

Standard Potentiometers

Series P2500

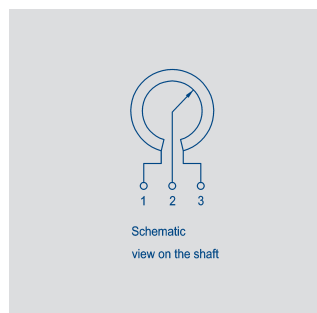
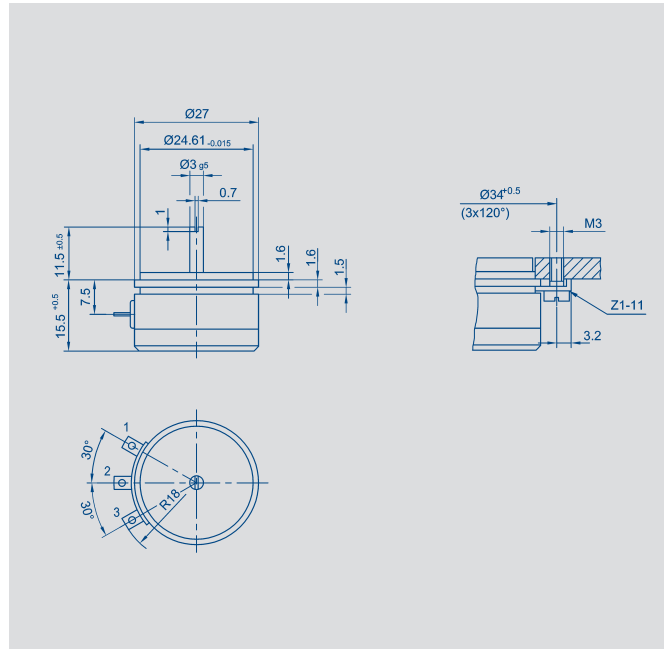


Special features

- unmatched combination of size, performance and price
- very long life - 100×10^6 movements
- very good linearity - standard $\pm 0.2\%$
- very high resolution - better than 0.01°
- high admissible operating speed - $10\,000 \text{ min}^{-1}$
- unrestricted continuous rotation

Precision potentiometer with conductive plastic resistance track. For measuring, control and instrumentation applications.

The distinguishing features of the P 2500 include an all metal case, ball-bearings, conductive-plastic collector track and elastomer-damped wipers for both resistance and collector tracks. Because of its reliability, long life, good linearity, high resolution, high operational speed and corrosion resistance, this component opens applications hitherto closed to conventional potentiometers. Special versions with different electrical travels and shaft dimensions are available.



Description

Size	servo size 11
Case	two part, anodized aluminium case and cover
Shaft	stainless steel
Bearings	stainless steel ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	gold-plated brass terminals

Mechanical Data		
Dimensions	see drawing	
Mounting	with 3 clamps Z 1 - 11	
Mechanical travel	360, continuous	°
Permitted shaft loading (axial and radial) static or dynamic force	15	N
Torque	≤0.07	Ncm
Maximum operational speed	10 000	min ⁻¹
Weight	20	g

Electrical Data		
Actual electrical travel	345 ±2	°
Available resistance values	1; 2; 5	kΩ
Resistance tolerance	±10	%
Repeatability	0.003 (Δ 0.01°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5	ppm/K
Independent linearity	±0.2 (< 0.2 on request)	%
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...+100	°C
Vibration	5...2000 A _{max} = 0.75 a _{max} = 20	Hz mm g
Shock	50 11	g ms
Life	100 x 10 ⁶	movem.
Protection class	IP 40 (DIN 400 50 / IEC 529)	

Order designations

Type	Art.no.	R in kΩ
P2501 A102	003001	1
P2501 A202	003002	2
P2501 A502	003003	5

Type designations for non-standard models will be specified upon receipt of order.

Included in delivery

3 mounting clamps Z1-11

Recommended accessories

Fork coupling Z 103 G 3
(backlash free),
Process-controlled indicators
MAP... with display,
Signal conditioner MUP.../
MUK ... for standardized out-
put 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 ($I_e \leq 1 \mu A$).