



## 7/8", 1 1/16", 2" Ø SINGLE TURN SERVO MOUNT POTENTIOMETERS WIREWOUND ELEMENT

- Shaft supported front and rear by precision ball bearings
- Exceeds humidity cycling requirements of MIL-R-12934
- Extended Temperature Range: -65 to +125°C.
- Housing: high temperature, moisture resistant, thermosetting plastic
- Dual collector pick-off assures outstanding vibration and shock performance.
- Performance guaranteed by the Bourns Reliability Program.
- Custom design capability is available to satisfy your most demanding and difficult special requirements

| STANDARD SPECIFICATIONS                        | MODEL 3585<br>7/8" Ø              | MODEL 3485<br>1 1/16" Ø      | MODEL 3465<br>2" Ø  |
|------------------------------------------------|-----------------------------------|------------------------------|---------------------|
| <b>Electrical Characteristics</b>              |                                   |                              |                     |
| Resistance Range                               | 50 Ω – 20 KΩ                      | 50 Ω – 50 KΩ                 | 50 Ω – 100 KΩ       |
| Resistance Tolerance                           |                                   | ± 3%                         |                     |
| Linearity (Independent)                        | ± 0.5%                            | ± 0.5%                       | ± 0.3%              |
| Resolution                                     | See ordering information          |                              |                     |
| Effective Electrical Angle                     | 350° ± 2°                         |                              |                     |
| Absolute Minimum Resistance                    | 1 Ω or 0.1%, whichever is greater |                              |                     |
| Noise                                          | 100 Ω ENR max.                    |                              |                     |
| Power Rating                                   | 70°C<br>125°C                     | 1.0 W<br>0 W                 | 4.0 W               |
| Dielectric Strength MIL-R-12934                |                                   |                              |                     |
| Sea Level                                      |                                   | 1000 V ~ min.                |                     |
| 70,000 feet                                    |                                   | 300 V ~ min.                 |                     |
| Insulation Resistance 500 V =                  |                                   | 1000 Meg. Ω min.             |                     |
| <b>Environmental Characteristics</b>           |                                   |                              |                     |
| Operating Temperature Range                    |                                   | -65°C to +125°C              |                     |
| Temperature Coefficient of Wire①               |                                   | 20 ppm/°C max.               |                     |
| Humidity                                       |                                   | MIL-R-12934 Humidity Cycling |                     |
| Vibration                                      |                                   | MIL-R-12934, 15G             |                     |
| Wiper Bounce                                   |                                   | 0.1 millisecond max.         |                     |
| Wiper Shift                                    |                                   | 1.0% max.                    |                     |
| Shock                                          |                                   | MIL-R-12934, 50G             |                     |
| Wiper Bounce and Wiper Shift                   |                                   | Same as Vibration            |                     |
| Load Life MIL-R-12934                          |                                   | 1000 hours                   |                     |
| Resistance Shift                               |                                   | 2.0% max.                    |                     |
| Sand, Dust, Fungus                             |                                   | MIL-E-5272                   |                     |
| Salt Spray                                     |                                   | MIL-R-12934                  |                     |
| <b>Mechanical and Physical Characteristics</b> |                                   |                              |                     |
| Mechanical Angle                               |                                   | Continuous                   |                     |
| Shaft Runout                                   |                                   | 0.001 in. T. I. R.           |                     |
| Shaft End Play                                 |                                   | 0.003 in. T. I. R.           |                     |
| Shaft Radial Play                              | 0.002 in. T. I. R.                | 0.002 in. T. I. R.           | 0.0015 in. T. I. R. |
| Lateral Runout                                 | 0.002 in. T. I. R.                | 0.002 in. T. I. R.           | 0.003 in. T. I. R.  |
| Pilot Diameter Runout                          | 0.0015 in. T. I. R.               | 0.0015 in. T. I. R.          | 0.002 in. T. I. R.  |
| Rotational Life, shaft revolutions             | 2,000,000                         | 2,000,000                    | 1,000,000           |
| Torque Starting                                | 0.1 oz.-in. max.                  | 0.1 oz.-in. max.             | 1.0 oz.-in. max.    |
| Torque Running                                 | 0.1 oz.-in. max.                  | 0.1 oz.-in. max.             | 0.6 oz.-in. max.    |
| Moment of Inertia                              | 0.1 g cm²                         | 0.12 g cm²                   | 1.67 g cm²          |
| Ganging                                        |                                   | 8 cups max.                  |                     |

Specifications are subject to change without notice.  
P. T. O.

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STANDARD SPECIFICATIONS CONT.

|           | MODEL 3585<br>7/8" $\phi$                                                                                               | MODEL 3485<br>1 1/16" $\phi$ | MODEL 3465<br>2" $\phi$ |
|-----------|-------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------|
| Weight    | approx. 17 g                                                                                                            | approx. 20 g                 | approx. 85 g            |
| Terminals | Gold plated turrets                                                                                                     |                              |                         |
| Markings  | Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram and date code. |                              |                         |

NOTES: ① Consult Bourns representative for complete specification details for resistances below 100  $\Omega$

## ORDERING INFORMATION

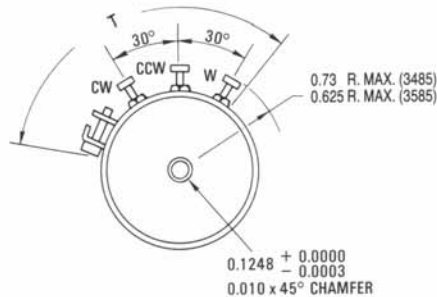
| Resistance $\Omega$ | Part Number*  | Resolution % | Part Number*  | Resolution % | Part Number*  | Resolution % |
|---------------------|---------------|--------------|---------------|--------------|---------------|--------------|
| 50                  | 3585S-1-500   | 0.370        | 3485S-1-500   | 0.304        | 3465S-1-500   | 0.233        |
| 100                 | 3585S-1-101   | 0.307        | 3485S-1-101   | 0.253        | 3465S-1-101   | 0.186        |
| 200                 | 3585S-1-201   | 0.260        | 3485S-1-201   | 0.215        | 3465S-1-201   | 0.159        |
| 500                 | 3585S-1-501   | 0.233        | 3485S-1-501   | 0.163        | 3465S-1-501   | 0.116        |
| 1,000               | 3585S-1-102   | 0.189        | 3485S-1-102   | 0.162        | 3465S-1-102   | 0.095        |
| 2,000               | 3585S-1-202   | 0.162        | 3485S-1-202   | 0.132        | 3465S-1-202   | 0.084        |
| 5,000               | ● 3585S-1-502 | 0.119        | ● 3485S-1-502 | 0.101        | ● 3465S-1-502 | 0.076        |
| 10,000              | 3585S-1-103   | 0.097        | 3485S-1-103   | 0.081        | 3465S-1-103   | 0.062        |
| 20,000              | 3585S-1-203   | 0.080        | 3485S-1-203   | 0.066        | 3465S-1-203   | 0.047        |
| 50,000              | —             | —            | 3485S-1-503   | 0.052        | 3465S-1-503   | 0.036        |
| 100,000             | —             | —            | —             | —            | 3465S-1-104   | 0.030        |

\*The last three digits of the part number represent the resistance in standard code. ● Preferred resistance values

## DIMENSIONS (INCH)

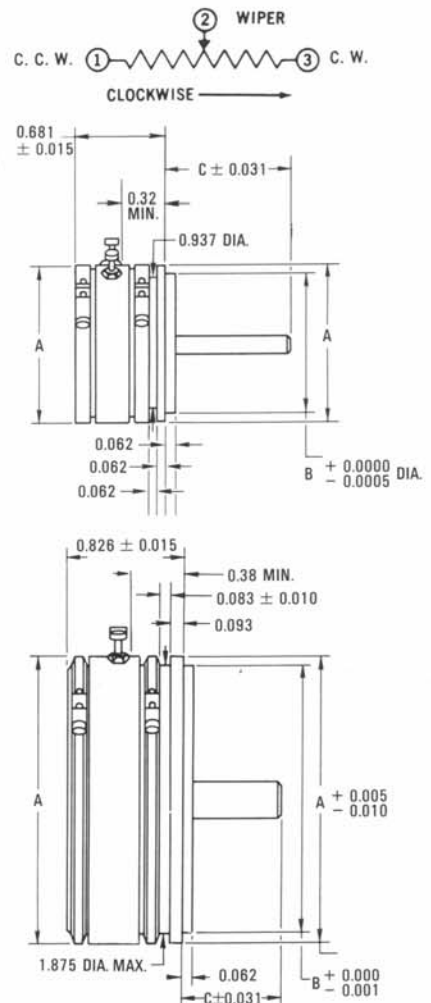
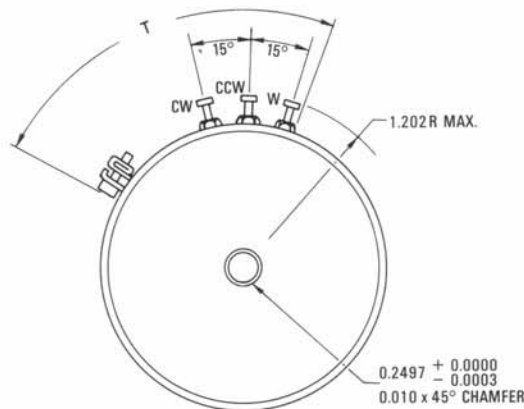
| Model | $\phi$ A | $\phi$ B | C     | T              | Add for each additional cup |
|-------|----------|----------|-------|----------------|-----------------------------|
| 3585  | 0.875    | 0.7500   | 0.500 | 145° + 0 - 20° | 0.405                       |
| 3485  | 1.062    | 0.9688   | 0.875 | 130° + 0 - 15° | 0.405                       |
| 3465  | 2.000    | 1.8750   | 0.625 | 90° + 0 - 20°  | 0.500                       |

3585 3485



TOLERANCES:  
EXCEPT WHERE NOTED  
DECIMALES: XX  $\pm$  0.010, XXX  $\pm$  0.005

3465



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