

7/8" (22.2 mm) Multi Turn Wirewound Potentiometer - 533: 3 Turns / 534: 10 Turns / 535: 5 Turns



DESIGN SUPPORT TOOLS


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FEATURES

- Bushing and servo mount designs available
- Linearity $\pm 0.25\%$, down to 0.05% on request
- Special resistance tolerances to 1%
- Rear shaft extensions and support bearing
- Metric shaft available
- Dual gang configuration and concentric shafts
- High torque, center tap, slipping clutch on request
- Special markings and front shaft extensions
- 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 | Industrial |
| Dimensions | 7/8" (22.2 mm) |

ELECTRICAL SPECIFICATIONS

| PARAMETER | MODEL 533 | MODEL 534 | MODEL 535 |
|--------------------------------------|---|--------------------------------|------------------------------|
| Resistance range - standard values | 50 Ω to 20 k Ω | 100 Ω to 100 k Ω | 50 Ω to 50 k Ω |
| Capability range | 5 Ω to 60 k Ω | 10 Ω to 200 k Ω | 5 Ω to 100 k Ω |
| Standard tolerance | $\pm 5\%$ | $\pm 5\%$ | $\pm 5\%$ |
| Linearity (independent) | $\pm 0.25\%$ | $\pm 0.25\%$ | $\pm 0.25\%$ |
| Noise | 100 Ω ENR | 100 Ω ENR | 100 Ω ENR |
| Rotation (electrical and mechanical) | 1080° $+10^\circ$ -0° | 3600° $+10^\circ$ -0° | 1800° $+10^\circ$ -0° |
| Power rating (at 70 °C) | 1.0 W | 2.0 W | 1.5 W |
| Insulation resistance | 1000 M Ω minimum 500 V _{DC} | | |
| Dielectric strength | 1000 V _{RMS} minimum 60 Hz | | |
| Absolute minimum resistance | Not to exceed linearity x total resistance or 1 Ω , whichever is greater | | |
| Temperature coefficient | 20 ppm/°C (standard values, wire only) | | |
| End voltage | 0.25 % of total applied voltage, maximum | | |
| Phasing | CCW end points - section 2 phased to section 1 within $\pm 2^\circ$ | | |
| Taps | Center tap only | | |

MARKING

| | |
|---------------------|---|
| Unit identification | Manufacturer's name and model number, resistance value and tolerance, linearity specification date code and terminal identification. Example of a marking for a standard part: 534-11103 |
|---------------------|---|

RESISTANCE VALUES

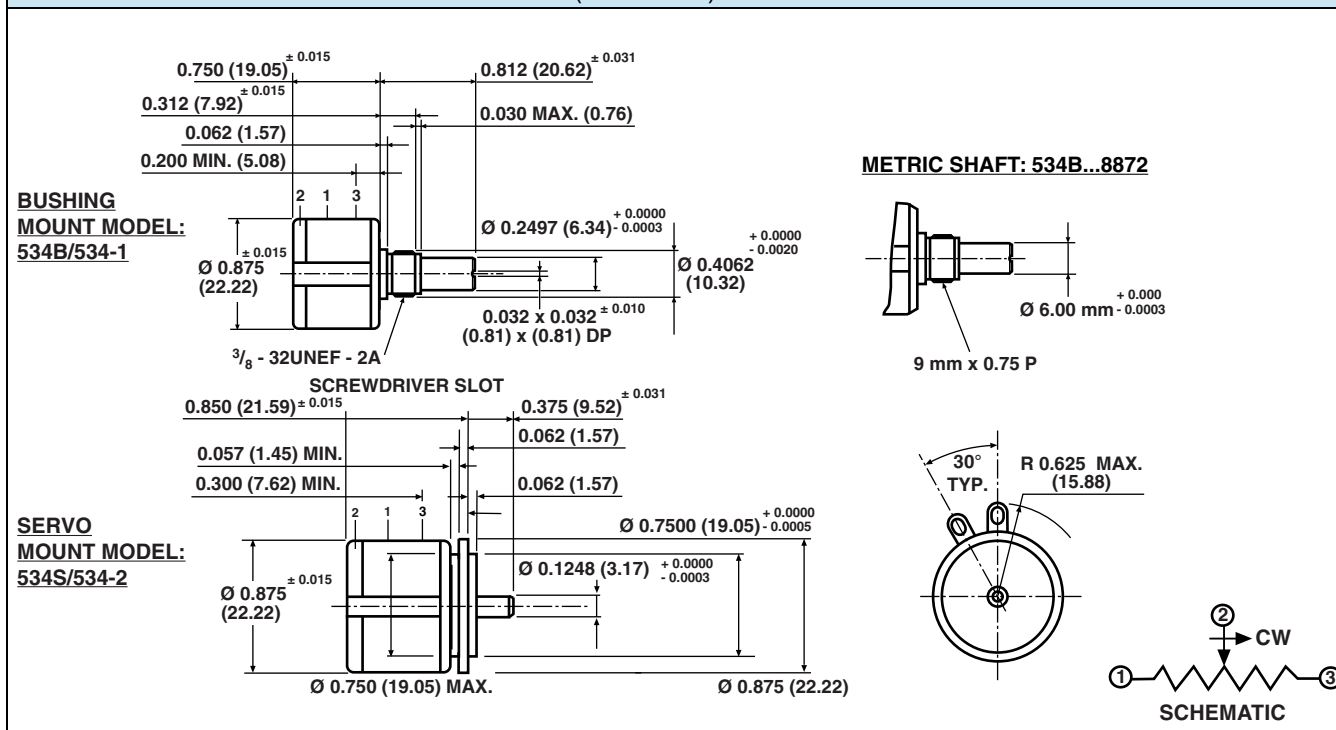
| | |
|-------------------------|--|
| 533 (Ω) | 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K |
| 534 (Ω) | 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K |
| 535 (Ω) | 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K |

ORDERING INFORMATION

| | | | | | | | | | | | | | | | |
|-------------------|------------------------|--------|--|---|--|---|--------------------------|---|-----------------------------|---|----------------------|---|---|---|---|
| 5 | 3 | 4 | B | 2 | 1 | 0 | 3 | 2 | 0 | 3 | J | C | 4 | 7 | 0 |
| MODEL | STYLE | GANGS | OHMIC VALUE GANGS N° 1 | | OHMIC VALUE GANGS N° 2 | | TOLERANCE ON OHMIC VALUE | | LINEARITY | | SPECIAL REQUEST | | | | |
| 533 534 535 | B: bushing S: servo | 1 2 | 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 | | J = ± 5 % F = ± 1 % | | C = ± 0.25 % L = ± 0.2 % | | Special code xxxx | | | | |

PART NUMBER DESCRIPTION (for information only)

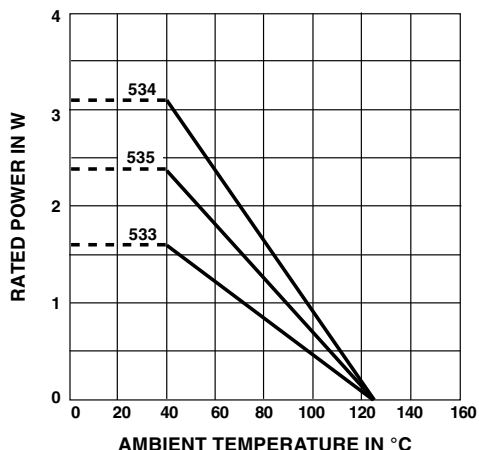
| | | | | | |
|-------|--------------|-------|------------------------|------------------------|---------|
| 534- | 1 | 2 | 103 | 203 | xxxx |
| MODEL | STYLE | GANGS | OHMIC VALUE GANGS N° 1 | OHMIC VALUE GANGS N° 2 | SPECIAL |
| | B: 1 S: 2 | | | | |

SINGLE SECTION DIMENSIONS in inches (millimeters)


Mounting hardware, washer and panel nut, nickel plated

**MECHANICAL SPECIFICATIONS**

| PARAMETER | | |
|---|--|---|
| Bearing type | Bushing: sleeve bearing | Servo: ball bearing |
| Torque (maximums): starting Section 1 Section 2 | 534 0.5 oz.-in (36 g-cm) 0.9 oz.-in (65 g-cm) | 533/535 0.7 oz.-in (50 g-cm) 1.1 oz.-in (79 g-cm) |
| Torque (maximums): running Section 1 Section 2 | 534 0.4 oz.-in (28.80 g-cm) 0.7 oz.-in (50.40 g-cm) | 533/535 0.6 oz.-in (43.20 g-cm) 0.9 oz.-in (64.8 g-cm) |
| Weight (maximums) Section 1 Section 2 | 0.75 oz. (21.26 g) 1.25 oz. (35.44 g) | |
| Stop strength | 75 oz.-in (static) (5.4 kg-cm) | |
| Ganging | 2 sections maximum | |

POWER RATING CHART**ENVIRONMENTAL SPECIFICATIONS**

| | |
|--|--|
| Vibration | 15 g thru 2000 Hz |
| Shock | 50 g |
| Rotational life (shaft revolution) 533 534 534 (servo) 535 | 300 000 1 000 000 > 1 000 000 500 000 |
| 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

RESISTANCE ELEMENT DATA

| RESISTANCE VALUE (Ω) | | | RESOLUTION (%) | | | OHMS PER TURN | | | MAXIMUM CURRENT AT 70 °C AMBIENT (mA) | | | MAXIMUM VOLTAGE ACROSS COIL (V) | | |
|-------------------------|------|-----|-------------------|-------|-------|---------------|--------|--------|---|-------|-------|---------------------------------------|-------|-------|
| 533 | 534 | 535 | 533 | 534 | 535 | 533 | 534 | 535 | 533 | 534 | 535 | 533 | 534 | 535 |
| 50 | - | 50 | 0.149 | - | 0.120 | 0.0746 | - | 0.0603 | 141.0 | - | 173.0 | 7.07 | - | 8.66 |
| 100 | 100 | 100 | 0.111 | 0.060 | 0.075 | 0.1114 | 0.0603 | 0.0746 | 100.0 | 141.0 | 122.0 | 10.0 | 14.1 | 12.2 |
| 200 | 200 | 200 | 0.097 | 0.037 | 0.061 | 0.1954 | 0.0746 | 0.1220 | 70.7 | 100.0 | 86.6 | 14.1 | 20.0 | 17.3 |
| 500 | 500 | 500 | 0.069 | 0.031 | 0.049 | 0.3424 | 0.1520 | 0.2459 | 44.7 | 63.2 | 54.7 | 22.4 | 31.6 | 27.4 |
| 1K | 1K | 1K | 0.063 | 0.025 | 0.041 | 0.6331 | 0.2459 | 0.4113 | 31.6 | 44.7 | 38.7 | 31.6 | 44.7 | 38.7 |
| 2K | 2K | 2K | 0.041 | 0.021 | 0.031 | 0.8206 | 0.4113 | 0.6331 | 22.4 | 31.6 | 27.4 | 44.7 | 63.2 | 54.8 |
| 5K | 5K | 5K | 0.044 | 0.016 | 0.034 | 2.2330 | 0.8206 | 1.7230 | 14.1 | 20.0 | 17.3 | 70.7 | 100.0 | 86.6 |
| 10K | 10K | 10K | 0.034 | 0.017 | 0.030 | 3.4510 | 1.7230 | 3.0160 | 10.0 | 14.1 | 12.2 | 100.0 | 141.0 | 122.0 |
| 20K | 20K | 20K | 0.031 | 0.015 | 0.020 | 6.1790 | 3.0160 | 3.9910 | 7.07 | 10.0 | 8.66 | 141.0 | 200.0 | 173.0 |
| - | 50K | 50K | - | 0.009 | 0.015 | - | 4.6690 | 7.4560 | - | 6.32 | 5.47 | - | 316.0 | 274.0 |
| - | 100K | - | - | 0.007 | - | - | 7.4560 | - | - | 4.47 | - | - | 447.0 | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



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