



- ### Features
- Bushing mount
  - Excellent resolution
  - Non-standard features and specifications available
  - Small diameter
  - High rotational life
  - RoHS compliant\*

## 3700/3701 - Precision Potentiometer

| Electrical Characteristics <sup>1</sup>   | 3700 Wirewound Element                           | 3701 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 °, -2 °                 |
| Absolute Minimum Resistance/<br>Minimum Voltage.....                              | 1 ohm or 0.1 % maximum<br>(whichever is greater) | Minimum voltage<br>0.2 % maximum   |
| Noise.....  | 500 ohms ENR maximum.....                        | Output smoothness 0.1 %<br>maximum |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301)                         |  |                                    |
| Sea Level.....  | 1,000 VAC minimum.....                           | 1,000 VAC minimum                  |
| Power Rating (Voltage Limited By Power Dissipation or 315 VAC, Whichever Is Less) |  |                                    |
| +70 °C.....   | 1 watt.....                                      | 1 watt                             |
| +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 Characteristics <sup>1</sup>                 |  |  |
|--|--|--|
| Operating Temperature Range.....                           | +1 °C to +125 °C.....                          | +1 °C to +105 °C                         |
| Storage Temperature Range.....                             | -65 °C to +125 °C.....                         | -55 °C to +105 °C                        |
| Temperature Coefficient Over                               |  |  |
| Storage Temperature Range <sup>2</sup> .....               | ±50 ppm/°C maximum/unit.....                   | ±100 ppm/°C maximum/unit                 |
| Vibration.....   | 20 G.....                                      | 20 G                                     |
| Wiper Bounce.....  | 0.1 millisecond maximum.....                   | 0.1 millisecond maximum                  |
| Shock.....   | 100 G.....                                     | 100 G                                    |
| Wiper Bounce.....  | 0.1 millisecond maximum.....                   | 0.1 millisecond maximum                  |
| Load Life.....   | 1,000 hours, 1 watt.....                       | 1,000 hours, 1 watt                      |
| Total Resistance Shift.....                                | ±2 % maximum.....                              | ±5 % maximum                             |
| Rotational Life (No Load).....                             | 1,000,000 shaft revolutions <sup>2</sup> ..... | 4,000,000 shaft revolutions <sup>2</sup> |
| 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 Characteristics <sup>1</sup> |   |
|---|---|
| Stop Strength.....                      | 14 N-cm (20 oz-in.) minimum   |
| Mechanical Angle.....                   | 3600 ° +20 °, -0 °  |
| Torque (Starting & Running).....        | 0.45 N-cm (0.6 oz-in.) max.   |
| Mounting.....                           | 170-200 N-cm (15-18 lb-in.) max.  |
| Shaft Runout.....                       | 0.05 mm (0.002 in.) T.I.R.  |
| Lateral Runout.....                     | 0.13 mm (0.005 in.) T.I.R.  |
| Shaft End Play.....                     | 0.13 mm (0.005 in.) T.I.R.  |
| Shaft Radial Play.....                  | 0.08 mm (0.003 in.) T.I.R.  |
| Pilot Diameter Runout.....              | 0.05 mm (0.002 in.) T.I.R.  |
| Backlash.....                           | 1.0 ° maximum   |
| Weight.....                             | Approximately 28 gm   |
| Terminals.....                          | Gold-plated solderlugs (3700) or gold-plated turret lugs (3701)   |
| Soldering Condition                     |   |
| Manual Soldering.....                   | 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire<br>370 °C (700 °F) max. for 3 seconds                        |
| Wave Soldering.....                     | 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux<br>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 |
| Ganging (Multiple Section Pots.).....   | 1 cup maximum   |
| Hardware.....                           | One lockwasher (H-37-1) and one mounting unit (H-38-1) is shipped with each potentiometer.                              |

<sup>1</sup>At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.  
<sup>2</sup>Consult manufacturer for complete specification details.

### Recommended Part Numbers

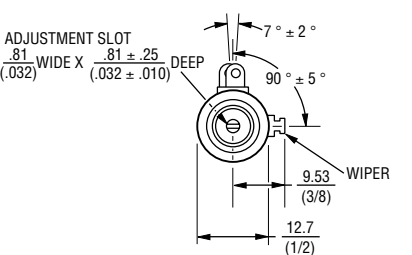
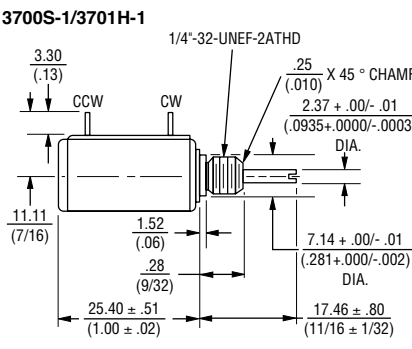
| Part Number  | Resistance (Ω) | Resolution |
|--------------|----------------|------------|
| 3700S-1-102L | 1,000          | 0.43       |
| 3700S-1-202L | 2,000          | 0.35       |
| 3700S-1-502L | 5,000          | 0.34       |
| 3700S-1-103L | 10,000         | 0.26       |

| Part Number  | Resistance (Ω) |
|--------------|----------------|
| 3701H-1-102L | 1,000          |
| 3701H-1-202L | 2,000          |
| 3701H-1-502L | 5,000          |
| 3701H-1-103L | 10,000         |

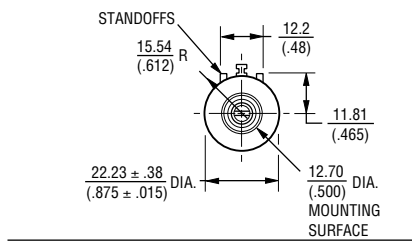
**BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.**  
 FOR OTHER OPTIONS CONSULT FACTORY.

ROHS IDENTIFIER:  
 L = COMPLIANT\*

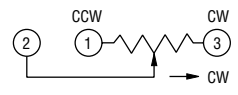
### Product Dimensions



LOCKWASHER AND MOUNTING NUT TO BE SUPPLIED WITH EACH UNIT



TOLERANCES: EXCEPT WHERE NOTED  
 DECIMALS: .XX ± .25 (.010), .XXX ± .13 (.005)  
 FRACTIONS: ±1/64  
 DIMENSIONS: MM (IN)



REV. 06/12

"Hybritron" is a registered trademark of Bourns, Inc.  
 \*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
 Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.

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