



# 7/8" (22mm) Precision Wirewound Potentiometer



### ADDITIONAL FEATURES

- Special Resistance Tolerances to 1%
- Rear Shaft Extensions and Support Bearing
- Non Turn Lug
- Dual Gang Configuration and Concentric Shafts
- High Torque and Center Tap
- Special Markings and Front Shaft Extensions
- Servo Unit available and Slipping Clutch

**Note:** The color of this product is changing to blue, during the internal period you may receive either black or blue.

| ELECTRICAL SPECIFICATIONS          |  |               |             |
|------------------------------------|--|---------------|-------------|
| PARAMETER                          | MODEL 533  | MODEL 534     | MODEL 535   |
| Resistance Range                   |  |               |             |
| Standard Values                    | 50Ω to 20KΩ  | 100Ω to 100KΩ | 50Ω to 50KΩ |
| Capability Range                   | 5Ω to 60KΩ   | 10Ω to 200KΩ  | 5Ω to 100KΩ |
| Standard Tol                       | ± 5%   | ± 5%          | ± 5%        |
| Linearity (Independent)            | ± 0.25%  | 0.20%         | ± 0.25%     |
| Noise                              | 100Ω ENR   | 100Ω ENR      | 100Ω ENR    |
| Rotation (Electrical & Mechanical) | 1080° + 10%  | 3600° + 10%   | 1800° ± 10° |
| Power Rating (@ 70°C)              | 1.0 watts  | 2.0 watts     | 1.5 watts   |
| Insulation Resistance              | 1000MΩ minimum 500VDC  |               |             |
| Dielectric Strength                | 1000V <sub>RMS</sub> minimum 60Hz                                      |               |             |
| Absolute Minimum Resistance        | Not to exceed linearity x total resistance or 1Ω, whichever is greater |               |             |
| Tempco                             | 20ppm/°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 ± 2°             |               |             |
| Taps                               | Center tap only  |               |             |

| MARKING             |   |
|---------------------|---|
| Unit Identification | Manufacturer's name and model number, resistance value and tolerance, linearity specification date code and terminal identification |

| RESISTANCE VALUES |   |
|-------------------|---|
| Ohms              |   |
| 533:              | 50R, 100R, 200R, 500R, 1K, 2K, 5K, 10K, 20K       |
| 534:              | 100R, 200R, 500R, 1K, 2K, 5K, 10K, 20K, 50K, 100K |
| 535:              | 50R, 100R, 200R, 500R, 1K, 2K, 5K, 10K, 20K, 50K  |

| ORDERING INFORMATION  |                        |                                      |                     |
|---|------------------------|--------------------------------------|---------------------|
| The Models 533 (3 turn), 534 (10 turn) and 535 (5 turn) can be ordered by stating |                        |                                      |                     |
| <b>534</b>  | <b>1</b>               | <b>2</b>                             | <b>XXX</b>          |
| MODEL   | MOUNTING               | NUMBER OF SECTIONS                   | RESISTANCE EIA CODE |
|   | 1. Bushing<br>2. Servo | 1. Single section<br>2. Dual section |                     |

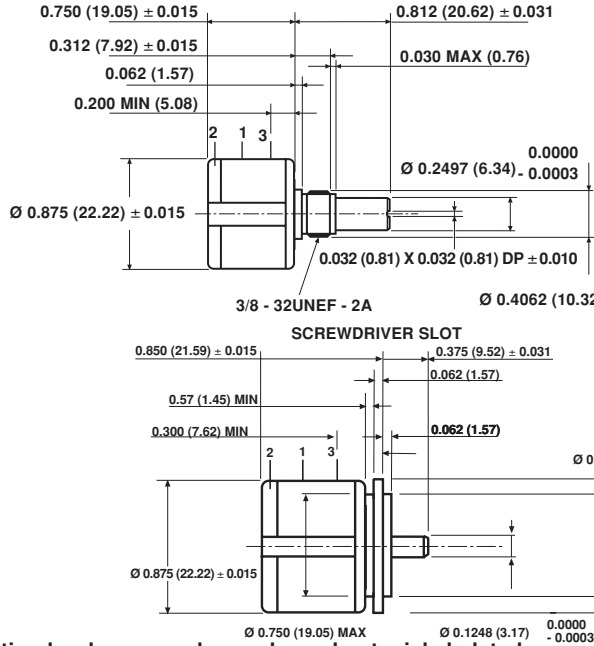
# Model 533, 534, 535



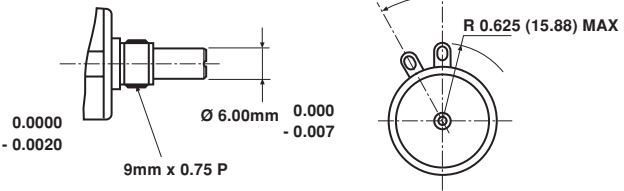
Vishay Spectrol

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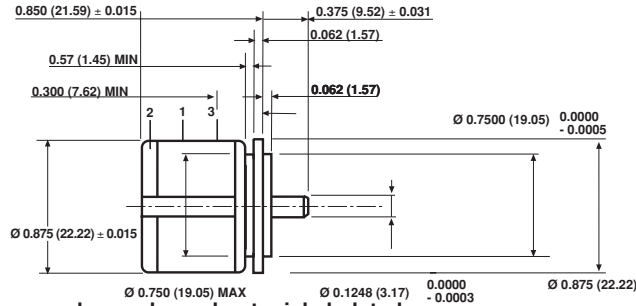
## SINGLE SECTION DIMENSIONS in millimeters



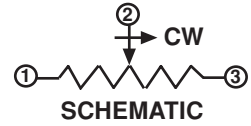
### METRIC



### SCREWDRIVER SLOT



Mounting hardware, washer and panel nut, nickel plated



## MECHANICAL SPECIFICATIONS

| PARAMETER                   |                                     |                             |
|-----------------------------|-------------------------------------|-----------------------------|
| Bearing Type                | Bushing: Sleeve bearing Servo: Ball |                             |
| Torque (maximums): starting | <b>534</b>                          | <b>533/535</b>              |
| Section 1                   | 0.5 oz - in (36gm - cms)            | 0.7 oz - in (50gm - cms)    |
| Section 2                   | 0.9 oz - in (65gm - cms)            | 1.1 oz - in (79gm - cms)    |
| Torque (maximums): running  | <b>534</b>                          | <b>533/535</b>              |
| Section 1                   | 0.4 oz - in (28.80gm - cms)         | 0.6 oz - in (43.20gm - cms) |
| Section 2                   | 0.7 oz - in (50.40gm - cms)         | 0.9 oz - in (64.8gm - cms)  |
| Weight (maximums)           | 0.75 oz (21.26gm)                   |                             |
| Section 1                   | 1.25 oz (35.44gm)                   |                             |
| Section 2                   |                                     |                             |
| Stop Strength               | 75 oz - in (static) (5.4Kg - cm)    |                             |
| Ganging                     | 2 sections maximum                  |                             |

## POWER RATING CHART



## ENVIRONMENTAL SPECIFICATIONS

|                                    |                   |
|------------------------------------|-------------------|
| Vibration                          | 15g thru 2000Hz   |
| Shock                              | 50g               |
| Rotational Life (Shaft Revolution) |                   |
| 533                                | 300,000           |
| 534                                | 1,000,000         |
| 534 (Servo)                        | > 1,000,000       |
| 535                                | 500,000           |
| Load Life                          | 900 Hours         |
| Temperature Range                  | - 55°C to + 125°C |



| <b>RESISTANCE ELEMENT DATA</b> |      |     |              |       |       |               |        |        |                                  |       |       |                             |       |       |
|--------------------------------|------|-----|--------------|-------|-------|---------------|--------|--------|----------------------------------|-------|-------|-----------------------------|-------|-------|
| RESISTANCE VALUE ( $\Omega$ )  |      |     | RESOLUTION % |       |       | OHMS PER TURN |        |        | MAX CURRENT AT 70°C AMBIENT (mA) |       |       | MAX 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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