

### 7/8" (22.2 mm) Multiturn Wirewound 533: 3 Turns/534: 10 Turns/535: 5 Turns



#### Note

- The color of this product may either be black (US market) or blue (other regions)

#### FEATURES

- Bushing and servo mount designs available
- 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



**RoHS**  
COMPLIANT

| ELECTRICAL SPECIFICATIONS            |   |                   |                   |
|--------------------------------------|---|-------------------|-------------------|
| PARAMETER                            | MODEL 533   | MODEL 534         | MODEL 535         |
| Resistance Range - Standard Values   | 50 Ω to 20 kΩ   | 100 Ω to 100 kΩ   | 50 Ω to 50 kΩ     |
| Capability Range                     | 5 Ω to 60 kΩ  | 10 Ω to 200 kΩ    | 5 Ω to 100 kΩ     |
| 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°<br>-0°   | 3600° +10°<br>-0° | 1800° +10°<br>-0° |
| Power Rating (at 70 °C)              | 1.0 W   | 2.0 W             | 1.5 W             |
| Insulation Resistance                | 1000 MΩ minimum 500 V <sub>DC</sub>                                     |                   |                   |
| Dielectric Strength                  | 1000 V <sub>RMS</sub> 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 ± 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/DESCRIPTION   |                        |                    |                          |                          |                          |                |                  |             |
|--|------------------------|--------------------|--------------------------|--------------------------|--------------------------|----------------|------------------|-------------|
| The Models 533 (3 turns), 534 (10 turns) and 535 (5 turns) can be ordered by stating |                        |                    |                          |                          |                          |                |                  |             |
| 534  | B                      | 2                  | 10K                      | 20K                      | 5 %                      | C              | BO10             | e4          |
| MODEL  | MOUNTING               | NUMBER OF SECTIONS | OHMIC VALUE SECTION N° 1 | OHMIC VALUE SECTION N° 2 | TOLERANCE ON OHMIC VALUE | LINEARITY      | PACKAGING        | LEAD FINISH |
|  | B: Bushing<br>S: Servo |                    |                          |                          |                          | ± 0.25 % (STD) | Box of 10 pieces |             |

| SAP PART NUMBERING GUIDELINES |                        |                    |                          |                          |                          |   |                  |
|-------------------------------|------------------------|--------------------|--------------------------|--------------------------|--------------------------|---|------------------|
| 534                           | B                      | 2                  | 103                      | 203                      | J                        | C   | B10              |
| MODEL                         | STYLE                  | NUMBER OF SECTIONS | OHMIC VALUE SECTION N° 1 | OHMIC VALUE SECTION N° 2 | TOLERANCE ON OHMIC VALUE | LINEARITY   | PACKAGING        |
|                               | B: Bushing<br>S: Servo |                    | 103 = 10K                | 203 = 20K                | J: ± 5 %<br>F: ± 1 %     | C: ± 0.25 %<br>CUSTOM:<br>L: ± 0.20 %<br>D: ± 0.1 % | Box of 10 pieces |

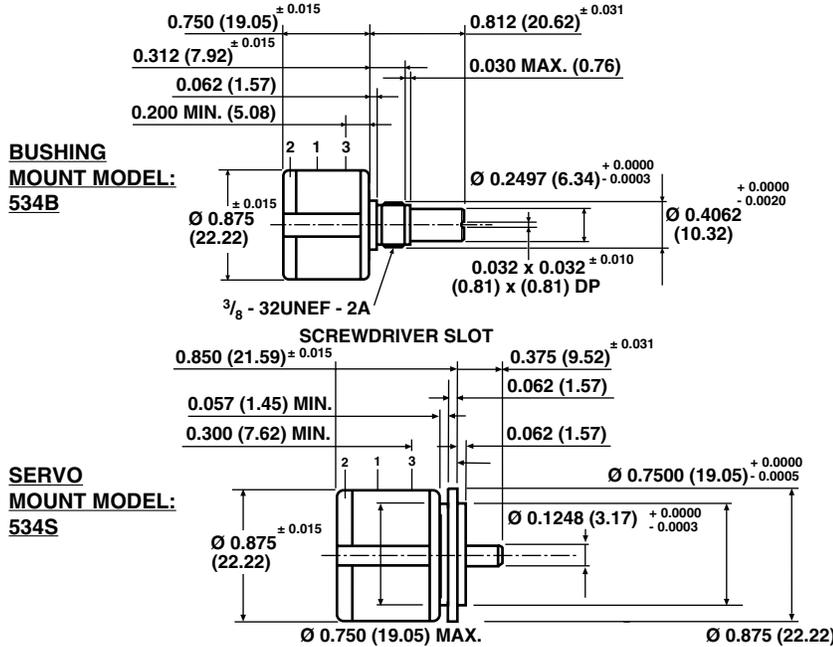
# Model 533, 534, 535



Vishay Spectrol

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

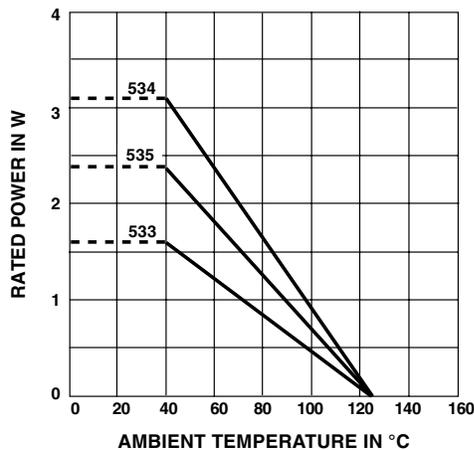
## SINGLE SECTION DIMENSIONS in inches (millimeters)



Mounting hardware, washer and panel nut, nickel plated

| MECHANICAL SPECIFICATIONS   |   |   |
|-----------------------------|---|---|
| PARAMETER                   |   |   |
| Bearing Type                | Bushing: Sleeve bearing                   | Servo: Ball bearing                           |
| Torque (Maximums): Starting |   |   |
| Section 1                   | <b>534</b><br>0.5 oz. - in (36 g - cm)    | <b>533/535</b><br>0.7 oz. - in (50 g - cm)    |
| Section 2                   | 0.9 oz. - in (65 g - cm)                  | 1.1 oz. - in (79 g - cm)                      |
| Torque (Maximums): Running  |   |   |
| Section 1                   | <b>534</b><br>0.4 oz. - in (28.80 g - cm) | <b>533/535</b><br>0.6 oz. - in (43.20 g - cm) |
| Section 2                   | 0.7 oz. - in (50.40 g - cm)               | 0.9 oz. - in (64.8 g - cm)                    |
| Weight (Maximums)           |   |   |
| Section 1                   | 0.75 oz. (21.26 g)                        |   |
| Section 2                   | 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                                | 300 000             |
| 534                                | 1 000 000           |
| 534 (Servo)                        | > 1 000 000         |
| 535                                | 500 000             |
| Load Life                          | 900 h               |
| Temperature Range                  | - 55 °C to + 125 °C |



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Vishay Spectrol

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