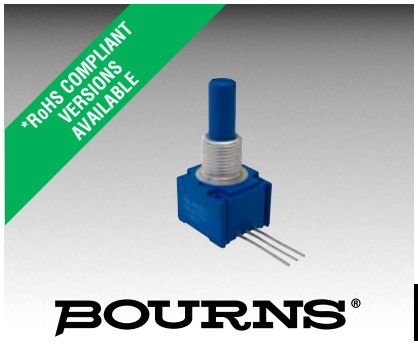

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Features

- Virtually infinite electrical circuit isolation
- Sealed for board wash
- Metal or plastic shaft options
- RoHS compliant versions available*

Non-RoHS models are currently available, but not recommended for new designs. See Product Obsolescence Memo for details.

Model 96 - 5/8 " Square Sealed Single-Turn Panel Control

Initial Electrical Characteristics[1]	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[1]		
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. (whichever is greater)	(All tapers) ±5 % TRS max.
	(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	IP 65	IP 65

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Model 96 - 5/8 ” Square Sealed Single-Turn Panel Control

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Mechanical Characteristics[1]

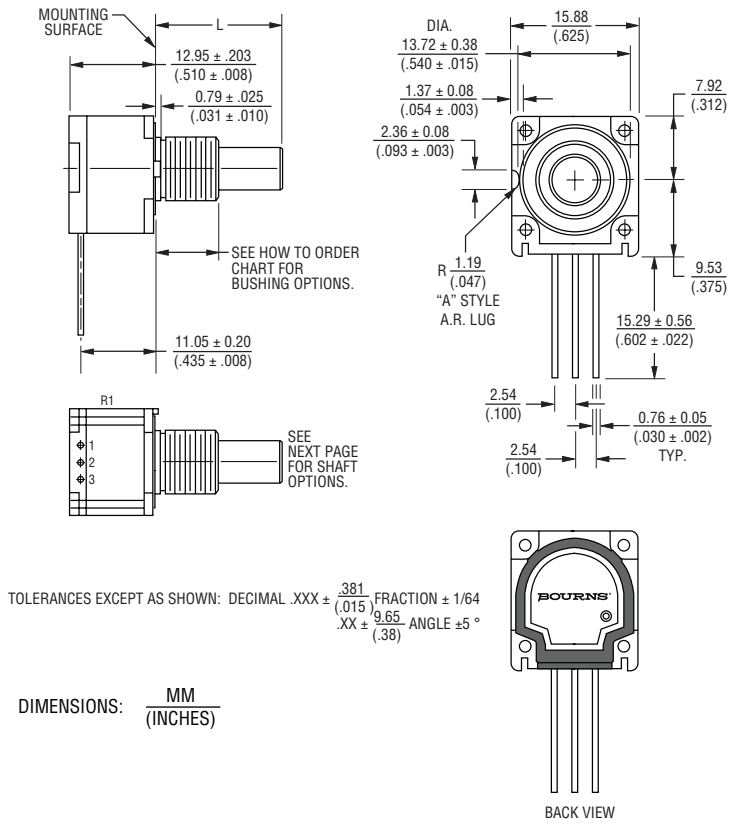
Stop Strength (1/4 ” D shaft) ..... 45.19 N-cm (4 lb.-in.)
(1/8 ” D shaft) ..... 33.89 N-cm (3 lb.-in.)
Mechanical Angle..... 300 ° ±5 °
Torque
Starting ..... 0.3 max. above average running torque
Running Torque
Single or Dual Section (A & R Bushings) ..... 0.21 to 1.06 N-cm (0.3 to 1.5 oz.-in.)
Single 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. Immersion wash is not recommended.
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 immersion cleaning processes.

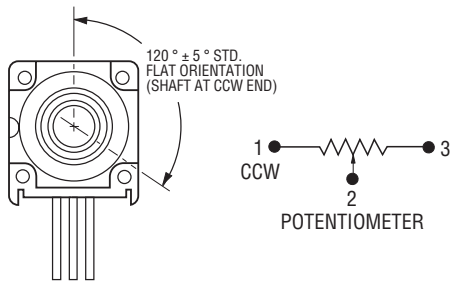
[1]At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

Product Dimensions

Model 96 PC Pin Terminals, In-Line



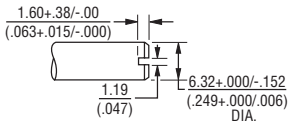
Shaft Flat Orientation



Product Dimensions

Plastic Shaft Styles

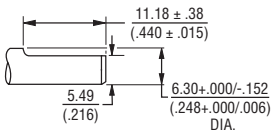
SHAFT TYPE "B" (USES BUSHING A)



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)	22.23 (.875)

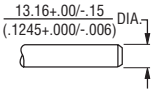
SHAFT TYPE "C" (USES BUSHING A)



STD. LENGTHS:

19.05 (.750)	22.23 (.875)

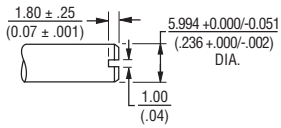
SHAFT TYPE "D" (USES BUSHING C)



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)

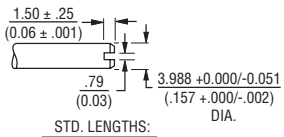
SHAFT TYPE "R" (USES BUSHING R)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)

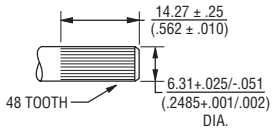
SHAFT TYPE "T" (USES BUSHING U)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)

SHAFT TYPE "W" (USES BUSHING A)

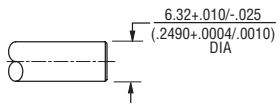


STD. LENGTHS:

25.40 (1.00)

Metal Shaft Styles

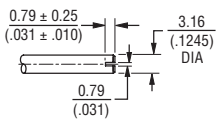
SHAFT TYPE "A" (USES BUSHING A)



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)	22.23 (.875)	25.4 (1.000)

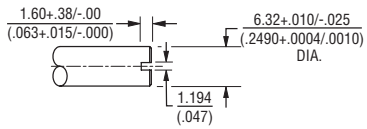
SHAFT TYPE "E" (USES BUSHING C)



STD. LENGTHS:

12.0 (.500)	16.0 (.625)	19.0 (.750)

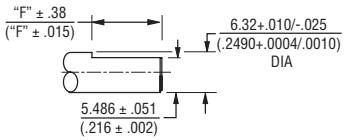
SHAFT TYPE "G" (USES BUSHING A)



STD. LENGTHS:

12.70 (.500)	15.88 (.625)	19.05 (.750)	22.23 (.875)

SHAFT TYPE "H" (USES BUSHING A)



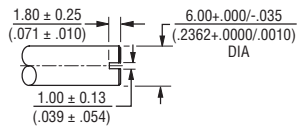
STD. LENGTHS:

19.05 (.750)	22.23 (.875)

FLAT LENGTH “F”:

7.95 (.313)	11.13 (.438)

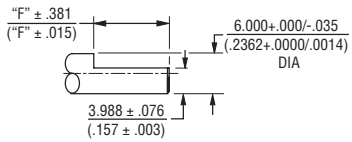
SHAFT TYPE "J" (USES BUSHING R)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)

SHAFT TYPE "S" (USES BUSHING R)



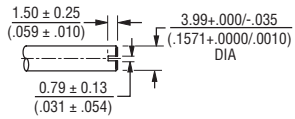
STD. LENGTHS:

19.05 (.750)	22.23 (.875)

FLAT LENGTH “F”:

9.98 (.393)	12.98 (.511)

SHAFT TYPE "V" (USES BUSHING U)



STD. LENGTHS:

19.05 (.750)	22.23 (.875)

TOLERANCES EXCEPT AS SHOWN: .XX = ± .02 (.050)

.XXX = ± .005 (.127)

.XXXX = ± .0005 (.0127)

DIMENSIONS: MM / (INCHES)

How to Order Model 96 Panel Controls

BOURNS®

96	A	1	A	-	A	28	-	A	15	L

ANTI-ROTATION LUG	
A	**Single .305 ” (7.8 mm) R, 90 °CW**
D	**No Lug**

# SECTIONS	
1	**Single**

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
R	**Metal Plain 10 mm D x 9 mm L**
U	Metal Plain 7 mm D x 9 mm L

MODEL	
96	**Single-Turn, In-Line PC Pins, Sealed**

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

RoHS IDENTIFIER	
L	**Compliant**
Blank	**Non-Compliant**

Non-compliant versions are available, but not recommended for new designs.

SHAFT TYPE		AVAILABLE ONLY IN LENGTHS (CODE)	AVAILABLE ONLY IN BUSHINGS (CODE)
B	**Plastic Single Slotted 1/4 " (6.35 mm) D**	16, 20, 24, 28	**A**
C	**Plastic Single Flatted 1/4" (6.35 mm) D**	24, 28	**A**
D	Plastic Single Plain 1/8" (3.18 mm) D	16, 20, 24	C
R	**Plastic Single Slotted 6 mm D**	Metric 16,22	R
T	**Plastic Single Slotted 4 mm D**	Metric 16, 22	U
W	Plastic Single Knurled 1/4" (6.35 mm) D	32	**A**
A	**Metal Single Plain 1/4" (6.35 mm) D**	16, 20, 24	**A**
E	**Metal Single Slotted 1/8" (3.18 mm) D**	16, 20, 24	**C**
G	**Metal Single Slotted 1/4" (6.35 mm) D**	16, 20, 24, 28	**A**
H	**Metal Single Flatted 1/4" (6.35 mm) D**	24, 28	**A**
J	**Metal Single Slotted 6 mm D**	Metric16, 22	R
S	**Metal Single Flatted 6 mm D**	Metric 16, 22	R
V	**Metal Single Slotted 4 mm D**	Metric 16, 22	U

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	**(18) - 50 K**
		(08) - 500	**(20) - 100 K**
		(10) - 1 K	(21) - 200 K
		(11) - 2 K	(22) - 250 K
		(12) - 2.5 K	(23) - 500 K
		(13) - 5 K	(25) - 1 M
		(15) - 10 K	
(B)	**Linear C-P ±20 %**	**(10) - 1 K**	**(18) - 50 K**
(E)	Linear C-P ±10 %	(12) - 2.5 K	**(20) - 100 K**
		(13) - 5 K	(22) - 250 K
		(15) - 10 K	(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.