

Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

Series HEM16



The displacement transducers of the HEM16 series are designed for hydraulic applications.

- High degree of protection IP67 and max. 250 bar operating pressure
- With external cursor - encapsulation of the sensor element
- Mounting via internal or external flange
- Measuring strokes from 50 mm to 1000 mm
- Long life span (100 million axis movements)

The sensors are for a max. operating pressure of 250 bar designed with peak values of 400 bar. The distance measurement takes place via an external cursor.

Electrical Data

Effective electrical travel (+1/-0 mm) 1.)	50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 750 / 800 / 850 / 900 / 950 / 1000
Total electrical travel (± 1 mm) 1.)	51 / 101 / 151 / 201 / 251 / 301 / 351 / 401 / 451 / 501 / 551 / 601 / 751 / 801 / 851 / 901 / 951 / 1001
Total resistance 1.)	5 kOhm (50..300 mm) / 10 kOhm (350...600 mm) / 20 kOhm (750..1000 mm)
Resistance tolerance	± 20 %
Independent linearity (best straight line) 1.)	± 0.1 % (50..100 mm) / ± 0.05 % (100..1000 mm)
Theoretical resolution 1.)	Almost infinite
Backlash (Hysteresis) 1.)	≤ 0.08 mm
Max. / recommended wiper current 1.)	10 mA (@40 °C, 1 min in case of failure) / < 1 μ A
Power rating @40 °C (0 W @120 °C)	≤ 1 W (50 mm) / ≤ 2 W (100 mm) / ≤ 3 W (150..1000 mm)
Isolation voltage 1.)	< 100 μ A@500 VAC, 1bar, 2s
Isolation resistance 1.)	1000 MOhm@500 VDC, 1bar, 2s

Mechanical Data, Environmental Conditions, Miscellaneous

Mechanical stroke (+5 mm) 1.)	50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 750 / 800 / 850 / 900 / 950 / 1000
Lifetime (90 % effective electrical travel) 2.)	> 25 million meters or 100 million movements (the smaller value applies)
Max. operational speed	≤ 5 m/s
Max. acceleration	≤ 10 m/s ²
Operational force @ RT 1.) 2.)	< 0.5 N
Operational temperature	-30..+100 °C
Storage temperature	-50..+120 °C
Protection grade (IEC60529)	IP67
Vibration (IEC 68-2-6, Test Fc)	20 g (5..2000 Hz, 0.75 mm)
Shock (IEC 68-2-27, Test Ea)	50 g, halfsine, 11 ms
Housing length (+97 mm)	50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 750 / 800 / 850 / 900 / 950 / 1000
Included in delivery	1 x magnetic cursor
Material housing	Steel AISI 316
Connection type	PUR-Cable 3-pole shielded 1 m

1.) According IEC 60393

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

Please note: Max. permissible supply voltage < 75 VDC respectively < 50 VAC in addition the max. power rating must be observed

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Order Code

Description	Selection: standard=black/bold, possible options=grey/cursive			
Series:	HEM16			
Effective electrical travel:				
50 mm		50		
100 mm		100		
150 mm		150		
200 mm		200		
250 mm		250		
300 mm		300		
350 mm		350		
400 mm		400		
450 mm		450		
500 mm		500		
550 mm		550		
600 mm		600		
750 mm		750		
800 mm		800		
850 mm		850		
900 mm		900		
950 mm		950		
1000 mm		1000		
Construction:				
Internal flange			I	
External flange			E	
Electrical connection:				
Cable 1 m				K
<i>Option cable length in m</i>				<i>Kxx</i>

For higher quantities or on-going demand, additional options are available as described below on request

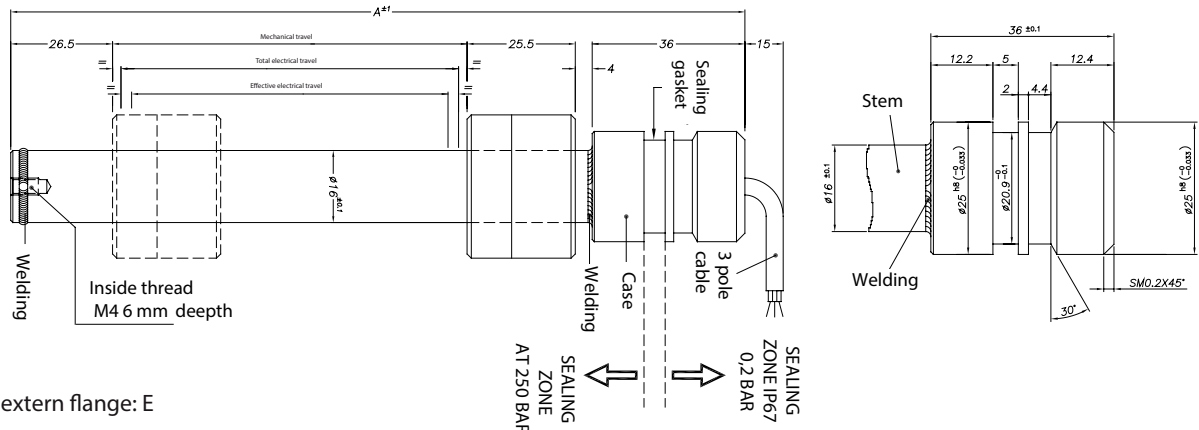
For example:

- Cables with / without connector
- Special axis length and much more

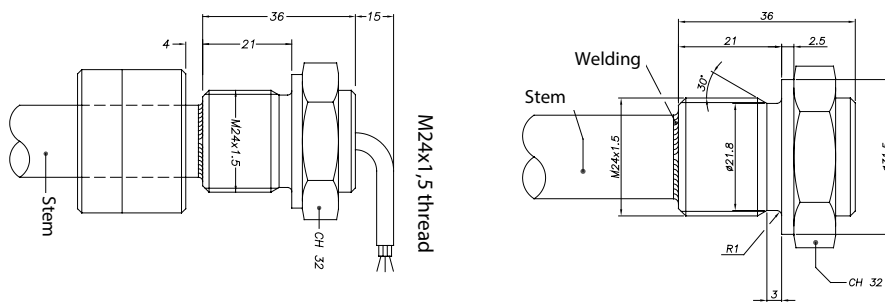
Note: When calibrating the linear transducer, be careful to set the stroke so that the output does not drop below 1 % or rise beyond 99 % of the supply voltage.

Drawing

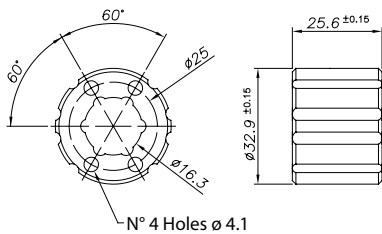
Construction - intern flange: I



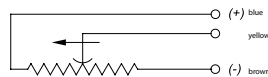
Construction - extern flange: E



Cursor



Connection diagram

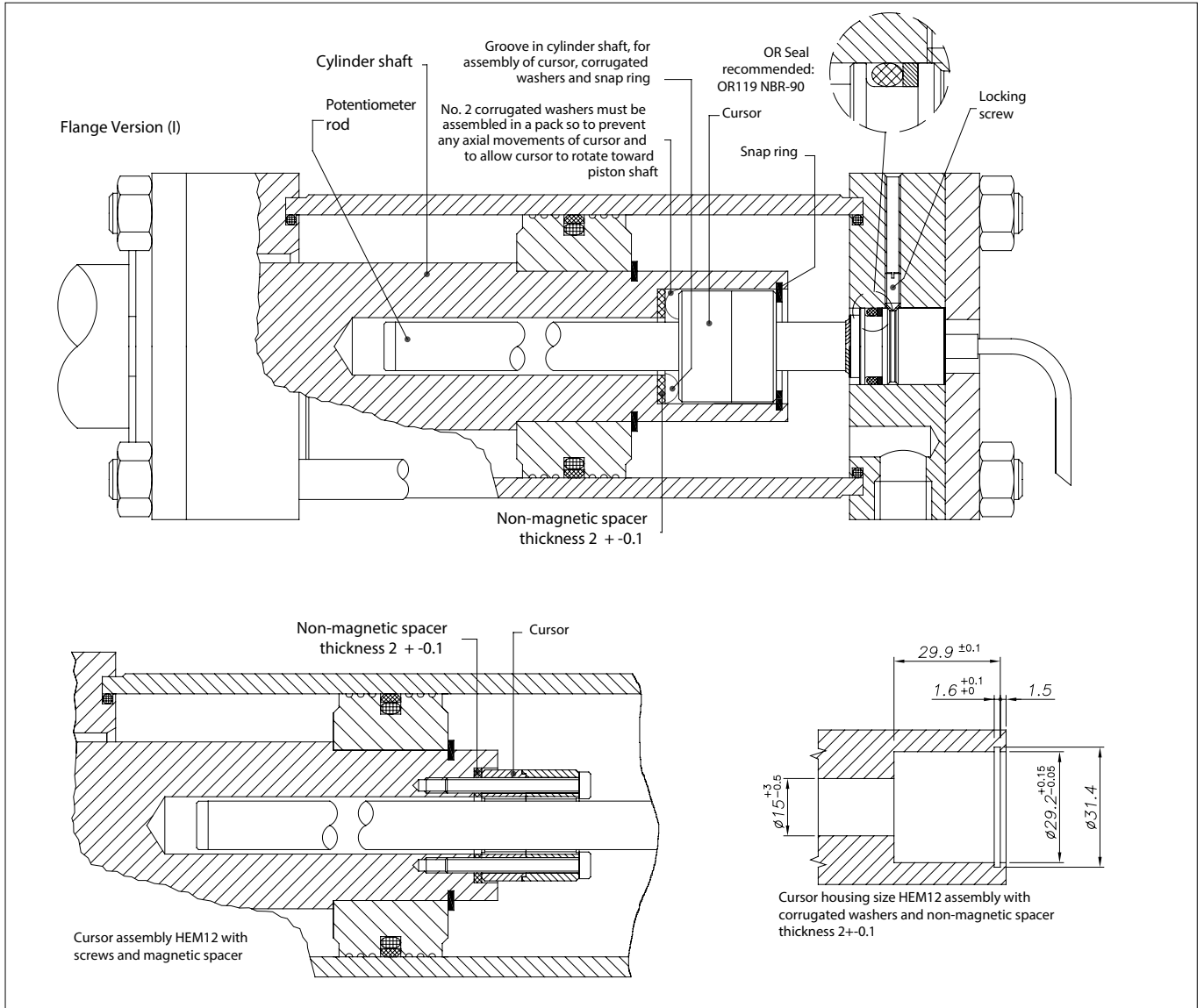


Dimensions in mm

A [+97 mm] 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 750 / 800 / 850 / 900 / 950 / 1000

Installation in cylinder

Installation inside cylinder with intern flange: I



Installation in cylinder

Installation inside cylinder with extern flange: E

