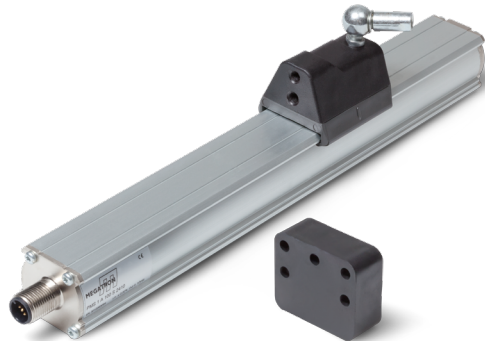


# Data Sheet for Linear Sensors

Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS



The PMS series is used in industrial applications that require a robust displacement sensor without push rod.

- Non-contact measuring principle
- Mech. connection by ball coupling to compensate for the angular offset or free position sensor
- Small space requirement without push rod
- Measuring lengths from 50 mm to 4000 mm

The robust aluminium housing allows use in harsh industrial applications.

## Electrical Data

Effective electrical travel 1.) in 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	
Independent linearity (best straight line) 1.)	With free cursor $\pm 0,01\%$ (min. $\pm 0,06$ mm) With guided cursor $\pm 0,02\%$ (at a distance between 2 and 5 mm) With guided cursor $\pm 0,04\%$ (at a distance between 5 and 7 mm)	
Output signal	0..10 V	4..20 mA / 0..20 mA
Theoretical resolution 1.)	16 bit (@ $\leq 5$ mVpp)	
Max. residual ripple VSUP	1 Vpp	
Backlash (Hysteresis) 1.)	$< 0,01$ mm	
Update rate (depends on travel)	0,5 ms (50..300 mm) / 1 ms (350..1100 mm) / 1,5 ms (1200..2000 mm) / 2 ms (2250..3000 mm) / 3 ms (3250..4000 mm)	
Supply voltage	24 V $\pm 20\%$	
Power consumption (no load)	$\leq 70$ mA	$\leq 90$ mA
Output load	$\leq 5$ kOhm	$\leq 500$ Ohm
Power ripple	$< 5$ mVpp	
Output value	$\leq 12$ V	$\leq 30$ mA
Alarm output value	10,5 V	21 mA
Insulation voltage 1.)	500 V (Suppressor diode 30V 0,4J mounted against voltage spikes)	
Reverse polarity protection / overvoltage protection / protection against power supply in output:	Yes	

## Mechanical Data, Environmental Conditions, Miscellaneous

Mechanical stroke 1.) in 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
Lifetime (90% effective electrical travel) 2.)	Theoretically infinite
Max. operational speed	$\leq 10$ m/s
Max. acceleration	$\leq 100$ m/s <sup>2</sup>
Operational temperature	-30..+75°C
Storage temperature	-40..+100°C
Protection grade (IEC60529)	IP67

# Data Sheet for Linear Sensors

Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS

## Mechanical Data, Environmental Conditions, Miscellaneous

Vibration (IEC 68-2-6, Test Fc)	12 g (10..2000 Hz)
Shock (IEC 68-2-27, Test Ea)	100 g, halfsine, 11 ms
Housing length (+ 154 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
Mounting parts (included in delivery)	1 Mounting set: 2 x clamps + 4 x screws + 4 x washer
Cursor	Not included in delivery
Material housing	Anodized aluminium
Material push rod	Plastic
Electrical connection	Plug 5-pole (M12) / Plug 6-pole DIN45322) / round cable 1 m
Sensor mounting	Adjustable mounting clamps

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

### Accessories (not included in delivery):

#### For 5 pole connector M12:

- Mating connector (STEM12) #125482: M12 thread, 5-pole, IP67, straight, shieldable (IP67 STE M12 5POL IP67 G S)
- Mating connector (STEM12) #125483: M12 thread, 5-pole, IP67, angled, shielded (STE M12 5POL IP67 W GS)
- Mating connector with cable (STKM12) #127287: M12 thread, 5-pole, IP67, straight, shielded, 2 m (STK M12 5POL IP67 G GS 2M AWG24)
- Mating connector with cable (STKM12) #127665: M12 thread, 5-pole, IP67, angled, shielded, 5 m (STK M12 5POL IP67 W GS 5M AWG24)

#### For 6 pole connector M16:

- Mating connector (STEM16) #118645: M16 thread, 6-pole, IP67, straight, shieldable (STE M16 6POL IP67 G S)
- Mating connector (STEM16) #118646: M16 thread, 6-pole, IP67, angled, shieldable (STE M16 6POL IP67 W S)

More connectors with cable on request. Take a look at data sheet STEM for connector without cable, STKM for connector with cable.

#### Additional accessories:

- Cursor guided with axial joint standard P35 #122134: Take a look at drawing
- Cursor guided with axial joint high (on request): Take a look at drawing
- Cursor guided with angle joint P37 #122528: Take a look at drawing
- Free cursor #123387: Take a look at drawing
- Additional mounting kit (2 x clamps + 4 x screws + 4 x spring washers) #122527: Take a look at drawing

# Data Sheet for Linear Sensors

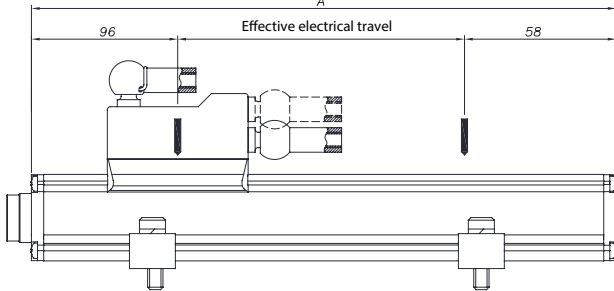
Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS

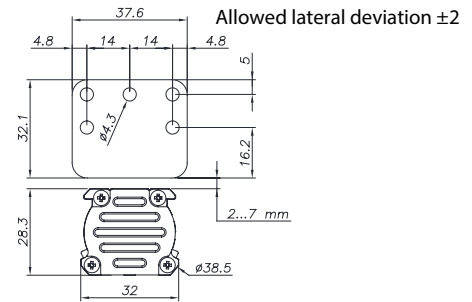
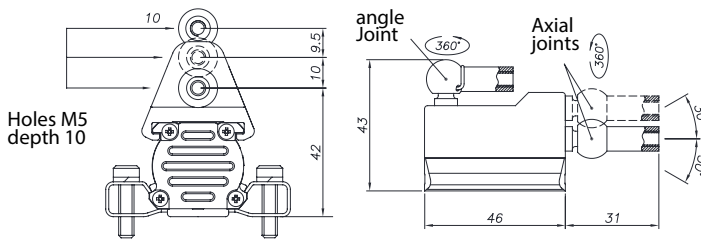
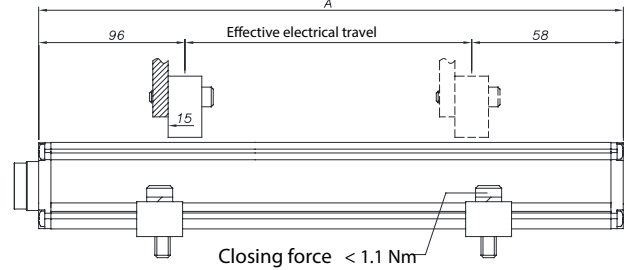
Order Code							
Description	Selection: standard=black/bold, possible options=grey/cursive						
<b>Series:</b>	<b>PMS</b>						
<b>Designed for 1 cursor</b> <i>Option designed for 2 cursors</i>		<b>1</b> 2					
<b>Operating mode analog</b>			<b>A</b>				
<b>Effective electrical travel:</b>							
<i>Option 50 mm</i>					50		
<i>Option 75 mm</i>					75		
<b>100 mm</b>					<b>100</b>		
<i>Option 130 mm</i>					130		
<i>Option 150 mm</i>					150		
<i>Option 175 mm</i>					175		
<b>200 mm</b>					<b>200</b>		
<i>Option 225 mm</i>					225		
<i>Option 250 mm</i>					250		
<b>300 mm</b>					<b>300</b>		
<i>Option 350 mm</i>					350		
<i>Option 360 mm</i>					360		
<i>Option 400 mm</i>					400		
<i>Option 450 mm</i>					450		
<b>500 mm</b>					<b>500</b>		
<i>Option 550 mm</i>					550		
<b>600 mm</b>					<b>600</b>		
<i>Option 650 mm</i>					650		
<i>Option 700 mm</i>					700		
<i>Option 750 mm</i>					750		
<i>Option 800 mm</i>					800		
<i>Option 900 mm</i>					900		
<i>Option 1000 mm</i>					1000		
<i>Option 1100 mm</i>					1100		
<i>Option 1200 mm</i>					1200		
<i>Option 1250 mm</i>					1250		
<i>Option 1300 mm</i>					1300		
<i>Option 1400 mm</i>					1400		
<i>Option 2250 mm</i>					2250		
<i>Option 2500 mm</i>					2500		
<i>Option 2750 mm</i>					2750		
<i>Option 3000 mm</i>					3000		
<i>Option 3250 mm</i>					3250		
<i>Option 3500 mm</i>					3500		
<i>Option 3750 mm</i>					3750		
<i>Option 4000 mm</i>					4000		
<b>Electrical connection:</b>							
<b>5-pole plug</b>						<b>S</b>	
<b>Round cable 1 m</b>						<b>K</b>	
<i>Option 6-pole plug</i>						S6	
<i>Option cable length in m (x,xx)</i>						Kx,xx	
<b>Output signal:</b>							
<b>0..10 V</b>							<b>2410</b>
<b>4..20 mA</b>							<b>2442</b>
<b>0..20 mA</b>							<b>2420</b>
<b>Degree of protection standard IP67:</b>							-

### Drawing

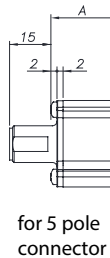
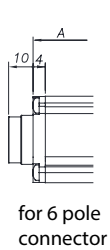
PMS with sliding magnetic cursors



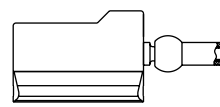
PMS with floating magnetic cursor



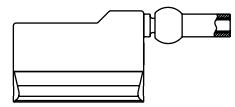
#### Connection output



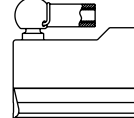
Sliding cursor  
axial joint standard



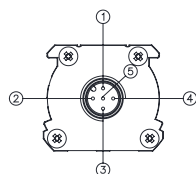
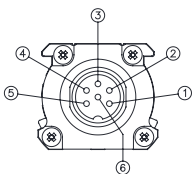
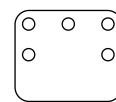
Sliding cursor  
axial joint high



Sliding cursor  
angle joint



Free cursor



- Note: 1) For strokes > 2500 mm use sliding or floating cursors with max. distance of 4 mm  
2) For multi-cursor versions, the cursors have to work under the same distance and temperature conditions

Connection	5 pole M12	6 pole M16	Cable
Output cursor 1 0...10V / 4...20mA / 0...20mA	1	1	Grey
GND Output cursor 1 (0V)	2	2	Pink
Inverse output cursor 1 / Output cursor 2 / Output speed 0...10V / 4...20mA / 0...20mA	3	3	Yellow
GND cursor 1 / Output cursor 2 / Output speed (0V)	2	4	Pink
Power supply+	5	5	Brown
Power supply GND	4	6	White

Dimensions	
Effective el. travel [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
A [mm]	+ 154 (effective el. travel)

Dimensions in mm