

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) | | |
| Total Resistance Shift..... | ±2 % maximum | ±2 % maximum |
| Voltage Ratio Shift..... | ±5 % maximum | ±5 % maximum |
| Shock (Single Section)..... | | |
| Total Resistance Shift..... | ±2 % maximum | ±2 % maximum |
| Voltage Ratio Shift..... | ±5 % maximum | ±5 % maximum |
| Load Life..... | | |
| Total Resistance Shift..... | ±10 % maximum | ±5 % maximum |
| Rotational Life (No Load)..... | | |
| 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 |



WARNING
Cancer and Reproductive Harm
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



Mechanical Characteristics¹

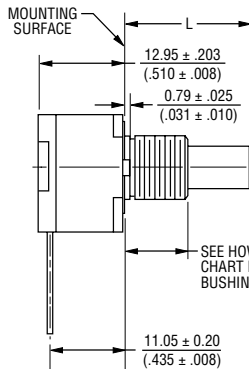
| | |
|---|--|
| Stop Strength (1/4" D shaft) | 45.19 N-cm (4 lb.-in.) |
| (1/8" D shaft) | 33.89 N-cm (3 lb.-in.) |
| Mechanical Angle | 300 ° ±5 ° |
| Torque | |
| Starting | 0.3 max. above average running torque |
| Running Torque | |
| Single or Dual Section (A & R Bushings) | 0.21 to 1.06 N-cm (0.3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

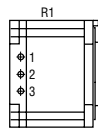
¹ Electrical specifications tested at 200 RPM, at room ambient: +25 °C nominal.

Product Dimensions

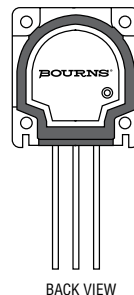
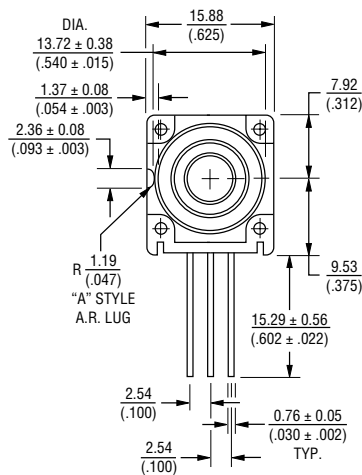
Model 96 PC Pin Terminals, In-Line



SEE HOW TO ORDER CHART FOR BUSHING OPTIONS.



SEE NEXT PAGE FOR SHAFT OPTIONS.

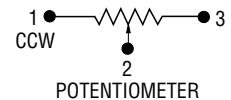
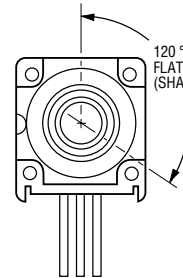


BACK VIEW

TOLERANCES EXCEPT AS SHOWN: DECIMAL .XXX ± .381 (.015), FRACTION ± 1/64, .XX ± 9.65 (.38), ANGLE ± 5 °

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

Shaft Flat Orientation



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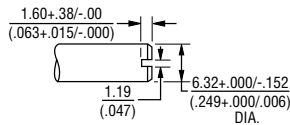
Model 96 – 5/8" Square Sealed Single-Turn Panel Control

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Product Dimensions

Plastic Shaft Styles

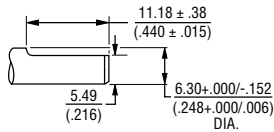
SHAFT TYPE "B" (USES BUSHING A)



STD. LENGTHS:

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

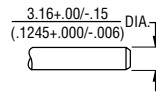
SHAFT TYPE "C" (USES BUSHING A)



STD. LENGTHS:

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

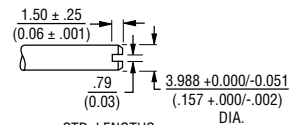
SHAFT TYPE "D" (USES BUSHING C)



STD. LENGTHS:

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

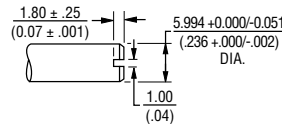
SHAFT TYPE "T" (USES BUSHING U)



STD. LENGTHS:

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

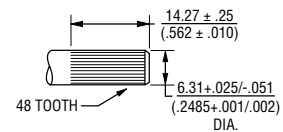
SHAFT TYPE "R" (USES BUSHING R)



STD. LENGTHS:

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

SHAFT TYPE "W" (USES BUSHING A)

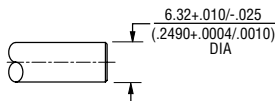


STD. LENGTHS:

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

Metal Shaft Styles

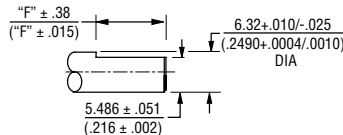
SHAFT TYPE "A" (USES BUSHING A)



STD. LENGTHS:

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

SHAFT TYPE "H" (USES BUSHING A)



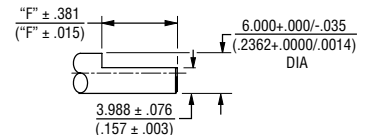
STD. LENGTHS:

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

FLAT LENGTH "F":

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

SHAFT TYPE "S" (USES BUSHING R)



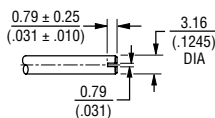
STD. LENGTHS:

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

FLAT LENGTH "F":

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

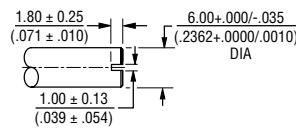
SHAFT TYPE "E" (USES BUSHING C)



STD. LENGTHS:

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

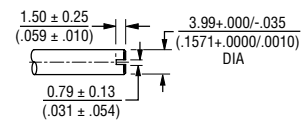
SHAFT TYPE "J" (USES BUSHING R)



STD. LENGTHS:

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

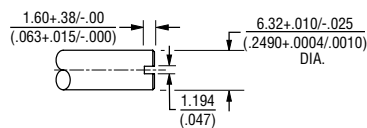
SHAFT TYPE "V" (USES BUSHING U)



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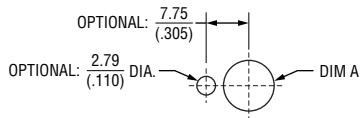
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Model 96 – 5/8" Square Sealed Single-Turn Panel Control

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

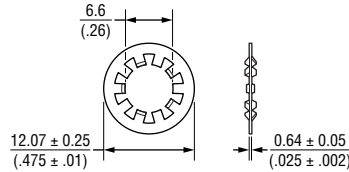
Date Code Description

YYWWMM

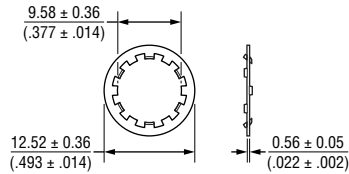
- M = COUNTRY OF MANUFACTURE (MEXICO)
- WW = WEEK NUMBER
- YY = LAST TWO DIGITS OF YEAR MANUFACTURED

Hardware

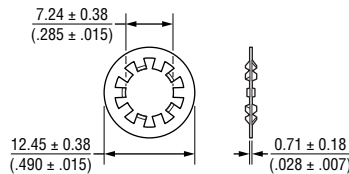
LOCKWASHER H-37-1



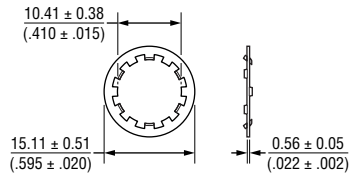
LOCKWASHER H-37-2



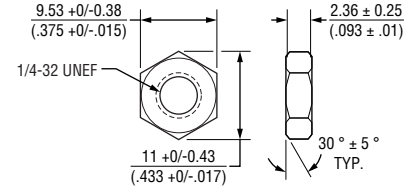
LOCKWASHER H-37-3



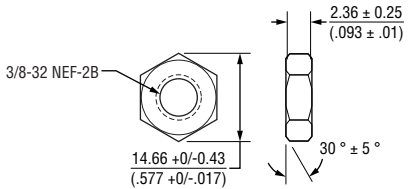
LOCKWASHER H-37-4



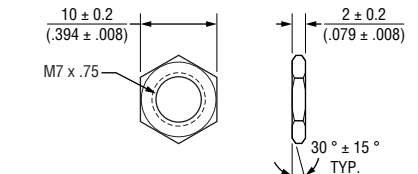
NUT H-38-1



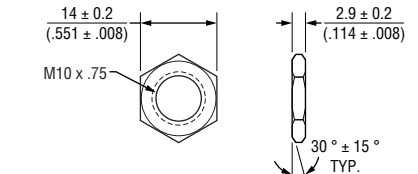
NUT H-38-2



NUT H-38-8



NUT H-38-9



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

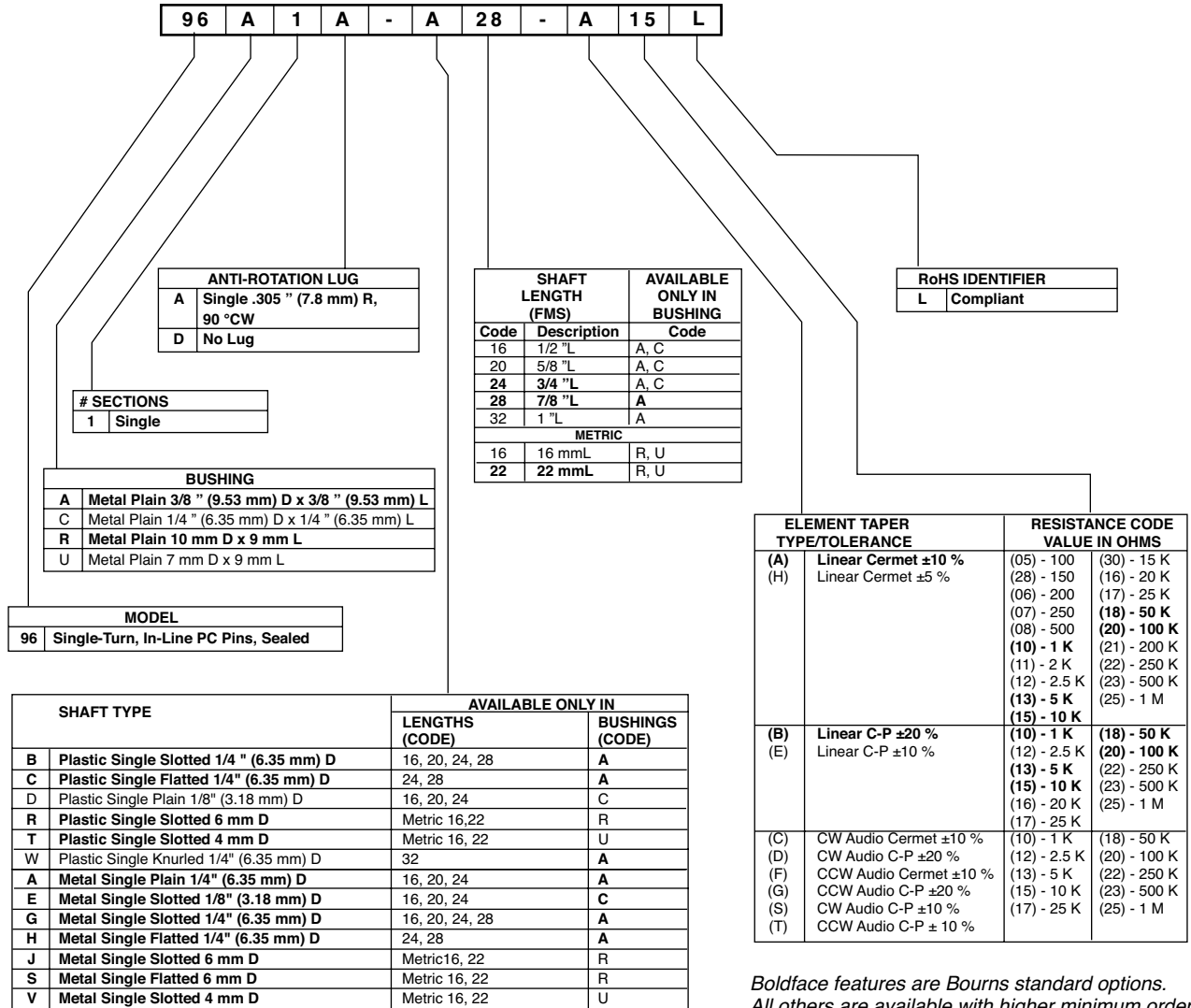
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How to Order Model 96 Panel Controls

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

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