

\*RoHS COMPLIANT  
VERSIONS  
AVAILABLE



**BOURNS®**

## Features

- Space saving design
- Wide range of resistance values
- PC pin or solder lug terminals
- Metric shaft and bushing option
- Mounting brackets available
- Linear or audio taper versions

## PC - "Slimline" 22 mm Square Single Turn Panel Control

### Electrical Characteristics

|   |                         |
|---|-------------------------|
| Standard Resistance Range   | 500 ohms to 1 megohm    |
| Linear Tapers   | 1 K ohms to 500 K ohms  |
| Audio Tapers  | ±20 %                   |
| Total Resistance Tolerance  | ±20 %                   |
| Independent Linearity   | ±5 %                    |
| Absolute Minimum Resistance   | 5 ohms maximum          |
| Effective Electrical Angle  | 270 ° ± 5 °             |
| Contact Resistance Variation  | 7 % of total resistance |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301)                                 |                         |
| Sea Level   | 1,000 VAC minimum       |
| 70,000 Feet   | 500 VAC minimum         |
| Insulation Resistance (500 V)   | 1,000 ohms minimum      |
| Power Rating @ 70 °C (Voltage Limited by Power Dissipation or 350 VAC, Whichever is Less) |                         |
| Linear  | .75 watt                |
| Audio   | .25 watt                |
| Theoretical Resolution  | Essentially infinite    |

### Environmental Characteristics

|  |   |
|--|---|
| Operating Temperature Range                            | +1 °C to +125 °C                          |
| Storage Temperature Range                              | -40 °C to +125 °C                         |
| Temperature Coefficient Over Storage Temperature Range | ±1000 ppm/°C                              |
| Vibration  | .20 G                                     |
| Total Resistance Shift                                 | ±1 % maximum                              |
| Voltage Ratio Shift                                    | ±20 % maximum                             |
| Shock  | .50 G                                     |
| Total Resistance Shift                                 | ±1 % maximum                              |
| Voltage Ratio Shift                                    | ±20 % maximum                             |
| Load Life  | 1,000 Hours @ Rated Power, 20 % RH, 70 °C |
| Total Resistance Shift                                 | ±10 % maximum                             |
| Rotational Life (No Load)                              | 50,000 cycles                             |
| Total Resistance Shift (Linear taper)                  | ±10 ohms or 12 %, whichever is greater    |
| Total Resistance Shift (Audio taper)                   | ±20 % maximum                             |
| Contact Resistance Variation                           | ±5 % maximum                              |
| Moisture Resistance                                    | MIL-STD-303, Method 103, Condition B      |
| Total Resistance Shift                                 | ±20 % maximum                             |
| IP Rating  | IP 40                                     |

### Mechanical Characteristics

|  |   |
|--|---|
| Stop Strength (1/4 " and 6 mm Shaft Diameters) | 79.09 N-cm (7 lb.-in.)  |
| Mechanical Angle                               | 300 ° ± 5 °   |
| Torque   |   |
| Starting (Detented)                            | 0.5-1.5 N-cm (0.75-2.25 oz.-in.)  |
| Starting (Undetented)                          | 1.5 N-cm (2.25 oz.-in.) maximum   |
| Running (Undetented)                           | 0.18 to 1.06 N-cm (0.25 to 1.5 oz.-in.)   |
| Mounting                                       | 79.09 N-cm (7 lb.-in.) maximum  |
| Weight (Single Section)                        | .21 gm (0.75 oz.) maximum   |
| Terminals                                      | PC pin or solder lug  |
| 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 trademark, resistance value, part number, and date code  |
| Ganging  | .1 cup maximum  |
| Hardware                                       | One lockwasher and one mounting nut is shipped with each potentiometer, except where noted in the part number.  |
| Detents  | Center, 10, 20, 30, none  |

For additional features or specifications not shown, consult factory.

FOR ORDERING INFORMATION SEE PAGE 4.

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

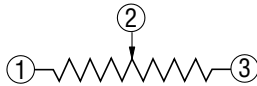
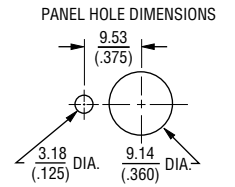
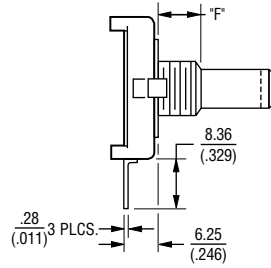
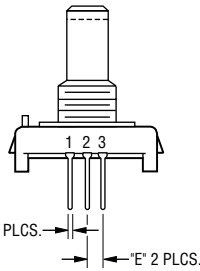
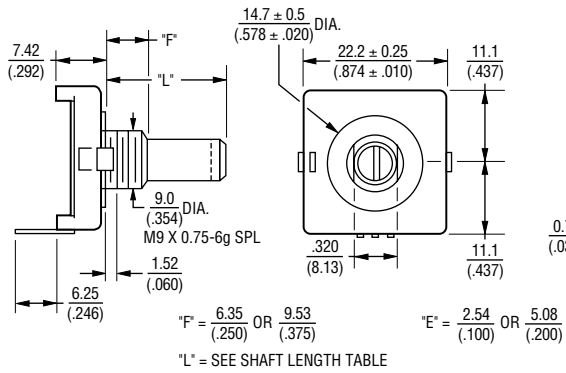
Customers should verify actual device performance in their specific applications.

# PC - "Slimline" 22 mm Square Single Turn Panel Control

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## Product Dimensions

### PC PINS (Rear Facing)



TOLERANCES EXCEPT WHERE NOTED:

.XX = ±  $\frac{.25}{(.010)}$   
 .XXX = ±  $\frac{.13}{(.005)}$

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

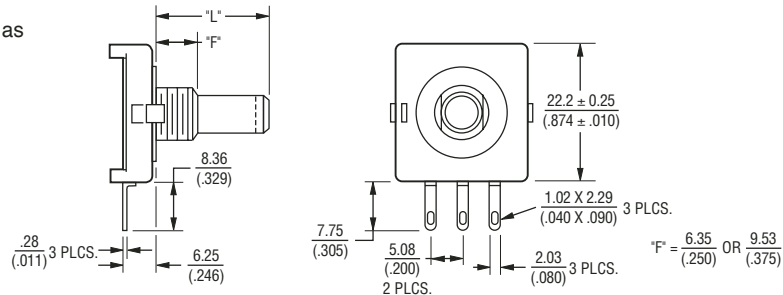
# PC - "Slimline" 22 mm Square Single Turn Panel Control

# BOURNS®

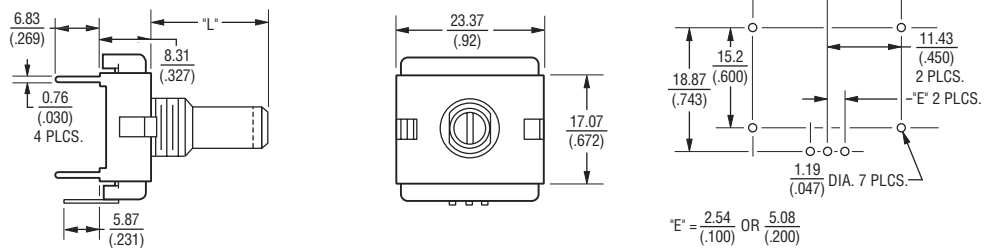
## Product Dimensions

### SOLDER LUGS

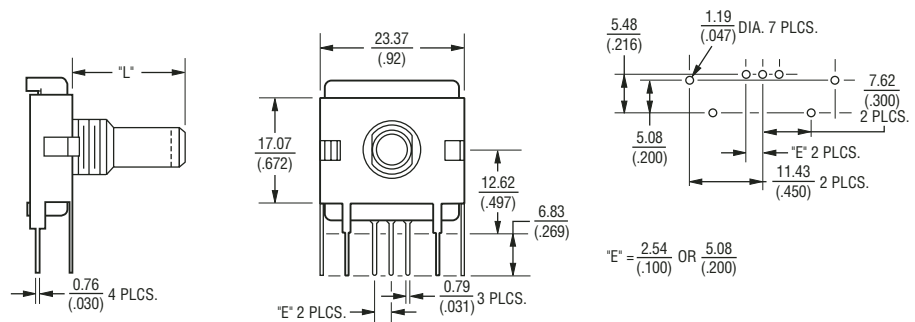
(Dimensions not given are the same as PC pins (rear facing)).



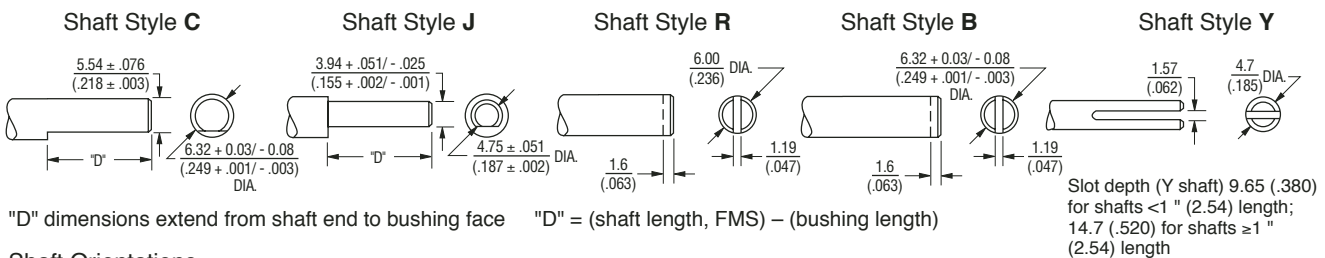
### PC PINS (Rear Facing) With Rear Mounting Bracket



### PC PINS (Side Exit) With Side Mounting Bracket

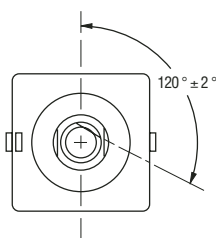


## SHAFT STYLES AND ORIENTATION (Full CCW Rotation)

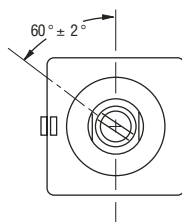


### Shaft Orientations

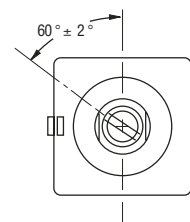
#### Shaft Styles C, J



#### Shaft Styles B, R



#### Shaft Style Y



DIMENSIONS: MM (IN.)  
 TOLERANCES EXCEPT WHERE NOTED:  
 .XX = ± 0.25 (0.010)  
 .XXX = ± 0.13 (0.005)

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# How to Order PC "Slimline" Panel Controls

**BOURNS®**

P C W 1 J - B 2 4 - B A B 1 0 3 L

| RoHS IDENTIFIER |               |
|-----------------|---------------|
| Code            | Description   |
| L               | Compliant     |
| Blank           | Non-Compliant |

| SHAFT LENGTH (FMS) |                              |                        |
|--------------------|------------------------------|------------------------|
| Code               | Description                  | Available Shaft Styles |
| 16                 | 1/2" (12.7 mm) Length        | B                      |
| 20                 | 5/8" (15.9 mm) Length        | J                      |
| <b>24</b>          | <b>3/4" (19 mm) Length</b>   | B, C, J, Y             |
| <b>28</b>          | <b>7/8" (22.2 mm) Length</b> | B, C, J, Y             |
| 32                 | 1" (25.4 mm) Length          | B, C, J, Y             |
| 36                 | 1-1/8" (28.6 mm) Length      | B, C, J, Y             |
| Metric             |                              |                        |
| 19                 | 19 mm Length                 | R                      |
| 22                 | 22 mm Length                 | R                      |
| <b>24</b>          | <b>24 mm Length</b>          | R                      |

| RESISTANCE VALUES |             |            |              |            |               |
|-------------------|-------------|------------|--------------|------------|---------------|
| Code              | TR          | Code       | TR           | Code       | TR            |
| 501               | 500 Ω       | <b>103</b> | <b>10 KΩ</b> | <b>104</b> | <b>100 KΩ</b> |
| 102               | 1 KΩ        | 203        | 20 KΩ        | 254        | 250 KΩ        |
| 252               | 2.5 KΩ      | 253        | 25 KΩ        | 504        | 500 KΩ        |
| <b>502</b>        | <b>5 KΩ</b> | <b>503</b> | <b>50 KΩ</b> | 105        | 1 MΩ          |

| ELEMENT TAPER VERSIONS |                    |
|------------------------|--------------------|
| Code                   | Taper Description  |
| <b>B</b>               | Lin. CP ±20 %      |
| D                      | CW Audio CP ±20 %  |
| G                      | CCW Audio CP ±20 % |

| SHAFT STYLES (See Outline Drawing) |  |
|------------------------------------|--|
| Code                               | Description  |
| <b>B</b>                           | <b>1/4" (6.35 mm) Dia. Slotted</b>                 |
| C                                  | 1/4" (6.35 mm) Dia. Flatted                        |
| J                                  | 3/16" (4.76 mm) Dia. Flatted                       |
| <b>R</b>                           | <b>6 mm Dia. Slotted (Use Metric Lengths Only)</b> |
| Y                                  | 3/16" (4.76 mm) Dia. Split Shaft                   |

| DETENT CONFIGURATIONS |                    |
|-----------------------|--------------------|
| Code                  | Taper Description  |
| <b>A</b>              | <b>No Detents</b>  |
| B                     | 10 Detents         |
| C                     | Center Detent Only |
| D                     | 20 Detents         |
| E                     | 30 Detents         |
| F                     | CCW Detent Only    |

| ANTI-ROTATION LUG |                      |
|-------------------|----------------------|
| Code              | Description          |
| <b>J</b>          | <b>9:00 Position</b> |
| D                 | None                 |

| NO. SECTIONS |               |
|--------------|---------------|
| Code         | Description   |
| <b>1</b>     | <b>Single</b> |

| BUSHING CONFIGURATION |   |                        |
|-----------------------|---|------------------------|
| Code                  | Description   | Available Shaft Styles |
| <b>W</b>              | <b>9 mm x .250" (6.35 mm) Length Threaded M9 x 0.75 6g 5 Pl</b> | All                    |
| L                     | 9 mm x .375" (9.53 mm) Length Threaded M9 x 0.75 6g 5 Pl        | B, C, R                |

| HOUSING TERMINAL CONFIGURATION                 |          |          |   |   |   |   |   |   |   |   |   |   |   |
|--|----------|----------|---|---|---|---|---|---|---|---|---|---|---|
| Features                                       | Code     |          |   |   |   |   |   |   |   |   |   |   |   |
|  | A        | B        | C | D | E | F | G | H | J | K | L | M | N |
| Rear Mounting Bracket                          |          | <b>X</b> |   |   |   |   |   |   | X | X |   |   | X |
| Side Mounting Bracket                          |          |          |   |   | X |   | X |   |   |   | X | X |   |
| Rear Facing Terminals .100" (2.54 mm) Centers  | <b>X</b> | <b>X</b> |   |   |   |   |   |   |   |   | X |   |   |
| Side Exiting Terminals .100" (2.54 mm) Centers |          |          |   | X | X |   |   |   |   |   | X |   |   |
| Side Exiting Terminals .200" (5.08 mm) Centers |          |          |   |   |   | X | X |   |   |   |   | X |   |
| Solder Lugs .200" (5.08 mm) Centers            |          |          | X |   |   |   |   |   |   |   |   |   |   |
| Rear Facing Terminals .200" (5.08 mm) Centers  |          |          |   |   |   |   |   | X | X |   |   |   | X |
| Hardware Included                              | X        |          | X | X |   | X |   | X |   | X | X | X | X |

Panel mount hardware not included as standard on bracketed versions. The sample part number demonstrates the identification code for Bourns Slimline Potentiometers. The part number shown is a commonly used model, typically available from stock.

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