

Standard Potentiometer

Series P 1400

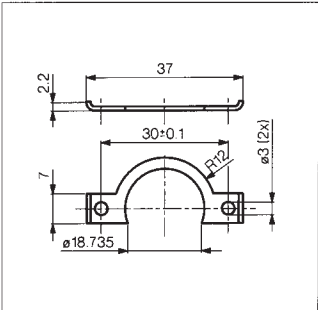
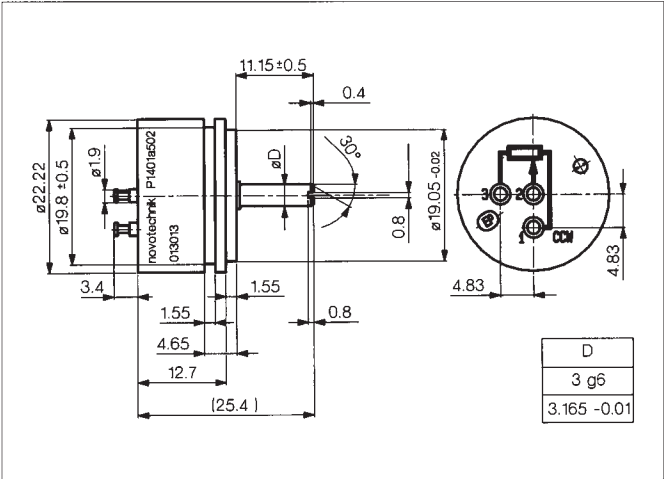


Special features

- high precision despite extremely small size
- very long life 100×10^6 cycles typ
- excellent linearity $\pm 0.25 \%$
- very good repeatability better than 0.015°
- unrestricted continuous rotation

High accuracy despite small dimensions characterises the smallest model of our rotary potentiometer product line. P1401a502 with metrical shaft and P1411a502 with inch shaft have a nominal resistance of $5\text{ k}\Omega$. The shaft is made of stainless steel with a screw-driver slot.

The model is very suitable for exact angel measurement in places where space is very limited.



Description	
Size	Servo size 9
Case	anodized aluminium
Shaft	stainless steel with screw-driver slot
Bearings	stainless ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wipers
Electrical connections	solder pins, gold-plated brass

Mechanical Data		
Dimensions	see drawing	
Mounting	with 1 clamp	
Mechanical travel	360, continuous	°
Permitted shaft loading (axial and radial) static or dynamic force	≤ 10	N
Torque	≤ 0.7	Ncm
Maximum operational speed	2 000	min ⁻¹
Weight	12	g
Electrical Data		
Actual electrical travel	348 ±3	°
Nominal resistance	5	kΩ
Resistance tolerance	±20	%
Repeatability	≤ 0.005 (0.015°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 10	ppm/°C
Independent linearity	± 0.25	%
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	rev.
Protection class	IP 50 (DIN 400 50 / IEC 529)	

Order designations

Type	Art.no.
P1401a502 metrical shaft, D = 3 g6	013013
P1411a502 inch shaft, D = 3.165 -0.01	013023

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

Included in delivery

1 mounting clamp
2 screws M 3x8

Recommended accessories

coupling Z103g3
(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, micro-linearity, resistance to external disturbances and Fork 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 ≤ 1 μA).