1/2" (12.7 mm) Ten Turn Wirewound Servo Mount Precision Potentiometer

FEATURES

- Large range of ohmic values: 100 Ω to 100 kΩ
- Smallest size available on the market
- Very easy and accurate adjustment
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

QUICK REFERENCE DATA

Sensor type	ROTATIONAL, multi turn wirewound
Output type	Output by turrets
Market appliance	Professional
Dimensions	½" (2.7 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER		
Total Resistance Standard Range Tolerance	**STANDARD** 100 Ω to 100 kΩ ± 5 %	**SPECIAL** 115 kΩ max. ± 2 %
Linearity (independent)	**STANDARD** ± 0.30 %	**BEST PRACTICAL** ± 0.15 %
Noise	100 Ω ENR	
Rotation	3600° +15° -0°	
Power Rating: Section 1:	2.0 W at 40 °C ambient, derated to zero at 125 °C	
Insulation Resistance	100 MΩ minimum, 500 V_{DC}	
Dielectric Strength	500 V_{RMS}, 60 Hz	
Absolute Minimum Resistance	Linearity x total resistance or 0.5 Ω, whichever is greater	
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

Housing and Lids	Molded, glass filled, thermoset plastic
Front Lid	Aluminum, anodized
Shaft	Stainless steel, non-passivated
Terminals	Brass, plated for solderability

ENVIRONMENTAL SPECIFICATIONS

Vibration	15 *g* thru 2000 Hz
Shock	50 *g*
Salt Spray	48 h
Rotational Life	500 000 shaft revolutions
Temperature Range	-55 °C to +125 °C

Note

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

MARKING

Unit Identification	Units shall be marked with Vishay Spectrol name and model no, resistance and resistance tolerance, linearity, terminal identification and date code

ORDERING INFORMATION

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MODEL	STYLE	OHMIC VALUE	SPECIAL REQUEST
164	**B**: bushing **S**: servo	**470** = 47 Ω **222** = 2.200 Ω **103** = 10 kΩ For ohmic value range see electrical specification	**xxxx**

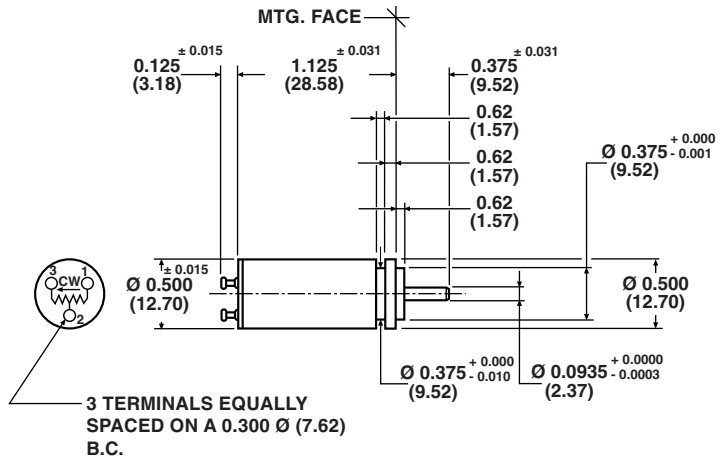
PART NUMBER DESCRIPTION (for information only)

164-	1	1	103	xxxx
MODEL	STYLE **B**: 1 **S**: 2	GANGS	OHMIC VALUE	SPECIAL

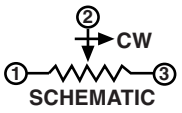
For technical questions, contact: sferprecisionpot@vishay.com

DIMENSIONS in inches (millimeters)

MODEL 164S/164-2...



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

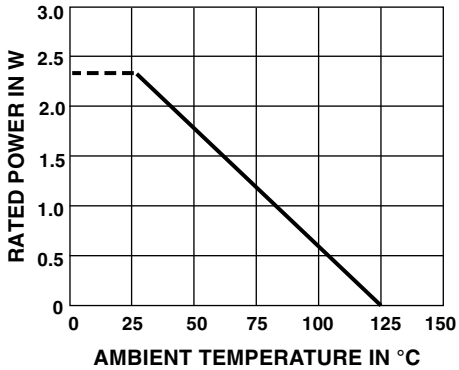


SCHEMATIC

MECHANICAL SPECIFICATIONS

PARAMETER		
Mechanical Rotation		3600°, +15° -0°
Bearing Type		**Ball**
Torque (maximum)	**STARTING** **RUNNING**	0.4 oz. - in (28.80 g - cm) 0.3 oz. - in (21.60 g - cm)
Mechanical Runouts (maximums): Shaft (TIR) Pilot Dia. (TIR) Lateral (TIR) Shaft End Play Shaft Radial Play		 0.002" (0.05 cm) 0.003" (0.08 cm) 0.003" (0.08 cm) 0.005" (0.13 cm) 0.002" (0.05 cm)
Weight		0.3 oz. (8.50 g) maximum
Stop Strength		20 oz. - in (static) (1.44 kg - cm)

POWER RATING CHART



MARKING

Example of a marking for a standard part: 164-21502

RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUM CURRENT AT 40 °C AMBIENT (mA)	MAXIMUM VOLTAGE ACROSS COIL (V)	WIRE TEMP. COEF. (ppm/°C)
100	0.092	0.092	141	14	20
200	0.069	0.138	100	20	20
500	0.049	0.245	63	32	20
1K	0.047	0.470	45	45	20
2K	0.038	0.763	32	64	20
5K	0.031	1.56	20	100	20
10K	0.025	2.55	14	140	20
20K	0.020	3.94	10	200	20
30K	0.018	5.34	8.2	246	20
50K	0.015	7.64	6.3	315	20
100K	0.013	13.2	4.5	450	20

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