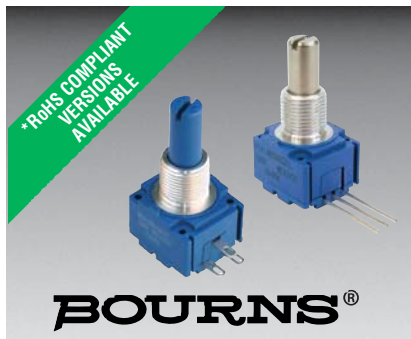




## Features

- Available in a variety of pin-out configurations
- Virtually infinite electrical circuit isolation
- Model 96 sealed for board wash
- Metal or plastic shaft options
- DPST and DPDT switch options
- RoHS compliant versions available\*

**91, 92, 93, 94, 95, 96 - 5/8 " Square Single-Turn Panel Control**  
**97, 99 - 5/8 " Square Single-Turn Panel Control with Rotary Switch**

## Potentiometer Specifications

| Initial Electrical Characteristics <sup>1</sup>                                   | Conductive Plastic Element               | Cermet Element                        |
|-----------------------------------------------------------------------------------|------------------------------------------|---------------------------------------|
| Standard Resistance Range                                                         |                                          |                                       |
| Linear Tapers (A, B, E, & H).....                                                 | (B & E) 1 K ohms to 1 megohm.....        | (A & H) 100 ohms to 1 megohm          |
| Audio Tapers (C, D, F, G, S, & T) .....                                           | (D, G, S, & T) 1 K ohms to 1 megohm..... | (C & F) 1 K ohms to 1 megohm          |
| Total Resistance Tolerance.....                                                   | 10 % or 20 %.....                        | 5% or 10%                             |
| Independent Linearity.....                                                        | ±5 %.....                                | ±5 %                                  |
| Absolute Minimum Resistance.....                                                  | 2 ohms maximum.....                      | 2 ohms maximum                        |
| Effective Electrical Angle.....                                                   | (Linear tapers) 240 ° ± 5 °.....         | (Linear tapers) 240 ° ± 6 °           |
|                                                                                   | (Audio tapers) 225 ° ± 5 °.....          | (Audio tapers) 225 ° ± 6 °            |
| Contact Resistance Variation .....                                                | ±1 %.....                                | ±1 % or 3 ohms (whichever is greater) |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301)                         |                                          |                                       |
| Sea Level .....                                                                   | 1,500 VAC minimum.....                   | 1,500 VAC minimum                     |
| 70,000 Feet .....                                                                 | 500 VAC minimum.....                     | 500 VAC minimum                       |
| Insulation Resistance (500 VDC) .....                                             | 1,000 megohms minimum.....               | 1,000 megohms minimum                 |
| Power Rating (Voltage Limited By Power Dissipation or 350 VAC, Whichever Is Less) |                                          |                                       |
| +70 °C Single Section Assembly .....                                              | (Linear tapers) 0.5 watt.....            | (Linear tapers) 2 watts               |
|                                                                                   | (Audio tapers) 0.25 watt .....           | (Audio tapers) 1 watt                 |
| +70 °C Multiple Section Assembly .....                                            | (Linear tapers) 0.5 watt/section.....    | (Linear tapers) 1 watt/section        |
|                                                                                   | (Audio tapers) 0.25 watt/section .....   | (Audio tapers) 0.5 watt/section       |
| +125 °C.....                                                                      | 0 watt.....                              | 0 watt                                |
| Theoretical Resolution.....                                                       | Essentially infinite.....                | Essentially infinite                  |

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

|                                                            |                                                |                               |
|------------------------------------------------------------|------------------------------------------------|-------------------------------|
| Operating Temperature Range .....                          | -40 °C to +125 °C .....                        | -40 °C to +125 °C             |
| Storage Temperature Range.....                             | -55 °C to +125 °C .....                        | -55 °C to +125 °C             |
| Temperature Coefficient Over Storage                       |                                                |                               |
| Temperature Range.....                                     | ±1,000 ppm/°C.....                             | ±150 ppm/°C                   |
| Vibration (Single Section).....                            |                                                |                               |
|                                                            | 15 G.....                                      | 15 G                          |
| Total Resistance Shift.....                                | ±2 % maximum.....                              | ±2 % maximum                  |
| Voltage Ratio Shift.....                                   | ±5 % maximum.....                              | ±5 % maximum                  |
| Shock (Single Section).....                                |                                                |                               |
|                                                            | 30 G.....                                      | 30 G                          |
| Total Resistance Shift.....                                | ±2 % maximum.....                              | ±2 % maximum                  |
| Voltage Ratio Shift.....                                   | ±5 % maximum.....                              | ±5 % maximum                  |
| Load Life .....                                            |                                                |                               |
|                                                            | 1,000 hours .....                              | 1,000 hours                   |
| Total Resistance Shift.....                                | ±10 % maximum.....                             | ±5 % maximum                  |
| Rotational Life (No Load) .....                            |                                                |                               |
|                                                            | 100,000 cycles .....                           | 100,000 cycles                |
| Total Resistance Shift.....                                | (Linear tapers) 10 ohms or ±15 % TRS max. .... | (All tapers) ±5 % TRS max.    |
|                                                            | (whichever is greater)                         |                               |
|                                                            | (Audio tapers) ±20 % maximum                   |                               |
| Contact Resistance Variation                               |                                                |                               |
| @ 50,000 cycles .....                                      | (Linear tapers) ±2 %.....                      | ±2 %                          |
|                                                            | (Audio tapers) ±3 % .....                      | ±3 %                          |
| Moisture Resistance (MIL-STD-202, Method 103, Condition B) |                                                |                               |
| Total Resistance Shift.....                                | (Linear tapers) ±10 % TRS maximum .....        | (All tapers) ±5 % TRS maximum |
|                                                            | (Audio tapers) ±20 % TRS maximum               |                               |
| Insulation Resistance (500 VDC).....                       | 100 megohms minimum .....                      | 100 megohms minimum           |
| IP Rating (Model 96) .....                                 |                                                |                               |
|                                                            | IP 65 .....                                    | IP 65                         |
| (All Others) .....                                         | IP 40 .....                                    | IP 40                         |

\*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.

**91, 92, 93, 94, 95, 96 - 5/8 " Square Single-Turn Panel Control**  
**97, 99 - 5/8 " Square Single-Turn Panel Control with Rotary Switch**

**BOURNS®**

**Potentiometer Specifications**

**Mechanical Characteristics<sup>1</sup>**

|                                                 |                                                                                                                |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Stop Strength (1/4 " D shaft) .....             | 45.19 N-cm (4 lb.-in.)                                                                                         |
| (1/8 " D shaft) .....                           | 33.89 N-cm (3 lb.-in.)                                                                                         |
| Mechanical Angle.....                           | 300 ° ±5 °                                                                                                     |
| Torque                                          |                                                                                                                |
| Starting .....                                  | 0.3 max. above average running torque                                                                          |
| Running Torque                                  |                                                                                                                |
| Single or Dual Section (A ,D & R Bushings)..... | 0.21 to 1.06 N-cm (0.3 to 1.5 oz.-in.)                                                                         |
| Single or Dual Section (C & U Bushings).....    | 0.14 to 1.06 N-cm (0.2 to 1.5 oz.-in.)                                                                         |
| Mounting .....                                  | (Metal Bushing) 1.7-2.0 N-m (15-18 lb.-in.) maximum                                                            |
|                                                 | Plastic Bushing) 56-79 N-cm (5-7 lb.-in.) maximum                                                              |
| Variation.....                                  | 0.35 N-cm (0.5 oz.-in.) maximum in 45 ° shaft travel                                                           |
| Weight (Single Section, Plastic Bushing) .....  | 7.3 grams nominal                                                                                              |
| Weight (Single Section, Metal Bushing).....     | 12.7 grams nominal                                                                                             |
| (Each Additional Section) .....                 | 4 grams nominal                                                                                                |
| Terminals .....                                 | Printed circuit terminals, J-Hooks or solder lugs                                                              |
| 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, date code, resistance, manufacturer's part number                                    |
| Ganging (Multiple Section Potentiometers).....  | 2 cups maximum                                                                                                 |
| Hardware.....                                   | One lockwasher and one mounting nut is shipped with each potentiometer, except where noted in the part number. |

NOTE: All Model 90 performance specifications do not apply to units subjected to printed circuit board cleaning procedures, except for the sealed version (Model 96).

<sup>1</sup>At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

**91, 92, 93, 94, 95, 96 - 5/8 " Square Single-Turn Panel Control**  
**97, 99 - 5/8 " Square Single-Turn Panel Control with Rotary Switch**

**BOURNS®**

**Rotary Switch Specifications**

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

|                                                           |                                                                      |
|-----------------------------------------------------------|----------------------------------------------------------------------|
| Contacts:                                                 |                                                                      |
| DPST .....                                                | N.O./N.O., N.C./N.C. or N.O./N.C.                                    |
| DPDT .....                                                | 2 N.O./N.C. (break before make)                                      |
| Power Rating (Resistive Load):                            |                                                                      |
| DPST .....                                                | 2 A @ 125 volts RMS-60 Hz or 2 A @ 28 VDC, 1 A @ 250 volts RMS-60 Hz |
| DPDT .....                                                | 1 A @ 125 volts RMS-60 Hz or 1 A @ 28 VDC                            |
| Contact Resistance (0.1 VDC-10 mA) .....                  | 10 milliohms nominal                                                 |
| Contact Bounce .....                                      | 5 milliseconds maximum                                               |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301) |                                                                      |
| Sea Level .....                                           | 1500 VAC minimum                                                     |
| Insulation Resistance .....                               | 1000 megohms minimum                                                 |

**Environmental Characteristics<sup>1</sup>**

|                                                                           |                                                          |
|---------------------------------------------------------------------------|----------------------------------------------------------|
| Operating Temperature Range .....                                         | 0 °C to +70 °C                                           |
| Exposure Temperature Range .....                                          | -65 °C to +125 °C                                        |
| Vibration (Dual Section) .....                                            | 8 G                                                      |
| Contact Resistance .....                                                  | 10 milliohms maximum                                     |
| Contact Bounce .....                                                      | 0.1 millisecond maximum                                  |
| Shock (Dual Section) .....                                                | 20 G                                                     |
| Contact Resistance .....                                                  | 10 milliohms maximum                                     |
| Contact Bounce .....                                                      | 0.1 millisecond maximum                                  |
| Rotational Life .....                                                     | 25,000 cycles                                            |
| Switch Actuating Torque (50% Duty cycle @ Rated Power Load) .....         | 1.41 to 4.94 N-cm (2 to 7 oz.-in.)                       |
| Contact Resistance .....                                                  | 100 milliohms maximum                                    |
| Moisture Resistance (MIL-STD-202, Method 106, Condition B)                |                                                          |
| Contact Resistance (0.1 VDC-10 mA) .....                                  | 10 milliohms maximum                                     |
| Insulation Resistance (After 24 Hours @ Room Temperature) (500 VDC) ..... | 100 megohms minimum                                      |
| Housing Material .....                                                    | High temperature, flame retardant, thermosetting plastic |

**Mechanical Characteristics<sup>1</sup>**

|                                                                    |                                      |
|--------------------------------------------------------------------|--------------------------------------|
| Actuating Torque (Each Section, Switch Module Only) .....          | 3.53 to 10.59 N-cm (5 to 15 oz.-in.) |
| Running Torque (Out of Detent, 2-4 Module Assembly) .....          | 0.21 to 1.41 N-cm (0.3 to 2 oz.-in.) |
| Detent .....                                                       | CW or CCW standard                   |
| Actuation Angle .....                                              | 20 ° ±5 °                            |
| Contact Materials .....                                            | Fine silver with gold overlay        |
| Terminal Styles .....                                              | Solder lug only                      |
| Standard Orientation .....                                         | In-line with control terminals       |
| Optional .....                                                     | Rotated 90 ° CCW from standard       |
| Terminal Strength (Before and After Soldering Heat Exposure) ..... | 0.9 kg (2 lbs.) minimum              |

NOTE: Model 99 performance specifications do not apply to units subjected to printed circuit board cleaning procedures.

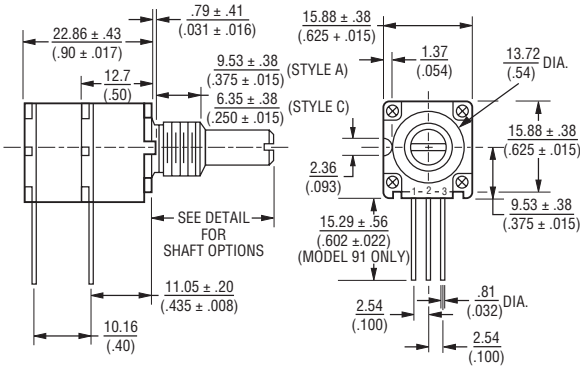
<sup>1</sup>At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

# 91, 92, 93, 94, 95, 96, 97, 99 - 5/8" Square Single-Turn

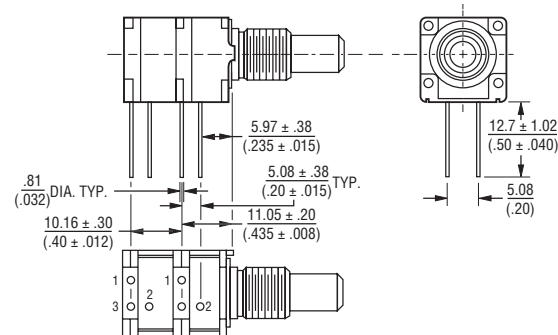
**BOURNS®**

## Product Dimensions

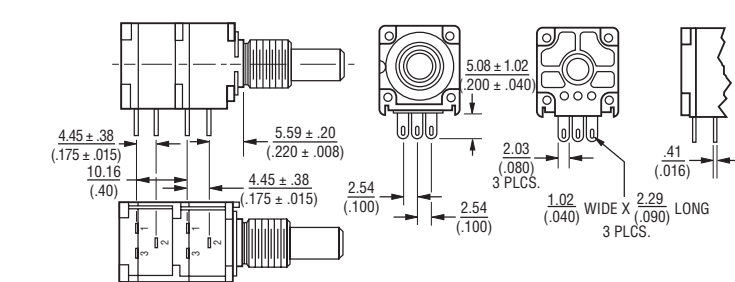
### Model 91 & 96 PC Pin Terminals, In-Line



### Model 93 PC Pin Terminals, "L" Pattern



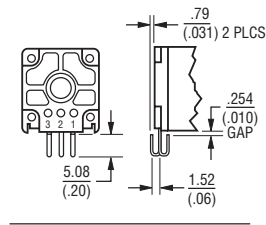
### Model 95 Solder Lug Terminals, "Triangular" Pattern



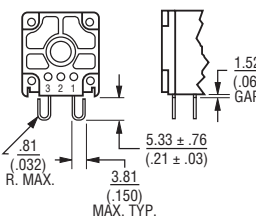
TOLERANCES EXCEPT AS SHOWN: DECIMAL .XXX ±  $\frac{.128}{.015}$  FRACTION ± 1/64  
 .XX ±  $\frac{.005}{.38}$  ANGLE ± 5°

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

### Model 92 J-Hooked Terminals, In-Line

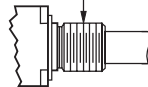


### Model 94 J-Hooked Terminals, "L" Pattern

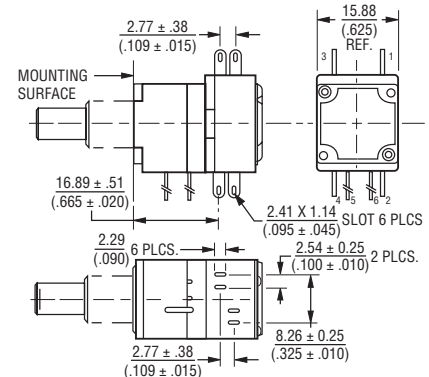


### Bushing Styles

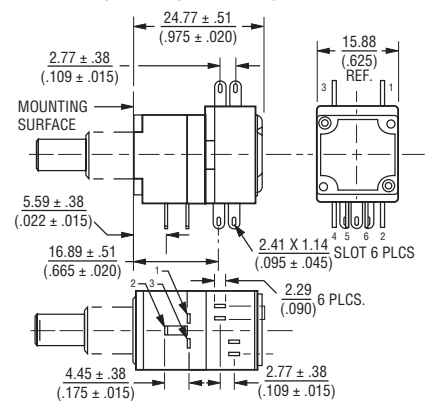
3/8 THREADLESS (9.53 mm) (STYLE "D")  
 3/8-32 UNEF (9.53 mm) (STYLE "A")  
 1/4-32 UNEF (6.35 mm) (STYLE "C")  
 M10 X 0.75-6g (STYLE "R")  
 M7 X 0.75-6g (STYLE "U")



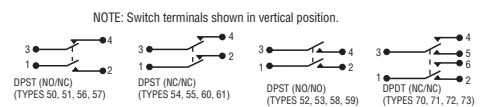
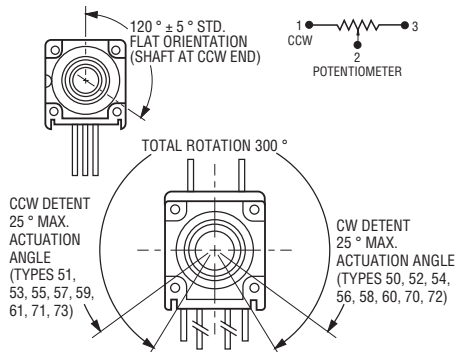
### Model 97 1st Cup Same As Model 93 (2nd Cup - Switch)



### Model 99 1st Cup Same As Model 95 (2nd Cup - Switch)



### Switch Module Variations Shaft Flat Orientation



Switch contacts shown in detent position.

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

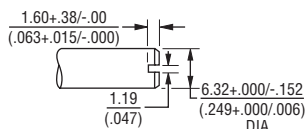
# 91, 92, 93, 94, 95, 96, 97, 99 - 5/8" Square Single-Turn

# BOURNS®

## Product Dimensions

### Plastic Shaft Styles

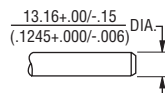
**SHAFT TYPE "B"** (USES BUSHING A OR D)



STD. LENGTHS:

|                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| 12.70<br>(.500) | 15.88<br>(.625) | 19.05<br>(.750) | 22.23<br>(.875) |
|-----------------|-----------------|-----------------|-----------------|

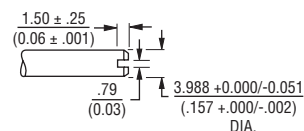
**SHAFT TYPE "D"** (USES BUSHING C)



STD. LENGTHS:

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| 12.70<br>(.500) | 15.88<br>(.625) | 19.05<br>(.750) |
|-----------------|-----------------|-----------------|

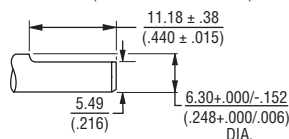
**SHAFT TYPE "T"** (USES BUSHING U)



STD. LENGTHS:

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| 12.00<br>(.472) | 16.00<br>(.630) | 22.00<br>(.866) |
|-----------------|-----------------|-----------------|

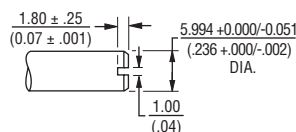
**SHAFT TYPE "C"** (USES BUSHING A OR D)



STD. LENGTHS:

|                 |
|-----------------|
| 22.23<br>(.875) |
|-----------------|

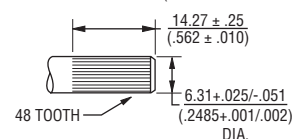
**SHAFT TYPE "R"** (USES BUSHING R)



STD. LENGTHS:

|                |                |                |
|----------------|----------------|----------------|
| 16.0<br>(.630) | 19.0<br>(.748) | 22.0<br>(.866) |
|----------------|----------------|----------------|

**SHAFT TYPE "W"** (USES BUSHING A OR D)

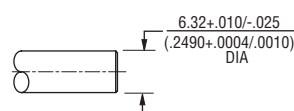


STD. LENGTHS:

|                 |
|-----------------|
| 25.40<br>(1.00) |
|-----------------|

### Metal Shaft Styles

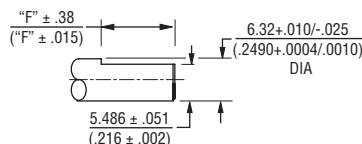
**SHAFT TYPE "A"** (USES BUSHING A)



STD. LENGTHS:

|                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 12.70<br>(.500) | 15.88<br>(.625) | 19.05<br>(.750) | 22.23<br>(.875) | 25.4<br>(1.000) |
|-----------------|-----------------|-----------------|-----------------|-----------------|

**SHAFT TYPE "H"** (USES BUSHING A)



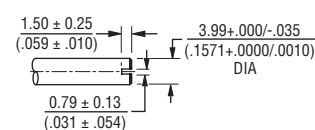
STD. LENGTHS:

|                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 12.70<br>(.500) | 15.88<br>(.625) | 19.05<br>(.750) | 22.23<br>(.875) | 25.4<br>(1.000) |
|-----------------|-----------------|-----------------|-----------------|-----------------|

FLAT LENGTH "F":

|                |                |                |                 |                 |
|----------------|----------------|----------------|-----------------|-----------------|
| 1.60<br>(.063) | 4.78<br>(.188) | 7.95<br>(.313) | 11.13<br>(.438) | 14.30<br>(.563) |
|----------------|----------------|----------------|-----------------|-----------------|

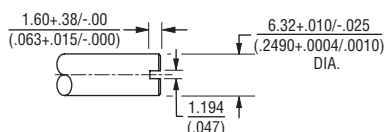
**SHAFT TYPE "V"** (USES BUSHING U)



STD. LENGTHS:

|                |                |                |                |
|----------------|----------------|----------------|----------------|
| 12.0<br>(.472) | 16.0<br>(.630) | 19.0<br>(.748) | 22.0<br>(.866) |
|----------------|----------------|----------------|----------------|

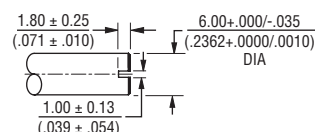
**SHAFT TYPE "G"** (USES BUSHING A)



STD. LENGTHS:

|                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 12.70<br>(.500) | 15.88<br>(.625) | 19.05<br>(.750) | 22.23<br>(.875) | 25.4<br>(1.000) |
|-----------------|-----------------|-----------------|-----------------|-----------------|

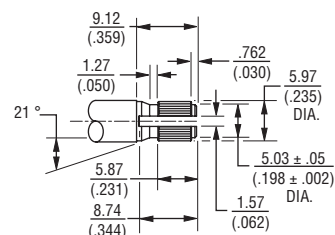
**SHAFT TYPE "J"** (USES BUSHING R)



STD. LENGTHS:

|                |                |                |                |
|----------------|----------------|----------------|----------------|
| 12.0<br>(.472) | 16.0<br>(.630) | 19.0<br>(.748) | 22.0<br>(.866) |
|----------------|----------------|----------------|----------------|

**SHAFT TYPE "Y"** (USES BUSHING A)



STD. LENGTHS:

|                 |
|-----------------|
| 19.05<br>(.750) |
|-----------------|

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

TOLERANCES EXCEPT AS SHOWN: XX =  $\pm \frac{.02}{(.050)}$   
 .XXX =  $\pm \frac{.005}{(.127)}$   
 .XXX =  $\pm \frac{.0005}{(.0127)}$

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

# How to Order 90 Series Panel Controls

**BOURNS®**

Models 91 - 96: Part number for multiple section potentiometers must have a taper and resistance value for each section.

Models 97 & 99: Part number must contain a switch type.

|    |   |   |   |   |   |    |   |   |    |
|----|---|---|---|---|---|----|---|---|----|
| 91 | A | 2 | A | - | A | 28 | - | A | 15 |
| 99 | A | 2 | A | - | B | 28 | - | A | 15 |

|     |   |
|-----|---|
| A15 | L |
| R51 | L |

| ANTI-ROTATION LUG |                                   |
|-------------------|-----------------------------------|
| A                 | Single .305 " (7.8 mm) R, 90 °CW  |
| C                 | Single .305 " (7.8 mm) R, 270 °CW |
| D                 | No Lug                            |

| # SECTIONS | APPLICABLE MODELS                                    |
|------------|------------------------------------------------------|
| 1          | Single Models 91 Thru 96 Only                        |
| 2          | Dual All Models, 2nd Section is a Switch in Model 99 |

| BUSHING |                                                          |
|---------|----------------------------------------------------------|
| A       | Metal Plain 3/8 " (9.53 mm) D x 3/8 " (9.53 mm) L        |
| C       | Metal Plain 1/4 " (6.35 mm) D x 1/4 " (6.35 mm) L        |
| D       | Plastic Unthreaded 3/8 " (9.53 mm) D x 3/8 " (9.53 mm) L |
| R       | Metal Plain 10 mm D x 9 mm L                             |
| U       | Metal Plain 7 mm D x 9 mm L                              |

| SHAFT LENGTH (FMS) |             | AVAILABLE ONLY IN BUSHING |
|--------------------|-------------|---------------------------|
| Code               | Description | Code                      |
| 16                 | 1/2 "L      | A, C, D                   |
| 20                 | 5/8 "L      | A, C, D                   |
| 24                 | 3/4 "L      | A, C, D                   |
| 28                 | 7/8 "L      | A, D                      |
| 32                 | 1 "L        | A, D                      |
| METRIC             |             |                           |
| 12                 | 12 mmL      | U                         |
| 16                 | 16 mmL      | R, U                      |
| 19                 | 19 mmL      | R                         |
| 22                 | 22 mmL      | R, U                      |

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

| SWITCH TYPE (MODELS 97 & 99 ONLY) |                                               |
|-----------------------------------|-----------------------------------------------|
| (R50)                             | DPST N.O./N.C. CW Detent In-Line Term         |
| (R51)                             | <b>DPST N.O./N.C. CCW Detent In-Line Term</b> |
| (R52)                             | DPST N.O./N.O. CW Detent In-Line Term         |
| (R53)                             | DPST N.O./N.O. CCW Detent In-Line Term        |
| (R54)                             | DPST N.C./N.C. CW Detent In-Line Term         |
| (R55)                             | DPST N.C./N.C. CCW Detent In-Line Term        |
| (R56)                             | DPST N.O./N.C. CW Detent Horz Term            |
| (R57)                             | DPST N.O./N.C. CCW Detent Horz Term           |
| (R58)                             | DPST N.O./N.O. CW Detent Horz Term            |
| (R59)                             | DPST N.O./N.O. CCW Detent Horz Term           |
| (R60)                             | DPST N.C./N.C. CW Detent Horz Term            |
| (R61)                             | DPST N.C./N.C. CCW Detent Horz Term           |
| (R70)                             | DPDT CW Detent In-Line Term                   |
| (R71)                             | DPDT CCW Detent In-Line Term                  |
| (R72)                             | DPDT CW Detent Horz Term                      |
| (R73)                             | DPDT CCW Detent Horz Term                     |

| MODEL |                                                    |
|-------|----------------------------------------------------|
| 91    | Single-Turn, In-Line PC Pins                       |
| 92    | Single-Turn, In-Line J-Hooks                       |
| 93    | Single-Turn, L-Pattern PC Pins                     |
| 94    | Single-Turn, L-Pattern J-Hooks                     |
| 95    | Single-Turn, Triangle-Pattern Solder Lugs          |
| 96    | Single-Turn, In-Line PC Pins, Sealed*              |
| 97    | Single-Turn, L-Pattern PC Pins w/Switch            |
| 99    | Single-Turn, Triangle-Pattern Solder Lugs w/Switch |

\*Model 96 is not available in multi-gang versions.

| ELEMENT TAPER TYPE/TOLERANCE           |                                                                                                                                                                         | RESISTANCE CODE VALUE IN OHMS                                                                                                                                                             |                                                                                                                                                                                       |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (A)<br>(H)                             | Linear Cermet $\pm 10$ %                                                                                                                                                | (05) - 100<br>(28) - 150<br>(06) - 200<br>(07) - 250<br>(08) - 500<br>(09) - 750<br>(10) - 1 K<br>(29) - 1.5 K<br>(11) - 2 K<br>(12) - 2.5 K<br>(13) - 5 K<br>(14) - 7.5 K<br>(15) - 10 K | (30) - 15 K<br>(16) - 20 K<br>(17) - 25 K<br>(18) - 50 K<br>(19) - 75 K<br>(20) - 100 K<br>(31) - 150 K<br>(21) - 200 K<br>(22) - 250 K<br>(23) - 500 K<br>(24) - 750 K<br>(25) - 1 M |
|                                        | Linear C-P $\pm 20$ %<br>Linear C-P $\pm 10$ %                                                                                                                          | (10) - 1 K<br>(12) - 2.5 K<br>(13) - 5 K<br>(15) - 10 K<br>(16) - 20 K<br>(17) - 25 K                                                                                                     | (18) - 50 K<br>(20) - 100 K<br>(22) - 250 K<br>(23) - 500 K<br>(25) - 1 M                                                                                                             |
| (C)<br>(D)<br>(F)<br>(G)<br>(S)<br>(T) | CW Audio Cermet $\pm 10$ %<br>CW Audio C-P $\pm 20$ %<br>CCW Audio Cermet $\pm 10$ %<br>CCW Audio C-P $\pm 20$ %<br>CW Audio C-P $\pm 10$ %<br>CCW Audio C-P $\pm 10$ % | (10) - 1 K<br>(12) - 2.5 K<br>(13) - 5 K<br>(15) - 10 K<br>(17) - 25 K                                                                                                                    | (18) - 50 K<br>(20) - 100 K<br>(22) - 250 K<br>(23) - 500 K<br>(25) - 1 M                                                                                                             |

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

| SHAFT TYPE |                                          | AVAILABLE ONLY IN  |                 |
|------------|------------------------------------------|--------------------|-----------------|
|            |                                          | LENGTHS (CODE)     | BUSHINGS (CODE) |
| B          | Plastic Single Slotted 1/4 " (6.35 mm) D | 16,20,24,28        | A,D             |
| C          | Plastic Single Flatted 1/4" (6.35 mm) D  | 24,28              | A,D             |
| D          | Plastic Single Plain 1/8" (3.18 mm) D    | 16,20,24           | C               |
| R          | Plastic Single Slotted 6 mm D            | Metric 16,19,22    | R               |
| T          | Plastic Single Slotted 4 mm D            | Metric 16,19,22    | U               |
| W          | Plastic Single Knurled 1/4" (6.35 mm) D  | 32                 | A,D             |
| A          | Metal Single Plain 1/4" (6.35 mm) D      | 16,20,24,28,32     | A               |
| G          | Metal Single Slotted 1/4" (6.35 mm) D    | 16,20,24,28,32     | A               |
| H          | Metal Single Flatted 1/4" (6.35 mm) D    | 16,20,24,28,32     | A               |
| J          | Metal Single Slotted 6 mm D              | Metric 12,16,19,22 | R               |
| V          | Metal Single Slotted 4 mm D              | Metric 12,16,19,22 | U               |
| Y          | Metal Single Knurled 1/4" (6.35 mm) D    | 24                 | A               |

REV. 01/10

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