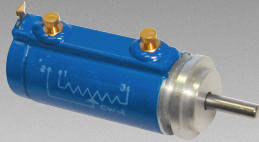




**THE DATASHEET OF**  
**3751H-1-102L**



\*ROHS COMPLIANT



**BOURNS®**

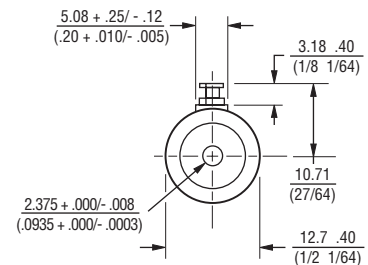
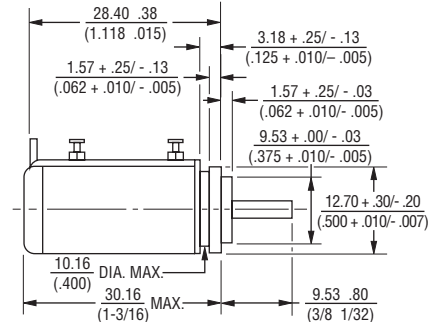
## Features

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

## 3750/3751 - Precision Potentiometer

### Product Dimensions

#### 3750/3751

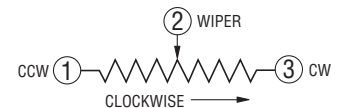


TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: .XX <sup>.25</sup>/<sub>(.010)</sub> .XXX <sup>.13</sup>/<sub>(.005)</sub>

DIMENSIONS: <sup>MM</sup>/<sub>(IN)</sub>

FRACTIONS: 1/64



### Additional Information

Click these links for more information:



REV. 03/26

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| Electrical Characteristics <sup>1</sup>                                           | 3750 Wirewound Element         | 3751 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 °, -4 °               |
| Absolute Minimum Resistance/.....                                                 | 1 ohm or 0.1 % maximum.....    | Minimum voltage                  |
| Minimum Voltage.....                                                              | (whichever is greater).....    | 0.2 % maximum                    |
| Noise.....                                                                        | 500 ohms ENR maximum.....      | Output smoothness 0.15 % 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.....                           | -65 °C to +125 °C.....                         | -55 °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> ..... | 10,000,000 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.....                         | 0.35 N-cm (0.5 oz.-in.) max.                                                                                            |
| Running.....                          | 0.21 N-cm (0.3 oz.-in.) max.                                                                                            |
| Shaft Runout.....                     | 0.08 mm (0.003 in.) T.I.R.                                                                                              |
| Lateral Runout.....                   | 0.08 mm (0.003 in.) T.I.R.                                                                                              |
| Shaft End Play.....                   | 0.13 mm (0.005 in.) T.I.R.                                                                                              |
| Shaft Radial Play.....                | 0.05 mm (0.002 in.) T.I.R.                                                                                              |
| Pilot Diameter Runout.....            | 0.05 mm (0.002 in.) T.I.R.                                                                                              |
| Backlash.....                         | 1.0 ° maximum                                                                                                           |
| Weight.....                           | Approximately 8.5 G                                                                                                     |
| Terminals.....                        | Gold-plated turret lugs                                                                                                 |
| 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                                                                                                           |

<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 |
|--------------|----------------|------------|
| 3750S-1-102L | 1,000          | 0.05       |
| 3750S-1-202L | 2,000          | 0.04       |
| 3750S-1-502L | 5,000          | 0.04       |
| 3750S-1-103L | 10,000         | 0.02       |

**BOLDFACE** LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR OTHER OPTIONS CONSULT FACTORY.

| Part Number  | Resistance (Ω) |
|--------------|----------------|
| 3751H-1-102L | 1,000          |
| 3751H-1-202L | 2,000          |
| 3751H-1-502L | 5,000          |
| 3751H-1-103L | 10,000         |

ROHS IDENTIFIER:  
L = COMPLIANT\*

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