

Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

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Series HEM12



Displacement sensor for hydraulic applications

- With integrated signal converter
- High degree of protection IP67 and max. 250 bar operating pressure
- With external magnetic drag - capsule of the sensor element
- Mounting via internal or external flange
- Measuring lengths from 50 mm to 1000 mm
- Long lifetime (up to 100 million movements)

The sensors are designed for operating pressures of max. 250 bar with peak values of 400 bar. The mechanical detection of linear movements is done by a magnetic drag.

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.)	50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 750 / 800 / 850 / 900 / 950 / 1000
Independent linearity (best straight line) 1.)	±0,35%
Output signal	4..20 mA (4 mA between 1..3% / 20 mA between 96..99% effective electrical travel)
Theoretical resolution 1.)	Almost infinite
Repeatability 1.)	≤ 0,08 mm
Backlash (Hysteresis) 1.)	≤ 0,25 mm
Update rate	≤ 1 ms
Supply voltage	10..30 V (please refer load diagram)
Power consumption (no load)	≤ 35 mA
Output load	Please refer load diagram
Isolation resistance 1.)	100 MOhm@45 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..+80°C
Storage temperature	-40..+100°C
Protection grade (IEC60529)	IP67
Vibration (IEC 68-2-6, Test Fc)	20 g (5..2000 Hz, 0,75mm)
Shock (IEC 68-2-27, Test Ea)	50 g, halfsine, 11 ms
Housing length (+100,2 ±1 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 304
Connection type	PUR-Cable 3-pole shielded 1 m

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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

Order Code					
Description	Selection: standard=black/bold, possible options=grey/cursive				
Series:	HEM12E				
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:					
Standard PUR cable 3-pole 1 m				K	
<i>Option cable length in m</i>				<i>Kxx</i>	
Output signal:					
Standard 4-20 mA					2442

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

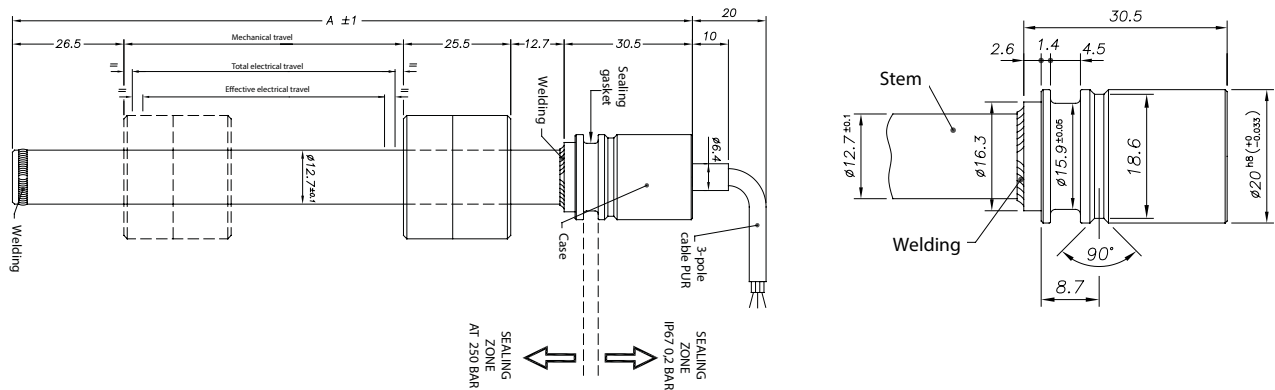
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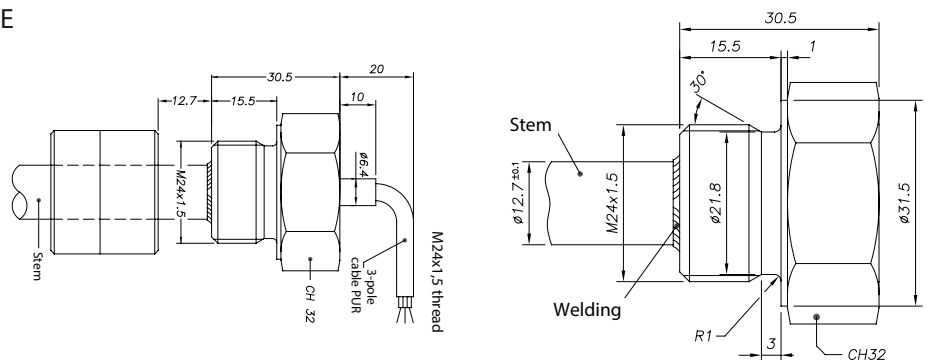
Series HEM12

Drawing

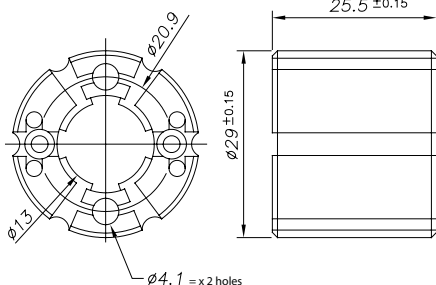
Construction - intern flange: I



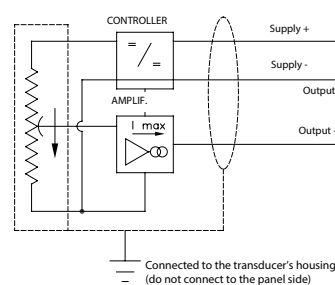
Construction - extern flange: E



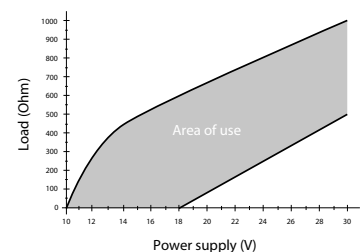
Cursor



Connection diagram



Load diagram



Dimensions in mm

A [+102,2 mm] 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 750 / 800 / 850 / 900 / 950 / 1000

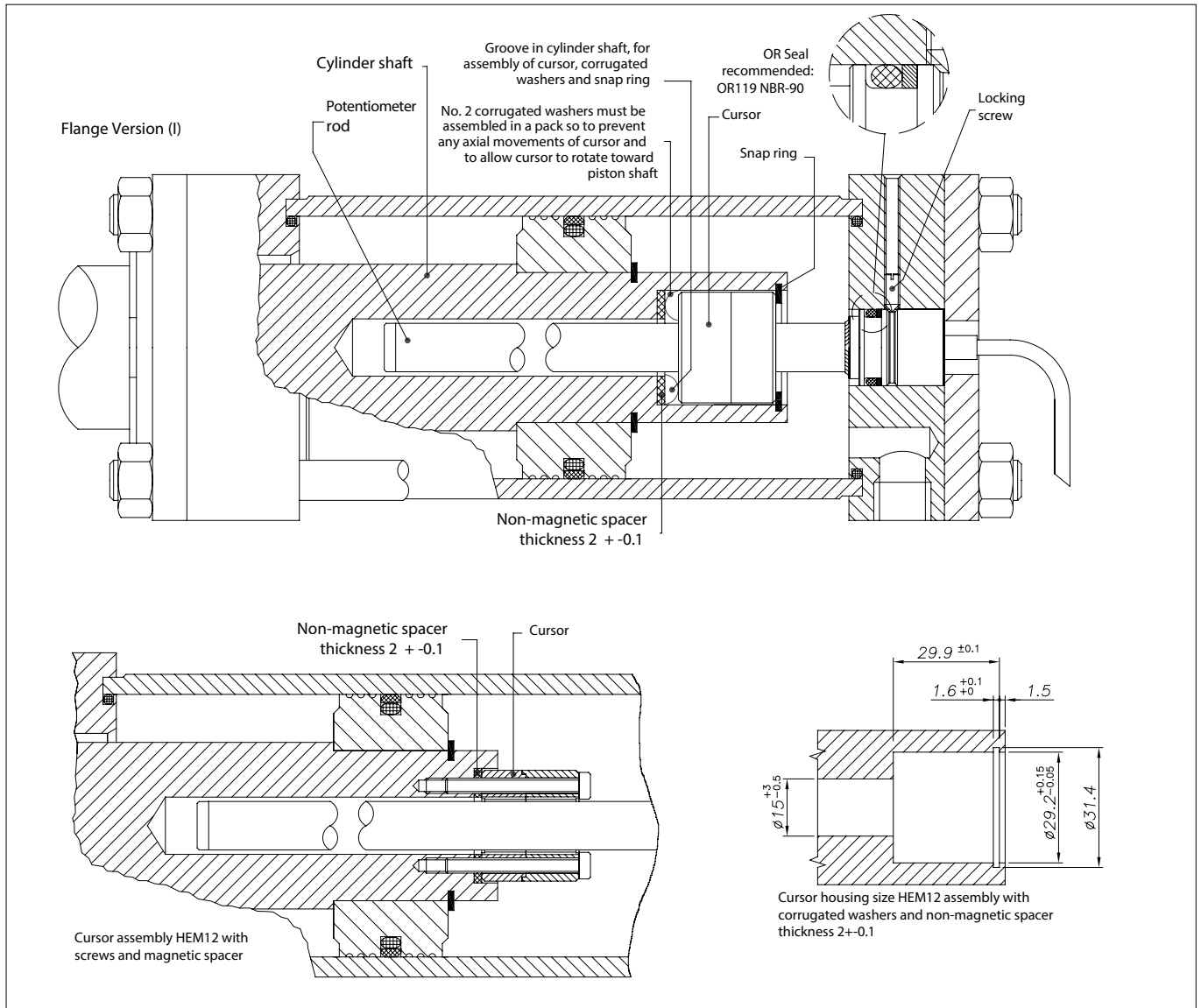
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Installation in cylinder

Installation inside cylinder with intern flange: I



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Installation in cylinder

Installation inside cylinder with extern flange: E

