

## 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
<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
+125 °C.....	0 watt .....	0 watt
Theoretical Resolution.....	Essentially infinite.....	Essentially infinite
<b>Environmental Characteristics<sup>1</sup></b>		
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>		
	15 G.....	15 G
Total Resistance Shift.....	±2 % maximum .....	±2 % maximum
Voltage Ratio Shift.....	±5 % maximum .....	±5 % maximum
<b>Shock (Single Section)</b>		
	30 G.....	30 G
Total Resistance Shift.....	±2 % maximum .....	±2 % maximum
Voltage Ratio Shift.....	±5 % maximum .....	±5 % maximum
<b>Load Life</b>		
	1,000 hours .....	1,000 hours
Total Resistance Shift.....	±10 % maximum .....	±5 % maximum
<b>Rotational Life (No Load)</b>		
	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	
<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 65 .....	IP 65



**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
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# Model 96 – 5/8" Square Sealed Single-Turn Panel Control

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## Mechanical Characteristics<sup>1</sup>

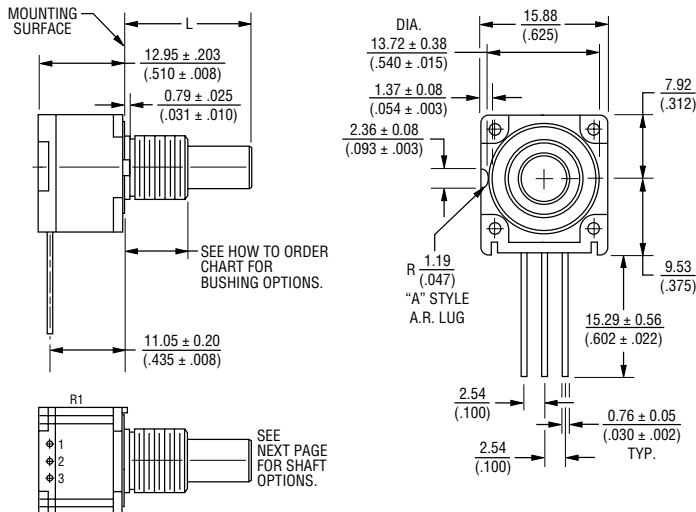
Stop Strength (1/4" D shaft) .....	45.19 N-cm (4 lb.-in.)
(1/8" D shaft) .....	33.89 N-cm (3 lb.-in.)
Mechanical Angle .....	300° ±5°
Torque	
Starting .....	0.3 max. above average running torque
Running Torque	
Single or Dual Section (A & R Bushings) .....	0.21 to 1.06 N-cm (0.3 to 1.5 oz.-in.)
Single 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
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 (Bushing A: H-37-2 & H-38-2; Bushing C: H-37-1 & H-38-1; Bushing R: H-37-4 & H-38-9; Bushing U: H-37-3 & H-38-8)

NOTE: Performance specifications do not apply to units subjected to printed circuit board immersion cleaning processes.

<sup>1</sup> Electrical specifications tested at 200 RPM, at room ambient: +25 °C nominal.

## Product Dimensions

### Model 96 PC Pin Terminals, In-Line

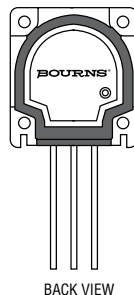


SEE HOW TO ORDER CHART FOR BUSHING OPTIONS.

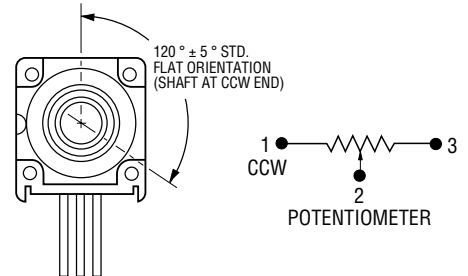
SEE NEXT PAGE FOR SHAFT OPTIONS.

TOLERANCES EXCEPT AS SHOWN: DECIMAL .XXX ±  $\frac{.381}{.015}$ , FRACTION ± 1/64  
 .XX ±  $\frac{9.65}{.38}$  ANGLE ±5°

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



### Shaft Flat Orientation



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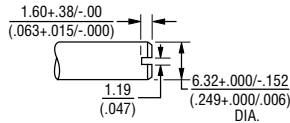
# Model 96 – 5/8" Square Sealed Single-Turn Panel Control

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## Product Dimensions

### Plastic Shaft Styles

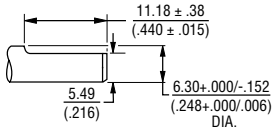
**SHAFT TYPE "B"** (USES BUSHING A)



STD. LENGTHS:

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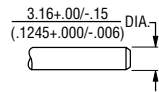
**SHAFT TYPE "C"** (USES BUSHING A)



STD. LENGTHS:

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

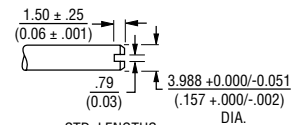
**SHAFT TYPE "D"** (USES BUSHING C)



STD. LENGTHS:

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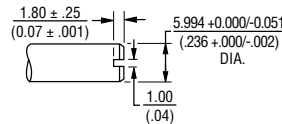
**SHAFT TYPE "T"** (USES BUSHING U)



STD. LENGTHS:

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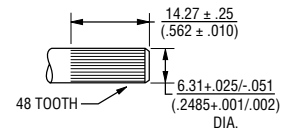
**SHAFT TYPE "R"** (USES BUSHING R)



STD. LENGTHS:

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

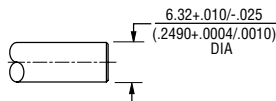


STD. LENGTHS:

25.40 (1.00)
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### Metal Shaft Styles

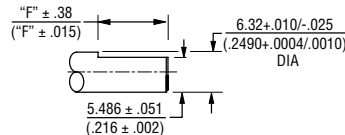
**SHAFT TYPE "A"** (USES BUSHING A)



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)



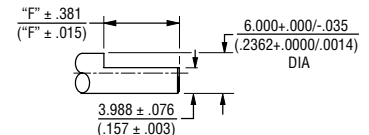
STD. LENGTHS:

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)



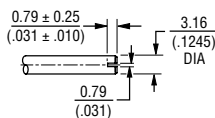
STD. LENGTHS:

16.0 (.630)	22.0 (.866)
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FLAT LENGTH "F":

6.99 (.275)	12.98 (.511)
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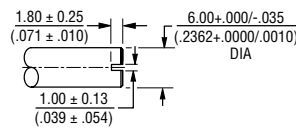
**SHAFT TYPE "E"** (USES BUSHING C)



STD. LENGTHS:

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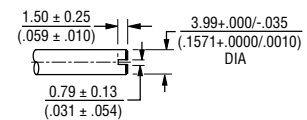
**SHAFT TYPE "J"** (USES BUSHING R)



STD. LENGTHS:

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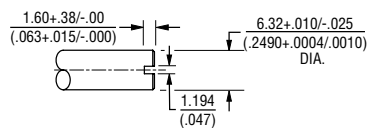
**SHAFT TYPE "V"** (USES BUSHING U)



STD. LENGTHS:

16.0 (.630)	22.0 (.866)
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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:  $\frac{\text{MM}}{\text{(INCHES)}}$

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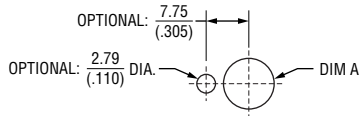
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# Model 96 – 5/8" Square Sealed Single-Turn Panel Control

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## Suggested Panel Layout



BUSHING	DIM A
A	$\frac{9.91}{(.39)}$
C	$\frac{6.73}{(.265)}$
R	$\frac{10.5}{(.413)}$
U	$\frac{7.5}{(.295)}$

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

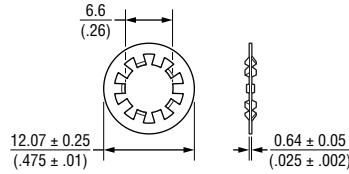
## Date Code Description

YYWWMM

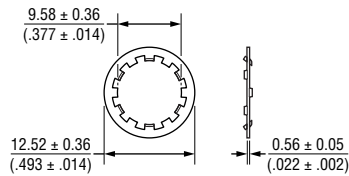
- M = COUNTRY OF MANUFACTURE (MEXICO)
- WW = WEEK NUMBER
- YY = LAST TWO DIGITS OF YEAR MANUFACTURED

## Hardware

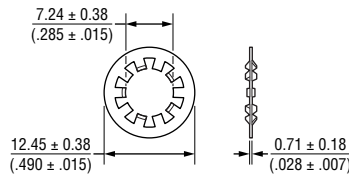
### LOCKWASHER H-37-1



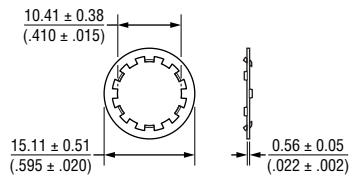
### LOCKWASHER H-37-2



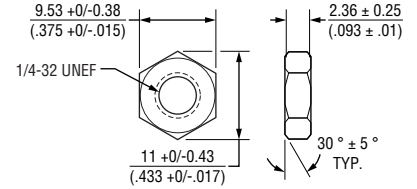
### LOCKWASHER H-37-3



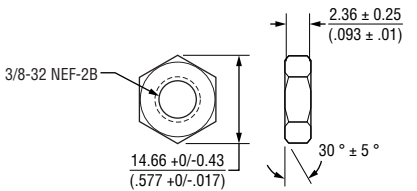
### LOCKWASHER H-37-4



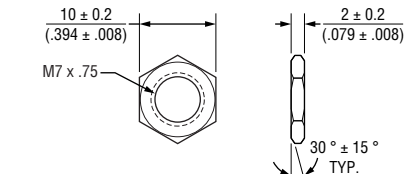
### NUT H-38-1



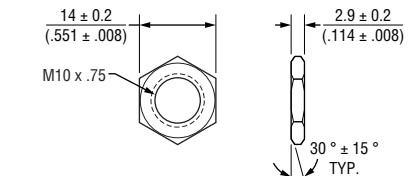
### NUT H-38-2



### NUT H-38-8



### NUT H-38-9



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

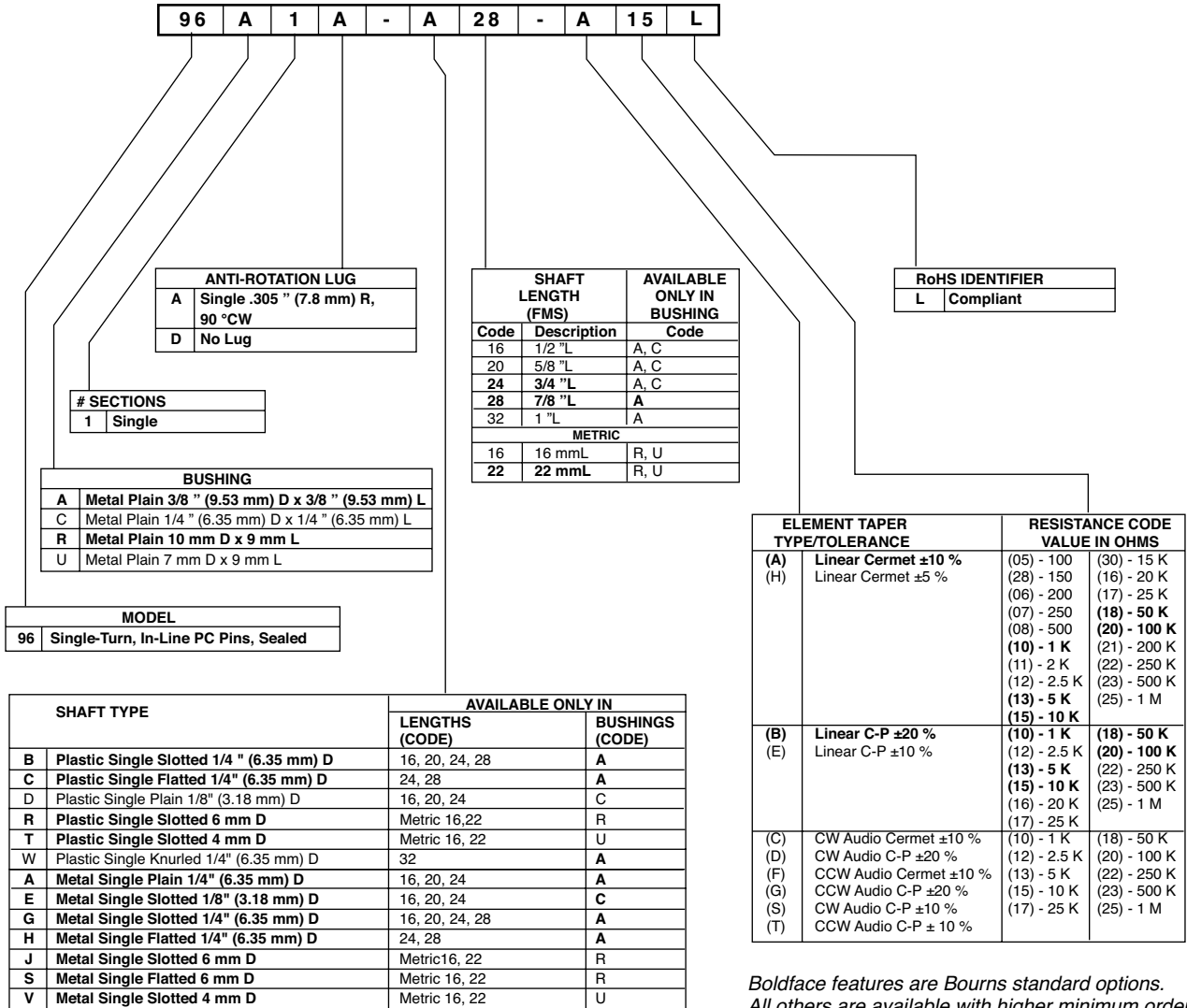
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# How to Order Model 96 Panel Controls

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

**BOURNS®**

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