

# Data Sheet for Linear Sensors

## Oil filled Potentiometric Linear Transducer (Wirewound)

## Series WGO20



The WGO20 series is a hermetically sealed, oil filled wirewound linear potentiometer. The transducer is largely insensitive to environmental conditions, making it ideal for use in extreme environments.

Electrical Data	WGO2050	WGO20100	WGO20200
Effective electrical travel 1.)	50 ±1 mm	100 ±1 mm	200 ±1 mm
Total resistance 1.)	100 Ohm..10 kOhm	100 Ohm..20 kOhm	100 Ohm..50 kOhm
Resistance tolerance	±5% (±3%)		
Independent linearity (best straight line) 1.)	±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)	≤ 0.75 W	≤ 1 W	≤ 2 W
Insulation voltage1.)	900 VAC, 1min		
Isolation resistance 1.)	100 MOhm @ 500 VDC		

Mechanical Data, Environmental Conditions, Miscellaneous	WGO2050	WGO20100	WGO20200
Mechanical stroke 1.)	ca. 53 mm	ca. 103 mm	ca. 203 mm
Lifetime (90% effective electrical travel) 2.)	4 Mio. movements		
Max. operational speed	< 2 m/s		
Operational force @ RT 1.) 2.)	< 15 N		
End stop force in case of failure	< 90 N		
Operational temperature	-30 °C up to +60 °C		
Storage temperature	-30 °C up to +60 °C		
Protection grade (IEC60529)	IP55		
Vibration (IEC 68-2-6, Test Fc)	15 g (10..2000 Hz, 0.75mm, 12h)		
Shock (IEC 68-2-27, Test Ea)	50 g, Halbsinus, 11 ms (18x)		
Housing length	135 ±1 mm	185 ±1 mm	285 ±1 mm
Mass	ca. 100 g	ca. 150 g	ca. 180 g
Mounting parts (included in delivery)	1 x washer, 1 x nut		
Material housing	Aluminium		
Material push rod	Stainless steel		
Electrical connection	Soldering pins, round cable 2 m, 6-pole plug		

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	100	200	500	1k	2k	5k	10k	20k	50k
Number of wire turns WGO2050	380	480	470	590	740	1000	1250	1600	-
Number of wire turns WGO20100	610	770	740	930	1200	1600	2000	2500	-
Number of wire turns WGO20200	970	1200	1650	1500	1850	2500	3200	4000	5550

### Order Code

Description	Selection: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>								
<b>Series:</b>	<b>WGO20</b>								
<b>Effective electrical travel:</b>									
<b>50 mm</b>		<b>50</b>							<b>L0,7%</b> ( <i>L0,4%</i> )
<b>100 mm</b>		<b>100</b>							<b>L0,5%</b> ( <i>L0,25%</i> )
<b>200 mm</b>		<b>200</b>							<b>L0,5%</b> ( <i>L0,25%</i> )
<b>Electrical connection:</b>									
<b>Soldering pins</b>									
<b>Round cable 2 m</b>									
<b>Plug</b>									
<b>Total resistance:</b>									
<i>Option 100 Ohm</i>									<i>R100</i>
<i>Option 200 Ohm</i>									<i>R200</i>
<i>Option 500 Ohm</i>									<i>R500</i>
<b>1 kOhm</b>									<b>R1K</b>
<i>Option 2 kOhm</i>									<i>R2K</i>
<b>5 kOhm</b>									<b>R5K</b>
<b>10 kOhm</b>									<b>R10K</b>
<i>Option 20 kOhm</i>									<i>R20K</i>
<i>Option 50 kOhm (only 200 mm stroke)</i>									<i>R50K</i>
<b>Resistance tolerance:</b>									
<b>±5%</b>									<b>W5%</b>
<i>Option ±3%</i>									<i>W3%</i>
<b>Independent linearity depends on electrical travel</b>									
<b>Standard</b> (e.g. L0,7 means ±0.7%)									<b>see above</b>
<i>Option</i>									<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

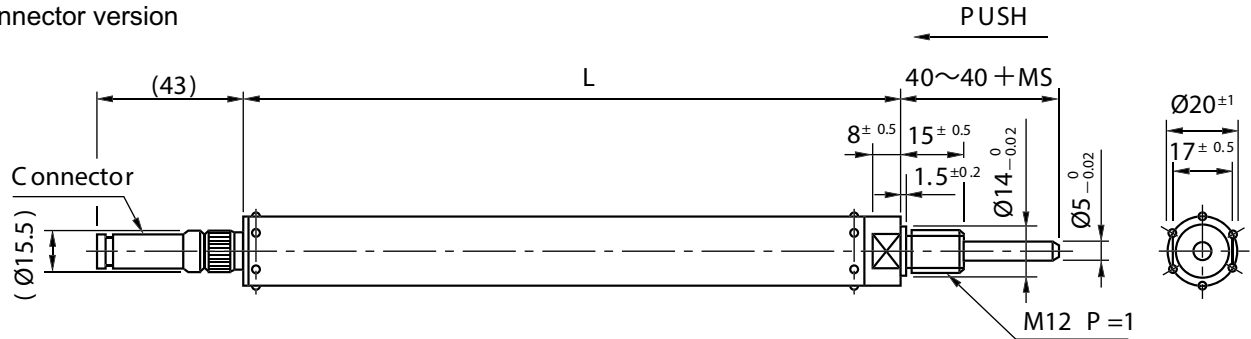
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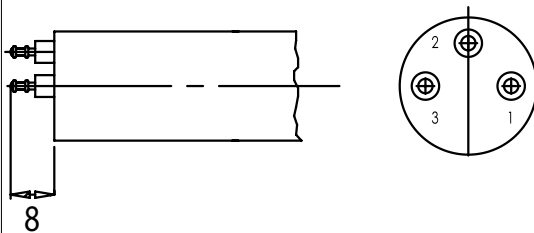
Series WGO20

## Drawing

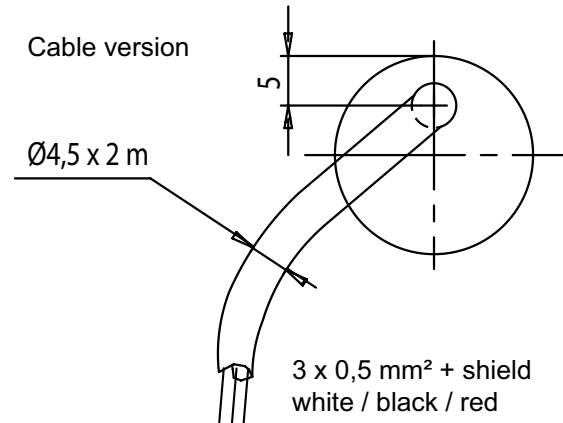
Connector version



Pin version



Cable version



Model No.	Mechanical Stroke (MS)	L
WGO2050	Approx. 53	135±1
WGO20100	Approx. 103	185±1
WGO20200	Approx. 203	285±1

## Specifications of Connector

Water-proof type

Number of poles: 6 poles

Diameter of electrical wire:  $\phi$  6.3mm max.

## Connection diagram

