

1 1/16" (27 mm) Single Turn Conductive Plastic Precision Potentiometer


FEATURES

- 1 1/16" round
- Bushing mount and servo mount types
- Designed for high reliability applications
- Ohmic value range: 500 Ω to 50 kΩ
- Rotational life exceeds 20 million shaft revolutions
- Virtually infinite resolution
- Up to 6 sections available
- Co-molded track and multi-finger wiper provide low noise signal
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

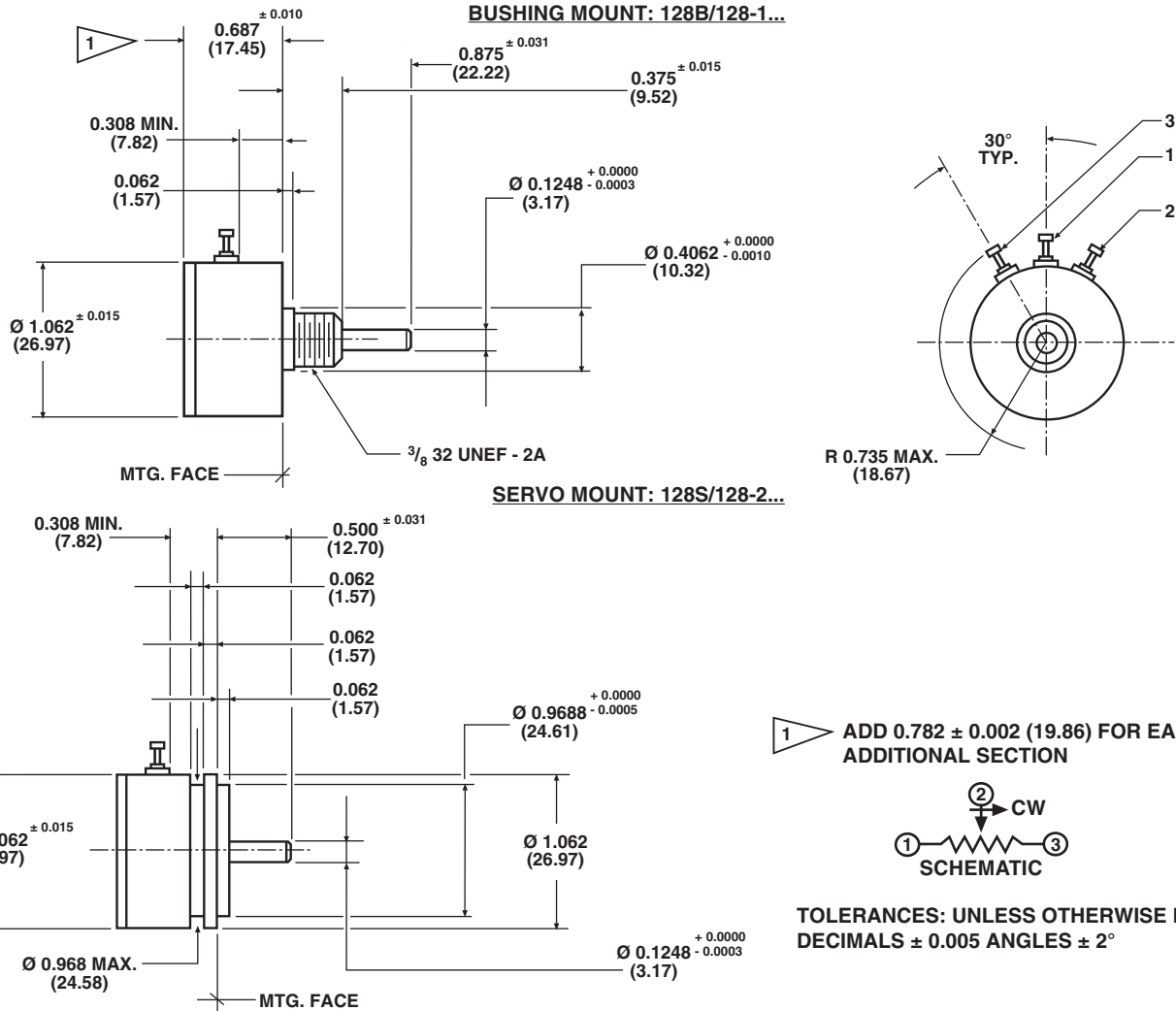

RoHS
COMPLIANT

| QUICK REFERENCE DATA | |
|----------------------|--------------------------------|
| Sensor type | ROTATIONAL, conductive plastic |
| Output type | Output by turrets |
| Market appliance | Professional |
| Dimensions | 1 1/16" (27 mm) |

| ELECTRICAL SPECIFICATIONS | | |
|---------------------------------------|---|----------|
| PARAMETER | STANDARD | SPECIAL |
| Total resistance | 500 Ω to 50 kΩ | |
| Tolerance | ± 10 % | ± 5 % |
| Linearity (independent) | ± 0.5 % | ± 0.15 % |
| Electrical angle | 345° ± 4° | |
| Power rating | 1.25 W at 70 °C ambient, derated to zero at 125 °C ambient | |
| Section 1: | | |
| Additional section: | 75 % of the rating of section 1 | |
| Output smoothness | 0.1 % maximum | |
| Insulation resistance | 1000 MΩ minimum, 500 V _{DC} | |
| Dielectric strength | 1000 V _{RMS} , 60 Hz | |
| Phasing (CCW end points) | Points at which output ratio is 0.5 aligned ± 1° (ref. section 1) | |
| Temperature coefficient of resistance | ± 600 ppm/°C maximum | |
| Taps (extra) | Extra taps available as special | |

| ORDERING INFORMATION | | | | | | | | | | | | | | |
|----------------------|---|------------------------|---|----------------------------|---|---|--|---|--|---|-----------------|---|---|---|
| 1 | 2 | 8 | S | 1 | 2 | 0 | 3 | 2 | 0 | 3 | X | X | X | X |
| MODEL | | STYLE | | GANGS | | | OHMIC VALUE GANGS N° 1 | | OHMIC VALUE GANGS N° 2 | | SPECIAL REQUEST | | | |
| 128 | | 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 | | | |

| PART NUMBER DESCRIPTION (for information only) | | | | | |
|--|--------------|-------|------------------------|------------------------|---------|
| 128- | 1 | 1 | 102 | 103 | xxxx |
| MODEL | STYLE | GANGS | OHMIC VALUE GANGS N° 1 | OHMIC VALUE GANGS N° 2 | SPECIAL |
| | B: 1 S: 2 | | | | |

DIMENSIONS in inches (millimeters)

MECHANICAL SPECIFICATIONS

| PARAMETER | | |
|------------------------------|---|--|
| Rotation | 360° continuous | |
| Bearing type | SERVO MOUNT Ball bearing | BUSHING MOUNT Sleeve bearing |
| Torque (maximum) | STARTING | RUNNING |
| Servo, 1 section | 0.25 oz. - in (18.0 g - cm) | 0.15 oz. - in (10.8 g - cm) |
| Bushing, 1 section | 0.30 oz. - in (21.6 g - cm) | 0.25 oz. - in (18.0 g - cm) |
| Each Additional Section | 0.20 oz. - in (14.4 g - cm) | 0.15 oz. - in (10.8 g - cm) |
| Mechanical runouts (maximum) | SERVO | BUSHING |
| Shaft runout (TIR/in) | 0.002" (0.05 mm) | 0.002" (0.05 mm) |
| Pilot dia. runout (TIR/in) | 0.002" (0.05 mm) | 0.002" (0.05 mm) |
| Lateral runout (TIR) | 0.002" (0.05 mm) | 0.005" (0.13 mm) |
| Shaft end play | 0.005" (0.13 mm) | 0.005" (0.13 mm) |
| Shaft radial play | 0.002" (0.05 mm) | 0.003" (0.08 mm) |
| Weight (maximum): | | |
| Single section | 0.8 oz. (22.7 g) | |
| Each additional section | 0.4 oz. (11.3 g) | |
| Ganging | 6 sections maximum, terminal alignment, added sections, within ± 10° of section 1 terminals | |
| Moment of inertia | 0.12 g - cm ² per section maximum | |



| 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 Hz |
| Shock | 50 g |
| Salt spray | 96 h |
| Rotational life | Servo: 20 million shaft revolutions Bushing: 5 million shaft revolutions |
| Load life | 900 h |
| Temperature range | -55 °C to +125 °C |

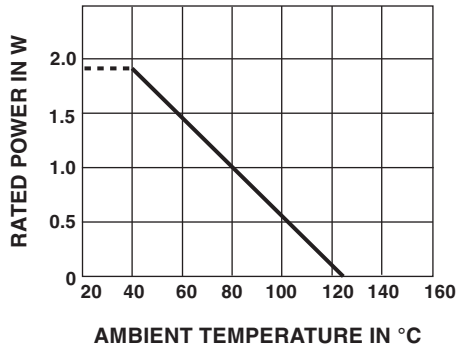
Note

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

| MECHANICAL SPECIFICATIONS | |
|---------------------------|--|
| Unit identification | Units shall be marked with Vishay Spectrol name, model number and data code on each section, resistance, resistance tolerance, linearity and terminal identification. Example of a marking for a standard part: 128-11103 |

POWER RATING CHART

(Ratings for cup No. 1.
Additional cups 75 % of values shown)



| RESISTANCE ELEMENT DATA | |
|-------------------------|--------------------------------|
| RESISTANCE VALUES (Ω) | MAXIMUM VOLTAGE APPLICABLE (V) |
| 500 | 25 |
| 1K | 35 |
| 2K | 50 |
| 5K | 79 |
| 10K | 112 |
| 20K | 158 |
| 50K | 250 |



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