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

FEATURES

- Ohmic value range: 50 Ω up to 20 kΩ
- Smallest size available: 12.7 mm
- Mechanical stops on request
- High torque and sealed versions available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

DESIGN SUPPORT TOOLS

click logo to get started

3D Models Available

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	320° ± 5°
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
Mounting Hardware Lockwasher Internal Tooth: Panel Nut:	 Steel, nickel plated Brass, nickel 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	0	B	0	3	5	0	2	X	X	X	X

MODEL	STYLE	MECHANICAL OPTIONS	FEATURES	VALUE	SPECIAL REQUEST
140	**B**: bushing	**0**: stops, slotted shaft (std) **1**: plain shaft **2**: shaft lock **3**: continuous rotation **4**: combination 1 and 2 **5**: combination 1 and 3 **6**: combination 2 and 3 **7**: combination 1, 2, and 3	**0**: standard torque **1**: center tap (10K max. Rt) **2**: high torque **3**: sealed construction **4**: combination 1 and 2 **5**: combination 1 and 3 **6**: combination 2 and 3 **7**: combination 1, 2, and 3	**470** = 47 Ω **222** = 2.200 Ω **103** = 10 kΩ For ohmic value range see electrical specification	Custom reference

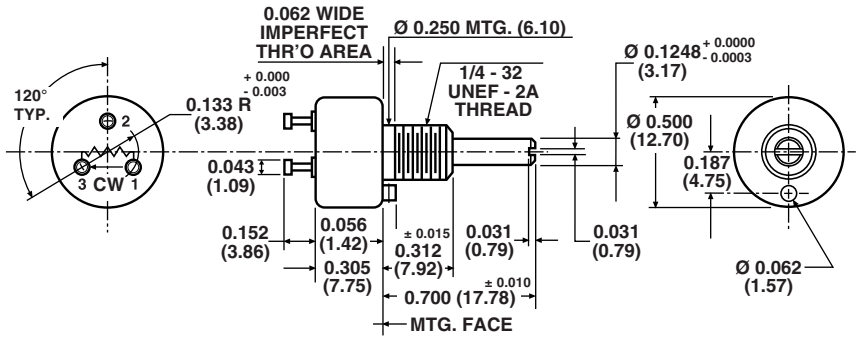
PART NUMBER DESCRIPTION (for information only)

140-	0-	3-	502	xxxx
MODEL	MECHANICAL OPTIONS	FEATURES	OHMIC VALUE	SPECIAL

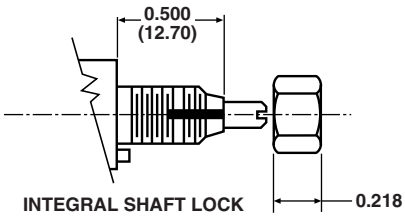
For technical questions, contact: sferprecisionpot@vishay.com

DIMENSIONS in inches (millimeters)

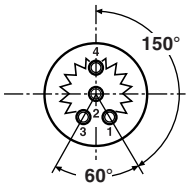
MODEL 140B/140-...



SHAFT LOCK OPTION



CENTER TAP OPTION



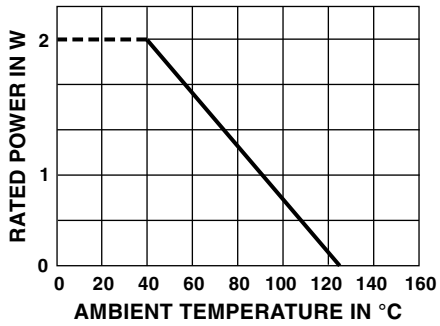
CENTER TAP AVAILABLE AS SPEC STANDARD FEATURE

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

MECHANICAL SPECIFICATIONS

PARAMETER	
Rotation	330° ± 5°
Bearing Type	SLEEVE BEARING
Torque (maximums)	
Starting	0.2 oz. - in (14.40 g - cm)
Running	0.2 oz. - in (14.40 g - cm)
Dead Zone	Not applicable
Weight	0.1 oz. maximum (2.84 g)
Stop Strength	5 in - lbs (5.76 kg - cm) static
Runouts (maximum)	
Shaft (TIR)	0.002" (0.05 cm)
Pilot Dia. (TIR)	0.002" (0.05 cm)
Lateral (TIR)	0.003" (0.08 cm)
Shaft End Play	0.006" (0.15 cm)
Shaft Radial Play	0.003" (0.08 cm)

POWER RATING CHART



RESISTANCE ELEMENT DATA

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

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: 140-1-2-103

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