

# Data Sheet for Linear Sensors

## Oil filled Potentiometric Linear Transducer (Wirewound)

## Series WGO40



The series WGO40 are hermetically sealed linear potentiometers (wirewound) with oil filling. The transducer is largely insensitive to environmental influences and therefore ideally suited for use under extreme environmental conditions.

Electrical Data	WGO40100	WGO40200	WGO40300	WGO40400	WGO40500
Effective electrical travel 1.)	100 ±1 mm	200 ±1 mm	300 ±1 mm	400 ±1 mm	500 ±1 mm
Total resistance 1.)	100 Ohm..20 kOhm	100 Ohm..50 kOhm	200 Ohm..100 kOhm		
Resistance tolerance	±5% (±3%)				
Independent linearity (best straight line) 1.)	±0.5% (±0.25%)		±0.3% (±0,1%)		
Theoretical resolution 1.)	Depends on resistance value (see table)				
Backlash (Hysteresis) 1.)	≤ 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)	≤ 1 W	≤ 2 W	≤ 3 W	≤ 4 W	≤ 5 W
Insulation voltage1.)	900 VAC, 1min				
Isolation resistance 1.)	100 MOhm @ 500 VDC				

Mechanical Data, Environmental Conditions, Miscellaneous	WGO40100	WGO40200	WGO40300	WGO40400	WGO40500
Mechanical stroke 1.)	ca. 105 mm	ca. 205 mm	ca. 305 mm	ca. 405 mm	ca. 505 mm
Lifetime (90% effective electrical travel) 2.)	10 Mio. movements				
Max. operational speed	< 2 m/s				
Operational force @ RT 1.) 2.)	< 20 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, halfsine, 11 ms (18x)				
Housing length	252 ±1 mm	352 ±1 mm	452 ±1 mm	552 ±1 mm	652 ±1 mm
Mass	ca. 1 kg	ca. 1.2 kg	ca. 1.5 kg	ca. 1.9 kg	ca. 2.3 kg
Mounting parts (included in delivery)	2 x ball joints				
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	100k
Number of wire turns WGO40100	530	670	910	800	1000	1400	1700	2200	-	-
Number of wire turns WGO40200	830	1050	1400	1800	1600	2200	2850	3450	4900	-
Number of wire turns WGO40300	-	1400	1900	2400	2200	3000	3800	4750	6450	8000
Number of wire turns WGO40400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of wire turns WGO40500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Order Code										
<b>Description</b>	Selection: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>									
<b>Series:</b>	<b>WGO40</b>									
<b>Effective electrical travel:</b>										
<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>300 mm</b>				<b>300</b>						<b>L0,3%</b> ( <i>L0,1%</i> )
<b>400 mm</b>				<b>400</b>						<b>L0,3%</b> ( <i>L0,1%</i> )
<b>500 mm</b>				<b>500</b>						<b>L0,3%</b> ( <i>L0,1%</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 (only for 100 and 200 mm)</i>										
<i>Option 200 Ohm</i>										
<i>Option 500 Ohm</i>										
<b>1 kOhm</b>										
<i>Option 2 kOhm</i>										
<b>5 kOhm</b>										
<b>10 kOhm</b>										
<i>Option 20 kOhm</i>										
<i>Option 50 kOhm (not for 100 mm)</i>										
<i>Option 100 kOhm (not for 100 and 200 mm)</i>										
<b>Resistance tolerance:</b>										
<b>±5%</b>										<b>W5%</b>
<i>Option ±3%</i>										<i>W3%</i>
<b>Independent linearity:</b>										
<b>Standard depends on travel</b>										<b>see above</b>
<i>Option depends on travel</i>										<i>see above</i>

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

For example:

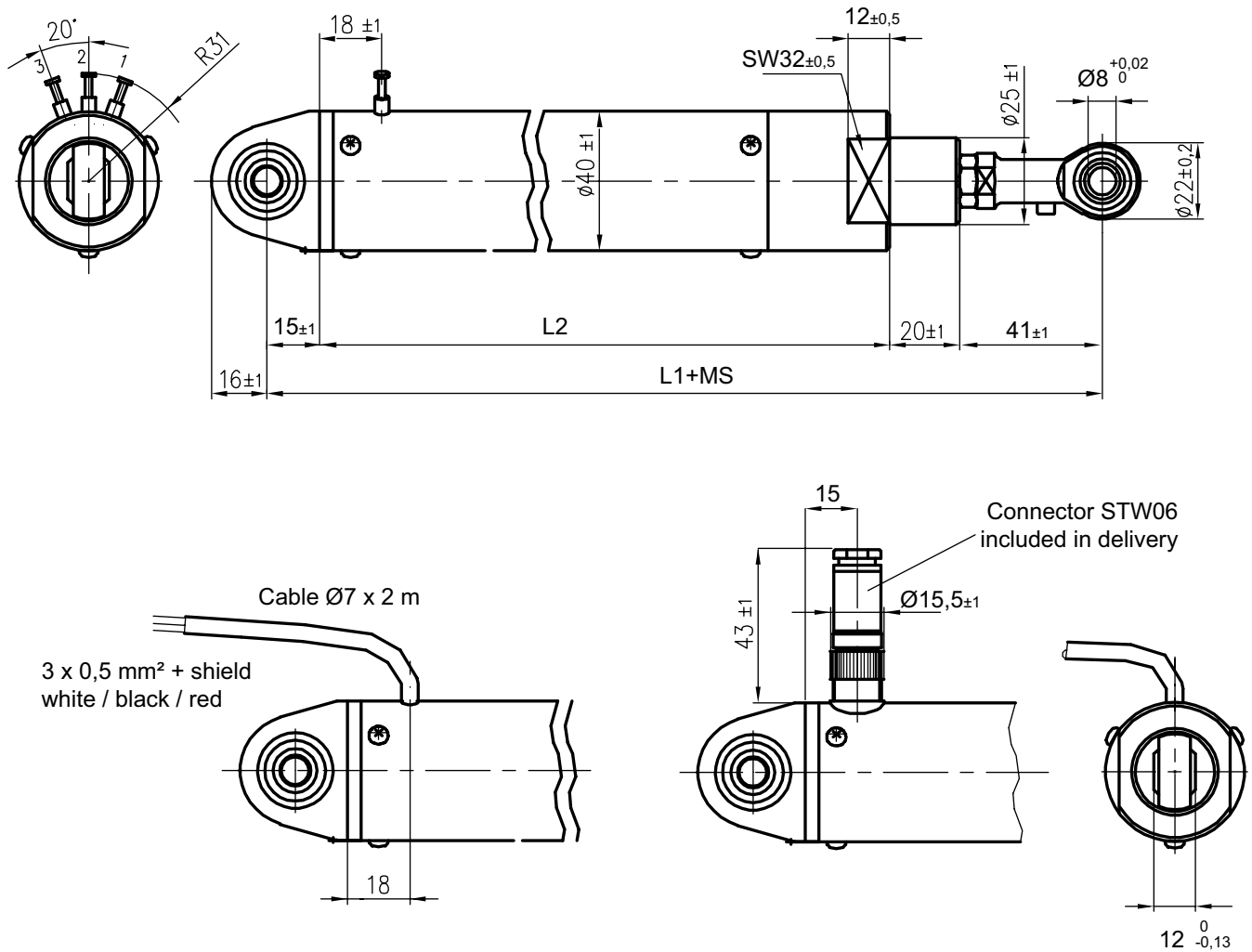
- Assembled leads and cables with / without connector
- Probe, special axis length and much more

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## Drawing



Model	Mechanical Stroke (MS)	L <sub>1</sub>	L <sub>2</sub>
WGO40100	Approx. 105	328	252
WGO40200	Approx. 205	428	352
WGO40300	Approx. 305	528	452
WGO40400	Approx. 405	628	552
WGO40500	Approx. 505	728	652

