1 5/16" (33.3 mm) Single Turn Wirewound Precision Potentiometer



FEATURES

- Gangable up to 6 sections
- Extra taps on request
- Bushing and servo mount types available
- Ohmic value range: 5 Ω up to 35 kΩ
- 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	Industrial
Dimensions	1 5/16" (33.3 mm)

ELECTRICAL SPECIFICATIONS

PARAMETER		
Total resistance: Tolerance: 50 Ω and above Below 50 Ω	**STANDARD** 5 Ω to 20 kΩ ± 3 % ± 5 %	**SPECIAL** to 35 kΩ ± 1 % ± 3 %
End voltage	Linearity x total applied voltage for total resistance above 20 Ω. 2.0 % of total applied voltage for 20 Ω and below	
Linearity (independent): 5 Ω to 100 Ω 100 Ω to 500 Ω 500 Ω to 3 kΩ 3 kΩ to 15 kΩ 15 kΩ and above	**STANDARD** ± 1.0 % ± 0.5 % ± 0.5 % ± 0.5 % ± 0.5 %	**BEST PRACTICAL** ± 0.50 % ± 0.35 % ± 0.25 % ± 0.20 % ± 0.15 %
Noise	100 Ω ENR (MIL-R-12934)	
Electrical angle	352° ± 2°	
Power rating	2.75 W at 40 °C ambient	
Insulation resistance	100 MΩ min, 500 V_{DC}	
Dielectric strength	1000 V_{RMS}, 60 Hz	
Taps (extra)	Up to 13 (position tolerance: ± 1°)	
Phasing	CCW taps of multiple sections aligned with CCW tap of section 1 to ± 1°	
Absolute minimum resistance	Linearity x total resistance or 0.5 Ω, whichever is greater	

ORDERING INFORMATION

1	0	0	S	1	2	0	3	2	0	3	X	X	X	X

MODEL	STYLE	GANGS	OHMIC VALUE GANGS Nº 1	OHMIC VALUE GANGS Nº 2	SPECIAL REQUEST
100	**B**: bushing **S**: servo	**1** **2** **3** **4** **5** **6**	**470** = 47 Ω **222** = 2.200 Ω **103** = 10 kΩ For ohmic value range see electrical specification	**470** = 47 Ω **222** = 2.200 Ω **103** = 10 kΩ For ohmic value range see electrical specification	**xxxx**

For technical questions, contact: sferprecisionpot@vishay.com

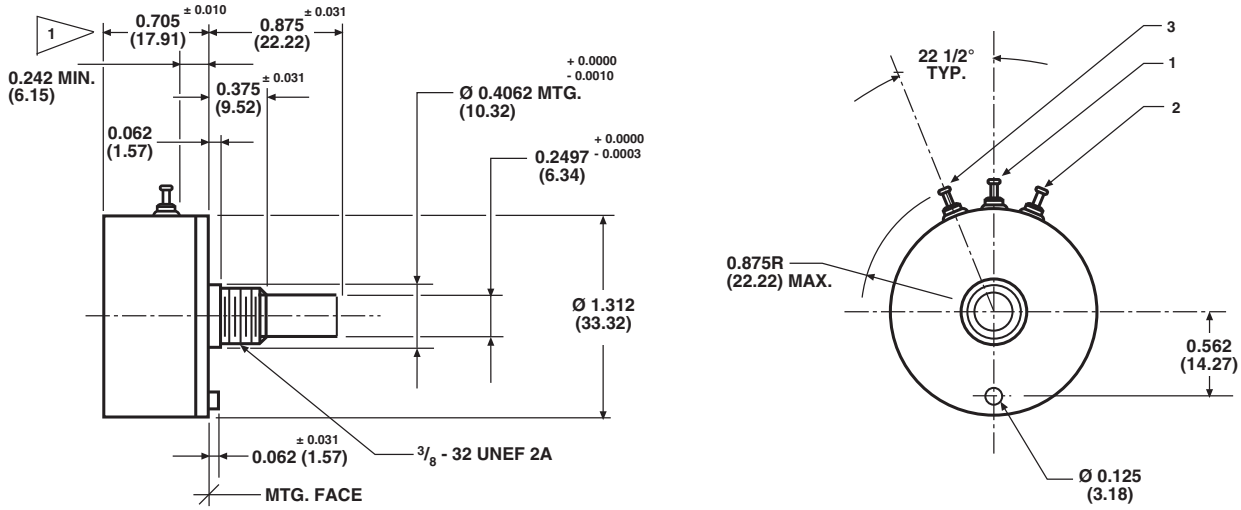
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PART NUMBER DESCRIPTION (for information only)

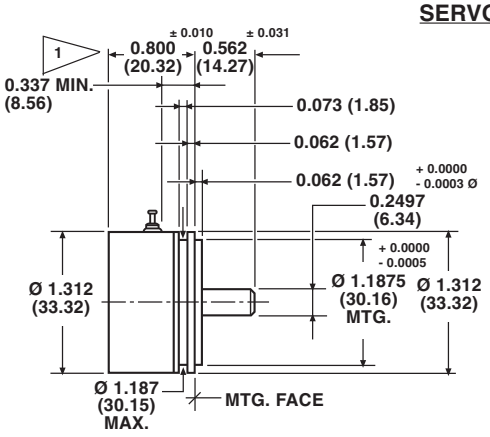
100-	1	2	103	203	xxxx
MODEL	STYLE	GANGS	OHMIC VALUE GANGS Nº 1	OHMIC VALUE GANGS Nº 2	SPECIAL
	B: 1 **S**: 2				

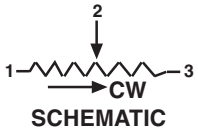
DIMENSIONS in inches (millimeters)

BUSHING MOUNT: 100B/100-1...



SERVO MOUNT: 100S/100-2...





SCHEMATIC

1 ADD 0.566 ± 0.002 (14.38) FOR EACH ADDITIONAL SECTION

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

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MECHANICAL SPECIFICATIONS

PARAMETER		
Rotation	360° (continuous)	
Bearing type	Servo mount: ball bearing Bushing mount: sleeve bearing	
Ganging	6 sections maximum, terminal alignment, added sections, within ± 10° of section 1 terminals	
Torque (maximums) Servo, 1 section Bushing, 1 section Each additional section	**STARTING** 0.60 oz. - in (43.20 g - cm) 1.00 oz. - in (72.00 g - cm) 0.30 oz. - in (21.60 g - cm)	**RUNNING** 0.30 oz. - in (21.60 g - cm) 0.75 oz. - in (54.00 g - cm) 0.30 oz. - in (21.60 g - cm)
Mechanical tolerances (maximums): Shaft runout (TIR/In) Pilot dia. runout (TIR) Lateral runout (TIR) Shaft end play Shaft radial play	**BUSHING** 0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.005" (0.13 cm) 0.004" (0.10 cm)	**SERVO** 0.002" (0.05 cm) 0.002" (0.05 cm) 0.002" (0.05 cm) 0.005" (0.13 cm) 0.002" (0.05 cm)
Moment of inertia	1.0 g - cm^2 per section maximum	
Weight Single section Each additional section	2.0 oz. maximum (56.7 g) 0.75 oz. maximum (21.3 g)	

MATERIAL SPECIFICATIONS

Housing and lids	Aluminum, anodized
Shaft	Stainless steel, non-magnetic non-passivated
Terminals	Brass, plated for solderability
Bushing mount hardware Lockwasher internal tooth: Panel nut:	Steel, nickel plated Brass, nickel plated

ENVIRONMENTAL SPECIFICATIONS

Vibration	15 *g* thru 2000 CPS
Shock	50 *g*
Salt spray	96 h
Rotational life	1 million shaft revolutions
Load life	900 h
Temperature range	-55 °C to +105 °C

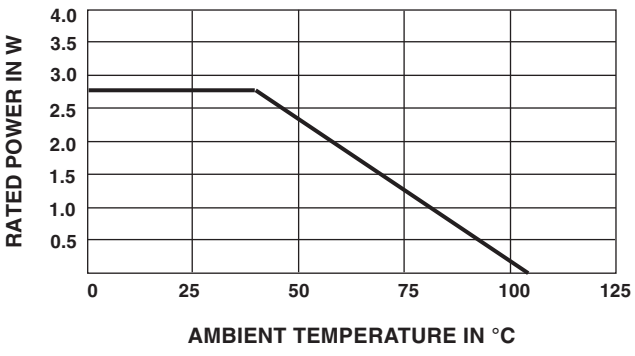
Note

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

MARKING

Unit identification	Units shall be marked with Vishay Spectrol name, model number and data code and on each section, resistance, resistance tolerance, linearity and terminal identification. Example of a marking for a standard part: 100-11103

POWER RATING CHART



RESISTANCE ELEMENT DATA

RESISTANCE VALUES (Ω)	RESOLUTION (%)	OHMS PER TURN	MAXIMUM CURRENT AT 70 °C AMBIENT (mA)	MAXIMUM VOLTAGE ACROSS COIL (V)	WIRE TEMP. COEF. (ppm/°C)
5	0.346	0.017	742	3.7	800
10	0.298	0.030	524	5.2	800
20	0.236	0.047	371	7.4	800
50	0.244	0.122	235	12	20
100	0.222	0.222	166	17	20
200	0.181	0.361	117	23	20
500	0.178	0.885	74	37	20
1K	0.138	1.38	52	52	20
2K	0.105	2.09	37	74	20
5K	0.085	4.23	23	117	20
10K	0.069	6.84	17	166	20
20K	0.058	11.5	12	235	20
35K	0.058	20.0	8.8	310	20

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