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



FEATURES

- Ohmic value range: 50 Ω up to 20 kΩ
- Smallest size available: 12.7 mm
- Center tap on request
- Custom shafts available on request
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

QUICK REFERENCE DATA	
Sensor type	ROTATIONAL, single turn wirewound
Output type	Output by turrets
Market appliance	Professional
Dimensions	1/2" (12.7 mm)

ELECTRICAL SPECIFICATIONS	
PARAMETER	
Total Resistance	50 Ω to 20 kΩ
Tolerance	± 5 %
Absolute Minimum Resistance	Linearity x total resistance or 0.5 Ω, whichever is greater
Linearity (independent)	± 1.0 %
Noise	100 Ω ENR
Power Rating	2 W at 40 °C ambient derating linearly to zero at 125 °C
Insulation Resistance	1000 MΩ min. 500 V_{DC}
Dielectric Strength	1000 V_{RMS}, 60 Hz
Electrical Angle	350° +0° -4°
End Voltage	Linearity x total applied voltage for total resistance above 20 Ω; 2.0 % of total applied voltage for 20 Ω 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 °C to +125 °C (operating)

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability

ORDERING INFORMATION

1	4	2	S	0	1	5	0	2	X	X	X	X

MODEL	STYLE	MECHANICAL OPTIONS	FEATURES	VALUE	SPECIAL REQUEST
142	**S**: servo	**0** = continuous rotation	**0** = standard torque **1** = center tap (10K max. Rt)	**470** = 47 Ω **222** = 2.200 Ω **103** = 10 kΩ For ohmic value range see electrical specification	Custom reference

For technical questions, contact: sferprecisionpot@vishay.com

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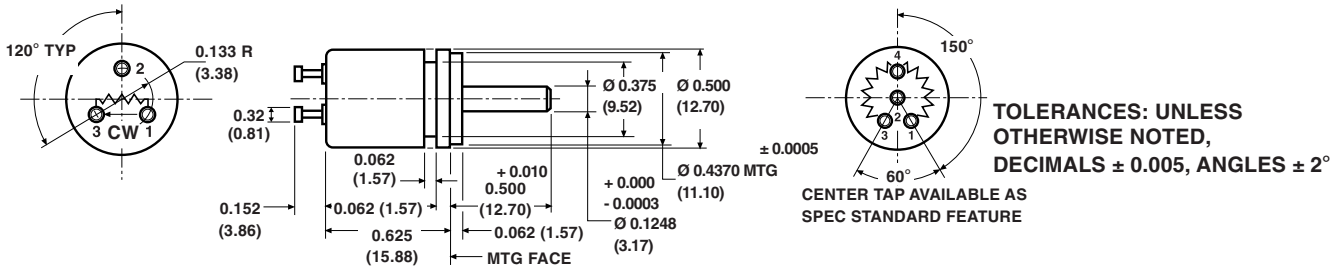
PART NUMBER DESCRIPTION (for information only)

142	0-	1-	502	xxxx
MODEL	MECHANICAL OPTIONS	FEATURES	OHMIC VALUE	SPECIAL

DIMENSIONS in inches (millimeters)

MODEL 142S/142-...

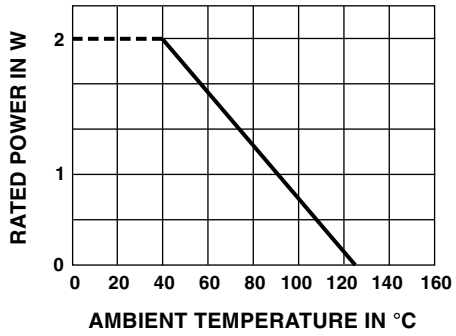


TOLERANCES: UNLESS OTHERWISE NOTED, DECIMALS ± 0.005, ANGLES ± 2°

MECHANICAL SPECIFICATIONS

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

POWER RATING CHART



RESISTANCE ELEMENT DATA

STD RESISTANCE VALUES (Ω)	RESO-LUTION (%)	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

MARKING

Unit Identification	Units shall be marked with manufacturer's name, model number, resistance value and tolerance, circuit diagram, terminal identification, linearity and data code. Example of a marking for a standard part: 142-0-1-102

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