



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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*RoHS COMPLIANT



BOURNS®

Features

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

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) 1 watt..... | (Linear tapers) 2 watts |
| | (Audio tapers) 0.5 watt..... | (Audio tapers) 1 watt |
| +125 °C..... | 0 watt..... | 0 watt |
| Theoretical Resolution..... | Essentially infinite..... | Essentially infinite |
| Environmental Characteristics¹ | | |
| 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..... | IP 65..... | IP 65 |

*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.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

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

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Mechanical Characteristics¹

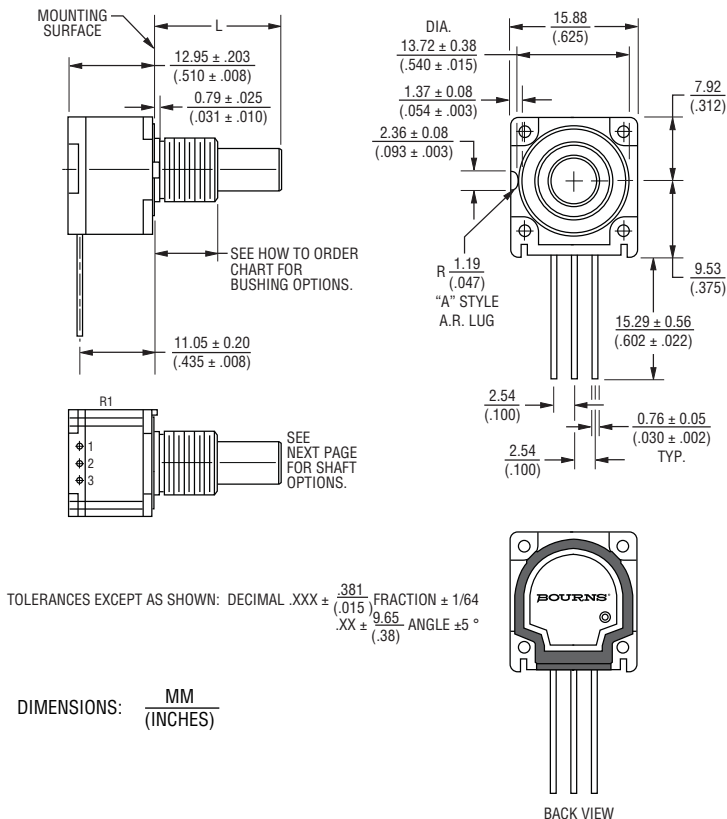
| | |
|---|--|
| Stop Strength (1/4 " D shaft) | 45.19 N-cm (4 lb.-in.) |
| (1/8 " D shaft) | 33.89 N-cm (3 lb.-in.) |
| Mechanical Angle..... | 300 ° ±5 ° |
| Torque | |
| Starting | 0.3 max. above average running torque |
| Running Torque | |
| Single or Dual Section (A & R Bushings) | 0.21 to 1.06 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 |
| 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 |
| 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.

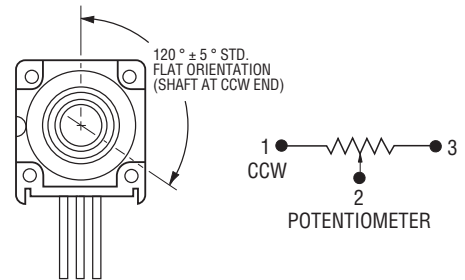
¹At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

Product Dimensions

Model 96 PC Pin Terminals, In-Line



Shaft Flat Orientation



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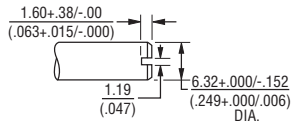
Model 96 - 5/8 " Square Sealed Single-Turn Panel Control

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Product Dimensions

Plastic Shaft Styles

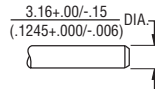
SHAFT TYPE "B" (USES BUSHING A)



STD. LENGTHS:

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

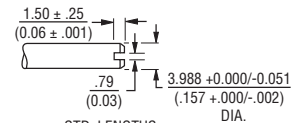
SHAFT TYPE "D" (USES BUSHING C)



STD. LENGTHS:

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

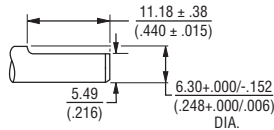
SHAFT TYPE "T" (USES BUSHING U)



STD. LENGTHS:

| | |
|----------------|----------------|
| 16.0 (.630) | 22.0 (.866) |
|----------------|----------------|

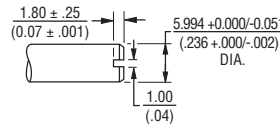
SHAFT TYPE "C" (USES BUSHING A)



STD. LENGTHS:

| | |
|-----------------|-----------------|
| 19.05 (.750) | 22.23 (.875) |
|-----------------|-----------------|

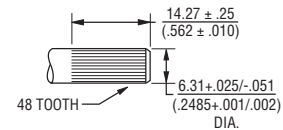
SHAFT TYPE "R" (USES BUSHING R)



STD. LENGTHS:

| | |
|----------------|----------------|
| 16.0 (.630) | 22.0 (.866) |
|----------------|----------------|

SHAFT TYPE "W" (USES BUSHING A)

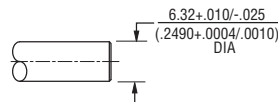


STD. LENGTHS:

| |
|-----------------|
| 25.40 (1.00) |
|-----------------|

Metal Shaft Styles

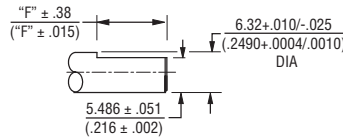
SHAFT TYPE "A" (USES BUSHING A)



STD. LENGTHS:

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

SHAFT TYPE "H" (USES BUSHING A)



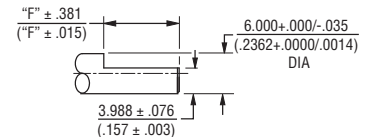
STD. LENGTHS:

| | |
|-----------------|-----------------|
| 19.05 (.750) | 22.23 (.875) |
|-----------------|-----------------|

FLAT LENGTH "F":

| | |
|----------------|-----------------|
| 7.95 (.313) | 11.13 (.438) |
|----------------|-----------------|

SHAFT TYPE "S" (USES BUSHING R)



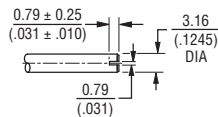
STD. LENGTHS:

| | |
|----------------|----------------|
| 16.0 (.630) | 22.0 (.866) |
|----------------|----------------|

FLAT LENGTH "F":

| | |
|----------------|-----------------|
| 6.99 (.275) | 12.98 (.511) |
|----------------|-----------------|

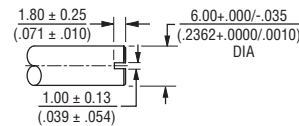
SHAFT TYPE "E" (USES BUSHING C)



STD. LENGTHS:

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

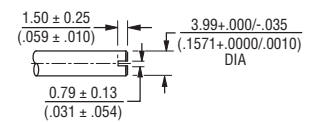
SHAFT TYPE "J" (USES BUSHING R)



STD. LENGTHS:

| | |
|----------------|----------------|
| 16.0 (.630) | 22.0 (.866) |
|----------------|----------------|

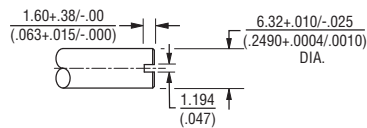
SHAFT TYPE "V" (USES BUSHING U)



STD. LENGTHS:

| | |
|----------------|----------------|
| 16.0 (.630) | 22.0 (.866) |
|----------------|----------------|

SHAFT TYPE "G" (USES BUSHING A)



STD. LENGTHS:

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

TOLERANCES EXCEPT AS SHOWN: .XX ± .02
 (.050)
 .XXX ± .005
 (.127)
 .XXXX ± .0005
 (.0127)

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

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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 mm L | R, U |
| 22 | 22 mm L | R, U |

| RoHS IDENTIFIER | |
|-----------------|-----------|
| L | Compliant |

| SHAFT TYPE | AVAILABLE ONLY IN | |
|--|-------------------|-----------------|
| | LENGTHS (CODE) | 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 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 | Metric 16, 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) (H) | Linear Cermet ±10 % Linear Cermet ±5 % | (05) - 100 | (30) - 15 K |
| | | (28) - 150 | (16) - 20 K |
| (B) (E) | Linear C-P ±20 % Linear C-P ±10 % | (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 | |
| | | (18) - 50 K | |
| | | (20) - 100 K | |
| (C) (D) (F) (G) (S) (T) | CW Audio Cermet ±10 % CW Audio C-P ±20 % CCW Audio Cermet ±10 % CCW Audio C-P ±20 % CW Audio C-P ±10 % CCW Audio C-P ±10 % | (10) - 1 K | (18) - 50 K |
| | | (12) - 2.5 K | (20) - 100 K |
| | | (13) - 5 K | (22) - 250 K |
| | | (15) - 10 K | (23) - 500 K |
| | | (17) - 25 K | (25) - 1 M |
| | | | |

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