



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



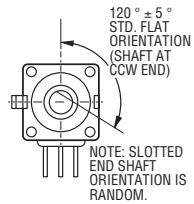
"C" Bushing 1/4" (6.35 mm) Dia. Plain - Single Shaft



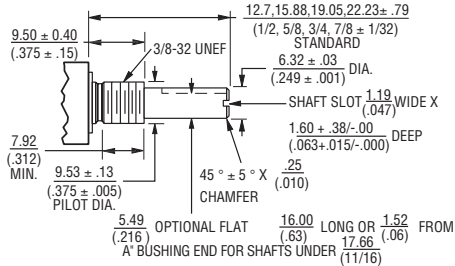
"E" Bushing 1/4" (6.35 mm) Dia. Locking - Single Shaft



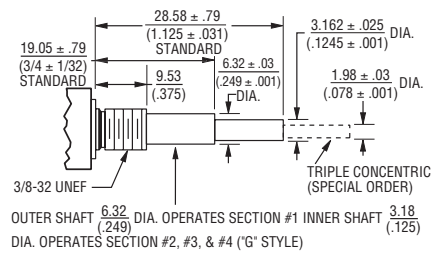
Shaft Flat Orientation



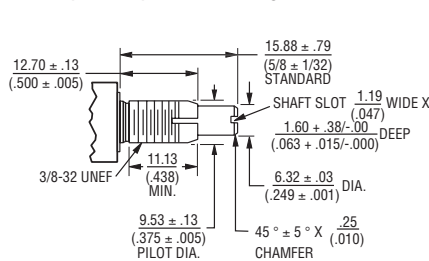
"A" Bushing 3/8" (9.53 mm) Dia. Plain - Single Shaft



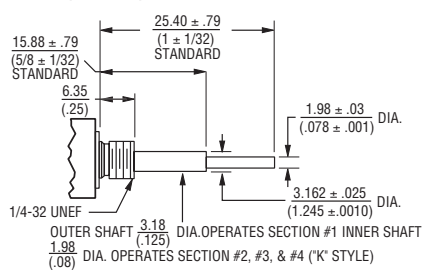
"A" Bushing 3/8" (9.53 mm) Dia. Plain - Concentric Shaft



"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 ± 5°
 FRACTIONS ± 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 |

| 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 | |

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

| 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.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А