



7/8", 1 1/16", 2" Ø SINGLE TURN SERVO MOUNT POTENTIOMETERS CONDUCTIVE PLASTIC ELEMENT

- Extended rotational life
- Ball bearings, front and rear
- Extended rotational life
- Housing, anodized aluminium
- Ganging up to 10 cups
- Terminals, gold plated turrets
- Performance guaranteed by the Bourns Reliability Program
- Custom design capability is available to satisfy your most demanding and difficult special requirements

| STANDARD SPECIFICATIONS | 7/8" Ø MODEL 6534 | 1 1/16" Ø MODEL 6544 | 2" Ø MODEL 6574 |
|--|--|------------------------------|---|
| Electrical Characteristics | | | |
| Resistance Range | 1 KΩ to 100 KΩ | | |
| Resistance Tolerance | ±10% | | |
| Linearity (Independent) | ±0.5% | ±0.5% | ±0.25% |
| Effective Electrical Angle | 320° ±3° | 340° ±3° | 350° ±3° |
| End Voltage | MIL-R-39023 | | |
| Power Rating | 70 °C 125 °C | 1.0 W | 1.25 W 2.0 W |
| Output Smoothness | 0 W 0.1% | | |
| Dielectric Strength | Sea Level 70,000 feet | 750 V ~ min. 250 V ~ min. | 750 V ~ min. 250 V ~ min. 1000 V ~ min. 350 V ~ min. |
| Insulation Resistance 500 V = | 1000 Meg. Ω min. | | |
| Environmental Characteristics | | | |
| Test Procedures per: | MIL-R-39023 | | |
| Operating Temperature Range | -65 °C to +125 °C | | |
| Temperature Coefficient | MIL-R-39023, Symbol A | | |
| Humidity | MIL-R-39023 moisture resistance | | |
| Vibration | MIL-R-39023, 15 G | | |
| Wiper Bounce | 0.1 millisecond max. | | |
| Wiper Shift | 1.0% max. | | |
| Shock | MIL-R-39023, 50 G | | |
| Wiper Bounce and Wiper Shift | Same as Vibration | | |
| Sand, Dust, Fungus | MIL-E-5272 | | |
| Salt Spray | MIL-R-39023 | | |
| Mechanical and Physical Characteristics | | | |
| Mechanical Angle | Continuous Rotation | | |
| Shaft Runout | MIL-R-12934: 0.001" or 0.002" per inch shaft length | | |
| Lateral Runout | 0.002 in. T.I.R. | | |
| Pilot Diameter Runout | 0.001 in. T.I.R. | | |
| Shaft End Play | 0.005 in. T.I.R. | | |
| Shaft Radial Play | 0.003 in. T.I.R. | | |
| Backlash | 0.1% max. | | |
| Rotational Life, shaft revolutions | MIL-R-39023, Res. Change 10% max., Symbol 4 = 25 x 10 ⁶ Rev. | | |
| Torque, Starting and Running | 0.25 oz.-in. max. | 0.25 oz.-in. max. | 0.75 oz.-in. max. |
| Markings | Part number, resistance value and tolerance, linearity tolerance, wiring diagram, date code. | | |

Specifications are subject to change without notice.

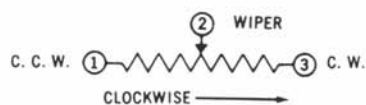
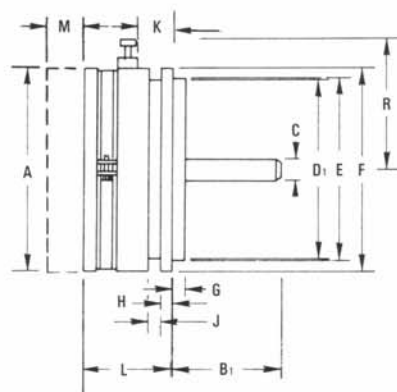
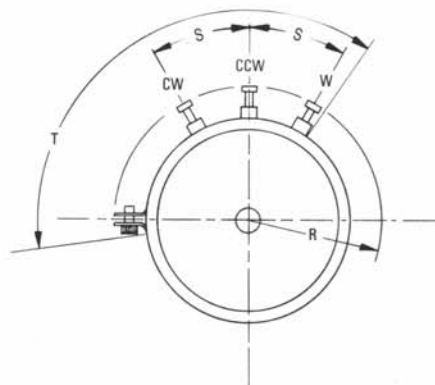
ORDERING INFORMATION

| Resistance Ω | $7/8"$ ϕ | $1\frac{1}{16}"$ ϕ^* | $2"$ ϕ^* |
|---------------------|---------------|---------------------------|---------------|
| 1,000 | ● 6534S-1-102 | 6544S-1-102 | ● 6574S-1-102 |
| 2,000 | 6534S-1-202 | 6544S-1-202 | 6574S-1-202 |
| 5,000 | 6534S-1-502 | 6544S-1-502 | ● 6574S-1-502 |
| 10,000 | ● 6534S-1-103 | ● 6544S-1-103 | ● 6574S-1-103 |
| 20,000 | 6534S-1-203 | 6544S-1-203 | 6574S-1-203 |
| 50,000 | 6534S-1-503 | 6544S-1-503 | 6574S-1-503 |
| 100,000 | 6534S-1-104 | 6544S-1-104 | 6574S-1-104 |

● Preferred resistance values

*The last three digits of the part number represent the resistance value in standard code.

| | | 6534 | 6544 | 6574 |
|---|----------------|------------------------|------------------------|------------------------|
| DIMENSIONS (INCH) | A | 0.875" ϕ | 1.062" ϕ | 2.00" ϕ |
| Shaft Length | B ¹ | 0.5 \pm 0.031 | 0.5 \pm 0.031 | 0.625 \pm 0.031 |
| Shaft ϕ | C | 0.1248 + 0, - 0.0003 | 0.1248 + 0, - 0.0003 | 0.2497 + 0, - 0.0003 |
| Pilot ϕ | D ₁ | 0.75 + 0, - 0.0005 | 0.9688 + 0, - 0.0005 | 1.875 + 0, - 0.001 |
| Pilot Thickness | G | 0.062 \pm 0.005 | 0.062 \pm 0.005 | 0.062 \pm 0.005 |
| Groove ϕ | E | 0.78 \pm 0.005 | 0.968 \pm 0.005 | 1.875 max. |
| Groove Width | J | 0.057 min. | 0.057 min. | 0.080 min. |
| Flange ϕ | F | 0.875 + 0.005, - 0.010 | 1.062 + 0.005, - 0.010 | 2.000 + 0.005, - 0.010 |
| Flange Thickness | H | 0.062 \pm 0.005 | 0.062 \pm 0.005 | 0.093 \pm 0.005 |
| Terminal Clearance | K | 0.200 min. | 0.200 min. | 0.250 min. |
| Terminal Radius | R | 0.600 max. | 0.700 max. | 1.165 max. |
| Terminal Spacing | S | 30° \pm 3° | 30° \pm 3° | 15° \pm 3° |
| Terminal-C/B Envelope | T | 140° + 0° - 20° | 135° + 0° - 20° | 90° + 0° - 20° |
| Housing Length, Std. | L | 0.475 \pm 0.015 | 0.475 \pm 0.015 | 0.600 \pm 0.031 |
| For each additional cup add to the above dimensions | M | 0.200 max. | 0.200 max. | 0.200 max. |



Specifications are subject to change without notice.



BOURNS®

Features

- Servo mount style
- Shaft supported by front and rear precision ball bearings
- Non-standard features and specifications available
- Gangable up to 10 cups

6574 - Precision Potentiometer

Electrical Characteristics¹

| | |
|---|--|
| Standard Resistance Range..... | 1 K to 100 K ohms |
| Total Resistance Tolerance | ±10 % |
| Independent Linearity | ±0.25 % |
| Effective Electrical Angle | 350 ° ±2 ° |
| End Voltage | 0.1 % maximum (0.2 % at 2 K ohms, 0.4 % at 1 K ohms) |
| Output Smoothness | 0.1 % |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301) | |
| Sea Level | 1,000 VAC minimum |
| Power Rating (Voltage Limited By Power Dissipation or 350 VAC, Whichever is Less) | |
| +70 °C | 2 watts |
| +125 °C | 0 watt |
| Insulation Resistance (500 VDC)..... | 1,000 megohms minimum |
| Resolution | Essentially infinite |

Environmental Characteristics¹

| | |
|---|------------------------------|
| Operating Temperature Range..... | +1 °C to +125 °C |
| Storage Temperature Range..... | -65 °C to +125 °C |
| Temperature Coefficient Over Storage Temperature Range..... | ±500 ppm/°C maximum |
| Vibration | 15 G |
| Wiper Bounce | 0.1 millisecond maximum |
| Total Resistance Shift | ±2 % maximum |
| Shock | 60 G |
| Wiper Bounce | 0.1 millisecond maximum |
| Load Life | 1,000 hours, 1.5 watts |
| Total Resistance Shift | ±10 % maximum |
| Rotational Life (No Load)..... | 25,000,000 shaft revolutions |
| Total Resistance Shift | ±10 % maximum |
| Moisture Resistance (MIL-STD-202, Method 103, Condition B) | |
| Total Resistance Shift | ±10 % maximum |
| IP Rating | IP 40 |

Mechanical Characteristics¹

| | |
|---|---|
| Mechanical Angle | Continuous |
| Torque (Starting & Running) | 0.53 N-cm (0.75 oz.-in.) maximum |
| Shaft Runout..... | 0.025 mm (0.001 in.) T.I.R. |
| Shaft End Play | 0.08 mm (0.003 in.) T.I.R. |
| Shaft Radial Play | 0.08 mm (0.003 in.) T.I.R. |
| Pilot Diameter Runout..... | 0.025 mm (0.001 in.) T.I.R. |
| Lateral Runout | 0.08 mm (0.003 in.) T.I.R. |
| Backlash | 0.1 ° maximum |
| Weight | 89 gm |
| Terminals..... | Side exit turret terminals |
| 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 Potentiometers) | 10 cup maximum |
| Hardware | No hardware included |

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

Recommended Part Numbers

| Part Number* | Resistance (Ω) |
|--------------------|----------------|
| 6574S-1-102 | 1,000 |
| 6574S-1-502 | 5,000 |
| 6574S-1-103 | 10,000 |

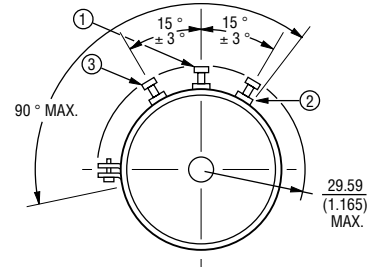
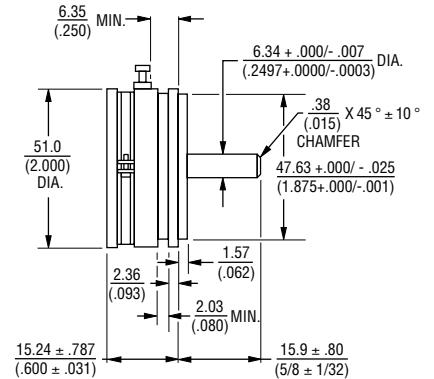
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FOR OTHER OPTIONS CONSULT FACTORY.

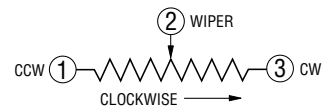
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Product Dimensions



TOLERANCES: EXCEPT WHERE NOTED
 DECIMALS: XX ± $\frac{.51}{(.02)}$, XXX ± $\frac{.13}{(.005)}$
 FRACTIONS: ±1/64
 DIMENSIONS: $\frac{MM}{(IN.)}$





Features

- Servo mount style
- Shaft supported by front and rear precision ball bearings
- Non-standard features and specifications available
- Gangable up to 10 cups

6574 - Precision Potentiometer

Electrical Characteristics¹

| | |
|--|---|
| Standard Resistance Range | 1K to 100K ohms |
| Resistance Tolerance | ±10% |
| Independent Linearity | ±0.25% |
| Effective Electrical Angle | 350° ±2° |
| Minimum Voltage | 0.1% maximum (0.2% at 2K ohms, 0.4% at 1K ohms) |
| Resolution | Essentially infinite |
| Power Rating | |
| (Voltage Limited By Power Dissipation or 350 VAC, Whichever is Less) | |
| +70°C | 2 watts |
| +125°C | 0 watt |
| Output Smoothness | 0.1% |
| Dielectric Withstanding Voltage | MIL-STD-202, Method 301 |
| Sea Level | 1,000 VAC minimum |
| 70,000 Feet | 350 VAC minimum |
| Insulation Resistance (500 VDC) | 1,000 megohms minimum |

Environmental Characteristics¹

| | |
|--------------------------------------|--------------------------------------|
| Operating Temperature | |
| Static Operation Temperature Range | -65°C to +125°C |
| Dynamic Operation Temperature Range | +1°C to +125°C |
| Temperature Coefficient ² | ±500ppm/°C maximum |
| Moisture Resistance | MIL-STD-202, Method 103, Condition B |
| Total Resistance Shift | ±10% maximum |
| Vibration | 15G |
| Wiper Bounce | 0.1 millisecond maximum |
| Total Resistance Shift | ±2% maximum |
| Shock | 60G |
| Wiper Bounce | 0.1 millisecond maximum |
| Rotational Life (No Load) | 25,000,000 shaft revolutions |
| Total Resistance Shift | ±10% maximum |
| Load Life | 1,000 hours, 1.5 watts |
| Total Resistance Shift | ±10% maximum |

Mechanical Characteristics¹

| | |
|-----------------------------|---------------------------------|
| Shaft Runout | 0.001 in. (0.025mm) T.I.R. |
| Shaft End Play | 0.003 in. (0.08mm) T.I.R. |
| Shaft Radial Play | 0.003 in. (0.08mm) T.I.R. |
| Pilot Diameter Runout | 0.001 in. (0.025mm) T.I.R. |
| Lateral Runout | 0.003 in. (0.08mm) T.I.R. |
| Backlash | 0.1° maximum |
| Mechanical Angle | Continuous |
| Torque (Starting & Running) | 0.75 oz.-in. (0.53 Ncm) maximum |

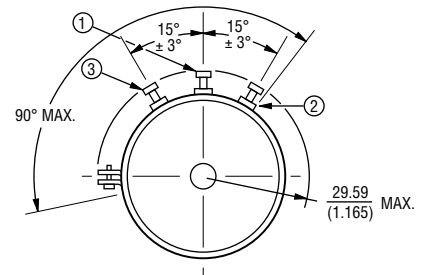
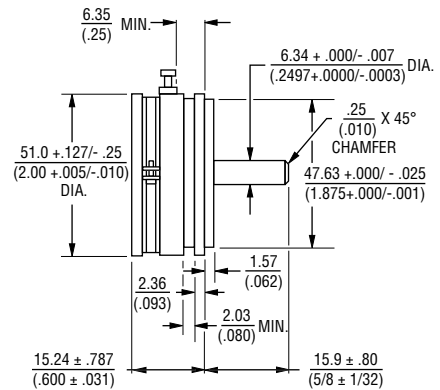
Recommended Part Numbers

| Part Number* | Resistance (W) |
|--------------|----------------|
| 6574S-1-102 | 1,000 |
| 6574S-1-502 | 5,000 |
| 6574S-1-103 | 10,000 |

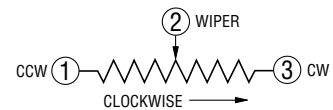
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FOR OTHER OPTIONS CONSULT FACTORY.

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



TOLERANCES: EXCEPT WHERE NOTED
 DECIMALS: .XX ± .38 (.015), .XXX ± .13 (.005)
 FRACTIONS: ±1/64
 DIMENSIONS: MM (IN.)





Features

- Servo mount style
- Shaft supported by front and rear precision ball bearings
- Non-standard features and specifications available
- Gangable up to 10 cups

6574 - Precision Potentiometer

Electrical Characteristics¹

| | |
|---|--|
| Standard Resistance Range..... | 1 K to 100 K ohms |
| Total Resistance Tolerance..... | ±10 % |
| Independent Linearity..... | ±0.25 % |
| Effective Electrical Angle..... | 350 ° ±2 ° |
| End Voltage..... | 0.1 % maximum (0.2 % at 2 K ohms, 0.4 % at 1 K ohms) |
| Output Smoothness..... | 0.1 % |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301) | |
| Sea Level..... | 1,000 VAC minimum |
| Power Rating (Voltage Limited By Power Dissipation or 350 VAC, Whichever is Less) | |
| +70 °C..... | .2 watts |
| +125 °C..... | 0 watt |
| Insulation Resistance (500 VDC)..... | 1,000 megohms minimum |
| Resolution..... | Essentially infinite |

Environmental Characteristics¹

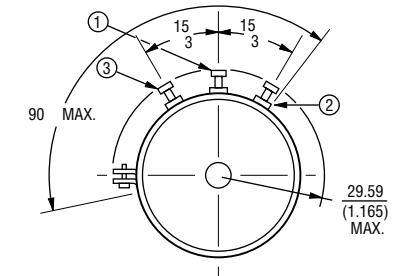
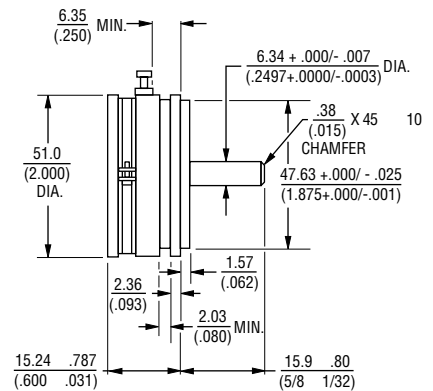
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|---|------------------------------|
| Operating Temperature Range..... | -40 °C to +125 °C |
| Storage Temperature Range..... | -65 °C to +125 °C |
| Temperature Coefficient Over Storage Temperature Range..... | ±500 ppm/°C maximum |
| Vibration..... | 15 G |
| Wiper Bounce..... | 0.1 millisecond maximum |
| Total Resistance Shift..... | ±2 % maximum |
| Shock..... | 60 G |
| Wiper Bounce..... | 0.1 millisecond maximum |
| Load Life..... | 1,000 hours, 1.5 watts |
| Total Resistance Shift..... | ±10 % maximum |
| Rotational Life (No Load)..... | 25,000,000 shaft revolutions |
| Total Resistance Shift..... | ±10 % maximum |
| Moisture Resistance (MIL-STD-202, Method 103, Condition B) | |
| Total Resistance Shift..... | ±10 % maximum |
| IP Rating..... | IP 40 |

Mechanical Characteristics¹

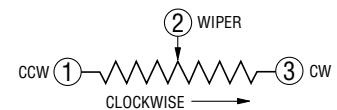
| | |
|--|---|
| Mechanical Angle..... | Continuous |
| Torque (Starting & Running)..... | 0.53 N-cm (0.75 oz.-in.) maximum |
| Shaft Runout..... | 0.025 mm (0.001 in.) T.I.R. |
| Shaft End Play..... | 0.08 mm (0.003 in.) T.I.R. |
| Shaft Radial Play..... | 0.08 mm (0.003 in.) T.I.R. |
| Pilot Diameter Runout..... | 0.025 mm (0.001 in.) T.I.R. |
| Lateral Runout..... | 0.08 mm (0.003 in.) T.I.R. |
| Backlash..... | 0.1 ° maximum |
| Weight..... | 89 gm |
| Terminals..... | Side exit turret terminals |
| Soldering Condition | |
| Manual Soldering..... | 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire 370 °C (700 °F) max. for 3 seconds |
| Wave Soldering..... | 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux 260 °C (500 °F) max. for 5 seconds |
| Wash processes..... | Not recommended |
| Marking..... | Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code. |
| Gangung (Multiple Section Potentiometers)..... | 10 cup maximum |
| Hardware..... | No hardware included |

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

Product Dimensions



TOLERANCES: EXCEPT WHERE NOTED
 DECIMALS: .XX $\frac{.51}{(.02)}$, .XXX $\frac{.13}{(.005)}$
 FRACTIONS: 1/64
 DIMENSIONS: $\frac{MM}{(IN.)}$



Recommended Part Numbers

| Part Number* | Resistance (Ω) |
|--------------------|----------------|
| 6574S-1-102 | 1,000 |
| 6574S-1-502 | 5,000 |
| 6574S-1-103 | 10,000 |

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