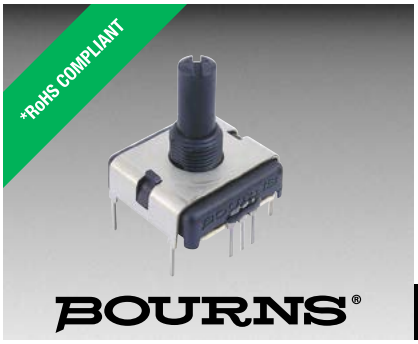


## Features

- RoHS compliant*
- 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[1]

| | |
|---|---|
| Standard Resistance Range | |
| Linear Tapers | 500 ohms to 1 megohm |
| Audio Tapers | 1 K ohms to 500 K ohms |
| 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 ºC (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 ºC |
| 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-202, 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 | |
| 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 trademark, resistance value, part number, and date code |
| Ganging | 1 cup maximum |
| Hardware | One lockwasher (H-37-2) and one mounting nut (H-38-11) is shipped with each potentiometer |
| Detents | Center, 10, 20, 30, none |

For additional features or specifications not shown, consult factory.

FOR ORDERING INFORMATION SEE PAGE 4.

**WARNING**
**Cancer and Reproductive Harm**
www.P65Warnings.ca.gov

[1] Electrical specifications tested at 200 RPM, at room ambient: +25 °C nominal.

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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

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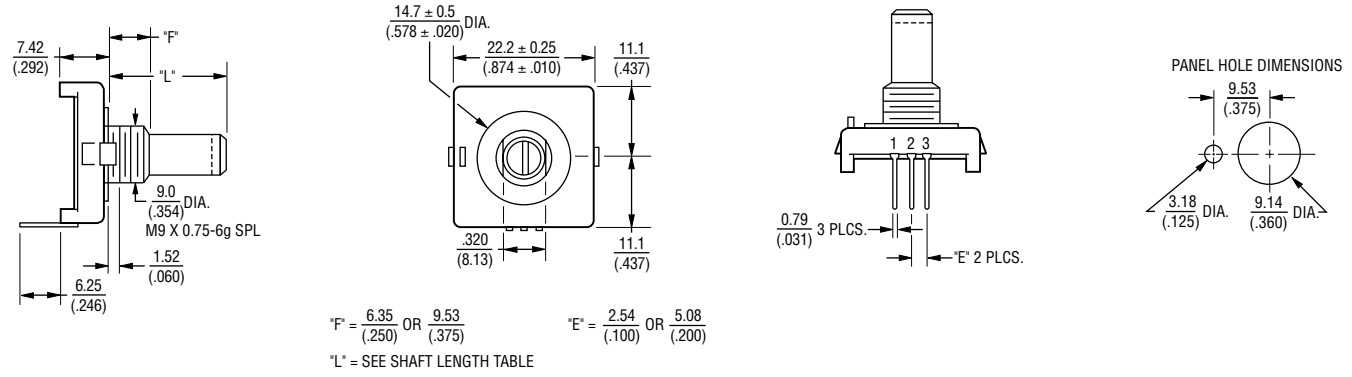
## Product Dimensions

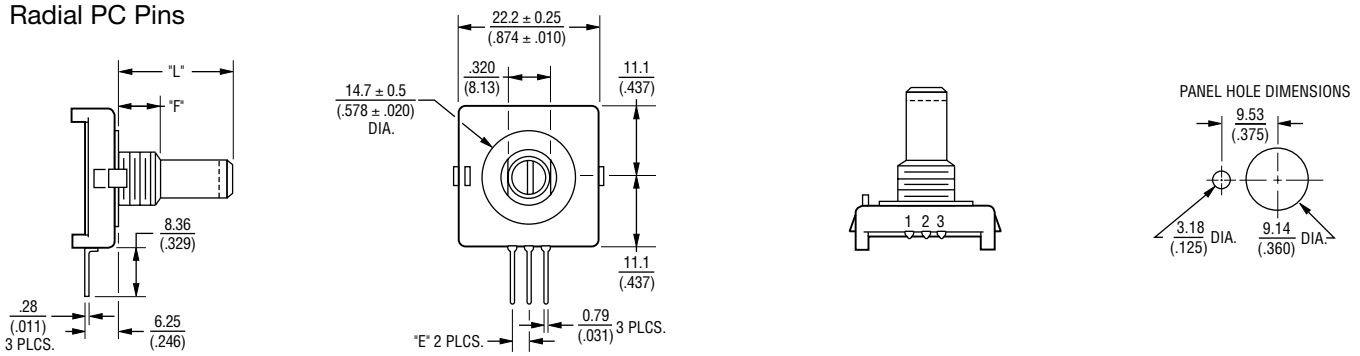
### Axial PC Pins




"F" = $\frac{6.35}{(.250)}$ OR $\frac{9.53}{(.375)}$ "E" = $\frac{2.54}{(.100)}$ OR $\frac{5.08}{(.200)}$

"L" = SEE SHAFT LENGTH TABLE

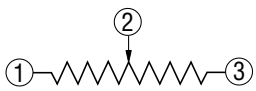
### Radial PC Pins




"F" = $\frac{6.35}{(.250)}$ OR $\frac{9.53}{(.375)}$ "E" = $\frac{2.54}{(.100)}$ OR $\frac{5.08}{(.200)}$

"L" = SEE SHAFT LENGTH TABLE

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



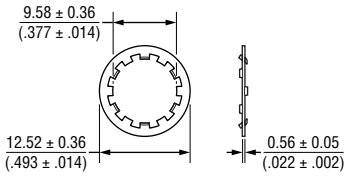

TOLERANCES EXCEPT WHERE NOTED:

.XX = ± $\frac{.25}{(.010)}$

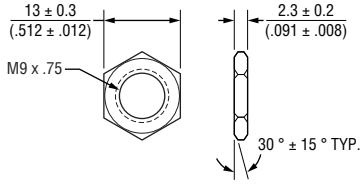
.XXX = ± $\frac{.13}{(.005)}$

## Hardware

**LOCKWASHER H-37-2**

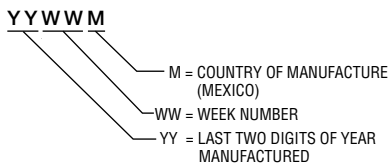



**NUT H-38-11**




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

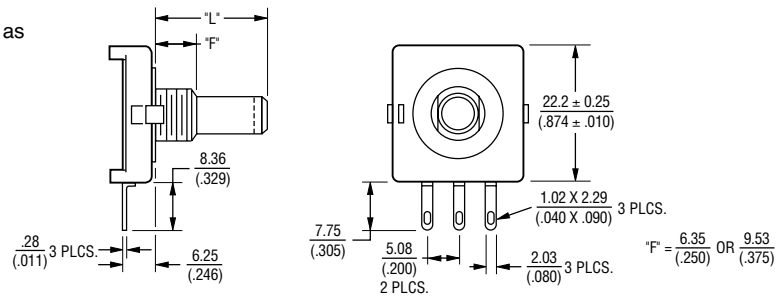
## Date Code Description



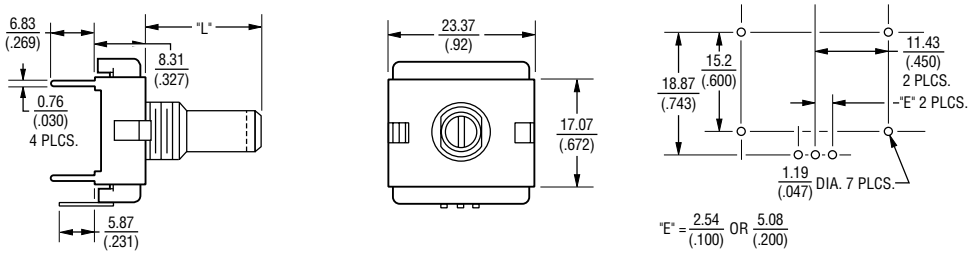
## Product Dimensions

### SOLDER LUGS

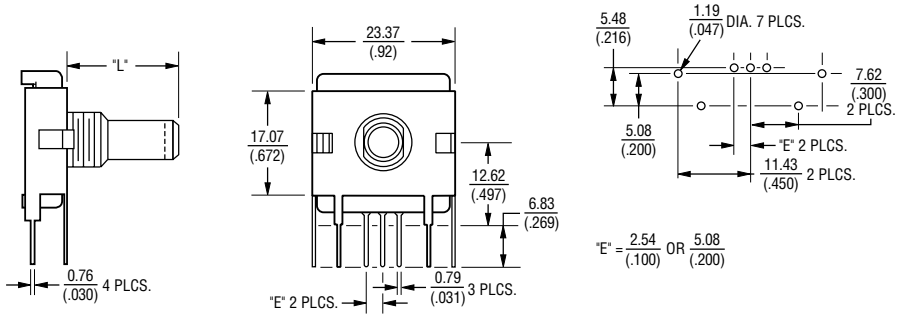
(Dimensions not given are the same as Axial PC pins.




### Axial PC PINS
### With Rear Mounting Bracket

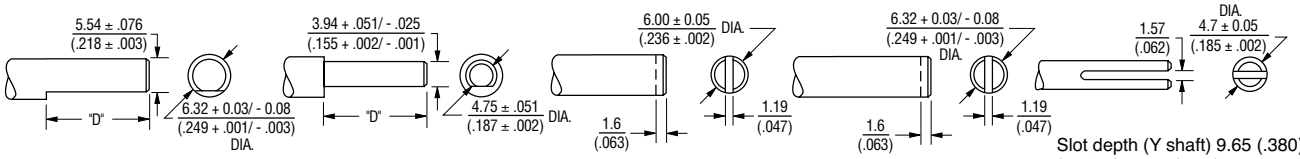



### Radial PC PINS
### With Side Mounting Bracket




## SHAFT STYLES AND ORIENTATION (Full CCW Rotation)

Shaft Style **C** | Shaft Style **J** | Shaft Style **R** | Shaft Style **B** | Shaft Style **Y**

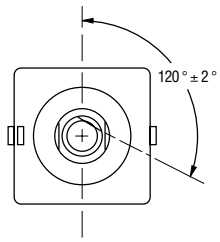



"D" dimensions extend from shaft end to bushing face "D" = (shaft length, FMS) – (bushing length)

Slot depth (Y shaft) 9.65 (.380) for shafts <1 " (2.54) length; 14.7 (.520) for shafts ≥1 " (2.54) length

### Shaft Orientations

Shaft Styles **C, J**



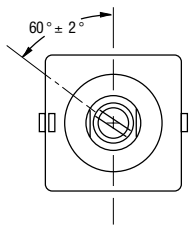

DIMENSIONS: MM / (INCHES)

TOLERANCES EXCEPT WHERE NOTED:

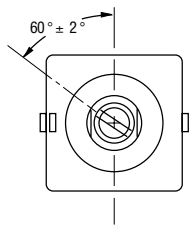
.XX = ± .25 (.010)

.XXX = ± .13 (.005)

Shaft Styles **B, R**




Shaft Style **Y**



# 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** |

**RESISTANCE VALUES**

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

**SHAFT LENGTH (FMS)**

| Code | Description | Available Shaft Styles |
|---|---|---|
| 16 | 1/2 " (12.7 mm) Length | B |
| 20 | 5/8 " (15.9 mm) Length | J |
| **24** | **3/4 " (19 mm) Length** | B, C, J, Y |
| **28** | **7/8 " (22.2 mm) Length** | 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 |
| **24** | **24 mm Length** | R |

**ELEMENT TAPER VERSIONS**

| Code | Taper Description |
|---|---|
| **B** | **Lin. CP ±20 %** |
| D | CW Audio CP ±20 % |
| G | CCW Audio CP ±20 % |

**SHAFT STYLES (See Outline Drawing)**

| Code | Description |
|---|---|
| **B** | **1/4 " (6.35 mm) Dia. Slotted** |
| C | 1/4 " (6.35 mm) Dia. Flatted |
| J | 3/16 " (4.76 mm) Dia. Flatted |
| **R** | **6 mm Dia. Slotted (Use Metric Lengths Only)** |
| Y | 3/16 " (4.76 mm) Dia. Split Shaft |

**DETENT CONFIGURATIONS**

| Code | Taper Description |
|---|---|
| **A** | **No Detents** |
| B | 10 Detents |
| C | Center Detent Only |
| D | 20 Detents |
| E | 30 Detents |
| F | CCW Detent Only |

**ANTI-ROTATION LUG**

| Code | Description |
|---|---|
| **J** | **9:00 Position** |
| **D** | **None** |

**HOUSING TERMINAL CONFIGURATION**

| | Code | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Features** | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **J** | **K** | **L** | **M** | **N** |
| Rear Mounting Bracket | | X | | | | | | | X | X | | | X |
| Side Mounting Bracket | | | | | X | | X | | | | X | X | |
| Axial Terminals .100 " (2.54 mm) Centers | X | X | | | | | | | | X | | | |
| Radial Terminals .100 " (2.54 mm) Centers | | | | X | X | | | | | | X | | |
| Radial Terminals .200 " (5.08 mm) Centers | | | | | | X | X | | | | | X | |
| Solder Lugs .200" (5.08 mm) Centers | | | X | | | | | | | | | | |
| Axial Terminals .200 " (5.08 mm) Centers | | | | | | | | X | X | | | | X |
| Hardware Included | X | | X | X | | X | | X | | X | X | X | X |

**NO. SECTIONS**

| | |
|---|---|
| **1** | **Single** |

**BUSHING CONFIGURATION**

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

*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.*


BOURNS®

**Asia-Pacific:** Tel: +886-2 2562-4117 • Email: asiacus@bourns.com
**EMEA:** Tel: +36 88 885 877 • Email: eurocus@bourns.com
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