



## Features

- Small diameter
- Wide resistance range
- Good resolution
- Linear tapers
- Cermet element

## 3862 - 1/2 " Diameter Single-Turn Panel Control

### Initial Electrical Characteristics<sup>1</sup>

|                                                                                   |                                             |
|-----------------------------------------------------------------------------------|---------------------------------------------|
| Standard Resistance Range .....                                                   | 1K ohms to 1 megohm                         |
| Total Resistance Tolerance .....                                                  | (A Taper) $\pm 10\%$<br>(H Taper) $\pm 5\%$ |
| Independent Linearity .....                                                       | $\pm 5\%$                                   |
| Absolute Minimum Resistance .....                                                 | 2 ohms maximum                              |
| Effective Electrical Angle .....                                                  | $260^\circ \pm 10^\circ$                    |
| Contact Resistance Variation .....                                                | $\pm 3\%$ or 6 ohms (whichever is greater)  |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301)                         |                                             |
| Sea Level .....                                                                   | 750 VAC minimum                             |
| 70,000 Feet .....                                                                 | 350 VAC minimum                             |
| Insulation Resistance (500 VDC) .....                                             | 1,000 megohms minimum                       |
| Power Rating (Voltage Limited by Power Dissipation or 350 VAC, Whichever is Less) |                                             |
| +70 °C .....                                                                      | 1 watt                                      |
| +125 °C .....                                                                     | 0 watt                                      |
| Theoretical Resolution .....                                                      | Essentially infinite                        |

### Environmental Characteristics<sup>1</sup>

|                                                              |                                            |
|--------------------------------------------------------------|--------------------------------------------|
| Operating Temperature Range .....                            | -40 °C to +125 °C                          |
| Storage Temperature Range .....                              | -65 °C to +125 °C                          |
| Temperature Coefficient Over Storage Temperature Range ..... | $\pm 150$ ppm/°C                           |
| Vibration .....                                              | 20 G                                       |
| Total Resistance Shift .....                                 | $\pm 2\%$ maximum                          |
| Voltage Ratio Shift .....                                    | $\pm 6\%$ maximum                          |
| Shock .....                                                  | 50 G                                       |
| Total Resistance Shift .....                                 | $\pm 2\%$ maximum                          |
| Voltage Ratio Shift .....                                    | $\pm 6\%$ maximum                          |
| Load Life .....                                              | 1,000 hours                                |
| Total Resistance Shift .....                                 | $\pm 3\%$ maximum                          |
| Rotational Life, No Load                                     |                                            |
| (C & N Bushings) .....                                       | 50,000 cycles                              |
| (E & T Bushings) .....                                       | 1,000 cycles                               |
| Total Resistance Shift .....                                 | $\pm 5\%$ maximum                          |
| Contact Resistance Variation .....                           | $\pm 3\%$ or 6 ohms (whichever is greater) |
| Moisture Resistance (MIL-STD-202, Method 106, Condition B)   |                                            |
| Total Resistance Shift .....                                 | $\pm 2\%$ maximum                          |
| Insulation Resistance (500 VDC) .....                        | 100 megohms minimum                        |
| Salt Spray .....                                             | MIL-STD-202, Method 101, Condition A       |
| IP Rating .....                                              | IP 40                                      |

### Mechanical Characteristics<sup>1</sup>

|                                                  |                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stop Strength .....                              | 33 N-cm (3 lb.-in.) maximum                                                                                                                                                                                                                                                              |
| Mechanical Angle .....                           | $295^\circ \pm 3^\circ$                                                                                                                                                                                                                                                                  |
| Torque                                           |                                                                                                                                                                                                                                                                                          |
| Starting and Running .....                       | 3.53 N-cm (5 oz.-in.) maximum                                                                                                                                                                                                                                                            |
| Mounting (Torque on Bushing) .....               | 1.7-2.0 N-m (15-18 lb.-in.) maximum                                                                                                                                                                                                                                                      |
| Shaft Locking Torque with Locking Bushings ..... | 14.12 N-cm (20 oz.-in.)                                                                                                                                                                                                                                                                  |
| Weight (Single Section) .....                    | 25 grams maximum                                                                                                                                                                                                                                                                         |
| Terminals .....                                  | Printed circuit pins or J-Hooks                                                                                                                                                                                                                                                          |
| Soldering Condition .....                        | Recommended hand soldering using Sn85/Ag5 no clean solder, 0.025 " wire diameter<br>Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux.<br>Part can be wave soldered at 260 °C (500 °F) for 5 seconds, no wash process with no clean flux. |
| Marking .....                                    | Manufacturer's trademark, wiring diagram, date code, resistance, manufacturer's part number                                                                                                                                                                                              |
| Ganging .....                                    | 1 cup maximum                                                                                                                                                                                                                                                                            |
| Hardware .....                                   | One lockwasher and one mounting nut is shipped with each potentiometer, except where noted in the part number.                                                                                                                                                                           |

<sup>1</sup> AT ROOM AMBIENT: +25 °C NOMINAL AND 50 % RELATIVE HUMIDITY NOMINAL, EXCEPT AS NOTED.

\*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.

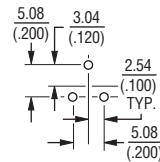
Users should verify actual device performance in their specific applications.

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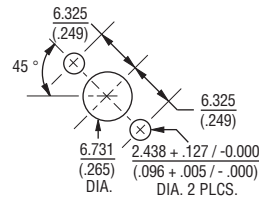
**BOURNS®**

## Product Dimensions

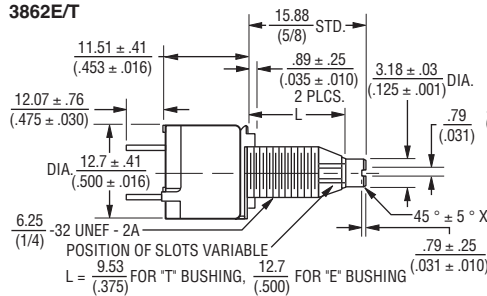
### PCB LAYOUT



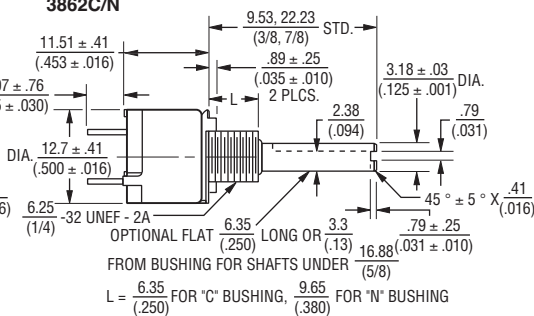
### PANEL LAYOUT



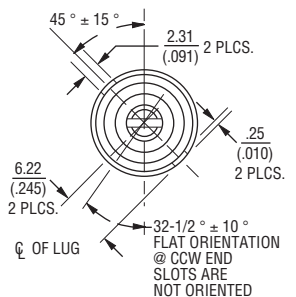
### 3862E/T



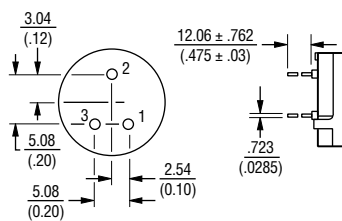
### 3862C/N



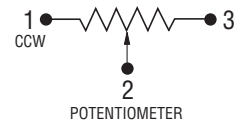
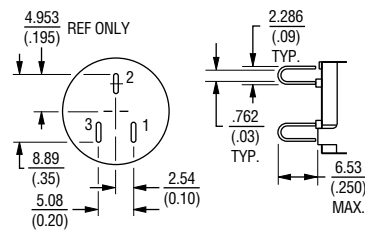
### Shaft End Detail 3862



### PC PIN TERMINAL



### J-HOOK TERMINAL



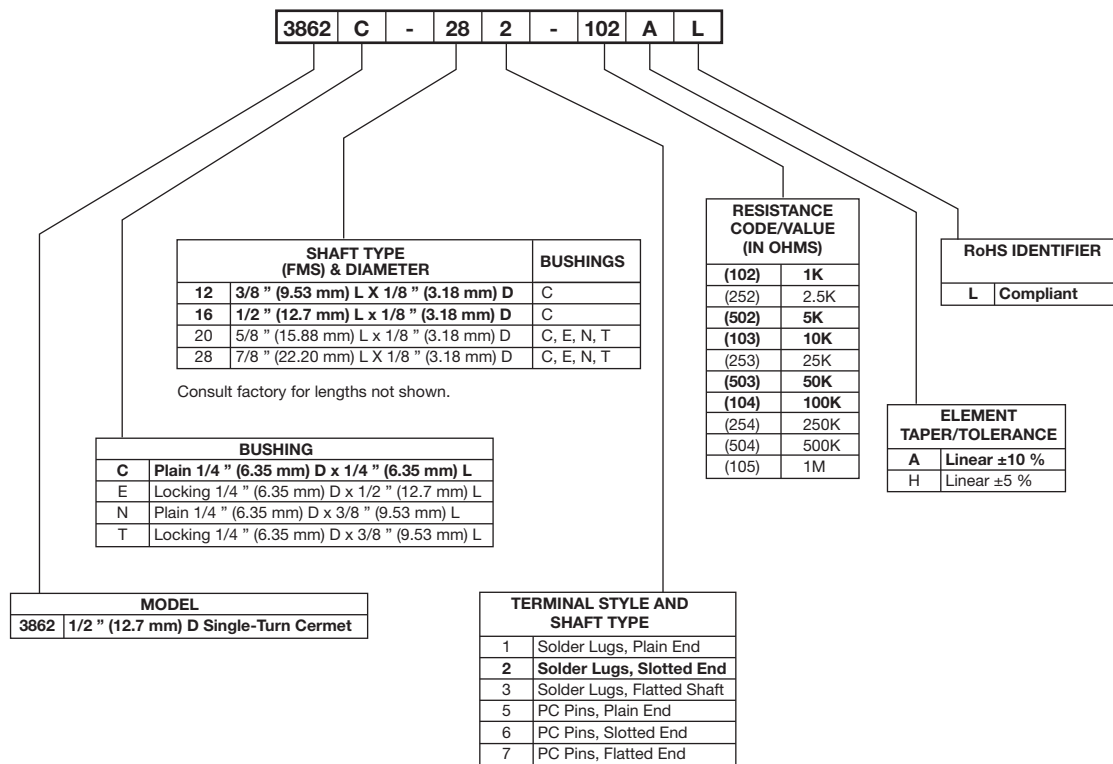
DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

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# How to Order 3862 Series Panel Controls

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*Boldface features are Bourns standard options. All others are available with higher minimum order quantities.*