

BOURNS®

Features

- Bushing mount
- Optional center tap and rear shaft extension
- Optional AR lug feature
- Gangable with common or concentric shafts

- High torque available
- Optional 0.1 % linearity
- Non-standard features and specifications available

3540/3541 - Precision Potentiometer

Electrical Characteristics¹ 3540 Wirewound Element 3541 Hybritron® Element

| | | |
|---|--|-----------------------|
| Standard Resistance Range | 100 to 100 K ohms | 1 K to 100 K ohms |
| Total Resistance Tolerance | ±5 % | ±10 % |
| Independent Linearity | ±0.25 % | ±0.25 % |
| Effective Electrical Angle | 3600° +10°, -0° | 3600° +10°, -0° |
| Absolute Minimum Resistance/ | 1 ohm or 0.1 % maximum | 0.2 % maximum |
| Minimum Voltage | (whichever is greater) | |
| Noise/Output Smoothness | 100 ohms ENR maximum | 0.1 % maximum |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301) | 1,000 VAC minimum | |
| Sea Level | 1,000 VAC minimum | |
| Power Rating (Voltage Limited By Power Dissipation or 447 VAC, Whichever Is Less) | | |
| +70 °C | 2 watts | 2 watts |
| +125 °C | 0 watt | 0 watt |
| Insulation Resistance (500 VDC) | 1,000 megohms minimum | 1,000 megohms minimum |
| Resolution | See recommended part nos.Essentially infinite | |

Environmental Characteristics¹

| | | |
|--|--|--|
| Operating Temperature Range | +1 °C to +125 °C | +1 °C to +125 °C |
| Storage Temperature Range | -55 °C to +125 °C | -55 °C to +125 °C |
| Temperature Coefficient Over | | |
| Storage Temperature Range ² | ±50 ppm/°C maximum/unit | ±100 ppm/°C maximum/unit |
| Vibration | 15 G | 15 G |
| Wiper Bounce | 0.1 millisecond maximum | 0.1 millisecond maximum |
| Shock | 50 G | 50 G |
| Wiper Bounce | 0.1 millisecond maximum | 0.1 millisecond maximum |
| Load Life | 1,000 hours, 2 watts | 1,000 hours, 2 watts |
| Total Resistance Shift | ±2 % | ±5 % |
| Rotational Life (No Load) | 1,000,000 shaft revolutions ² | 5,000,000 shaft revolutions ² |
| Total Resistance Shift | ±5 % maximum | ±5 % maximum |
| Moisture Resistance (MIL-STD-202, Method 103, Condition B) | | |
| Total Resistance Shift | ±2 % maximum | ±5 % maximum |
| IP Rating | IP 40 | IP 40 |

Mechanical Characteristics¹

| | |
|----------------------------------|--|
| Stop Strength | 53 N-cm (75 oz-in.) minimum |
| Mechanical Angle | 3600° +10°, -0° |
| Torque (Starting & Running) | 0.35 N-cm (0.5 oz-in.) max. |
| Mounting | 170-200 N-cm (15-18 lb.-in.) max. |
| Shaft Runout | 0.08 mm (0.003 in.) T.I.R. |
| Lateral Runout | 0.13 mm (0.005 in.) T.I.R. |
| Shaft End Play | 0.30 mm (0.012 in.) T.I.R. |
| Shaft Radial Play | 0.08 mm (0.003 in.) T.I.R. |
| Pilot Diameter Runout | 0.08 mm (0.003 in.) T.I.R. |
| Backlash | 1.0° maximum |
| Weight | Approximately 21 gm |
| Terminals | Gold-plated solder lugs |
| Soldering Condition | Recommended hand soldering using Sn95/Ag5 no clean solder, 0.025" wire diameter. Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux. |
| Marking | Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code |
| Ganging (Multiple Section Pots.) | 2 cups maximum |
| Hardware | One lockwasher (H-37-2) and one mounting nut (H-38-2) is shipped with each potentiometer. |

¹At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

²Consult manufacturer for complete specification details.

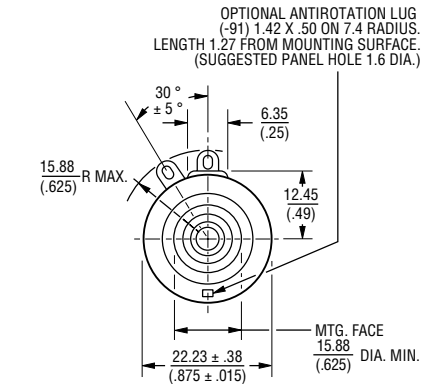
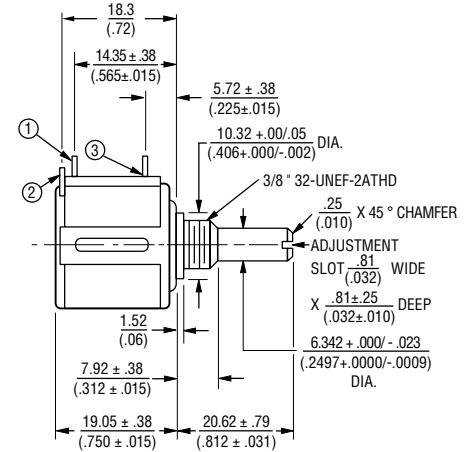
Recommended Part Numbers

| Part Number | Resistance | Resolution |
|-------------|------------|------------|
| 3540S-1-201 | 200 | .042 |
| 3540S-1-501 | 500 | .031 |
| 3540S-1-102 | 1,000 | .027 |
| 3540S-1-202 | 2,000 | .021 |
| 3540S-1-502 | 5,000 | .021 |
| 3540S-1-103 | 10,000 | .019 |
| 3540S-1-203 | 20,000 | .014 |
| 3540S-1-503 | 50,000 | .011 |
| 3540S-1-104 | 100,000 | .008 |

| Part Number | Resistance |
|-------------|------------|
| 3541H-1-102 | 1,000 |
| 3541H-1-202 | 2,000 |
| 3541H-1-502 | 5,000 |
| 3541H-1-103 | 10,000 |
| 3541H-1-203 | 20,000 |
| 3541H-1-503 | 50,000 |
| 3541H-1-104 | 100,000 |

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

3540S-1/3541H-1

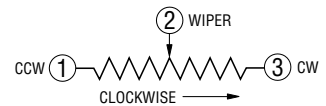


TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: XX ± .25 (0.010), XXX ± .13 (0.005)

FRACTIONS: ±1/64

DIMENSIONS: MM (IN.)



BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.
FOR SERVO MOUNT VERSION AND OTHER OPTIONS CONSULT FACTORY.

REV. 04/05