

## Rotary Sensor Potentiometer

Series P6500



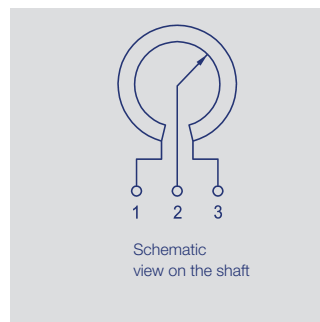
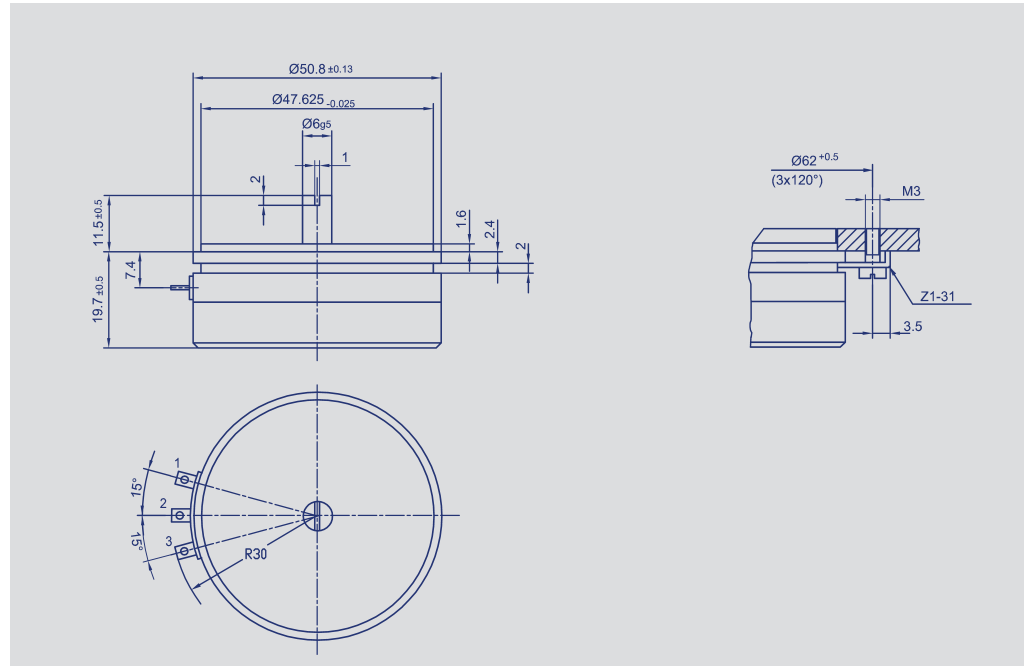
### Special features

- excellent precision - linearity  $\pm 0.075\%$ , repeatability  $\pm 0.02\%$
- very high resolution - better than  $0.008^\circ$
- exceptionally long life - to 100 million movements
- operating speed to 10,000 RPM
- continuous rotation allowed
- sealed to IP40
- industry standard size, provides excellent performance at reasonable cost

The P4500 is a precision potentiometer for measuring, control, and instrumentation applications.

It offers a servo size 13 metal case, ball-bearings, a conductive resistance element and elastomer-damped wipers.

Special versions with different angular ranges and shaft dimensions are available.



Description	
Size	servo size 20
Case	two-part; flange anodized aluminium; cover high-grade, temperature-resistant plastic
Shaft	stainless steel
Bearings	stainless steel ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wipers
Electrical connections	gold-plated brass terminals

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<b>Mechanical Data</b>		
Dimensions	see drawing	
Mounting with	with 3 clamps Z1-31	
Mechanical travel	360, continuous	°
Permitted shaft loading (axial and radial) static or dynamic force	45	N
Torque	≤ 0.15	Ncm
Maximum operational speed	10,000	RPM
Weight	80	g
<b>Electrical Data</b>		
Actual electrical travel	355 ±2	°
Available resistance values	1; 2; 5	kΩ
Resistance tolerance	±20	%
Repeatability	0.002 (Δ 0.007°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5	ppm/K
Independent linearity	±0.05	%
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
<b>Environmental Data</b>		
Temperature range	-40...+100	°C
Vibration	5...2000 Amax = 0.75 amax = 20	Hz mm g
Shock	50 11	g ms
Life	100 x 10 <sup>6</sup>	movements
Protection class	IP 40 (DIN 400 50 / IEC 529)	

#### Included in delivery

3 mounting clamps Z1-31.

#### Recommended accessories

Fork coupling Z-104-G06, P/N 005690;  
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(backlash-free);  
MAP - Process-control indicator, with display,  
MUP / MUK - signal conditioners.

#### Important

All values given for linearity, lifetime and temperature coefficient are derived with no electrical load on the wiper (I ≤ 1μA).

#### Order designations

Type	P/N	R in kΩ
P-6501-A102	008201	1
P-6501-A202	008202	2
P-6501-A502	008203	5

#### Additional models available

P-6501-S0049	008224	↘ 60° ±2°, independent linearity ±0.2 %; R = 1 kΩ ±20 %
P-6501-G252	008221	↘ 90° ±2°, independent linearity ±0.3 %; R = 2.5 kΩ ±20 %
P-6501-R252	008225	↘ 180° ±2°, independent linearity ±0.15 %; R = 2.5 kΩ ±20 %

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