

## 1/2" (12.7 mm) Single - Turn Wirewound Servo Mount Type Precision Potentiometer



### FEATURES

- Ohmic value range: 50  $\Omega$  up to 20 k $\Omega$
- Smallest size available: 12.7 mm
- Center tap on request
- Custom shafts available on request



**RoHS**  
COMPLIANT

ELECTRICAL SPECIFICATIONS	
PARAMETER	
Total Resistance	50 $\Omega$ to 20 k $\Omega$
Tolerance	$\pm 5\%$
Absolute Minimum Resistance	Linearity x total resistance or 0.5 $\Omega$ , whichever is greater
Linearity (Independent)	$\pm 1.0\%$
Noise	100 $\Omega$ ENR
Power Rating	2 W at 40 $^{\circ}\text{C}$ ambient derating linearly to zero at 125 $^{\circ}\text{C}$
Insulation Resistance	1000 M $\Omega$ min. 500 V <sub>DC</sub>
Dielectric Strength	1000 V <sub>RMS</sub> , 60 Hz
Electrical Angle	350 $^{\circ}$ + 0 $^{\circ}$ - 4 $^{\circ}$
End Voltage	Linearity x total applied voltage for total resistance above 20 $\Omega$ ; 2.0 % of total applied voltage for 20 $\Omega$ and below

MATERIAL SPECIFICATIONS	
Shaft	Stainless steel, non magnetic non-passivated
Housing	Aluminum, anodized
Rear Lid	Molded glass filled thermoset plastic
Terminals	Brass, gold plated

ENVIRONMENTAL SPECIFICATIONS	
Vibration	20 G thru 2000 Hz
Shock	50 g
Salt Spray	96 h
Rotational Life	500 000 shaft revolutions
Load Life	900 h
Temperature Range	- 55 $^{\circ}\text{C}$ to + 125 $^{\circ}\text{C}$ (operating)

ORDERING INFORMATION/DESCRIPTION				
142S	0	0	10K	BO10
MODEL	MECHANICAL OPTIONS	SPECIAL FEATURE	OHMIC VALUE	PACKAGING
	0. Continuous rotation, plain shaft (std.)	0. Standard torque 1. Center tap (10K max. Rt)		Box of 10 pieces

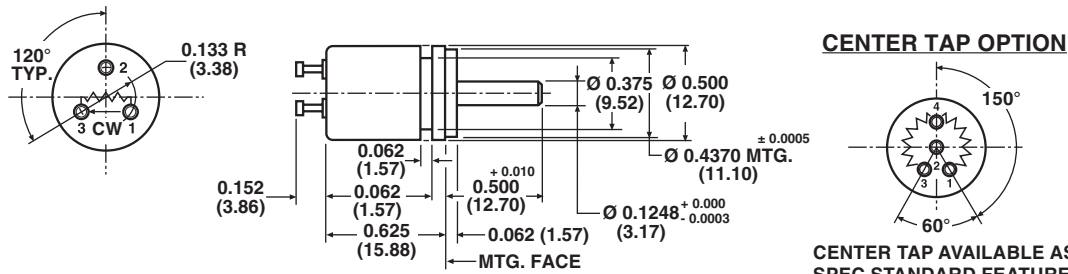
SAP PART NUMBERING GUIDELINES				
142S	0	1	502	B10
MODEL	MECHANICAL OPTIONS	SPECIAL FEATURE	OHMIC VALUE	PACKAGING
		1: With center tap	502 = 5K	Box of 10 pieces



**1/2" (12.7 mm) Single - Turn Wirewound  
Servo Mount Type Precision Potentiometer**

Vishay Spectrol

**DIMENSIONS** in inches (millimeters)

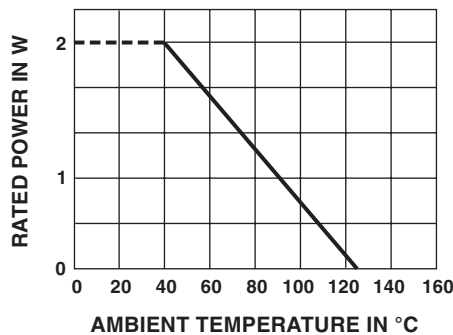


**CENTER TAP OPTION**

CENTER TAP AVAILABLE AS SPEC STANDARD FEATURE  
**TOLERANCES: UNLESS OTHERWISE NOTED.  
DECIMALS ± 0.005 ANGLES ± 2°**

<b>MECHANICAL SPECIFICATIONS</b>	
PARAMETER	
Rotation	360° continuous
Bearing Type	<b>BALL BEARING</b>
Torque (Maximums)	
Starting	0.075 oz. - in (5.40 g - cm)
Running	0.05 oz. - in (3.60 g - cm)
Dead Zone	0.20 oz. - in (14.40 g - cm)
Weight	0.3 oz. (8.50 g) maximum
Runouts (Maximum)	0.002" (0.05 cm)
Shaft (TIR)	0.002" (0.05 cm)
Pilot Dia. (TIR)	0.002" (0.05 cm)
Lateral (TIR)	0.004" (0.10 cm)
Shaft End Play	0.002" (0.05 cm)
Shaft Radial Play	0.002" (0.05 cm)

**POWER RATING CHART**



<b>RESISTANCE ELEMENT DATA</b>					
STD RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUM CURRENT AT 40 °C AMBIENT (mA)	MAXIMUM VOLTAGE ACROSS COIL (V)	WIRE TEMP. COEF. (ppm/°C)
50	0.542	0.271	200.0	10.0	20
100	0.431	0.431	141.0	14.1	20
200	0.361	0.722	100.0	20.0	20
500	0.312	1.56	63.2	31.6	20
1K	0.255	2.55	44.7	44.7	20
2K	0.197	3.94	31.6	63.2	20
5K	0.170	8.50	20.0	100.0	20
10K	0.147	14.7	14.1	141.0	20
20K	0.105	21.0	10.0	200.0	20

<b>MARKING</b>	
<b>Unit Identification</b>	Units shall be marked with manufacturer's name, model number, resistance value and tolerance, circuit diagram, terminal identification, linearity and data code



## Disclaimer

All product specifications and data are subject to change without notice.

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