



Features

- Features one-piece molded plastic
- Available in a variety of pin-out shaft and rotor assemblies configurations
- Virtually infinite electrical circuit
- Model 96 sealed for board wash
- Metal shaft available as special feature

91, 93, 95, 96 - 5/8" Square Single-Turn

Initial Electrical Characteristics ¹	Conductive Plastic Element	Cermet Element
Standard Resistance Range		
Linear Tapers (A, B, E, & H).....	(B & E) 1K ohms to 1 megohm.....	(A & H) 50 ohms to 1 megohm
Audio Tapers (C, D, F, G, S, & T).....	(D, G, S, & T) 1K ohms to 1 megohm.....	(C & F) 1K ohms to 1 megohm
Resistance Tolerance.....	(B, D, & G tapers) ±20%.....	(A, C, & F tapers) ±10%
	(E, S, & T tapers) ±10%.....	(H taper) ±5%
Independent Linearity.....	(B & E tapers) ±5%.....	(A & H tapers) ±5%
Absolute Minimum Resistance.....	2 ohms maximum.....	2 ohms maximum
Continuity.....	Maintained for full mechanical angle.....	Maintained for full mechanical angle
Effective Electrical Angle.....	240° ±5°.....	240° ±6°
Contact Resistance Variation.....	±1%.....	±1% or 3 ohms (whichever is greater)
Dielectric Withstanding Voltage.....	MIL-STD-202, Method 301.....	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.....	(B & E tapers) 0.5 watt.....	(A & H tapers) 2 watts
	(D, G, S, & T tapers) 0.25 watt.....	(C & F tapers) 1 watt
+70°C Multiple Section Assembly.....	(B & E tapers) 0.5 watt/section.....	(A & H tapers) 1 watt/section
	(D, G, S, & T tapers) 0.25 watt/section.....	(C & F tapers) 0.5 watt/section
+125°C.....	0 watt.....	0 watt
Roll-on/Roll-off.....	(B & E tapers) 0.25% maximum.....	(A & H tapers) 0.5% maximum
	(D & S tapers) 0.1% maximum CCW end.....	(C taper) 0.1% maximum CCW end
	(G & T tapers) 0.1% maximum CW end.....	(F taper) 0.1% maximum CW end
	(D & S tapers) 0.5% maximum CW end.....	(C taper) 1.0% maximum CW end
	(G & T tapers) 0.5% maximum CCW end.....	(F taper) 1.0% maximum CW end
Theoretical Resolution.....	Essentially infinite.....	Essentially infinite

Environmental Characteristics ¹	Conductive Plastic Element	Cermet Element
Operating Temperature.....	+1°C to +125°C.....	+1°C to +125°C
Storage Temperature Range.....	-55°C to +125°C.....	-55°C to +125°C
Temperature Coefficient		
Over Storage Temperature Range.....	±1,000PPM/°C.....	±150PPM/°C
Vibration (Single Section).....	15G.....	15G
Total Resistance Shift.....	±2% maximum.....	±2% maximum
Voltage Ratio Shift.....	±5% maximum.....	±5% maximum
Shock (Single Section).....	30G.....	30G
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.....	(B & E tapers) 10 ohms or ±15% maximum.....	10 ohms or ±10% maximum
	(whichever is greater)	(whichever is greater)
	(D, G, S, & T tapers) ±20% maximum	
Contact Resistance Variation @ 50,000 cycles.....	(B & E tapers) ±2%.....	
	(D, G, S, & T tapers) ±3%	
Moisture Resistance.....	MIL-STD-202, Method 103, Condition B.....	MIL-STD-202, Method 103, Condition B
Total Resistance Shift.....	(B & E tapers) ±10% maximum.....	(All tapers) ±5% maximum
	(D, G, S, & T tapers) ±20% maximum	
Insulation Resistance (500 VDC).....	100 megohms minimum.....	100 megohms minimum

Mechanical Characteristics ¹	Conductive Plastic Element	Cermet Element
Running Torque		
Single or Dual Section (A, D & r Bushings).....	0.3 to 1.5 oz.-in. (0.21 to 1.06 Ncm).....	0.3 to 1.5 oz.-in. (0.21 to 1.06 Ncm)
Single or Dual Section (C & U Bushings).....	0.2 to 1.5 oz.-in. (0.14 to 1.06 Ncm).....	0.2 to 1.5 oz.-in. (0.14 to 1.06 Ncm)
Starting Torque.....	0.3 maximum above average running torque.....	0.3 maximum above average running torque
Torque Variation.....	0.5 oz.-in. (0.35 Ncm) max. in 45° shaft travel.....	0.5 oz.-in. (0.35 Ncm) max. in 45° shaft travel
Stop Strength (1/4" D shaft).....	4 in.-lb. (45.19 Ncm).....	4 in.-lb. (45.19 Ncm)
(1/8" D shaft).....	3 in.-lb. (33.89 Ncm).....	3 in.-lb. (33.89 Ncm)
Mechanical Angle.....	300° ±5°.....	300° ±5°
Weight (Single Section).....	7 grams maximum.....	7 grams maximum
Each Additional Section.....	4 grams maximum.....	4 grams maximum
Terminals.....	Printed circuit terminals, J-Hooks or solder lugs.....	Printed circuit terminals, J-Hooks or solder lugs
Marking.....	Manufacturer's trademark, date code, resistance, manufacturer's part number.....	Manufacturer's trademark, date code, resistance, manufacturer's part number

FOR DIMENSIONAL DRAWINGS SEE PAGE 226.

FOR ORDERING INFORMATION SEE PAGE 227.

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).

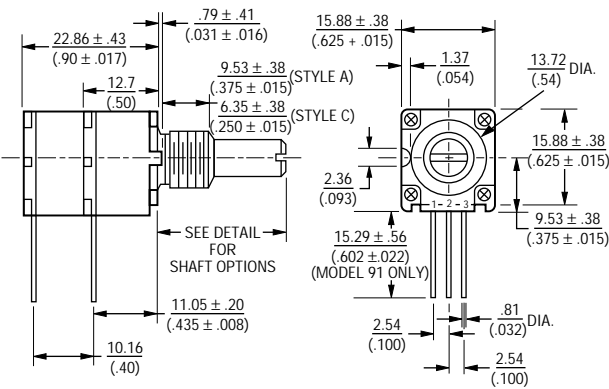
¹AT ROOM AMBIENT: +25°C NOMINAL AND 50% RELATIVE HUMIDITY NOMINAL, EXCEPT AS NOTED.

Specifications are subject to change without notice.

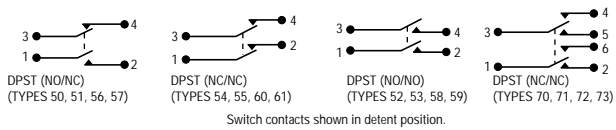
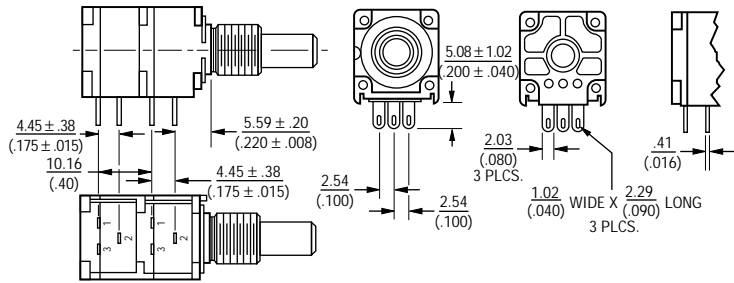
91, 93, 95, 96 Dimensions and Tolerances



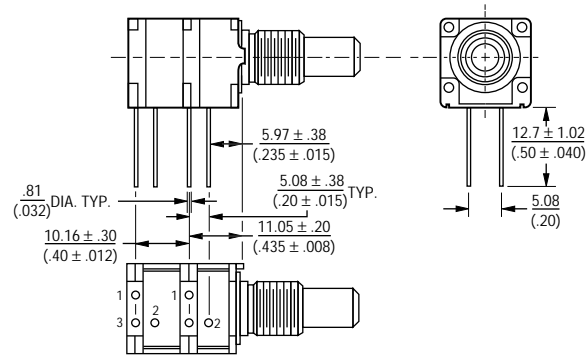
Model 91 PC Pin Terminals, In-Line



Model 95 Solder Lug Terminals, "Triangular" Pattern

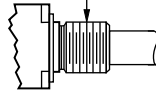


Model 93 PC Pin Terminals, "L" Pattern

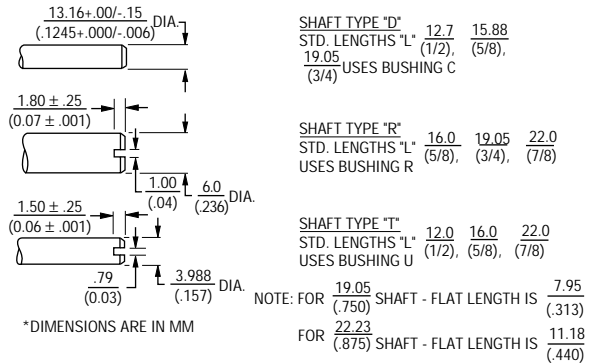
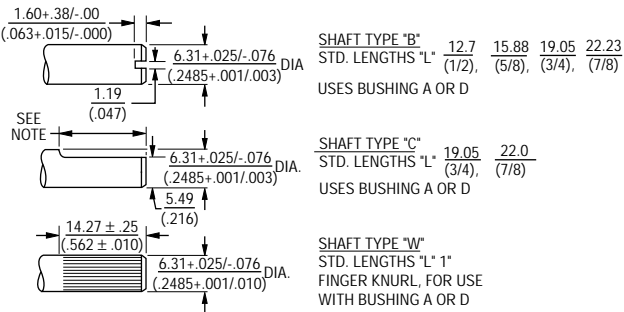


Bushing Styles

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



Shaft Styles

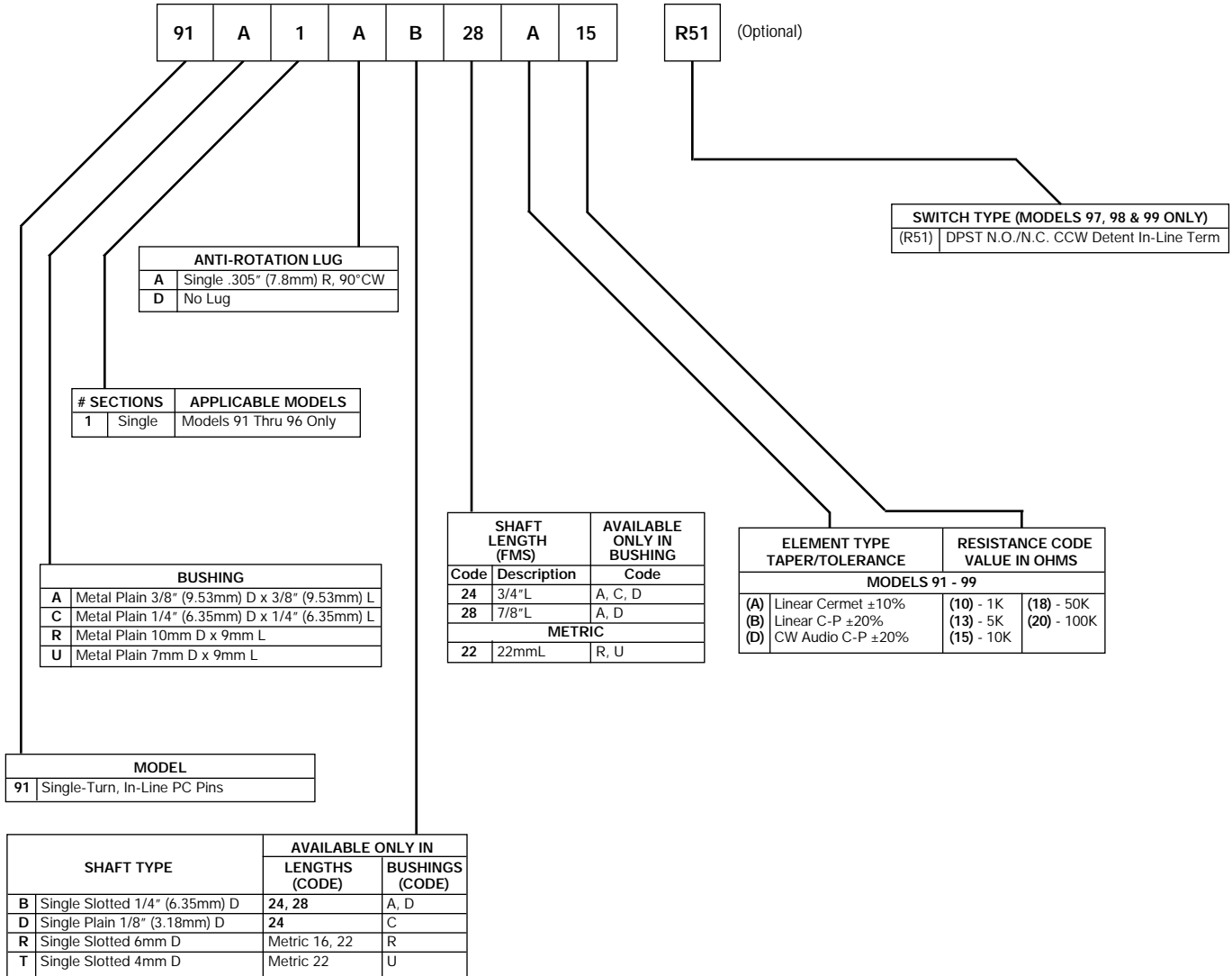


TOLERANCES EXCEPT AS SHOWN: DECIMAL .XXX ± $\frac{.128}{.015}$, FRACTION ± 1/64
 .XX ± $\frac{.005}{.38}$ ANGLE ± 5°

DIMENSIONS ARE: METRIC
(INCHES)

90 Series Panel Controls Dimensions and Tolerances **BOURNS®**

How To Order



Recommended part numbers.
For other options contact the factory.
Boldface listings are in stock and readily available through distribution.