

Data Sheet for Linear Sensors

Oil filled Potentiometric Linear Transducer (Wirewound)

Series WGO40



The WGO40 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	WGO40100	WGO40200	WGO40300
Effective electrical travel 1.)	100 ±1 mm	200 ±1 mm	300 ±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
Insulation voltage1.)	900 VAC, 1min		
Isolation resistance 1.)	100 MOhm @ 500 VDC		

Mechanical Data, Environmental Conditions, Miscellaneous	WGO40100	WGO40200	WGO40300
Mechanical stroke 1.)	ca. 105 mm	ca. 205 mm	ca. 305 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
Mass	ca. 1 kg	ca. 1.2 kg	ca. 1.5 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

Order Code

Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>									
Series:	WGO40									
Effective electrical travel:										
100 mm				100						L0,5% (L0,25%)
200 mm				200						L0,5% (L0,25%)
300 mm				300						L0,3% (L0,1%)
Electrical connection:										
Soldering pins										
Round cable 2 m										
Plug										
Total resistance:										
<i>Option 100 Ohm (only for 100 and 200 mm)</i>										<i>R100</i>
<i>Option 200 Ohm</i>										<i>R200</i>
<i>Option 500 Ohm</i>										<i>R500</i>
1 kOhm										R1K
<i>Option 2 kOhm</i>										<i>R2K</i>
5 kOhm										R5K
10 kOhm										R10K
<i>Option 20 kOhm</i>										<i>R20K</i>
<i>Option 50 kOhm (not for 100 mm)</i>										<i>R50K</i>
<i>Option 100 kOhm (not for 100 and 200 mm)</i>										<i>R100K</i>
Resistance tolerance:										
±5%										W5%
<i>Option ±3%</i>										<i>W3%</i>
Independent linearity depends on electrical travel										
Standard (e.g. L0,5 means ±0.5%)										see above
<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:

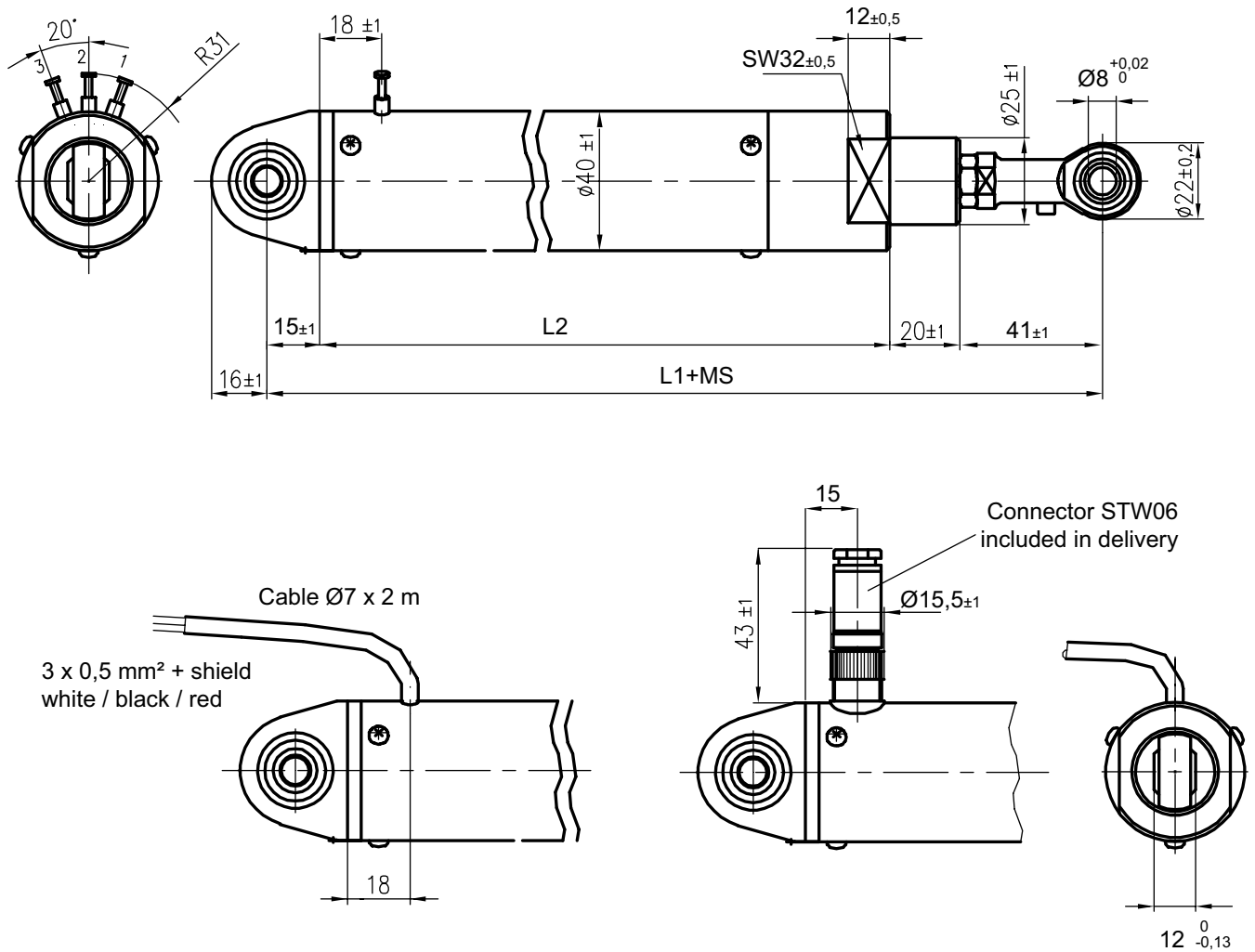
- Assembled leads and cables with / without connector
- Probe, special axis length and much more

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Drawing



Model	Mechanical Stroke (MS)	L ₁	L ₂
WGO40100	Approx. 105	328	252
WGO40200	Approx. 205	428	352
WGO40300	Approx. 305	528	452

