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Vishay Spectrol

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



DESIGN SUPPORT TOOLS

click logo to get started



| QUICK REFERENCE DATA | | | | | | |
|----------------------|-----------------------------------------|--|--|--|--|--|
| Sensor type | ROTATIONAL, multi turn wirewound | | | | | |
| Output type | Output by turrets | | | | | |
| Market appliance | Industrial | | | | | |
| Dimensions | ⁷ / ₈ " (22.2 mm) | | | | | |

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 <u>www.vishay.com/doc?99912</u>

| ELECTRICAL SPECIFICATIONS | | | | | | | | | |
|--------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------|------------------------------|--|--|--|--|--|--|
| PARAMETER | MODEL 533 | MODEL 534 | MODEL 535 | | | | | | |
| Resistance range - standard values | 50 Ω to 20 k Ω | 100 Ω to 100 kΩ | 50 Ω to 50 k Ω | | | | | | |
| Capability range | 5 Ω to 60 k Ω | 10 Ω to 200 kΩ | 5Ω to 100 k Ω | | | | | | |
| Standard tolerance | ±5% | ± 5 % | ±5% | | | | | | |
| Linearity (independent) | ± 0.25 % | ± 0.25 % | ± 0.25 % | | | | | | |
| Noise | 100 Ω ENR | 100 Ω ENR | 100 Ω ENR | | | | | | |
| Rotation (electrical and mechanical) | 1080° +10° -0° | 3600° +10° -0° | 1800° +10° -0° | | | | | | |
| Power rating (at 70 °C) | 1.0 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 |

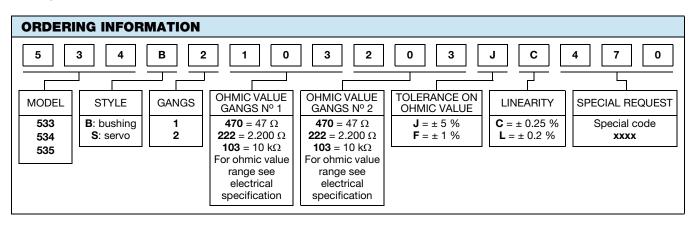
| RESISTANCE VALUES | | | | | | | | |
|-------------------|------------------------------------------------|--|--|--|--|--|--|--|
| 533 (Ω) | 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K | | | | | | | |
| 534 (Ω) | 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K | | | | | | | |
| 535 (Ω) | 50, 100, 200, 500,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

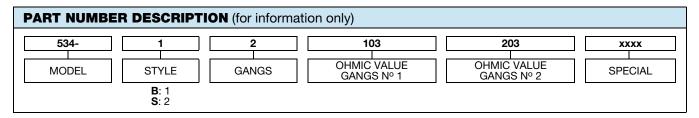
Revision: 17-May-2018

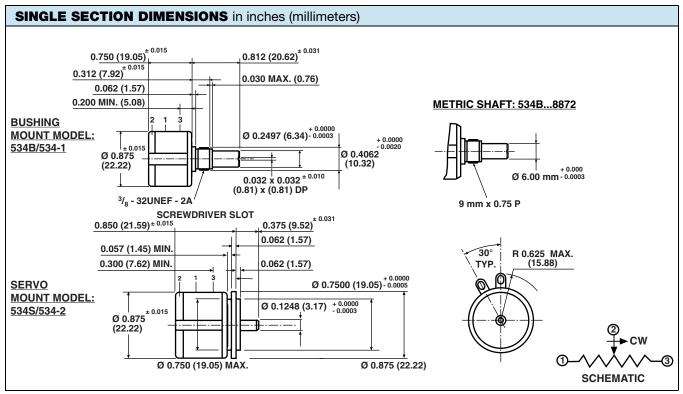
1 For technical questions, contact: <u>sferprecisionpot@vishay.com</u>



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Mounting hardware, washer and panel nut, nickel plated

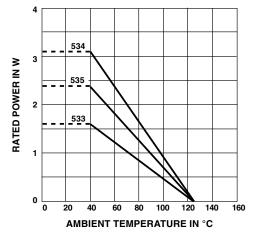
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| MECHANICAL SPECIFICATIONS | | | | | | | |
|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------|--|--|--|--|--|
| PARAMETER | | | | | | | |
| Bearing type | Bushing: sleeve bearing Servo: ball bearing | | | | | | |
| Torque (maximums): starting Section 1 Section 2 | 534 0.5 ozin (36 g-cm) 0.9 ozin (65 g-cm) | 533/535 0.7 ozin (50 g-cm) 1.1 ozin (79 g-cm) | | | | | |
| Torque (maximums): running Section 1 Section 2 | 534 0.4 ozin (28.80 g-cm) 0.7 ozin (50.40 g-cm) | 533/535 0.6 ozin (43.20 g-cm) 0.9 ozin (64.8 g-cm) | | | | | |
| Weight (maximums) Section1 Section 2 | 0.75 oz. (21.26 g) 1.25 oz. (35.44 g) | | | | | | |
| Stop strength | 75 ozin (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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