



## 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



**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.

## Additional Features

- 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**

**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                                    |
| Gangung (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.

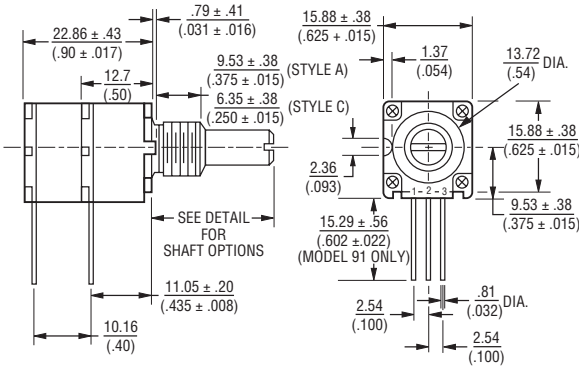
<sup>1</sup>At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

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

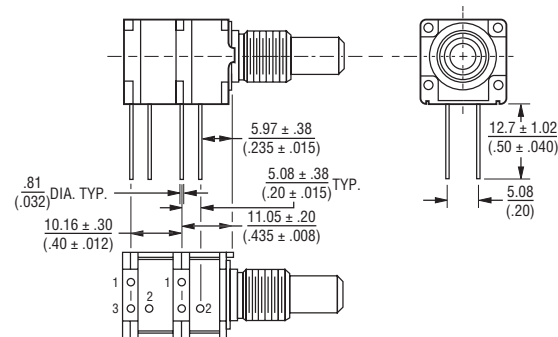
# BOURNS®

## Product Dimensions

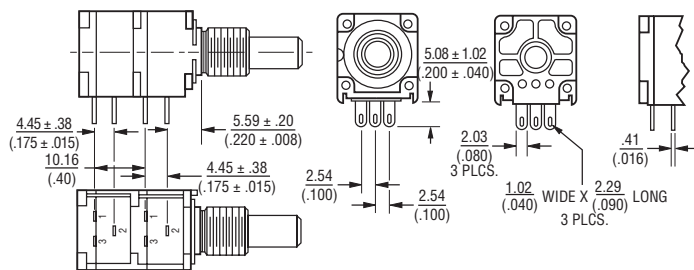
### Model 91 & 96 PC Pin Terminals, In-Line



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



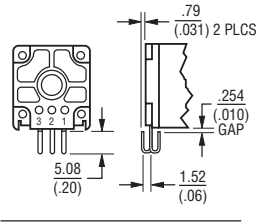
### Model 95 Solder Lug Terminals, "Triangular" Pattern



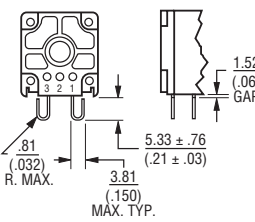
TOLERANCES EXCEPT AS SHOWN: DECIMAL .XXX ±  $\frac{.128}{.015}$  FRACTION ± 1/64  
 .XX ±  $\frac{.005}{.38}$  ANGLE ± 5°

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

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

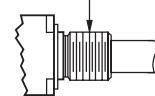


### Model 94 J-Hooked Terminals, "L" Pattern

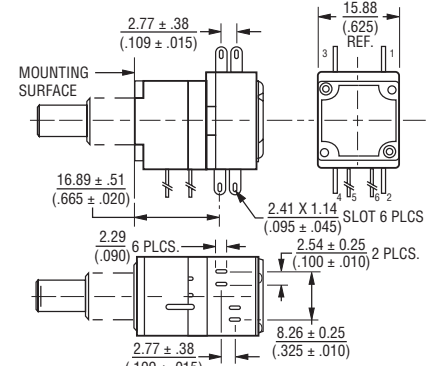


### Bushing Styles

- 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



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

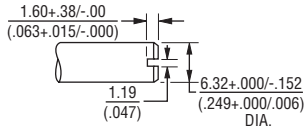
# 91, 92, 93, 94, 95, 96, 97, 99 - 5/8" Square Single-Turn

# BOURNS®

## Product Dimensions

### Plastic Shaft Styles

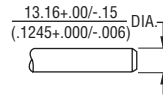
**SHAFT TYPE "B"** (USES BUSHING A OR D)



STD. LENGTHS:

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

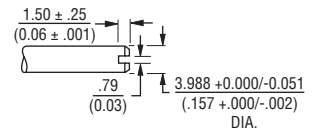
**SHAFT TYPE "D"** (USES BUSHING C)



STD. LENGTHS:

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

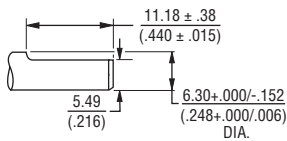
**SHAFT TYPE "T"** (USES BUSHING U)



STD. LENGTHS:

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

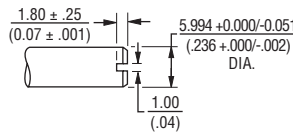
**SHAFT TYPE "C"** (USES BUSHING A OR D)



STD. LENGTHS:

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

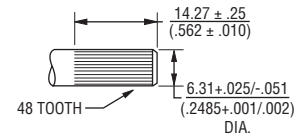
**SHAFT TYPE "R"** (USES BUSHING R)



STD. LENGTHS:

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

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

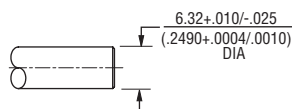


STD. LENGTHS:

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

### Metal Shaft Styles

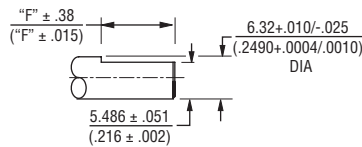
**SHAFT TYPE "A"** (USES BUSHING A)



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)



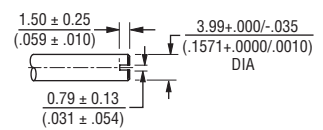
STD. LENGTHS:

|                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 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) |
|----------------|----------------|----------------|-----------------|-----------------|

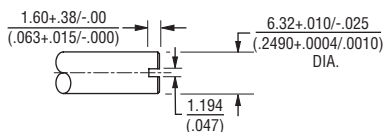
**SHAFT TYPE "V"** (USES BUSHING U)



STD. LENGTHS:

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

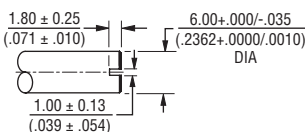
**SHAFT TYPE "G"** (USES BUSHING A)



STD. LENGTHS:

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

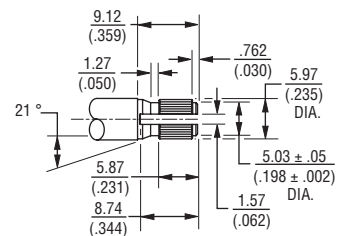
**SHAFT TYPE "J"** (USES BUSHING R)



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 = ±  $\frac{.02}{.050}$   
 .XXX = ±  $\frac{.005}{.127}$   
 .XXXX = ±  $\frac{.0005}{.0127}$

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®

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

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

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.

| 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                            |

| 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.

| 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 mm L     | U                         |
| 16                 | 16 mm L     | R, U                      |
| 19                 | 19 mm L     | R                         |
| 22                 | 22 mm L     | 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         |
| <b>(R51)</b>                      | <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                     |

| 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               |

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

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

REV. 02/10

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