

**Standard-  
Potentiometer**

Series P6500-4007



**Special features**

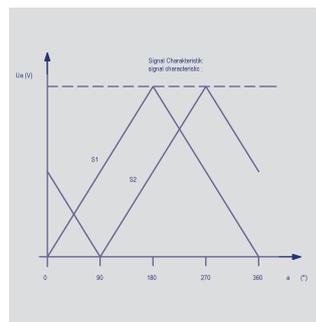
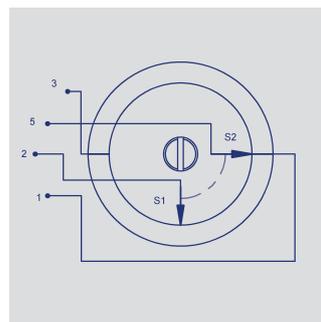
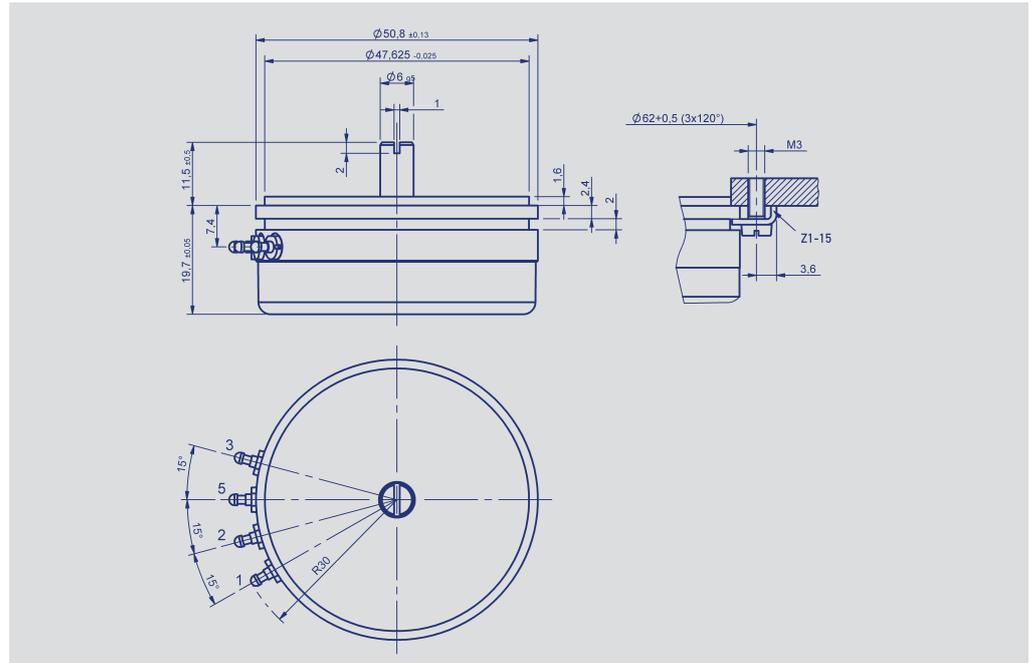
- delta function
- long life 50 x 10<sup>6</sup> movements
- very good resolution 0,007°
- unrestricted continuous rotation
- electrical range 2 x 178°

Precision potentiometer for measuring, control and instrumentation applications.

The distinguishing features of the P-6501-4007 include a resistance element and elastomer-damped wipers.

The resistance element forms a closed ring. The supply voltage is conducted at two opposite points. Per rotation each of both wipers detect a triangular-shaped, angle-proportional voltage with a phase offset of 90°.

By the customer's logical combination of both signals, an unique assignment of the shaft position can be achieved.



**Description**

Size	servo size 20
Housing	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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<b>Mechanical Data</b>		
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	≤ 0.25	Ncm
Maximum operational speed	10 000	min-1
Weight	80	g
<b>Electrical Data</b>		
Actual electrical travel	2 x 178	°
Def. electrical range	2 x 100 (±50° to electrical center within electrical range)	°
Available resistance values	2.5	kΩ
Resistance tolerance	±20	%
Repeatability	0.002 ( 0.007°)	%
Temperature coefficient of the output-to-applied voltage ratio	typ. 5	ppm/K
Independent linearity	±0.1 (within the defined electrical range)	%
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)	≥ 100	MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤ 500	μA
<b>Environmental Data</b>		
Temperature range	-55 ...+100	°C
Vibration	5...2000 Amax =0.75 amax =20	Hz mm g
Shock	50 11	g ms
Life	> 50 x 10 <sup>6</sup>	rev.
Protection class	IP 40 (DIN 400 50 / IEC 529)	
<b>Order designations</b>		
Typ e	P/N	
P-6501-4007	008218	

#### Included in delivery

3 mounting clamps Z-1-31

#### Recommended accessori

Fork coupling Z-104-G6,  
Z-105-G6 (backlash-free).

#### 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 operation with the wiper voltage driving on operational amplifier working as a voltage follower, where virtually no load is applied to the wiper ( $I_e \approx 1 \mu A$ ).