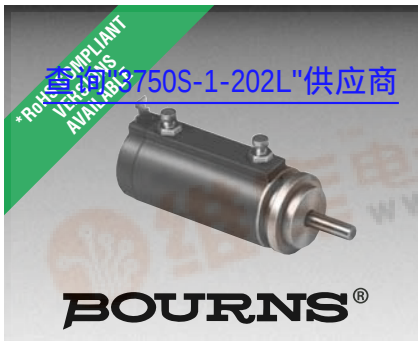




## Features

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



Models 3750 and 3751 are currently available, although not recommended for new designs.

## 3750/3751 - Precision Potentiometer

### 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                                | +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> | 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                        |                                                                                                                                                                                    |
| Soldering Condition              | Recommended hand soldering using Sn95/Ag5 no clean solder, 0.025" wire diameter. Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux. |
| 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.

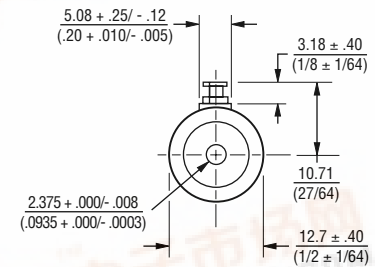
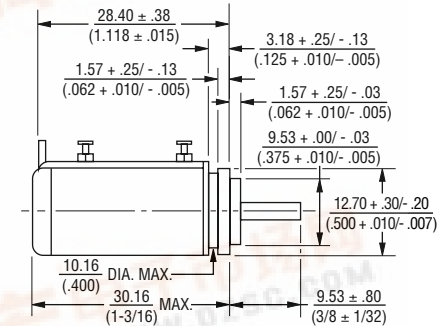
<sup>2</sup>Consult manufacturer for complete specification details.

### 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       |

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

### 3750/3751

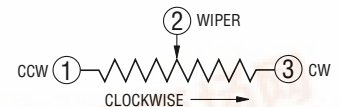


TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: .XX ± .25  
(.010) .XXX ± .13  
(.005)

DIMENSIONS: MM  
(IN)

FRACTIONS: ±1/64



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

FOR OTHER OPTIONS CONSULT FACTORY.

TERMINALS:

L = RoHS COMPLIANT  
BLANK = STANDARD

REV. 06/06

RoHS Directive 2002/95/EC Jan 27 2003 including Annex  
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

