



Features

- Compatible with other members of the Model 80 Series
- The only 10-turn precision potentiometer in a modular panel control package
- Up to 2 sections available
- RoHS compliant*

83/84 - 5/8 " Square 10-Turn

Initial Electrical Characteristics¹

| | Wirewound Element (J Taper) | Hybritron® Element (K Taper) |
|---|--|------------------------------|
| Standard Resistance Range..... | 200 to 100 K ohms..... | 1 K to 100 K ohms |
| Total Resistance Tolerance..... | ±5 % | ±10 % |
| Independent Linearity..... | ±0.25 % | ±0.25 % |
| Absolute Minimum Resistance (J Taper) | 1.0 ohm or 0.1 % (whichever is greater)..... | - |
| Effective Electrical Angle | 3600 ° +10 °, -0 °..... | 3600 ° +10 °, -0 ° |
| Dielectric Withstanding Voltage (MIL-STD-202, Method 301) | | |
| Sea Level..... | 1,000 VAC minimum | 1,000 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 | 1 watt | 1 watts |
| +125 °C | 0 watt | 0 watt |
| Theoretical Resolution..... | See table..... | Essentially infinite |
| End Voltage (K Taper) | - | 0.2 % of applied voltage |
| Noise (J Taper)..... | 100 ohms ENR maximum | - |
| Output Smoothness (K Taper) | - | 0.15 % maximum |

Environmental Characteristics¹

| | | |
|--|----------------------------------|-----------------------------|
| Operating Temperature Range | +1 °C to +125 °C | +1 °C to +125 °C |
| Storage Temperature Range | -55 °C to +125 °C | -55 °C to +125 °C |
| Temperature Coefficient Over Storage Temperature Range | ±50 ppm/°C | ±100 ppm/°C |
| Vibration | 15 G | 15 G |
| Total Resistance Shift..... | ±2 % | ±2 % |
| Voltage Ratio Shift..... | ±0.2 % | ±0.2 % |
| Wiper Bounce..... | 0.1 millisecond maximum | 0.1 millisecond maximum |
| Shock | 50 G | 50 G |
| Total Resistance Shift..... | ±2 % | ±2 % |
| Voltage Ratio Shift..... | ±0.2 % | ±0.2 % |
| Wiper Bounce..... | 0.1 millisecond maximum | 0.1 millisecond maximum |
| Load Life..... | 1,000 hours | 1,000 hours |
| Total Resistance Shift..... | ±2 % maximum | ±5 % maximum |
| Rotational Life (No Load)..... | 1,000,000 shaft revolutions..... | 4,000,000 shaft revolutions |
| Total Resistance Shift..... | ±5 % maximum | ±5 % maximum |
| Moisture Resistance (MIL-STD-202, Method 103, Condition B) | | |
| Total Resistance Shift..... | ±2 % maximum | ±5 % maximum |
| Insulation Resistance (500 VDC)..... | 100 megohms minimum | 100 megohms minimum |
| IP Rating | IP 40 | IP 40 |

Mechanical Characteristics¹

| | |
|--|--|
| Stop Strength | 33.90 N-cm (48.0 oz.-in.) minimum |
| Mechanical Angle | 3600 ° +15 °, -0 ° |
| Torque | |
| Starting..... | Running torque plus 0.7 N-cm (1.0 oz.-in.) maximum |
| Running (1 or 2 Section)..... | 0.18 to 1.41 N-cm (0.25 to 2.0 oz.-in.) |
| Mounting (Torque on Bushing) | 1.7-2.0 N-m (15-18 lb.-in.) maximum |
| Shaft Runout | 0.15 mm (0.006 in.) T.I.R. |
| Shaft End Play | 0.36 mm (0.014 in.) T.I.R. |
| Shaft Radial Play | 0.13 mm (0.005 in.) T.I.R. |
| Weight (Single Section)..... | 21 gm (0.75 oz.) |
| (Each Additional Section)..... | 18 gm (0.65 oz.) |
| Terminals | Printed circuit terminals 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. No wash process to be used with no clean flux |
| Marking..... | Manufacturer's trademark, wiring diagram, date code and resistance, manufacturer's part number |
| Ganging (Multiple Section Potentiometers)..... | 2 cup maximum |
| Hardware..... | One lockwasher and one mounting nut is shipped with each potentiometer, except where noted in the part number. |

NOTE: Model 83/84 performance specifications do not apply to units subjected to printed circuit board cleaning procedures.

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

83/84 - 5/8 " Square 10-Turn

BOURNS®

Wirewound Resolution Table

| Resistance (Ohms) | Resolution (Nom.) (%) |
|-------------------|-----------------------|
| 200 | .048 |
| 500 | .037 |
| 1 K | .032 |
| 2 K | .031 |
| 5 K | .023 |
| 10 K | .020 |
| 20 K | .015 |
| 50 K | .012 |
| 100 K | .010 |

Dimensional Drawings

Dual Section Model 84 Solder Lugs



Dual Section Model 83 PC Pins



Note: The Models 83/84 dimensions for dual section assembly are for either single or dual concentric shaft styles.

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

83/84 - 5/8" Square 10-Turn

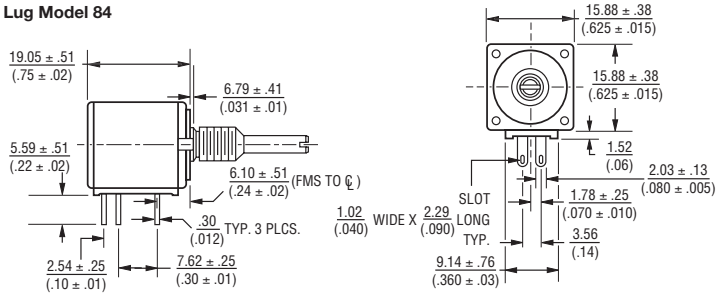
BOURNS®

Product Dimensions

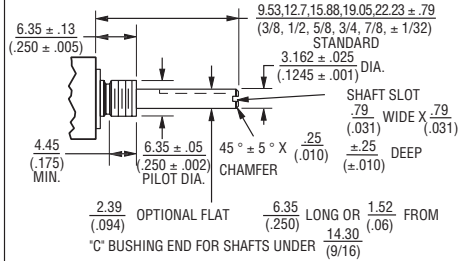
PC Pin Model 83



Solder Lug Model 84



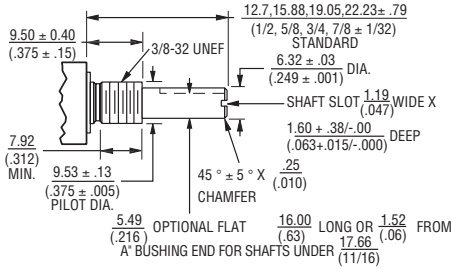
"C" Bushing 1/4" (6.35 mm) Dia. Plain - Single Shaft



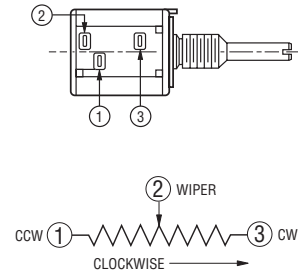
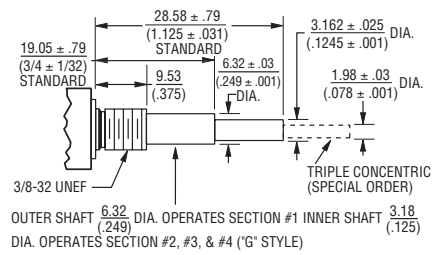
"E" Bushing 1/4" (6.35 mm) Dia. Locking - Single Shaft



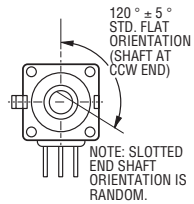
"A" Bushing 3/8" (9.53 mm) Dia. Plain - Single Shaft



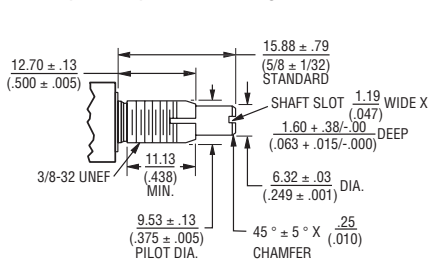
"A" Bushing 3/8" (9.53 mm) Dia. Plain - Concentric Shaft



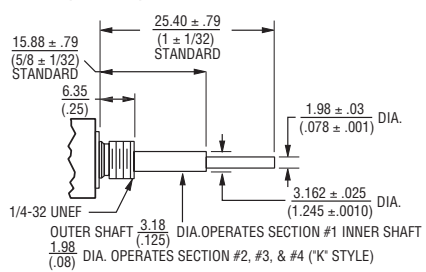
Shaft Flat Orientation



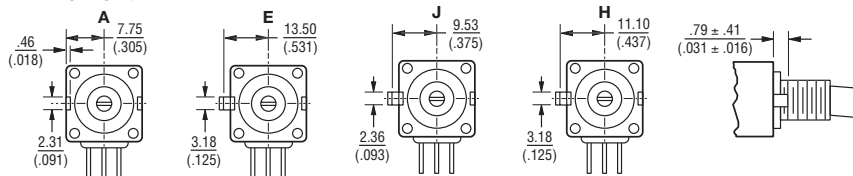
"B" Bushing 3/8" (9.53 mm) Dia. Plain - Single Shaft



"C" Bushing 1/4" (6.35 mm) Dia. Plain - Concentric Shaft



Locating Lug Options - All Model 80 Series



NOTE: "D" OPTION - NO A/R LUG. OTHER LOCATING LUG OPTIONS AVAILABLE. FOR DETAILS CONSULT FACTORY.

TOLERANCES EXCEPT AS SHOWN: DECIMALS .XXX ± .005
 .XX ± .015
 ANGLE $\pm 5^\circ$
 FRACTIONS $\pm 1/64$

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

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

83/84 - 5/8 " Square 10-Turn

BOURNS®

How To Order

83 A 1 A - B 28 - J 15 L

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

| ANTI-ROTATION LUG | |
|-------------------|-------------------------------|
| A | Single .305 R, 90 °CW |
| B | Double .305 R, 90 ° & 270 °CW |
| C | Single .305 R, 270 °CW |
| D | No Lug |
| E | Single .531 R, 90 °CW |
| F | Single .305 R, 180 °CW |
| J | Single .375 R, 90 °CW |
| K | Double .375 R, 90 ° & 270 °CW |

| # SECTIONS | |
|------------|--------|
| 1 | Single |
| 2 | Double |
| 3 | Triple |

| BUSHING | |
|---------|---|
| A | Plain 3/8 " (9.53 mm) D x 3/8 " (9.53 mm) L |
| B | Locking 3/8 " (9.53 mm) D x 1/2 " (12.7 mm) L |
| C | Plain 1/4 " (6.35 mm) D x 1/4 " (6.35 mm) L |
| E | Locking 1/4 " (6.35 mm) D x 1/2 " (12.7 mm) L |
| J | Plain 3/8 " (9.53 mm) D x 1/4 " (6.35 mm) L |
| N | Plain 1/4 " (6.35 mm) D x 3/8 " (9.53 mm) L |
| R | Plain 10 mm D x 9 mm L |
| U | Plain 7 mm D x 6 mm L |

| MODEL | |
|-------|----------------------|
| 83 | 10-Turn, PC Pins |
| 84 | 10-Turn, Solder Lugs |

| SHAFT LENGTH (FMS) | | AVAILABLE ONLY IN BUSHING |
|--------------------|-------------|---------------------------|
| Code | Description | Code |
| 12 | 3/8 " L | C, N, J |
| 16 | 1/2 " L | A, C, J, N |
| 20 | 5/8 " L | A, B, C, E, J, N |
| 24 | 3/4 " L | A, B, C, E, J, N |
| 28 | 7/8 " L | A, B, C, E, J, N |
| 32 | 1 " L | A, B, C, E, J, N |
| 36 | 1-1/8 " L | A, B, C, E, J, N |
| 40 | 1-1/4 " L | A, B, C, E, J, N |
| Metric | | |
| 10 | 10 mmL | U |
| 13 | 13 mmL | U |
| 16 | 16 mmL | R |
| 19 | 19 mmL | R |
| 22 | 22 mmL | R, U |
| 30 | 30 mmL | R |
| 42 | 42 mmL | R |
| 50 | 50 mmL | R |

| ELEMENT TAPER TYPE/TOLERANCE | | RESISTANCE CODE VALUE IN OHMS | |
|------------------------------|------------------------|-------------------------------|--------------|
| | | J | K |
| (J) | Linear Wirewound | (06) - 200 | (10) - 1 K |
| | 10-Turn ±5 % | (08) - 500 | (11) - 2 K |
| (K) | Linear Hybritron® | (10) - 1 K | (13) - 5 K |
| | Elements 10-Turn ±10 % | (11) - 2 K | (15) - 10 K |
| | | (13) - 5 K | (16) - 20 K |
| | | (15) - 10 K | (18) - 50 K |
| | | (16) - 20 K | (20) - 100 K |
| | | (18) - 50 K | |
| | | (20) - 100 K | |

| SHAFT TYPE | | AVAILABLE ONLY IN | |
|------------|--|-------------------|-----------------|
| | | LENGTHS (CODE) | BUSHINGS (CODE) |
| A | Single Plain 1/4 " (6.35 mm) D | 16,20,24,28 | A, B, J |
| B | Single Slotted 1/4 " (6.35 mm) D | 16,20,24,28 | A, B, J |
| C | Single Flatted 1/4 " (6.35 mm) D | 20,24,28 | A, B, J |
| E | Single Slotted 1/8 " (3.18 mm) D | 12,16,20,24,28 | C, E, N |
| F | Single Flatted 1/8 " (3.18 mm) D | Consult Factory | C, N |
| G | Dual Concentric Plain 1/4 " (6.35 mm) D - 1/8 " (3.18 mm) D Outer Operates Section 1 | 36,40 | A, J |
| K | Dual Concentric Plain 1/8 " (3.18 mm) D - 5/64 " (1.98 mm) D Outer Operates Section 1 | 32,36 | C, N |
| L | Dual Concentric Plain 1/4 " (6.35 mm) D - 1/8 " (3.18 mm) D Outer Operates Section 1/2 | 36,40 | A, J |
| M | Dual Concentric Plain 1/8 " (3.18 mm) D - 5/64 " (1.98 mm) D Outer Operates Section 1 | 32,36 | C, N |
| N | Dual Concentric Plain 1/4 " (6.35 mm) D - 1/8 " (3.18 mm) D Outer Operates Section 1/2/3 | 36,40 | A, J |
| P | Dual Concentric Plain 1/8 " (3.18 mm) D - 5/64 " (1.98 mm) D Outer Operates Section 1/2 | 32,36 | C, N |
| R | Single Slotted 6 mm D | 16,19,22,50 | R, S |
| T | Single Slotted 4 mm D | 10, 13, 22 | U |
| V | Dual Concentric Plain 6 mm D - 3 mm D Outer Operates Section 1 | 30, 42 | R |

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

REV. 06/12

"Hybritron" is a registered trademark of Bourns, Inc. Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9