

Data Sheet for Linear Sensors

Linear Potentiometer (wirewound)

Series WG / WGR



In the series WG without spring return, WGR with spring return, the linear movement is done by a single guided push rod.

Electrical Data	WG(R)15	WG(R)30	WG(R)50	WG(R)100
Effective electrical travel 1.)	15 ±0,5 mm	30 ±0,5 mm	50 ±0,5 mm	100 ±0,5 mm
Total resistance 1.)	10 Ohm..5 kOhm	20 Ohm..10 kOhm	50 Ohm..10 kOhm	50 Ohm..20 kOhm
Resistance tolerance	±5% (±3%)			
Independent linearity (best straight line) 1.)	±2% (±1%)	±1% (±0,5%)	±0,7% (±0,4%)	±0,5% (±0,25%)
Theoretical resolution 1.)	Depends on resistance value (see table)			
Backlash (Hysteresis) 1.)	≤ 0,1 mm			
Rotational noise (ENR) (IEC60393 Method C)	100 Ohm			
Max. / recommended wiper current 1.)	1 mA (@ 40°C, 1 min in case of failure) / 2 µA			
Power rating @ 40°C (0W @ 55°C)	≤ 0,3 W	≤ 0,5 W	≤ 0,75 W	≤ 1 W
Insulation voltage1.)	1000 VAC, 1min			
Isolation resistance 1.)	100 MOhm @ 1000 VDC			

Mechanical Data, Environmental Conditions, Miscellaneous	WG(R)15	WG(R)30	WG(R)50	WG(R)100
Mechanical stroke 1.)	15 +2 mm	30 +2 mm	50 +2 mm	100 +2 mm
Lifetime (90% effective electrical travel) 2.)	0,2 / 0,1 Mio. movements (WG / WGR)			
Max. operational speed	< 2 m/s			
Operational force @ RT 1.) 2.) (WG / WGR)	< 0,6 N / 3 N	< 0,8 N / 3 N	< 1 N / 3 N	
End stop force in case of failure	< 90 N			
Operational temperature	-30..+105°C			
Storage temperature	-30..+105°C			
Protection grade (IEC60529)	IP40			
Vibration (IEC 68-2-6, Test Fc)	15 g (10..2000 Hz, 0,75mm, 12h)			
Shock (IEC 68-2-27, Test Ea)	50 g, halfsine, 11 ms (18x)			
Housing length	50 ±1 mm	65 ±1 mm	85 ±1 mm	135 ±1 mm
Mass	ca. 60 g	ca. 70 g	ca. 100 g	ca. 140 g
Mounting parts (included in delivery)	2 x washer, 2 x nut			
Material housing	Aluminium (cover plastic)			
Material push rod	Gold plated brass			
Electrical connection	Soldering pins gilded			

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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Number of wire turns / resolution

Resistance Ohm	10	20	50	100	200	500	1k	2k	5k	10k	20k
Number of wire turns WG(R)15	75	90	115	110	140	160	230	280	350	-	-
Number of wire turns WG(R)30	-	150	190	240	210	280	360	450	580	780	-
Number of wire turns WG(R)50	-	-	260	340	420	440	500	650	900	1100	-
Number of wire turns WG(R)100	-	-	400	530	670	900	900	1000	1200	1600	2400

Order Code

Description	Selection: standard=black/bold, possible options=grey/cursive				
Series: Without spring return <i>Option with spring return</i>	WG <i>WGR</i>				
Effective electrical travel: 15 mm 30 mm 50 mm 100 mm		15 30 50 100			L2% (L1%) L1% (L0,5%) L0,7% (L0,4%) L0,5% (L0,25%)
Total resistance: <i>Option 10 Ohm (only WG(R)15)</i> <i>Option 20 Ohm (only WG(R)15 and 30)</i> <i>Option 50 Ohm</i> <i>Option 100 Ohm</i> <i>Option 200 Ohm</i> <i>Option 500 Ohm</i> 1 kOhm <i>Option 2 kOhm</i> 5 kOhm <i>Option 10 kOhm (not for WG(R)15)</i> <i>Option 20 kOhm (only WG(R)100)</i>			<i>R10</i> <i>R20</i> <i>R50</i> <i>R100</i> <i>R200</i> <i>R500</i> R1k <i>R2k</i> R5k <i>R10k</i> <i>R20k</i>		
Resistance tolerance: ±5% <i>Option ±3 kOhm</i>				W5% <i>W3%</i>	
Independent linearity: Standard depends on travel <i>Option depends on travel</i>					see above <i>see above</i>

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

For example:

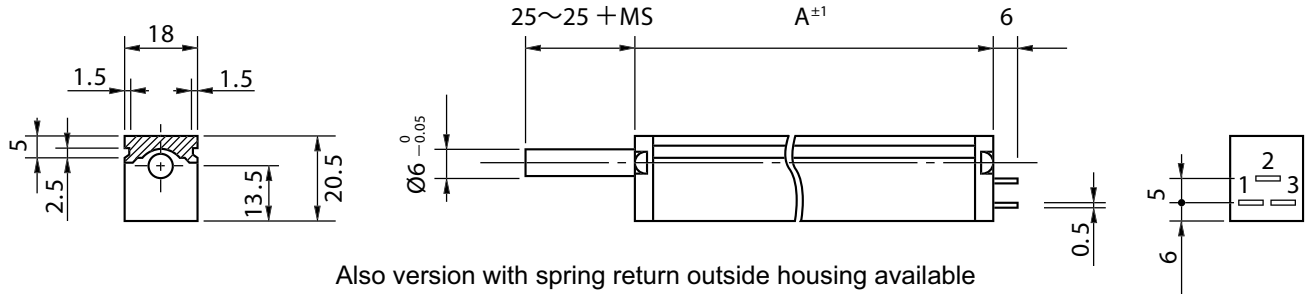
- Assembled leads and cables with / without connector
- Probe, special axis length and much more

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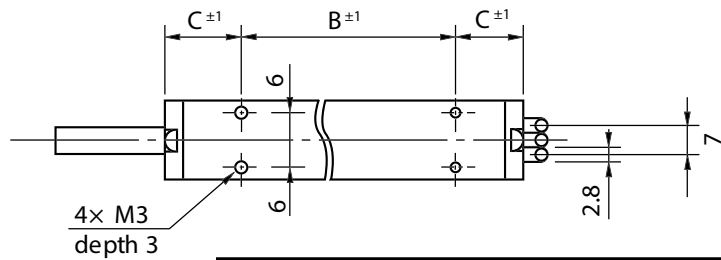
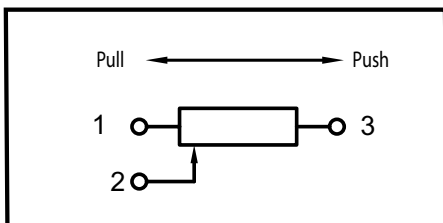
Series WG / WGR

Drawing



Also version with spring return outside housing available

Connection diagram



Note: Please do not fasten the mounting screws over 3 mm in order to avoid damaging the inside construction.

Dimensions in mm

Model	Mechanical Stroke (MS)	Dimensions		
		A	B	C
WG(R)15	15	50.0	25.0	12.5
WG(R)30	30	65.0	40.0	12.5
WG(R)50	50	85.0	50.0	17.5
WG(R)100	100	135.0	100.0	17.5