

Sensor Potentiometers

Series SP2500



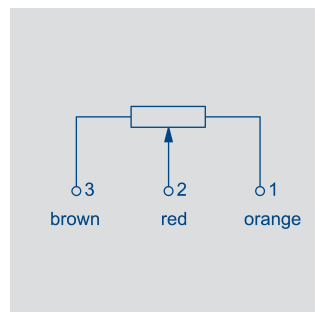
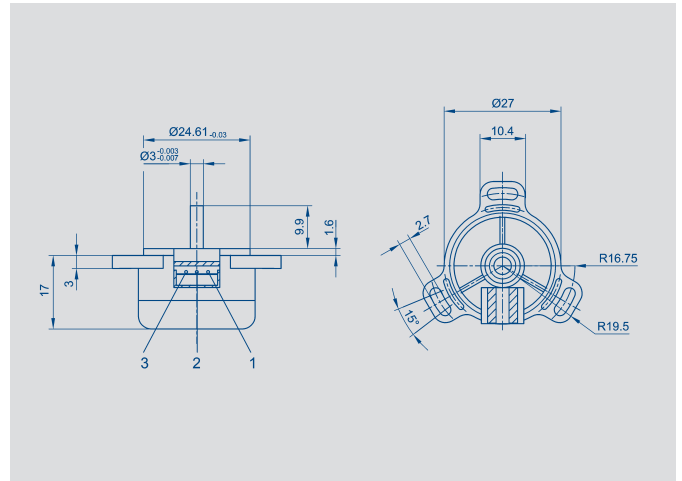
Special features

- Precision despite small dimensions for an inexpensive price
- very long life 50×10^6 movements
- very good linearity - standard $\pm 0.2\%$
- very high resolution - better than 0.01°
- unrestricted continuous rotation
- easy assembly by a synchroflange with 3 mounting plates
- optimal connection by an integrated snap-connector

Precision potentiometer with a conductive plastic resistance track, manufactured with screen-printing technology. For applications in measuring, control and instrumentation.

The distinguishing features of the SP25 include a plastic housing, ball-bearings, conductive plastic collector track and precious metal multi-finger wiper.

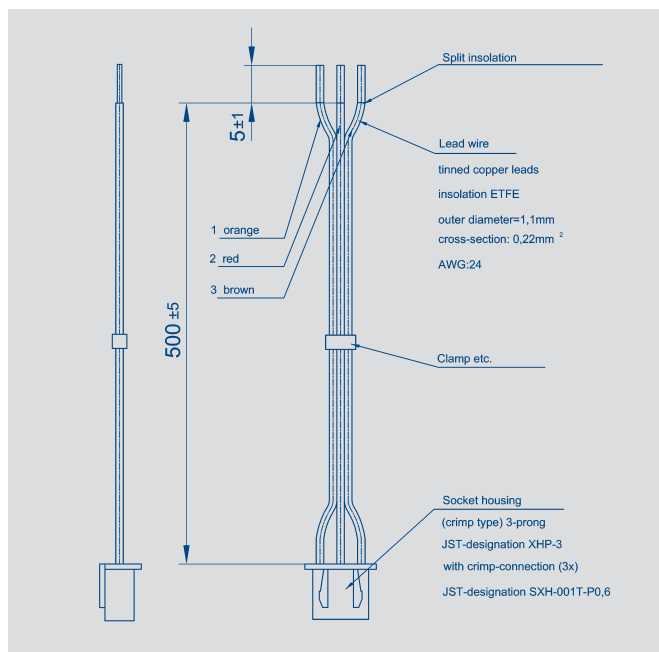
Reliability, long life, linearity, resolution and corrosion resistance further differentiate the SP25.



Description

Size	servo size 11
Housing	two part; plastic housing and cover
Shaft	stainless steel
Bearings	stainless steel
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	3-pin snap connection

Type Designations	SPK2501 A5033	SPK2501 A1812	
Mechanical Data			
Dimensions	see dimension drawing		
Mounting	with 3 cylinder screws M 2.5 and washers		
Mechanical travel	360 continuous	°	
Permitted shaft loading (axial and radial) static or dynamic force	15	N	
Torque	≤ 0.1	Ncm	
Max. allowed rotational velocity	10 ⁴	rad/s ²	
Weight	15	g	
Electrical Data			
Actual electrical travel	335 ± 2	120 ± 2	°
Nominal resistance	5.0	1.8	kΩ
Resistance tolerance	-0 ... +40		%
Repeatability	0.003 (Δ 0.01°)		%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5		ppm/K
Independent linearity	± 0.2	± 0.6	%
Max. permissible applied voltage	42		V
Recommended operating wiper current	≤ 1		μA
Max. wiper current in case of malfunction	10		mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10		MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤ 100		μA
Environmental Data			
Temperature range	-40...+85		°C
Vibration	5...2000 A _{max} = 0.75 a _{max} = 20		Hz mm g
Shock	50 11		g ms
Life (limitation on movements over dead zone)	50 x 10 ⁶		movements
Protection class	IP 40 (DIN 400 50 / IEC 529)		
Order Designations			
Type	Art.no.	R in kΩ	
SPK2501 A5033	038001	5	
SPK2501 A1812	038002	1.8	
Cable set ZK1-500	059013		



Recommended accessories

Fork coupling Z103 G3 (backlash free),
Process-controlled indicators
Signal conditioner MUP... /
MUK ... for standardized output signals

Important

All the values given in this data sheet for linearity, lifetime and temperature coefficient in the voltage dividing mode are quoted for the device operating with the wiper voltage driving on operational amplifier working as a voltage follower, where virtually no load is applied to the wiper ($I_e \leq 1 \mu A$).