



## Features

- Available in a variety of pin-out configurations
- Virtually infinite electrical circuit isolation
- Metal or plastic shaft options
- RoHS compliant\*

## Model 91, 92, 93, 94 & 95 - 5/8" Square Single-Turn Panel Control

Initial Electrical Characteristics <sup>1</sup>	Conductive Plastic Element	Cermet Element
<b>Standard Resistance Range</b>		
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)
<b>Dielectric Withstanding Voltage (MIL-STD-202, Method 301)</b>		
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
<b>Power Rating (Voltage Limited By Power Dissipation or 350 VAC, Whichever Is Less)</b>		
+70 °C Single Section Assembly.....	(Linear tapers) 1 watt.....	(Linear tapers) 2 watts
	(Audio tapers) 0.5 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
<b>Temperature Coefficient Over Storage</b>		
Temperature Range.....	±1,000 ppm/°C.....	±150 ppm/°C
<b>Vibration (Single Section)</b>		
Total Resistance Shift.....	±2 % maximum.....	±2 % maximum
Voltage Ratio Shift.....	±5 % maximum.....	±5 % maximum
<b>Shock (Single Section)</b>		
Total Resistance Shift.....	±2 % maximum.....	±2 % maximum
Voltage Ratio Shift.....	±5 % maximum.....	±5 % maximum
<b>Load Life</b>		
Total Resistance Shift.....	±10 % maximum.....	±5 % maximum
<b>Rotational Life (No Load)</b>		
Total Resistance Shift.....	(Linear tapers) 10 ohms or ±15 % TRS max. ....	(All tapers) ±5 % TRS max.
	(whichever is greater)	
	(Audio tapers) ±20 % maximum	
<b>Contact Resistance Variation</b>		
@ 50,000 cycles.....	(Linear tapers) ±2 %.....	±2 %
	(Audio tapers) ±3 %.....	±3 %
<b>Moisture Resistance (MIL-STD-202, Method 103, Condition B)</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.....	IP 40.....	IP 40

\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
 Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.

**Model 91, 92, 93, 94 & 95 - 5/8 " Square Single-Turn Panel Control** **BOURNS®**

**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 & 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 .....	1.7-2.0 N-m (15-18 lb.-in.) maximum
Variation.....	0.35 N-cm (0.5 oz.-in.) maximum in 45 ° shaft travel
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: 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.

# Model 91, 92, 93, 94 & 95 - 5/8" Square Single-Turn Panel Control **BOURNS®**

## Product Dimensions

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



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



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



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



### Shaft Flat Orientation



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



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# Model 91, 92, 93, 94 & 95 - 5/8" Square Single-Turn Panel Control **BOURNS®**

## Product Dimensions

### Plastic Shaft Styles

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



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)	22.23 (.875)
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**SHAFT TYPE "C"** (USES BUSHING A)



STD. LENGTHS:

19.05 (.750)	22.23 (.875)
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**SHAFT TYPE "D"** (USES BUSHING C)



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)
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**SHAFT TYPE "T"** (USES BUSHING U)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)
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**SHAFT TYPE "R"** (USES BUSHING R)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)
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**SHAFT TYPE "W"** (USES BUSHING A)



STD. LENGTHS:

25.40 (1.00)
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### Metal Shaft Styles

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



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)	22.23 (.875)	25.4 (1.000)
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**SHAFT TYPE "H"** (USES BUSHING A)



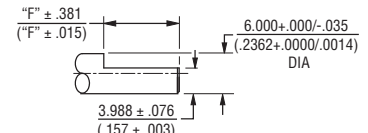
STD. LENGTHS:

19.05 (.750)	22.23 (.875)
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FLAT LENGTH "F":

7.95 (.313)	11.13 (.438)
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**SHAFT TYPE "S"** (USES BUSHING R)



STD. LENGTHS:

19.05 (.750)	22.23 (.875)
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FLAT LENGTH "F":

9.98 (.393)	12.98 (.511)
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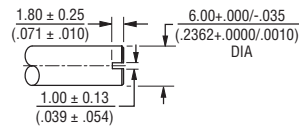
**SHAFT TYPE "E"** (USES BUSHING C)



STD. LENGTHS:

12.0 (.500)	16.0 (.625)	19.0 (.750)
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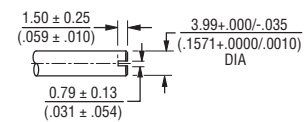
**SHAFT TYPE "J"** (USES BUSHING R)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)
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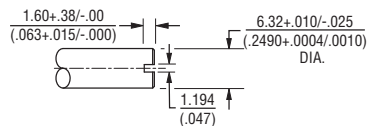
**SHAFT TYPE "V"** (USES BUSHING U)



STD. LENGTHS:

19.05 (.750)	22.23 (.875)
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**SHAFT TYPE "G"** (USES BUSHING A)



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)	22.23 (.875)
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TOLERANCES EXCEPT AS SHOWN: .XX = ± .02  
 (.050)  
 .XXX = ± .005  
 (.127)  
 .XXXX = ± .0005  
 (.0127)

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

# How to Order Model 91, 92, 93, 94 & 95 Panel Controls

# BOURNS®



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



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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