Binary/Gray, 24/25 bit
Output value max.		12 V	30 mA	-	-
Current consumption max.	[mA]	70	90	90	50
Output load max.		5 kΩ	<0,5 kΩ	-	RS422/485 standard
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		≤ 0.005 %/°C		20 ppm/°C	
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			connector M16
Housing material		anodised aluminium, Nylon 66 G 25			

[1] depends on distance between cursor and sensor

SAMPLING TIME AND DIMENSIONS

MAB-A

Measurement range	[mm]	up to 300	350 to 1100	1200 to 2000	2500
Sampling time	[ms]	0.5	1	1.5	2
Overall housing length	[mm]	measurement range + 154			

MAB-C

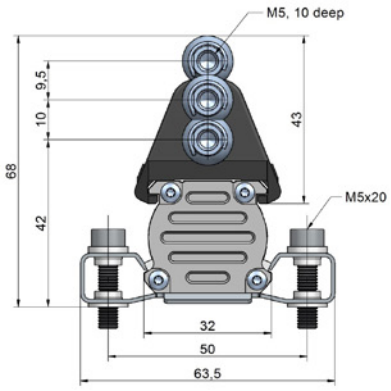
Measurement range	[mm]	up to 1100	1200 to 2000	2500
Sampling time	[ms]	1	2	4
Overall housing length	[mm]	measurement range + 154		

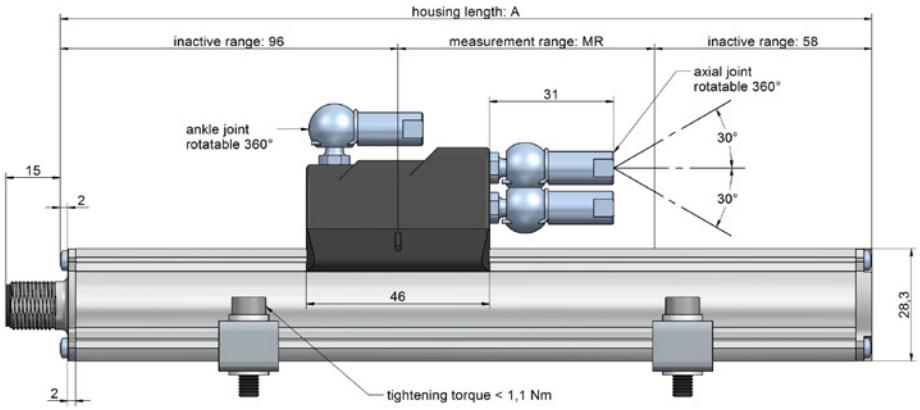
MAB-S

Measurement range	[mm]	up to 1100	1200 to 2000	2500
Sampling time	[ms]	1	2	4
Overall housing length	[mm]	measurement range + 154		

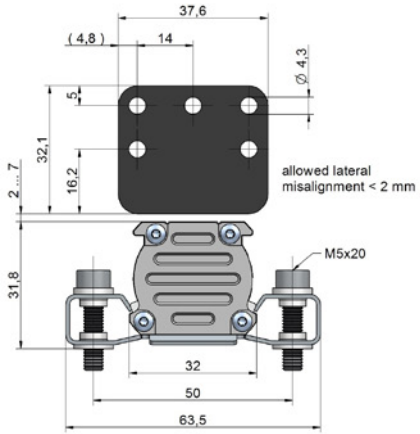
TECHNICAL DRAWING

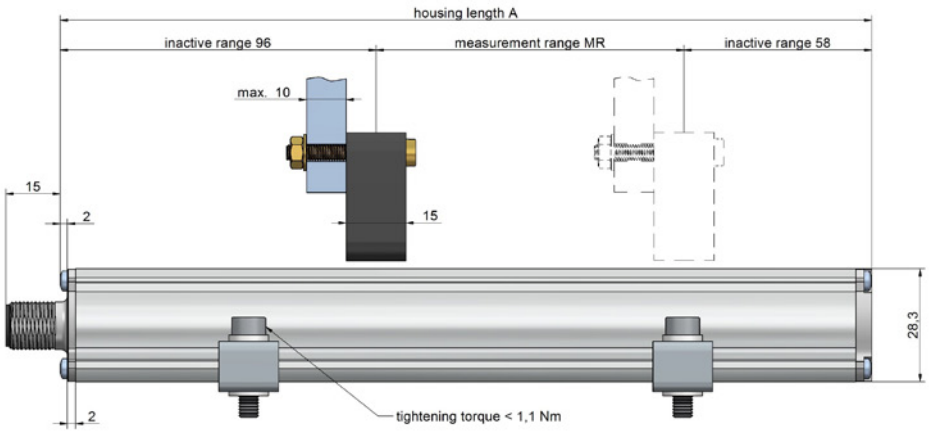
MAB, sliding magnetic cursor



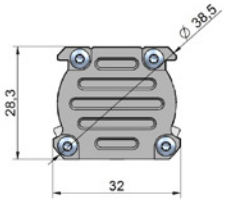


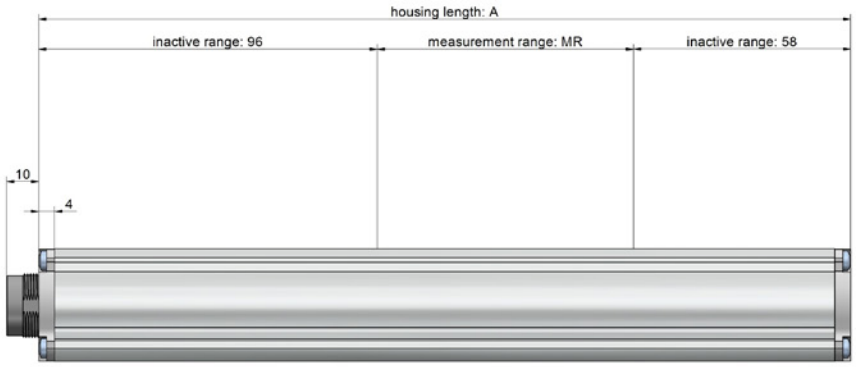
MAB, floating magnetic cursor





MAB-S

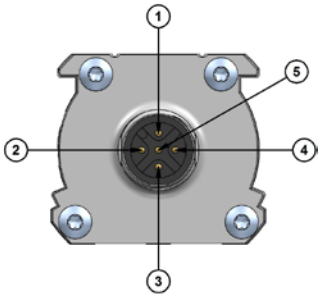




ELECTRICAL CONNECTION

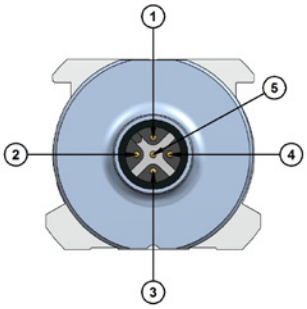
MAB-A

Function	Pin
Output 1: 0...10 V, 4...20 mA	1
Output 1 and 2: GND	2
Output 2: 10...0 V, 20...4 mA	3
Supply GND	4
Supply +	5



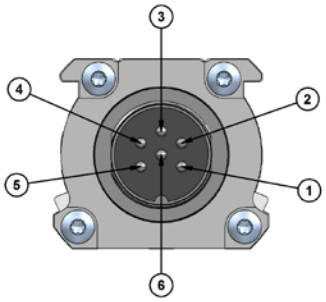
MAB-C

Function	Pin
n. c.	1
Supply +	2
Supply GND	3
CAN H	4
CAN L	5



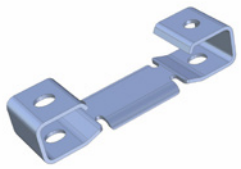
MAB-S

Function	Pin
Data -	1
Data +	2
Clock +	3
Clock -	4
Supply +	5
Supply GND	6



ACCESSORIES

Brackets (not included in delivery!)
1 set includes 2 brackets. We recommend to use 1 set for each third of the measurement range.



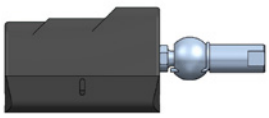
Type: PKIT091
- Material: stainless steel
- Overall length: 63.5 mm
- Distance between mounting holes: 50 mm
- Mounting screws: M5

Magnetic cursors (not included in delivery!)

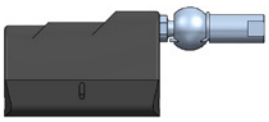
Magnetic cursors for MAB-A and MAB-S	Magnetic cursors for MAB-C	Description
PCUR210	PCUR045	standard version; guided sliding, axial joint, low
PCUR211	PCUR046	guided sliding, axial joint, high
PCUR212	PCUR047	guided sliding, angled joint
PCUR202	PCUR068	unguided floating

The adjustment has to be done 2...7 mm above the MAB-profile. Allowed lateral deviation ±2 mm. Installation only on a support made of non-magnetic material.

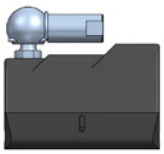
PCUR210
PCUR045



PCUR211
PCUR046



PCUR212
PCUR047

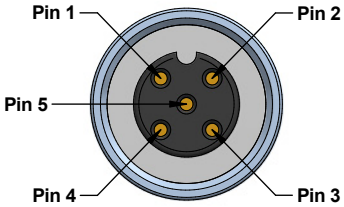


PCUR202
PCUR068



Connection cable for analog output

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	cable colour
1	BN
2	WH
3	BU
4	BK
5	GY

ORDER CODE ANALOG OUTPUT

MAB — □ — □ — □ — □ — □

Output type Analog output	A
Connection Connector M12, 5 pins	A
Measurement range [mm] see „Technical Data“	e. g. 50

00.0	**Speed output** maximum measurable speed 0.1...10 m/s [specify in format 00.0]
	Output signal 0...10 V
N	position
P	position and speed
Y	2 x position (for 2 cursors, MR >360)
	Output signal 4...20 mA
E	position
F	position and speed
H	2 x position (for 2 cursors, MR >360)

Note: Magnetic cursors and brackets must be ordered separately!

ORDER CODE DIGITAL ABSOLUTE CANOPEN

MAB — □ — □ — □ — □ — □

Output type Digital absolute CANopen	C
Connection Connector M12, 5 pins	A
Measurement range [mm] see „Technical Data“	e. g. 50

1	**Data transmission rate** 500 kBaud
	Number of cursors
A	1 cursor
B	2 cursor (MR >360)

Note: Magnetic cursors and brackets must be ordered separately!

ORDER CODE DIGITAL ABSOLUTE SSI

MAB — □ — □ — □ — □ — □

Output type Digital absolute SSI	S
Connection Connector M16, 6 pins	B
Measurement range [mm] see „Technical Data“	e. g. 50

3	**Data length** 24 Bit
4	25 Bit
	Output code
B	Binary
G	Gray

Note: Magnetic cursors and brackets must be ordered separately!

ACCESSORIES

Magnetic cursors for analog output and SSI	
PCUR210	guided sliding, axial joint, low
PCUR211	guided sliding, axial joint, high
PCUR212	guided sliding, angled joint
PCUR202	unguided floating

Magnetic cursors for CANopen	
PCUR045	guided sliding, axial joint, low
PCUR046	guided sliding, axial joint, high
PCUR047	guided sliding, angled joint
PCUR068	unguided floating

Mounting set	
PKIT091	Brackets (2 pieces)

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

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

Connector (female) for self assembly	
CON022	straight connector M16, 6 pins, IP67
CON023	angular connector M16, 6 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.

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.

WayCon Positionsmesstechnik GmbH
email: info@waycon.de
internet: www.waycon.biz

WayCon Positionsmesstechnik

Head Office
Mehlbeerenstr. 4
82024 Taufkirchen
Tel. +49 (0)89 67 97 13-0
Fax +49 (0)89 67 97 13-250

Office Köln
Auf der Pehle 1
50321 Brühl
Tel. +49 (0)2232 56 79 44
Fax +49 (0)2232 56 79 45