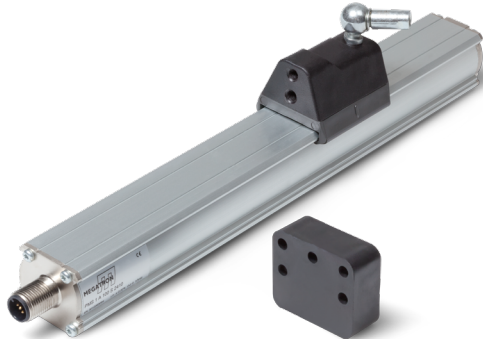


Data Sheet for Linear Sensors



Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS2



The PMS2 series is used in industrial applications that require a robust displacement sensor without push rod.

- Non-contact measuring principle
- Mechanical 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
- Very precise due to high resolution and good linearity
- Electromagnetic compatibility 2014/30 /EU (EMC)

The robust aluminium housing allows use in harsh industrial applications. Due to its excellent performance in terms of EMC immunity, the displacement sensor is suitable for use in electromagnetically disturbed industrial environments.

Electrical Data Daten	PMS2 A	PMS2 AH
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	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 guided cursor $\leq \pm 0,02\%$ (min. $\pm 0,06$ mm)	With guided cursor $\leq \pm 0,01\%$ (min. $\pm 0,06$ mm)
Independent linearity (best straight line) 1.)	With free cursor $\pm 0,02\%$ (at distance between 2 and 5 mm) With free cursor $\pm 0,04\%$ (at distance between 5 and 7 mm)	
Output signal	0..10 V	4..20 mA / 0..20 mA
Theoretical resolution 1.)	16 bit (@ ≤ 5 mVpp)	
Max. residual ripple VSUP	1 Vpp	
Backlash (Hysteresis) 1.)	< 0,01 mm (only limited by the output noise)	
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 ± 20 %	
Power consumption (no load)	≤ 70 mA**	≤ 90 mA**
Output load	≤ 5 kOhm	≤ 500 Ohm
Power ripple	< 5mVpp	
Output value	≤ 12 V	≤ 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	PMS2 A	PMS2 AH
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	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	

Data Sheet for Linear Sensors

Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS2

Mechanical Data, Environmental Conditions, Miscellaneous	PMS2 A	PMS2 AH
Max. operational speed	≤ 10 m/s (min. 0..0,1 m/s, max. 0..10 m/s)	
Accuracy speed	<2% (FS)	
Max. acceleration	≤ 100 m/s ²	
Operational temperature	-30..+75°C	-30..+85°C*
Storage temperature	-40..+100°C	
Protection grade (IEC60529)	IP67	
Vibration (IEC 68-2-6, Test Fc)	12 g (10..2000 Hz)	15g (10..2000 Hz)
Shock (IEC 68-2-27, Test Ea)	100 g, halvesine, 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 cursor	Plastic	
Electrical connection	Plug 5-pole (M12) / Plug 6-pole DIN45322) / Plug 8-pole (M16) / Plug 8-pole (M12) / 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

* For PMS2 AH: Please note possible temperature restrictions for electrical connections

** For PMS2 AH: The devices must be supplied with a Class 2 Power Supply (as for NEC) or LPS Power Supply (as for EN 60950). If devices are permanently connected to the machine it's requested an external switch or circuit breaker and external over current protection.

Data Sheet for Linear Sensors

Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS2

Accessories (not included in delivery):

For 5 pole connector M12:

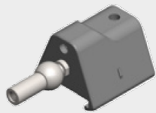
- Mating connector (STEM12) #125482: M12 thread, 5-pole, IP67, straight, shieldable (IP67 STE M12 5POL IP67 G S)
- Mating connector (STEM12) #125483: M12 thread, 5-pole, IP67, angled, shielded (STE M12 5POL IP67 W GS)
- Mating connector with cable (STKM12) #127287: M12 thread, 5-pole, IP67, straight, shielded, 2 m (STK M12 5POL IP67 G GS 2M AWG24)
- Mating connector with cable (STKM12) #127527: M12 thread, 5-pole, IP67, angled, shielded, 5 m (STK M12 5POL IP67 W GS 5M AWG24)

For 6 pole connector M16:

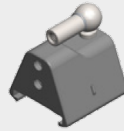
- Mating connector (STEM16) #118645: M16 thread, 6-pole, IP67, straight, shieldable (STE M16 6POL IP67 G S)
 - Mating connector (STEM16) #118646: M16 thread, 6-pole, IP67, angled, shieldable (STE M16 6POL IP67 W S)
- More connectors with cable on request. Take a look at data sheet STEM for connector without cable, STKM for connector with cable.

For 8 pole connector M16 / M12 with or without cable on request

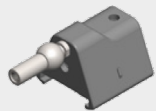
Cursors:



Guided cursor with axial joint
low #134590



Guided cursor with angled joint
#134592



Guided cursor with axial joint
high #134591



Free cursor #134574

Additional accessories:

- Additional mounting kit (2 x clamps + 4 x screws + 4 x spring washers) #122527
- On request mounting kit M5 (2 x clamps + 4 x screws + 4 x spring washers)

Data Sheet for Linear Sensors

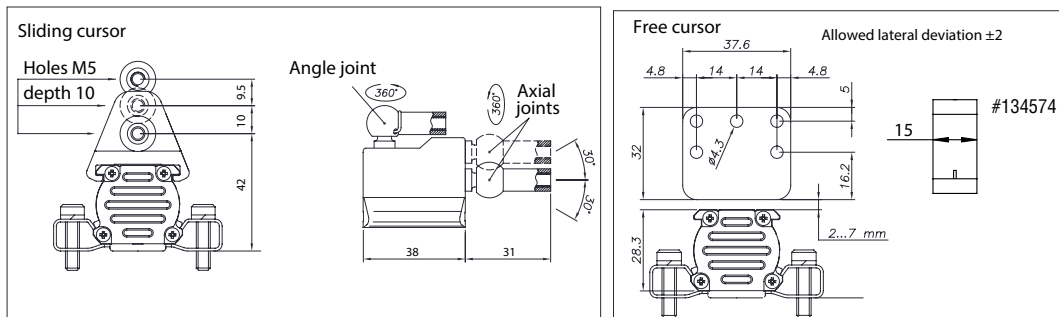
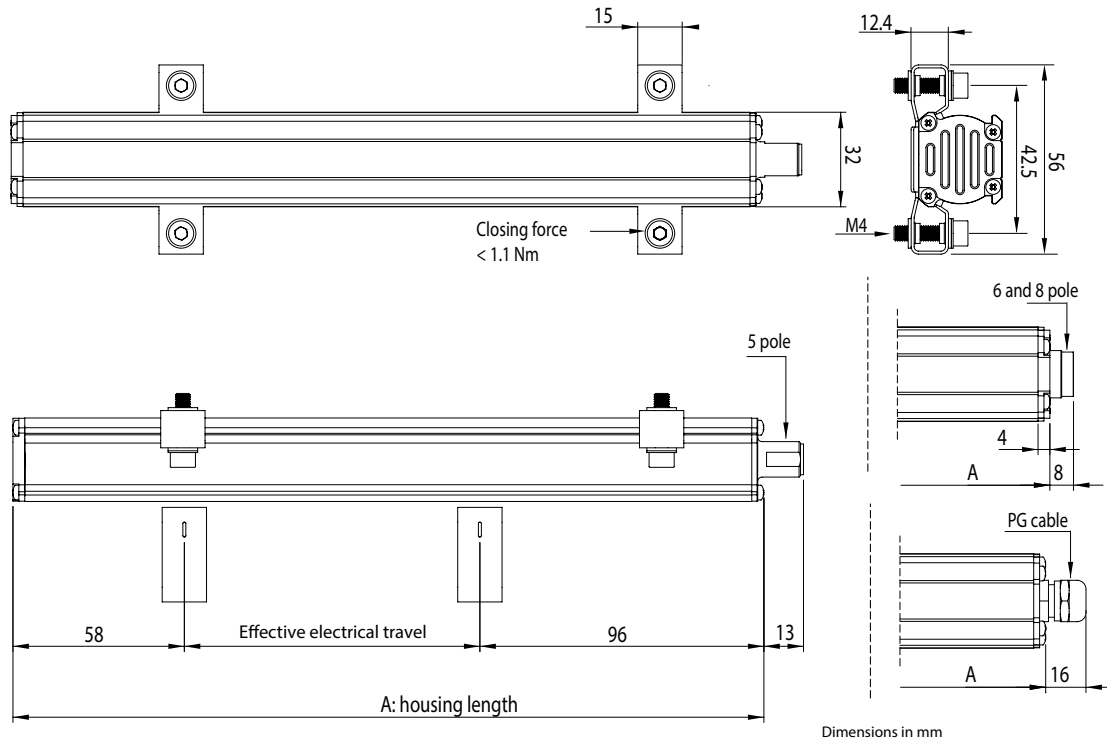
Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS2

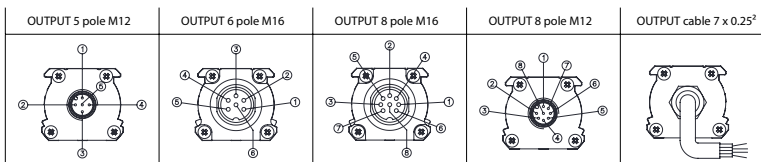
Order Code

Description		Selection: standard=black/bold, possible options=grey/cursive					
Series:	PMS2						
Operating mode: Analog		A					
Performance: Standard High				- H			
Designed for 1 cursor <i>Option designed for 2 cursors</i>					1 2		
Effective electrical travel:							
50 mm						50	
75 mm						75	
100 mm						100	
130 mm						130	
150 mm						150	
175 mm						175	
200 mm						200	
225 mm						225	
250 mm						250	
300 mm						300	
350 mm						350	
360 mm						360	
400 mm						400	
450 mm						450	
500 mm						500	
550 mm						550	
600 mm						600	
650 mm						650	
700 mm						700	
750 mm						750	
800 mm						800	
900 mm						900	
1000 mm						1000	
1100 mm						1100	
1200 mm						1200	
1250 mm						1250	
1300 mm						1300	
1400 mm						1400	
2250 mm						2250	
2500 mm						2500	
2750 mm (only for High)						2750	
3000 mm (only for High)						3000	
3250 mm (only for High)						3250	
3500 mm (only for High)						3500	
3750 mm (only for High)						3750	
4000 mm (only for High)						4000	
Electrical connection: 5-pole plug M12 <i>Option 6-pole plug M16 Option 8-pole plug M16 Option 8-pole plug M12</i> Round cable 1 m <i>Option cable length in m (xx = 5, 10, 15)</i>							S <i>S6 S816 S812</i> K <i>Kxx</i>
Output signal: 0..10 V 4..20 mA <i>Option 0..20 mA Option 0..+5Vdc</i>							2410 2442 <i>2420 2405</i>

Drawing



Connectors / Cables



Connection	5 pole M12	6 pole M16	8 pole M16	8 pole M12	Cable
Output cursor 1 0...10V / 4...20mA / 0...20mA	1	1	5 (1*)	5	Grey
GND Output cursor 1 (0V)	2	2	2	1	Pink
Inverse output cursor 1 / Output cursor 2 / Output speed 0...10V / 4...20mA / 0...20mA	3	3	3	3	Yellow
GND cursor 1 / Output cursor 2 / Output speed (0V)	2	4	6	2	Pink
Power supply+	5	5	7	7	Brown
Power supply GND	4	6	8	6	White
n.c	-	-	4	4	-
n.c	-	-	1 (5*)	8	-

* = for version 4...20mA/0...20mA: The transducer case must be grounded with the cable sheathing on the control system side only.

Data Sheet for Linear Sensors

Magnetic (magnetostrictive) linear transducer with analogue output

Series PMS2

Drawing

ANALOG OUTPUT

The PMS2 magnetostrictive transducers provide a direct and reverse voltage or current analogue output proportional to the magnetic cursor's position. Since the output is direct, no signal electronic processing is required if interfaced with controllers or measurement instruments.

