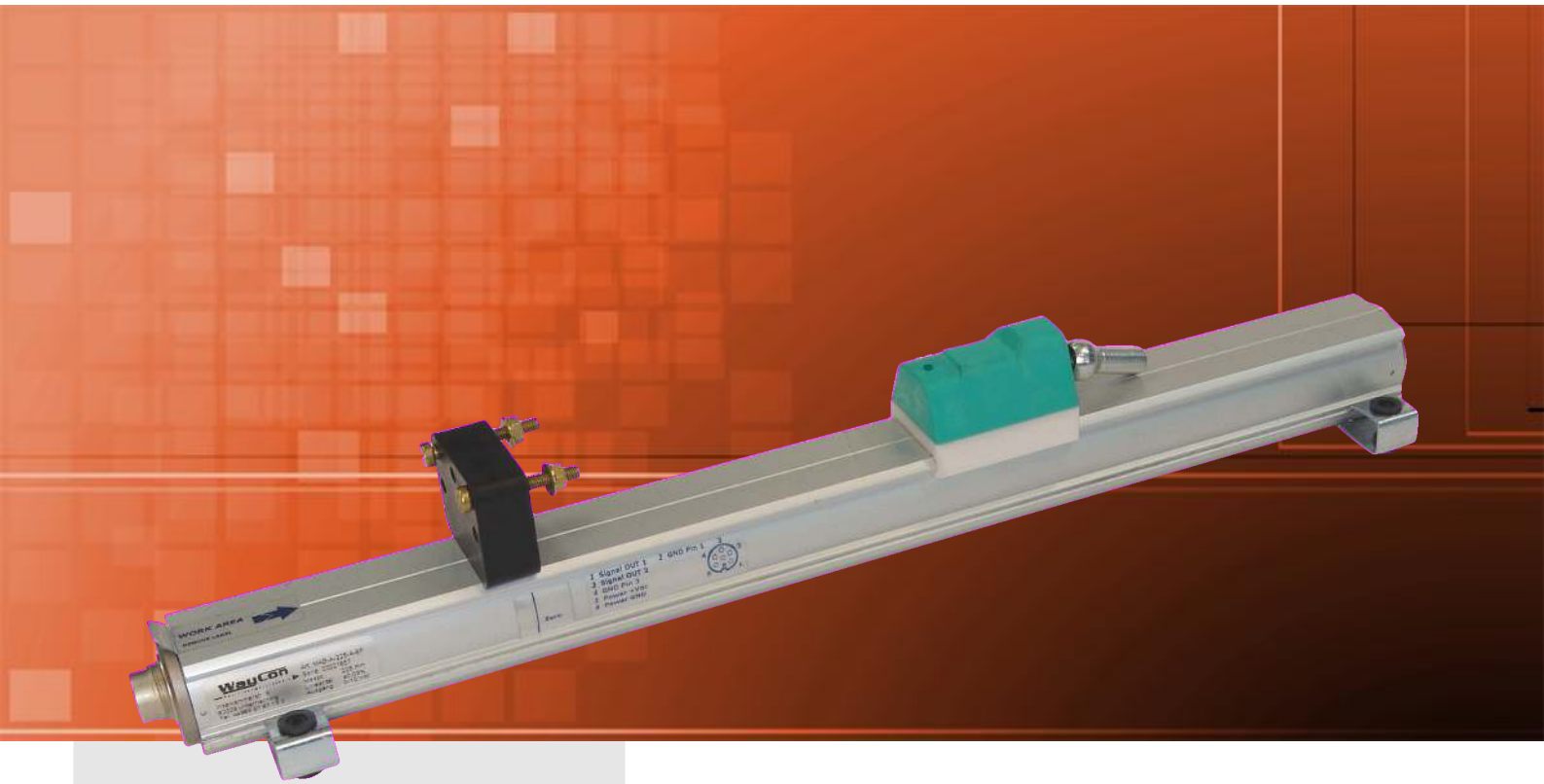
MAGNETOSTRICTIVE TRANSDUCER



MAB Series

Key-Features:

- *Available measurement ranges 50 to 4000 mm*
- *Distance and speed (not with SSI) measurement*
- *Displacement speed up to 10 m/s*
- *Linearity up to ±0.01 %*
- *Working temperature -30...+75 °C*
- *Sliding, or floating magnetic cursor*
- *Protection class IP67*
- *Output signals: Analog, SSI, CANopen*

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17.08.15

WayCon Positionsmesstechnik

TECHNICAL DATA

Model		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/ 2250/ 2500/ 2750/ 3000/ 3250/ 3500/ 3750/ 4000		
Measured dimension		position / speed	position / speed	position
Measurement range speed	[m/s]	min. 0…0.1, max. 0…10	depending on the scale	-
Accuracy of the speed output	[%]	<2		-
Protection class		IP67		
Displacement speed	[m/s]	≤10		
Displacement force	[N]	<1		
Maximum acceleration	[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 between 2-5 mm	±0.02	±0.02 **
	[%]	±0.04 at a distance between 5-7 mm		
Resolution		16 bit (max. noise 5 mVpp)	5 µm (2 µm on request)	5 µm (2 µm on request)
Repeatability	[mm]	<0.01		
Hysteresis		<0.01 mm		<±0.005 % MR
Shock test DIN IEC68T2-27		100 g, 11 ms		
Vibrations DIN IEC68T2-6		12 g, 10…2000 Hz		
Position read sampling time (see table below)	[ms]	0.5 to 3	1 to 4	1
Max. output value		12 V (at 0…10 V), 30 mA (at 4…20 mA)		
Max. current consumption	[mA]	70 (at 0…10 V), 90 (at 4…20 mA)	90	50
Coefficient of temperature	[ppm/°C]	20		
Max. output load	[kOhm]	5 (at 0…10 V), <0.5 (at 4…20 mA)		RS422/485 Standard
Protection against polarity inversion		yes		
Working temperature	[°C]	-30…+75	-30…+75	-30…+90
Storage temperature	[°C]	-40…+100	-40…+100	-40…+100
Power supply	[VDC]	24, ±20 %		10…32
Output signal		0…10V, 4…20 mA	CANopen DS 301	SSI: Binär, Gray, 24 bit, 25 bit
Electrical connection		5-pole M12-connector	5-pole M12-connector	6-pole M16-connector
Housing material		anodised aluminium, Nylon 66 G 25		

* For strokes >2500 mm use sliding or floating cursors with max. distance of 4 mm to the sensor

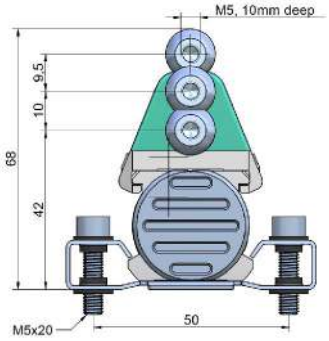
** value depnds on the distance between cursor and sensor body

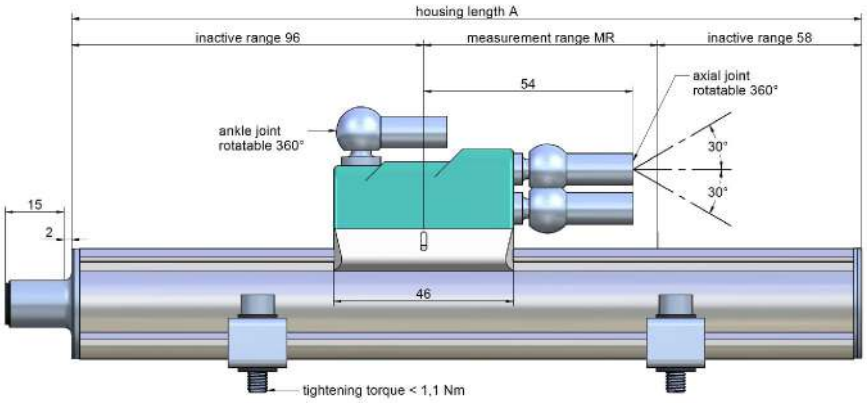
DIMENSIONS AND ELECTRICAL DATA

Useful electrical stroke	[mm]	50 to 300	350 to 1100	1200 to 2000	2250 to 3000	3250 to 4000
Sampling time MAB-A	[ms]	0.5	1	1.5	2	3
Sampling time MAB-C	[ms]	1		2	4	
Sampling time MAB-S	[ms]	1		2	4	
Dimensions MAB-A, -C, -S	[mm]	measurement range + 154				

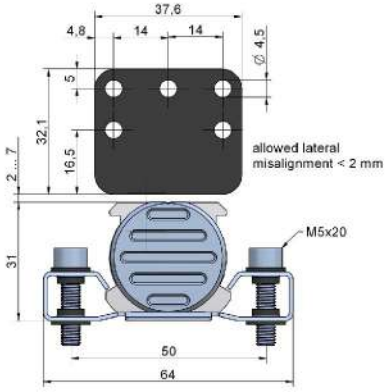
TECHNICAL DRAWING

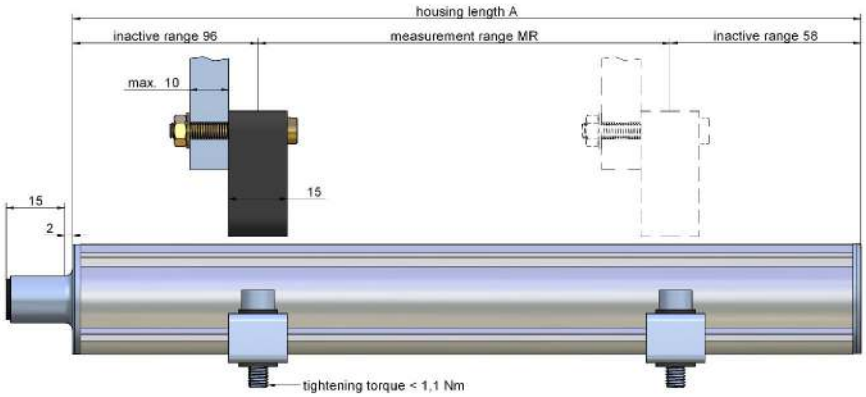
MAB, sliding magnetic cursor





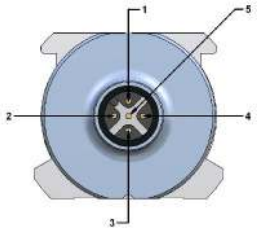
MAB, floating magnetic cursor





ELECTRICAL CONNECTION

Analog output

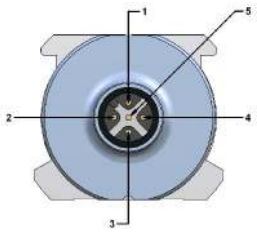


Function	PIN
Output magnetic cursor 1	1
GND output magnetic cursor 1, 2, speed	2
Inverse output:	
Output magnetic cursor 2, speed	3
power supply GND	4
power supply +	5

Connector, 5-pole, M12
D5-G-M12-S, straight, IP67
D5-W-M12-S, angular, IP67

Cable with connector K5P..
see at the bottom of this page

CANopen output

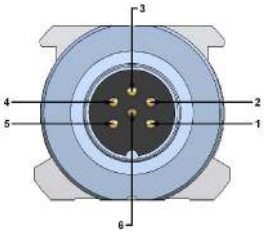


Function	PIN
n.c.	1
Power + VDC	2
DC Ground	3
CAN H	4
CAN L	5

Connector, 5-pole, M12
D5-G-M12-S: straight, IP67
D5-W-M12-S, angular, IP67

CAN Cable with female connector
K5P2M-S-M12-CAN: M12, straight, open cable head, 5-pole, PUR

SSI output



Function	PIN
Data -	1
Data +	2
Clock +	3
Clock -	4
Power supply +	5
Ground	6

Connector, 6-pole, M16
CON021, straight, IP40
CON022, straight, IP67
CON023, angular, IP67

ACCESSORIES

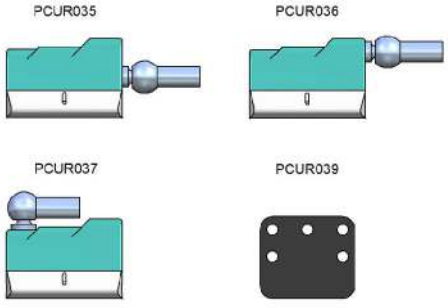
Brackets (not included in delivery)

1 set includes 2 brackets. We recommend to use 1 set for each 1/3 of the measurement range.

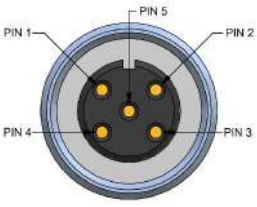
Code: PKIT091
Material: steel
Distance between mounting holes: 50 mm
Overall length: 63.5 mm
Mounting screws: M5

Magnetic cursor (not included in delivery)

The type PCUR039 is a floating magnetic cursor.
The adjustment has to be done 2...7 mm above the MAB-Profile.
Allowed lateral deviation ±2 mm.
The type PCUR035 represents the standard version.

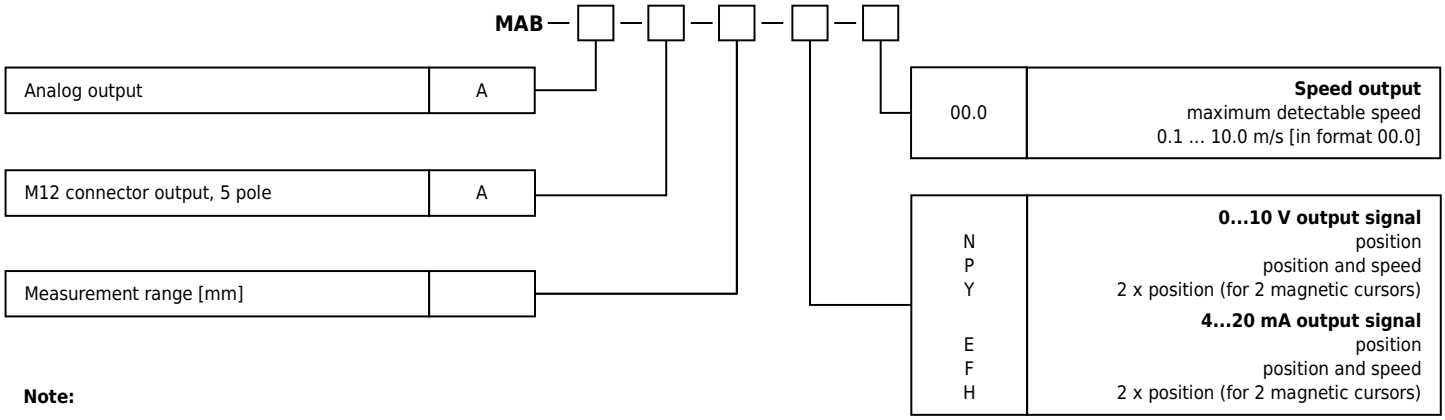


Cable for analog output, connector M12, 5 pole	
K5P2M-S-M12	2 m, connector, straight, IP67, shielded
K5P5M-S-M12	5 m, connector, straight, IP67, shielded
K5P10M-S-M12	10 m, connector, straight, IP67, shielded
K5P2M-SW-M12	2 m, connector, angular, IP67, shielded
K5P5M-SW-M12	5 m, connector, angular, IP67, shielded
K5P10M-SW-M12	10 m, connector, angular, IP67, shielded



PIN	Cable colour K5P..
1	brown
2	white
3	blue
4	black
5	grey

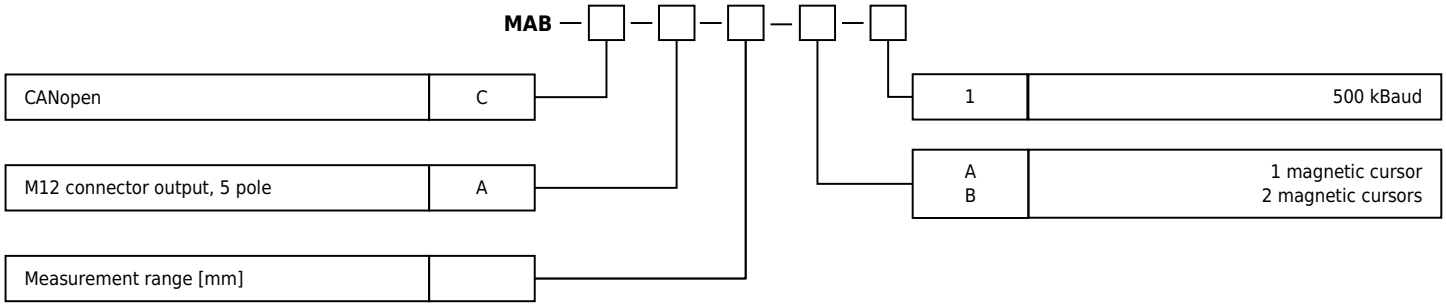
ORDER CODE ANALOG OUTPUT



Note:

- magnetic cursors and brackets have to be ordered separately (see accessories).
- analog output 0...20 mA, 0...5 V, ±5 V and ±10 V are available on request.

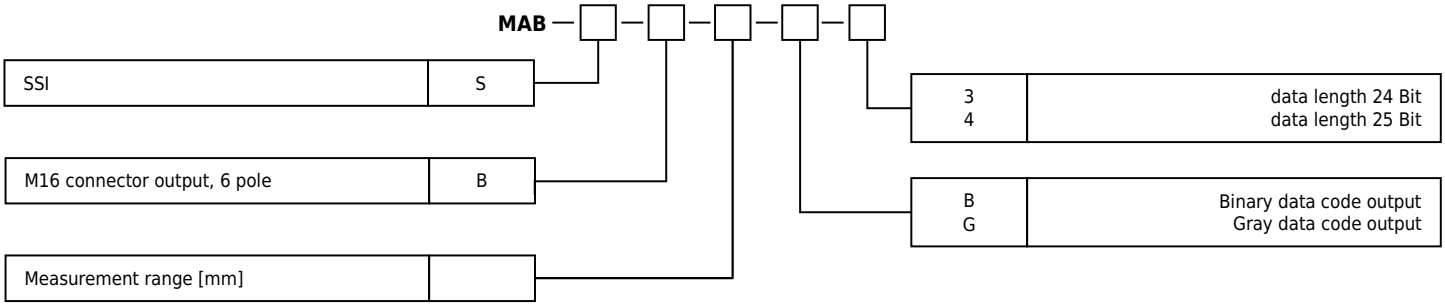
ORDER CODE CANopen OUTPUT



Note:

- magnetic cursors and brackets have to be ordered separately (see accessories).
- other Baud rates and resolutions are available on request.
- additional information, like CANopen Data Protocol is available on request.

ORDER CODE SSI OUTPUT



Note:

- magnetic cursors and brackets have to be ordered separately (see accessories).
- other resolutions are available on request.

OVERVIEW

Base model, 0...10 V Analog output, M12 connector					
MAB-A-A-50-N	**50**	**mm**	**MAB-A-A-800-N**	**800**	**mm**
MAB-A-A-75-N	**75**	**mm**	**MAB-A-A-850-N**	**850**	**mm**
MAB-A-A-100-N	**100**	**mm**	**MAB-A-A-900-N**	**900**	**mm**
MAB-A-A-130-N	**130**	**mm**	**MAB-A-A-950-N**	**950**	**mm**
MAB-A-A-150-N	**150**	**mm**	**MAB-A-A-1000-N**	**1000**	**mm**
MAB-A-A-175-N	**175**	**mm**	**MAB-A-A-1100-N**	**1100**	**mm**
MAB-A-A-200-N	**200**	**mm**	**MAB-A-A-1200-N**	**1200**	**mm**
MAB-A-A-225-N	**225**	**mm**	**MAB-A-A-1250-N**	**1250**	**mm**
MAB-A-A-250-N	**250**	**mm**	**MAB-A-A-1300-N**	**1300**	**mm**
MAB-A-A-300-N	**300**	**mm**	**MAB-A-A-1400-N**	**1400**	**mm**
MAB-A-A-350-N	**350**	**mm**	**MAB-A-A-1500-N**	**1500**	**mm**
MAB-A-A-360-N	**360**	**mm**	**MAB-A-A-1750-N**	**1750**	**mm**
MAB-A-A-400-N	**400**	**mm**	**MAB-A-A-2000-N**	**2000**	**mm**
MAB-A-A-450-N	**450**	**mm**	**MAB-A-A-2250-N**	**2250**	**mm**
MAB-A-A-500-N	**500**	**mm**	**MAB-A-A-2500-N**	**2500**	**mm**
MAB-A-A-550-N	**550**	**mm**	**MAB-A-A-2750-N**	**2750**	**mm**
MAB-A-A-600-N	**600**	**mm**	**MAB-A-A-3000-N**	**3000**	**mm**
MAB-A-A-650-N	**650**	**mm**	**MAB-A-A-3250-N**	**3250**	**mm**
MAB-A-A-700-N	**700**	**mm**	**MAB-A-A-3500-N**	**3500**	**mm**
MAB-A-A-750-N	**750**	**mm**	**MAB-A-A-3750-N**	**3750**	**mm**
			MAB-A-A-4000-N	**4000**	**mm**

Options with additional charge on base model	
0...10 V output:	
P	position and speed
Y	2 x position (for 2 magnets)
4...20 mA output:	
E	position
F	position and speed
H	2 x position (for 2 magnets)
CANopen output:	
C	50 to 550 mm measurement range
C	600 to 4000 mm measurement range
SSI output:	
S	50 to 550 mm measurement range
S	600 to 4000 mm measurement range

Accessories	
PCUR039	floating magnetic cursor
PCUR035	sliding magnetic cursor, middle axial joint
PCUR036	sliding magnetic cursor, high axial joint
PCUR037	sliding magnetic cursor, angle joint
PKIT091	set of brackets (2 pieces)
Cable for analog output, 5 pole, shielded, connector M12	
K5P2M-S-M12	2 m, connector, straight
K5P5M-S-M12	5 m, connector, straight
K5P10M-S-M12	10 m, connector, straight
K5P2M-SW-M12	2 m, connector, angular
K5P5M-SW-M12	5 m, connector, angular
K5P10M-SW-M12	10 m, connector, angular
Cable for CANopen output, 5 pole, shielded, PUR	
K5P2M-B-M12-CAN	female connector M12, straight, open cable head
Connector SSI output	
CON022	connector, 6 pole, M16, straight, IP67
CON023	connector, 6 pole, M16, angular, IP67
Connector analog output, CANopen output	
D5-G-M12-S	connector 5 pole, M12, straight, IP67
D5-W-M12-S	connector 5 pole, M12, angular, IP67

Subject to chance without prior notice.

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