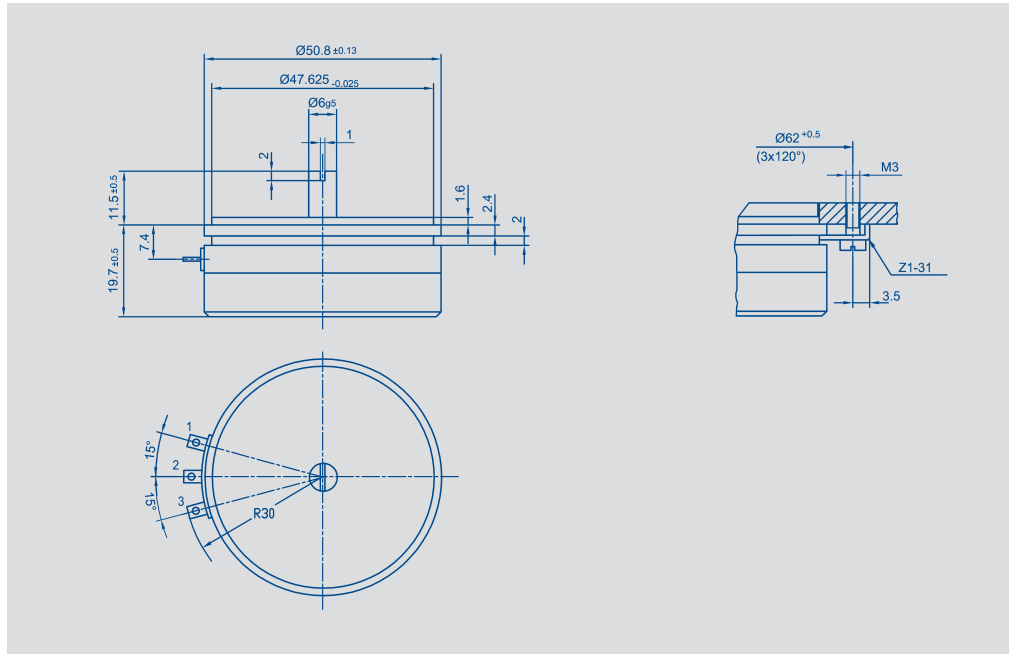
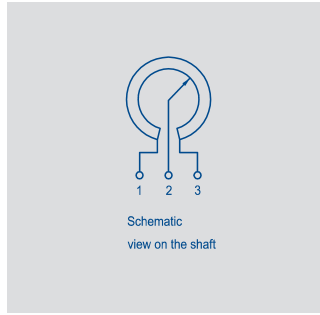
novotechnik
Siedle Group

Standard Potentiometers

Series P6500





Special features

- very long life - 100 x 10^6 movements
- very good linearity - standard ± 0.05 %,
- very high resolution - better than 0.007°
- high admissible operating speed 10 000 min^{-1}
- unrestricted continuous rotation

Precision potentiometer for measuring, control and instrumentation applications.

The distinguishing features of the P 6500 include an all metal case, ball-bearings, a conductive resistance element and elastomer-damped wipers.
As a high-precision angular displacement transducer this potentiometer meets all kinds of analog applications.
Together with an A/D converter it serves as a low-cost digital-absolute-encoder for precision setting or pick-up and thus opens a multitude of digital applications.

Special versions with different electrical travels 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 wiper
Electrical connections	gold-plated brass terminals

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Printed in Germany

Mechanical Data		
Dimensions	see drawing	
Mounting	with 3 clamps Z 1 - 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	min^{-1}
Weight	80	g
Electrical Data		
Actual electrical travel	355 ±2	°
Available resistance values	1; 2; 5	kΩ
Resistance tolerance	±20	%
Repeatability	0.002 (≙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)	≥ 10	MΩ
Dielectric strength (500 VAC, 50 Hz)	≤ 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	rev.
Protection class	IP 40 (DIN 400 50 / IEC 529)	

Order designations		
Type	**Art.no.**	**R in kΩ**
P6501 A102	008201	1
P6501 A202	008202	2
P6501 A502	008203	5

Additional models available		
P6501 S0049	008224	∢ 60°± 2°, indep. Lin. ± 0,2%; R= 1kΩ ±20%
P6501 G252	008221	∢ 90°± 2°, indep. Lin. ± 0,3%; R= 2,5kΩ ±20%
P6501 R252	008225	∢ 180°± 2°, indep. Lin. ± 0,15%; R= 2,5kΩ ±20%

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

Included in delivery
3 mounting clamps Z1-31

Recommended accessories
Fork coupling Z 104 G 6,
Fork coupling Z 105 G 6 (backlash-free),
Process-controlled indicators MAP... with display,
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 ≤ 1µA).