

•ROHS COMPLIANT



BOURNS®

Features

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

3700/3701 - Precision Potentiometer

Electrical Characteristics¹

	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/.....	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 Characteristics¹

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 ²	±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 ²	4,000,000 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

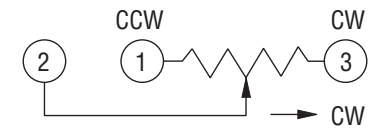
Mechanical Characteristics¹

Stop Strength.....	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
	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
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.

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

² Consult manufacturer for complete specification details.

Schematic



Recommended Part Numbers

Part Number	Resistance (Ω)	Resolution (% Max.)
3700S-1-102L	1,000	0.05
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-1-102L	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*

BOURNS®

Asia-Pacific:

Tel: +886-2 2562-4117

Fax: +886-2 2562-4116

EMEA:

Tel: +36 88 520 390

Fax: +36 88 520 211

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www.bourns.com

REV. 11/13

"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.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

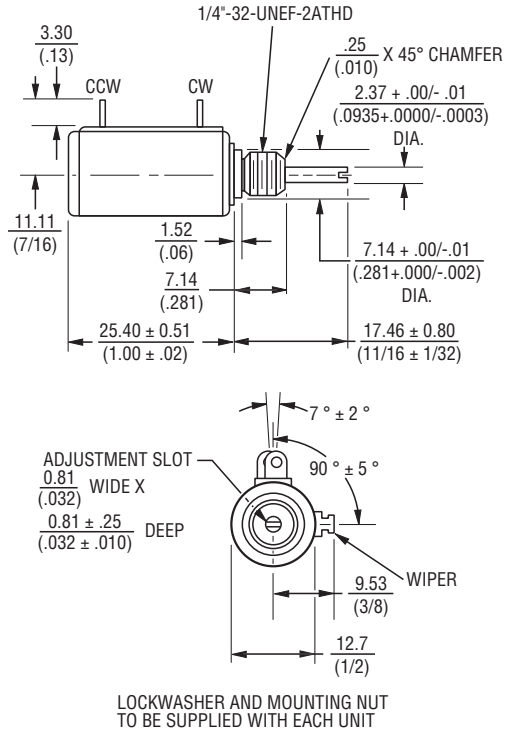
Users should verify actual device performance in their specific applications.

3700/3701 - Precision Potentiometer

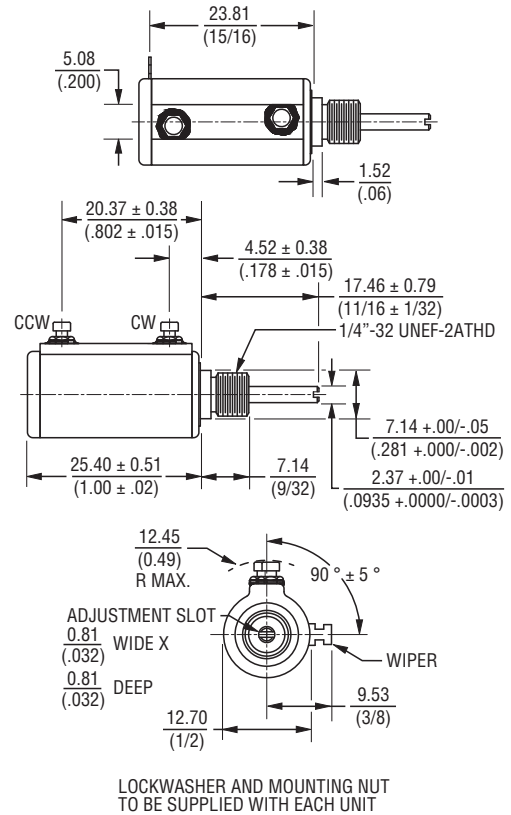
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Product Dimensions

3700S-1



3701H-1



TOLERANCES: EXCEPT WHERE NOTED

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

FRACTIONS: 1/64

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

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