

## Rotary Sensor Low-Torque Potentiometer

Series P2200



### Special features

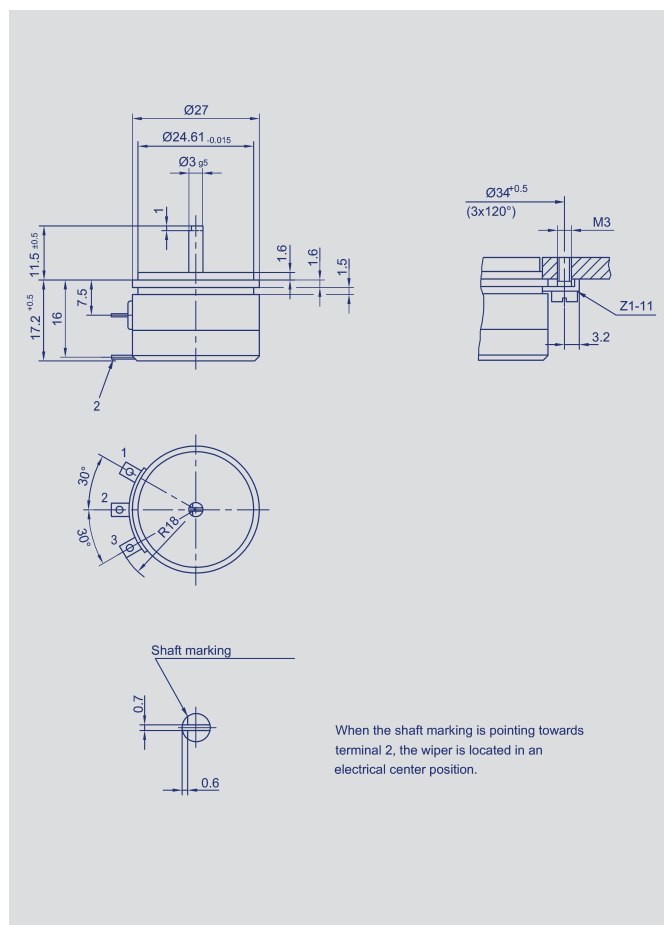
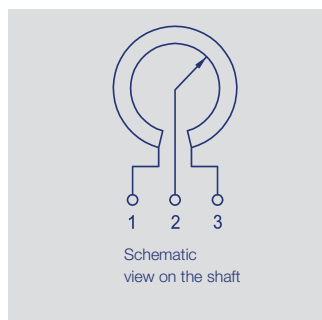
- extremely low torque - 0.003 Ncm
- exceptionally long life - to 100 million movements
- excellent linearity - standard  $\pm 0.1\%$
- very good repeatability better than  $0.01^\circ$
- single integrated main bearing
- shaft with screwdriver slot and marking
- unrestricted continuous rotation
- sealed to IP50

The P2200 has an exceptionally low operating torque requirement. This makes it suitable for applications where the system to be measured can be affected by the torque requirements of the sensor.

It offers a precision conductive plastic potentiometer in a servo size 11 housing with stainless steel bearing.

The standard version P2201 A502 has a nominal resistance of 5 k $\Omega$ .

Special versions with different electrical travels are available.



### Description

Size	servo size 11
Case	two-parts; flange anodized aluminium, cover high-grade temperature-resistant plastic
Shaft	stainless steel with screwdriver slot and marking
Bearings	stainless integrated steel ball bearings, dust-protected
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wipers
Electrical connections	terminals gold-plated brass

Novotechnik U.S., Inc.  
155 Northboro Road  
Southborough, MA 01772

Phone 508 485 2244  
Fax 508 485 2430  
info@novotechnik.com  
www.novotechnik.com

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<b>Mechanical Data</b>		
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
Maximum operating torque	≤ 0.003	Ncm
Maximum operational speed	600	RPM
Weight	20	g
<b>Electrical Data</b>		
Actual electrical travel	345 ±2	°
Nominal resistance	5	kΩ
Resistance tolerance	±20	%
Repeatability	0.0012 (≠ 0.004°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5	ppm/K
Independent linearity	±0.1	%
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
<b>Environmental Data</b>		
Temperature range	-40...+100	°C
Vibration	5...2000	Hz
	Amax = 0.75	mm
	amax = 20	g
Shock	50	g
	11	ms
Life	100 x 10 <sup>6</sup>	movements
Protection class	IP50 (DIN 400 50 / IEC 529)	

**Included in delivery**  
3 clamps Z1-11

**Recommended accessories**  
Fork coupling Z 103 G 3  
(backlash free),  
MAP process control indicators  
with display MUP/MUK signal  
conditioners for standardized  
voltage and current 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 opera-  
ting with the wiper voltage dri-  
ving on operational amplifier  
working as a voltage follower,  
where virtually no load is  
applied to the wiper (I ≤ 1 μA)

**Order designations**

Type	P/N
P-2201-A502	002203

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