

# MAG200

## MAGNETOSTRICTIVE

Measuring length absolute up to 3 m linear position transducer



DATASHEET - Rev.3 - 18012018



### CHARACTERISTICS

- Measuring range from 100 to 3000mm
- High Resistance to shock and vibration
- Working pressures up to 350bars
- Customizable cursor
- Absolute output
- Relay and CANopen output
- For relay version the switching point is settable by customer.



### ADVANTAGES

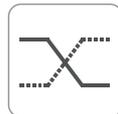
- Absolute Contactless linear position measurement
- High Resolution, High Linearity
- Without null zone
- Unlimited mechanical life
- Rod, nipple and flange AISI 316
- Easy in-field installation and replacement
- Position, speed and acceleration measured values



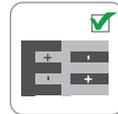
High protection level



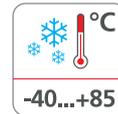
Shock/vibration resistant



Redundancy output



Reverse polarity protection



Wide range temperature



Functional safety



CANopen output



Relay output



Directive 2011/65/EU



EU conformity

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### PRODUCT DESCRIPTION

MAG200 is a magnetostrictive position transducer designed for use with hydraulic cylinders in mobile application. Its unique design, plus a wide range of cursor configurations, ensures easy installation and total compatibility with cylinder manufacturer specifications.

Working temperature from -40 to +85°C, working pressures up to 350 bars, high resistance to vibration and shock give the sensor the indispensable strength needed for heavy-duty use. High performance in terms of transduction of measurement defined as linearity, hysteresis and repeatability. The signal is CANopen or relay output.



### PRODUCT CODE

MAG200. a . b . c . d . e ORDER CODE

<b>a</b>	Power supply
<b>2</b>	◀ = 9 ... 30 VDC

<b>c</b>	Sensor Output
<b>6</b>	◀ = CANopen redundant
<b>8</b>	◀ = Relay
<b>28</b>	◀ = CANopen SIL2-Pld

<b>e</b>	Cursor
<b>X</b>	◀ = none
<b>0</b>	◀ = Custom cursor
<b>1</b>	◀ = Standard cursor

<b>b</b>	Measuring length
<b>XXXX</b>	◀ = mm (steps of 0100 mm)

<b>d</b>	Type of connection
<b>2</b>	◀ = Male flange connector M12, 5-pin

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### TECHNICAL SPECIFICATION

Measuring range	0,1...3 m
Magnetostrictive resolution	0.1 mm
Magnetostrictive Linearity	±0.04 % (F.S)
Magnetostrictive Repeatability	±0.005 % (F.S)
Operating Pressure	350 bars (peak max ... 500 bars)
Type of connection	Male flange connector M12, 5-pin
Protection	IP67
Temperature range head	-40°C ... +85°C [-40°F ...+185°F]
Temperature Operating Rod	-40°C ... 125°C [-40°F ...+257°F]
Temperature Coefficient	±0.004 % (F.S)/°C
Material	stainless steel AISI316
Rod Diameter	10 mm
Nipples Thread	M18 x 1,5mm
Shock resistance	acc. to EN 60068-2-27 30 G, 11 ms
Vibration resistance	acc. to EN 60068-2-6 10 ... 500 Hz

### OPERATING PRINCIPLE

The magnetostrictive effect on metallic wire or rod creates a change in length or volume of the wire or rod in the presence of a magnetic field. Ferromagnetic metals can have negative or positive magnetostrictive properties, for example they can shrink or stretch which in turn decreases or increases its volume. This effect is used in our magnetostrictive linear position sensors.

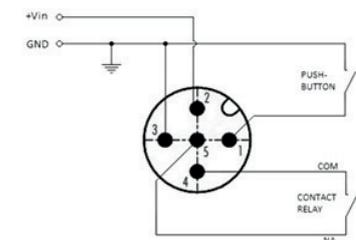


### ELECTRICAL CHARACTERISTICS

<b>CANopen</b>	
Power supply	9 ... 30 V DC
Profile of Communication	CiA DS301 (CiA DS406 for SIL2-PLD)
Current consumption	max. 100 Ma
<b>Relay</b>	
Power supply	9 ... 30 V DC
Output signal	1x relay (Normally open)
Maximum current	50 mA
Hysteresis	20 mm (factory setting)
Protections	Reverse Polarity, burst, surge, EMI filters
Electromagnetic compatibility	acc. to EN 61326-1, EN 61326-3-1
CE compliant	acc. to EMC guideline 2014/30/EU RoHS guideline 2011/65/EU

### FUNCTION RELAY

The switching point of the relay can be set by means of a button connected to pin 1 (teach). To do so, position the magnetic cursor at the position desired switching point and then press the button once.



### RELAY ELECTRICAL CONNECTION M12 X 5 PINS

	<b>Pinout</b>
1	Button
2	+Vin
3	GND
4	COM
5	N.O.

### CANOPEN ELECTRICAL CONNECTION M12 X 5 PINS

	<b>Pinout</b>
1	CAN-GND
2	+Vin
3	GND
4	CAN-H
5	CAN-L

### ACCESSORY

For assign the relay switch point position press the button of "INT.TASTO.1" (cod. TSM 9T100017)



ONLY FOR RELAY VERSION

# MAG200

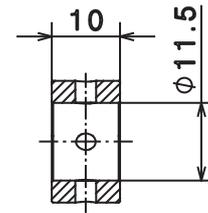
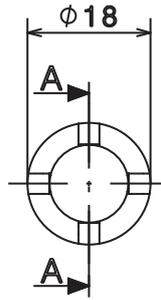
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### TYPE OF MAGNET

#### 1] Cursor STD



Section A-A

