

**MAGNETOSTRICTIVE  
TRANSDUCERS**

Powerful sensors to meet growing demands

## Magnetostrictive Transducer MAB/MAP



### Features

- Measurement ranges from 50 to 4000 mm
- Displacement speed up to 10 m/s
- Operating temperature max. -30...+90 °C
- Analogue and digital outputs
- Protection class up to IP67
- Repeatability  $\leq 0.01$  mm
- Contactless measurement without wear
- Sliding, or floating magnetic cursor

### Introduction

The MAB and MAP series magnetostrictive transducer sensors consist of two components. The profile, which also contains the electronics, is bolted to a fixed surface. The position magnet, available in a sliding, or free floating style, is secured to the moving measurement object. This touchless, wear-free measuring method will accurately reflect distances with minimal effort.

### Technical data

GROUP ► CHARACTERISTICS ▼	MAB	MAP
Measuring range max. <sup>1)</sup>	4000 mm	1500 mm
Linearity max. <sup>1)</sup>	$\pm 0.01$ %	$\pm 0.04$ % (min. $\pm 0.09$ mm)
Resolution	5 $\mu$ m ( 2 $\mu$ m on request)	limited by power supply
Repeatability	$\leq 0.01$ mm	
Displacement speed	$\leq 10$ m/s	
Output analogue	0...10 V / 4...20 mA	0.1...10.1 V / 4...20 mA
Output digital	CANopen, SSI	-
Operating temperature	-30...+90 °C	-20...+75 °C
Speed measurement	Yes	-
Protection class	IP67	IP65

<sup>1)</sup> based on the measurement range

# Magnetostrictive Transducer MAZ/MSB



## Features

- ▶ Measurement ranges from 50 to 4000 mm
- ▶ Resolution up to 2  $\mu\text{m}$
- ▶ Displacement speed up to 10 m/s
- ▶ Operating temperature -30...+90 °C
- ▶ Output signals: Analogue, SSI, CANopen
- ▶ Protection class IP67
- ▶ Working pressure up to 350 bar
- ▶ Contactless measurement

## Introduction

The magnetostrictive measuring principle is particularly suited for determining the position of the piston in small and medium sized hydraulic cylinders. The plug-in or threaded flange sensors are mounted all the way in the cylinder for this purpose. MAZ and MSB sensors are further used to measure container fill levels. A special float style magnet provides a reliable measurement of the fluid level.

## Technical data

GROUP ► CHARACTERISTICS ▼	MAZ	MSB
Measuring range max. <sup>1)</sup>	4000 mm	
Linearity max. <sup>1)</sup>	±0.02 %	
Resolution	2...5 $\mu\text{m}$	10 $\mu\text{m}$
Repeatability	<10 $\mu\text{m}$	
Displacement speed	≤10 m/s	
Output analogue	0...10 V, 4...20 mA	0.1...10.1 V / 0.1...5.1 V / 4...20 mA
Output digital	SSI, CANopen	-
Operating temperature	-30...+90 °C / -30...+75 °C	-30...+75 °C
Protection class	IP67	
Working pressure	350 bar	
Housing	high grade steel AISI316	

<sup>1)</sup> based on the measurement range

# Magnetostrictive Transducer MOP



## Features

- Measurement ranges from 50 to 900 mm
- Linearity up to  $\pm 1$  mm
- Displacement speed up to 10 m/s
- Recognizes the polarization of the internal magnets
- Especially low profile
- Operating temperature 0...+50 °C
- Contactless measurement without wear
- For pneumatic cylinders according to the ISO 15552

## Introduction

Transducer sensors in the MOP group are used to easily retrofit a measurement system in standard cylinders according to ISO 15552. A touchless sensor mounted on the outside determines the position of the magnetic piston, which is then output as a proportional analogue signal. This allows continuous control or monitoring of a pneumatic cylinder, that originally had no distance measurement system.

## Technical data

CHARACTERISTICS ▼	MOP
Measuring range max. <sup>1)</sup>	900 mm
Linearity max. <sup>1)</sup>	$\pm 0.02$ % (min. $\pm 1$ mm)
Resolution	limited by the quality of the power supply
Repeatability max.	$\leq 0.05$ mm
Output analogue	0.5...9.5 V / 4.8...19.2 mA
Operating temperature	0...50 °C
Protection class	IP65

<sup>1)</sup> based on the measurement range

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