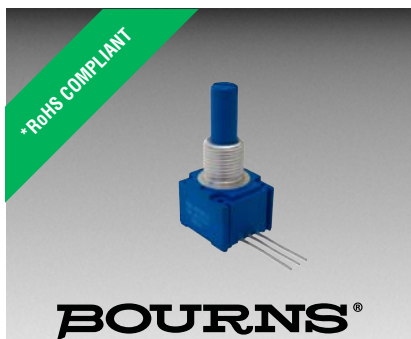




## Features

- 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 <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) 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 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.....                                                                    | IP 65.....                                     | IP 65                                 |

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

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

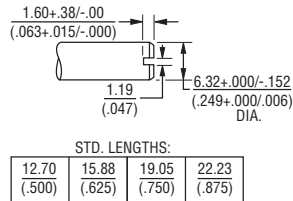
# Model 96 - 5/8 " Square Sealed Single-Turn Panel Control

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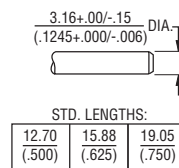
## Product Dimensions

### Plastic Shaft Styles

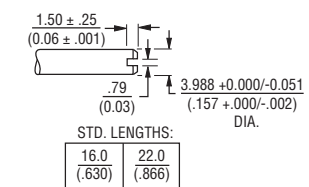
**SHAFT TYPE "B"** (USES BUSHING A)



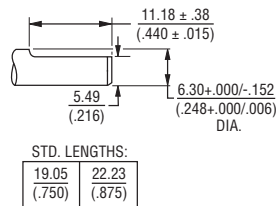
**SHAFT TYPE "D"** (USES BUSHING C)



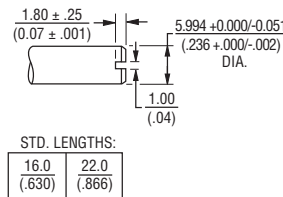
**SHAFT TYPE "T"** (USES BUSHING U)



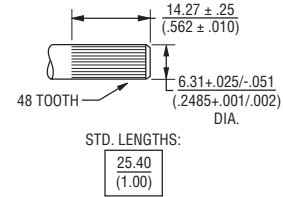
**SHAFT TYPE "C"** (USES BUSHING A)



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

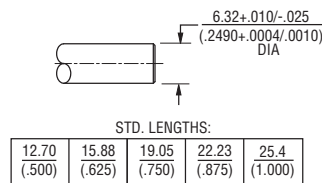


**SHAFT TYPE "W"** (USES BUSHING A)

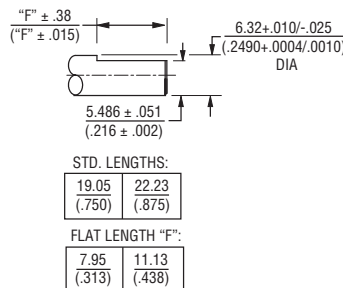


### Metal Shaft Styles

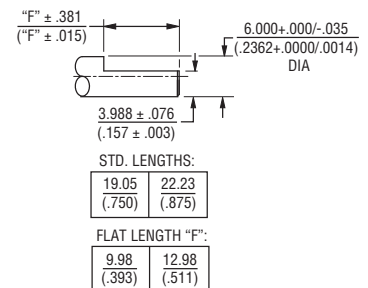
**SHAFT TYPE "A"** (USES BUSHING A)



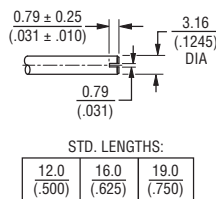
**SHAFT TYPE "H"** (USES BUSHING A)



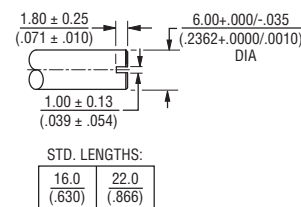
**SHAFT TYPE "S"** (USES BUSHING R)



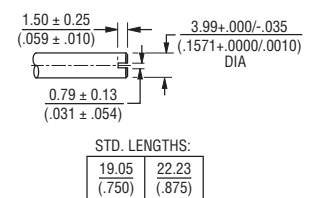
**SHAFT TYPE "E"** (USES BUSHING C)



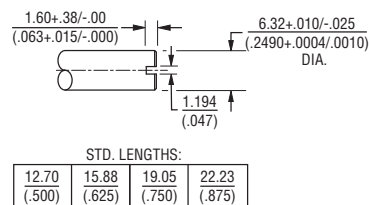
**SHAFT TYPE "J"** (USES BUSHING R)



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



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



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

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

# How to Order Model 96 Panel Controls

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|    |   |   |   |   |   |    |   |   |    |   |
|----|---|---|---|---|---|----|---|---|----|---|
| 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 |

| 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               |
| 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)<br>(H)                   | Linear Cermet ±10 %    | (05) - 100<br>(28) - 150<br>(06) - 200<br>(07) - 250<br>(08) - 500<br><b>(10) - 1 K</b><br>(11) - 2 K<br>(12) - 2.5 K<br><b>(13) - 5 K</b><br><b>(15) - 10 K</b> | (30) - 15 K<br>(16) - 20 K<br>(17) - 25 K<br><b>(18) - 50 K</b><br><b>(20) - 100 K</b><br>(21) - 200 K<br>(22) - 250 K<br>(23) - 500 K<br>(25) - 1 M |
|                              | Linear Cermet ±5 %     |                                                                                                                                                                  |                                                                                                                                                      |
| (B)<br>(E)                   | Linear C-P ±20 %       | (10) - 1 K<br>(12) - 2.5 K<br><b>(13) - 5 K</b><br><b>(15) - 10 K</b><br>(16) - 20 K<br>(17) - 25 K                                                              | (18) - 50 K<br><b>(20) - 100 K</b><br>(22) - 250 K<br>(23) - 500 K<br>(25) - 1 M                                                                     |
|                              | Linear C-P ±10 %       |                                                                                                                                                                  |                                                                                                                                                      |
| (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.*

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