

## 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.....         | 2 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/.....   | 1 ohm or 0.1 % maximum.....    | Minimum voltage                 |
| Minimum Voltage.....  | (whichever is greater)         | 0.2 % maximum                   |
| Noise.....  | 100 ohms ENR maximum.....      | Output smoothness 0.1 % 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>                 | 3700 Wirewound Element                         | 3701 Hybritron® Element                  |
|--|--|--|
| 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>  | 3700 Wirewound Element  | 3701 Hybritron® Element   |
|--|---|---|
| Stop Strength.....   | 14 N-cm (20 oz-in.) minimum   | 14 N-cm (20 oz-in.) minimum   |
| Mechanical Angle.....  | 3600 ° +20 °, -0 °  | 3600 ° +20 °, -0 °  |
| Torque (Starting & Running).....   | 0.45 N-cm (0.6 oz.-in.) max.  | 0.45 N-cm (0.6 oz.-in.) max.  |
| Mounting.....  | 170-200 N-cm (15-18 lb.-in.) max.   | 170-200 N-cm (15-18 lb.-in.) max.   |
| Shaft Runout.....  | 0.05 mm (0.002 in.) T.I.R.  | 0.05 mm (0.002 in.) T.I.R.  |
| Lateral Runout.....  | 0.13 mm (0.005 in.) T.I.R.  | 0.13 mm (0.005 in.) T.I.R.  |
| Shaft End Play.....  | 0.13 mm (0.005 in.) T.I.R.  | 0.13 mm (0.005 in.) T.I.R.  |
| Shaft Radial Play.....   | 0.08 mm (0.003 in.) T.I.R.  | 0.08 mm (0.003 in.) T.I.R.  |
| Pilot Diameter Runout.....   | 0.05 mm (0.002 in.) T.I.R.  | 0.05 mm (0.002 in.) T.I.R.  |
| Backlash.....  | 1.0 ° maximum   | 1.0 ° maximum   |
| Weight.....  | Approximately 28 gm   | 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  | 96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire  |
| Wave Soldering.....  | 370 °C (700 °F) max. for 3 seconds  | 370 °C (700 °F) max. for 3 seconds  |
| Wash processes.....  | 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux  | 96.5Sn/3.0Ag/0.5Cu solder with no-clean flux  |
| Wash processes.....  | 260 °C (500 °F) max. for 5 seconds  | 260 °C (500 °F) max. for 5 seconds  |
| Wash processes.....  | Not recommended   | Not recommended   |
| Marking.....   | Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code | Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code |
| Ganging (Multiple Section Pots.).....  | 1 cup maximum   | 1 cup maximum   |
| Hardware.....  | One lockwasher (H-37-1) and one mounting unit (H-38-1)  | One lockwasher (H-37-1) and one mounting unit (H-38-1)  |
|  | is shipped with each potentiometer.   | 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.

\*Hybritron" is a registered trademark of Bourns, Inc.

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

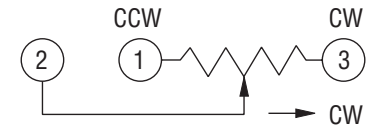
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## Additional Information

Click these links for more information:



## Schematic



## Recommended Part Numbers

| Part Number  | Resistance (Ω) | Resolution (% Max.) |
|--------------|----------------|---------------------|
| 3700S-1-202L | 2,000          | 0.04                |
| 3700S-1-502L | 5,000          | 0.04                |
| 3700S-1-103L | 10,000         | 0.03                |

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

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FOR OTHER OPTIONS CONSULT FACTORY.

ROHS IDENTIFIER:  
L = COMPLIANT\*

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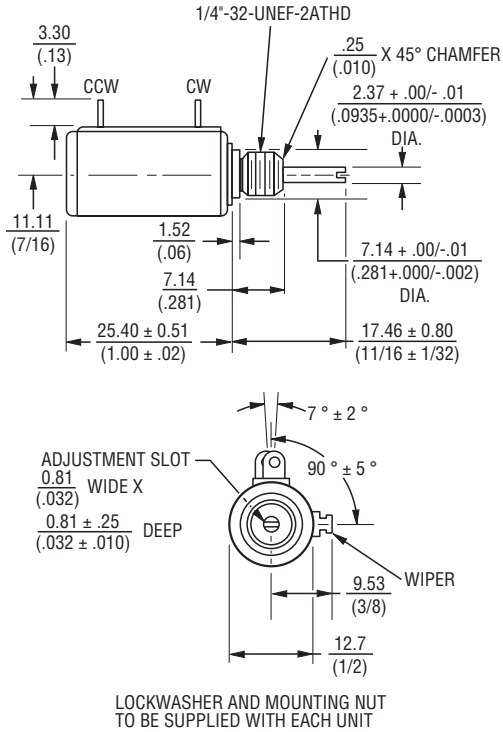
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# 3700/3701 - Precision Potentiometer

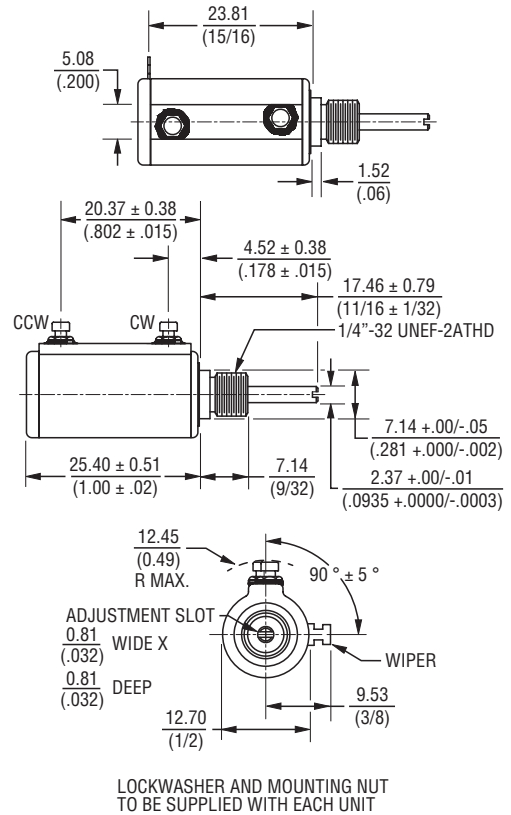
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## Product Dimensions

### 3700S-1



### 3701H-1



TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: .XX  $\frac{.25}{(.010)}$  .XXX  $\frac{.13}{(.005)}$

FRACTIONS: 1/64

DIMENSIONS:  $\frac{MM}{(IN)}$

REV. 03/22

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