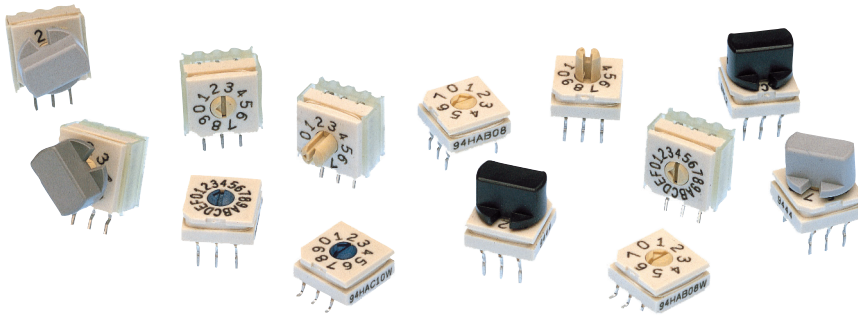


## SERIES 94H

### Binary Coded

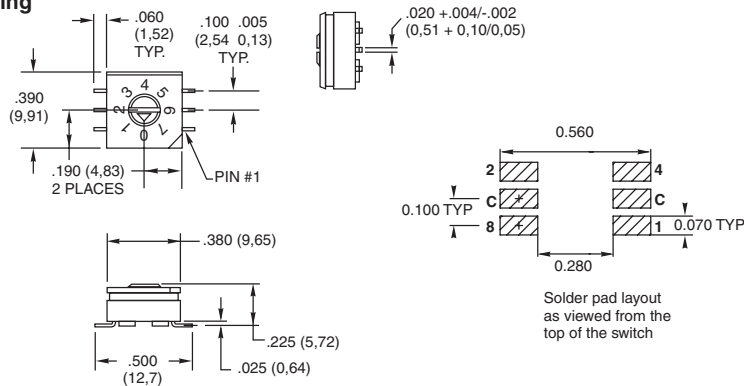


### DIMENSIONS in inches (and millimeters)

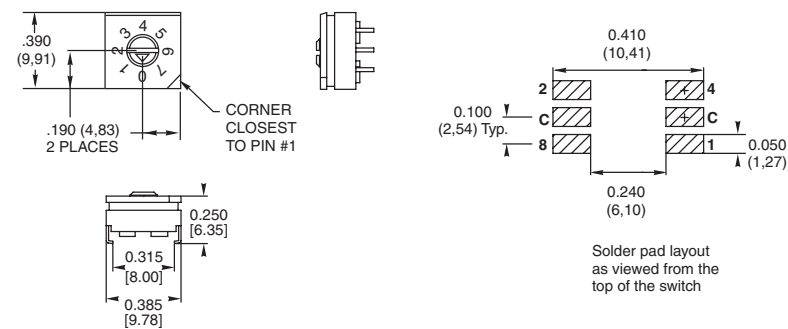
Tolerances are  $\pm .010$  inches unless specified otherwise.

#### Surface Mount

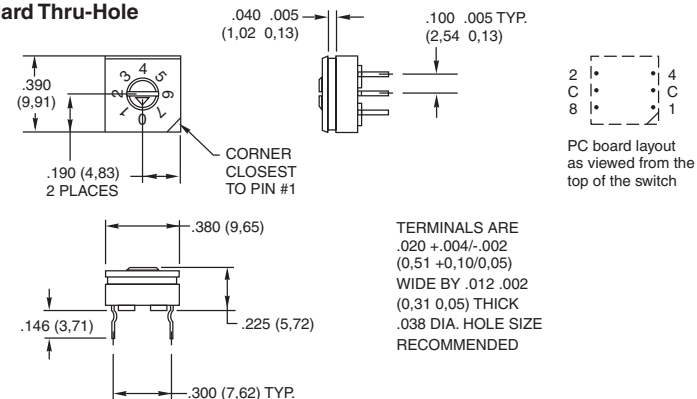
##### Gullwing



#### Surface Mount J-Lead



#### Standard Thru-Hole



### FEATURES

- Sealed Construction; No Tape Seal Required
- Surface Mount or Thru-Hole Style
- Tube or Tape and Reel Packaging
- Octal, BCD, and Hexadecimal Code
- In Standard or Complement
- Standard and Right Angle Mount
- Flush or Extended Actuators
- Gold-Plated Contacts
- RoHS Compliant

### ACTUATOR STYLES



Octal-8 position



BCD-10 position



Hex-16 position



Figure 1  
"A" style rotor

Figure 2  
"F" style rotor

All actuation types are available in octal (8), binary coded decimal (10), or hexadecimal (16) codes; with either standard or complement output. Standard code outputs have natural color rotors; complements in a contrasting color.

### EXTENDED ACTUATOR TYPES

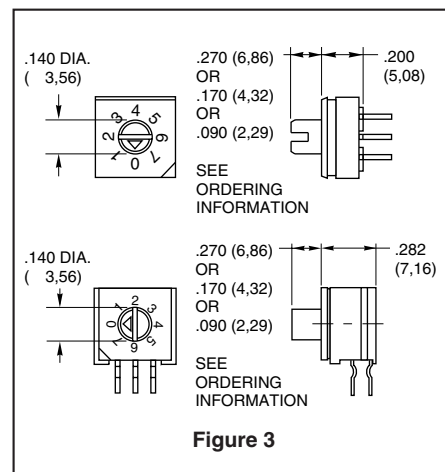
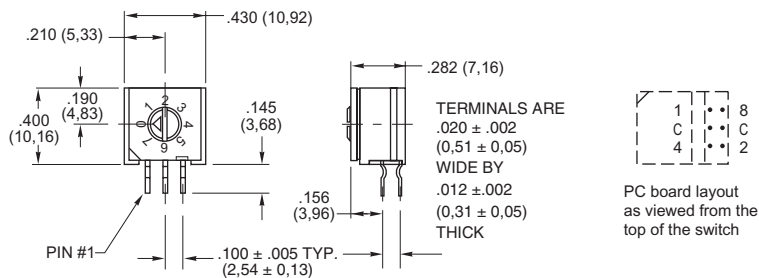


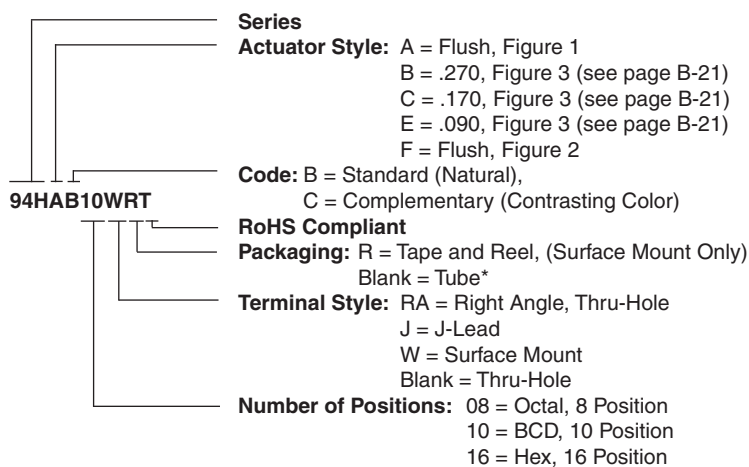
Figure 3

## DIMENSIONS in inches (and millimeters)

### Right Angle Thru-Hole

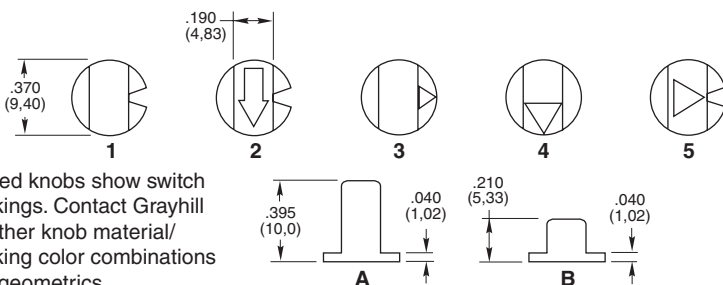


## ORDERING INFORMATION: Series 94H



\* 27 Pieces per tube for surface mount and thru-hole, 24 pieces per tube for right angle switches.

## SERIES 94 High Temperature Knobs: For Shaft Extensions



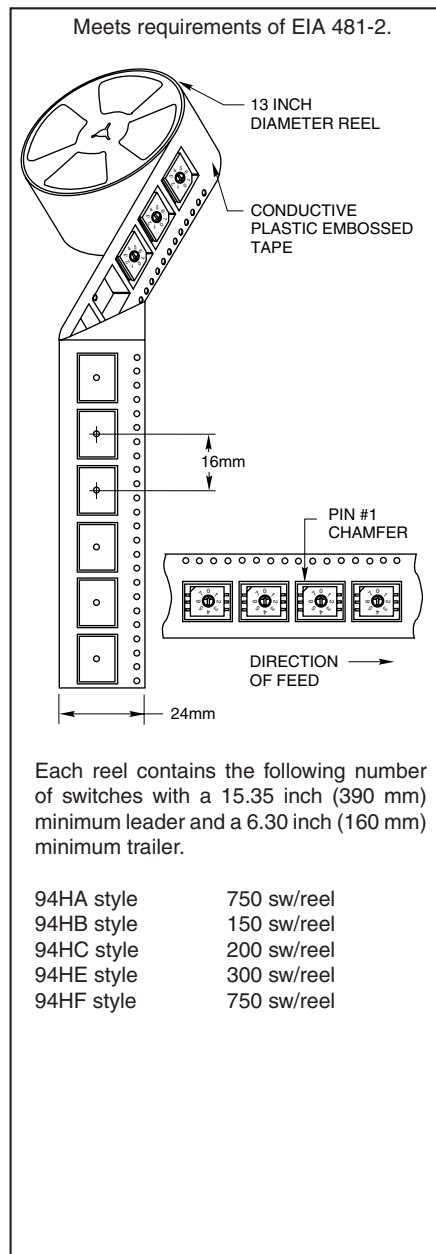
\* Use only with Actuator Type B or C

## ORDERING INFORMATION: Series 94 High Temperature Knobs\*

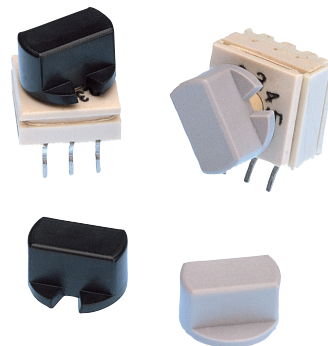
| Knob Style and Height | Knob Color | Arrow Color | Part Number |
|-----------------------|------------|-------------|-------------|
| 1A                    | Gray       | N/A         | 947706-001  |
| 5A                    | Gray       | Black       | 947706-005  |
| 1B                    | Black      | N/A         | 947705-001  |
| 1B                    | Gray       | N/A         | 947705-012  |
| 2B                    | Gray       | White       | 947705-004  |
| 3B                    | Gray       | Black       | 947705-017  |
| 4B                    | Gray       | Black       | 947705-018  |
| 1B                    | Natural    | N/A         | 947705-009  |
| 4B                    | Black      | White       | 947705-010  |
| 5B                    | Gray       | Black       | 947705-019  |

\*Ordered as a separate item. B = Standard (Natural), C = Complementary (Contrasting Color).

## TAPE AND REEL PACKAGING: Series 94H



|            |             |
|------------|-------------|
| 94HA style | 750 sw/reel |
| 94HB style | 150 sw/reel |
| 94HC style | 200 sw/reel |
| 94HE style | 300 sw/reel |
| 94HF style | 750 sw/reel |



Available from your local Grayhill Distributor. For prices and discounts, contact a local Sales Office, an authorized Distributor or Grayhill.

## SPECIFICATIONS

### Electrical Ratings

**Make-and-break Current Rating:** 30 mA at 30 Vdc for 10,000 cycles of operation.

**Carrying Current Rating:** 100 mA at 50 Vdc

**Contact Resistance:** 50 mohms maximum initially (measured at 10 mA, 50 mVdc). 150 mohms maximum after life.

**Insulation Resistance:**(measured at 100 Vdc across open switch contacts)  
Initial: 5000 Mohms minimum. After Life: 1000 Mohms minimum.

**Dielectric Strength:** (measured across open switch contacts) Initial: 500 Vac RMS minimum. After Life: 250 Vac RMS

### Mechanical Ratings

**Mechanical Life:** 10,000 cycles of operation. One cycle is a rotation through all positions and a complete return through all positions.

**Mechanical Shock:** 1000g's, 0.5mS, half sine per MIL-STD-202F, Method 213, Test Condition E.

**Vibration Resistance:** 10-2000 Hz at 15G or 0.060" double amplitude per MIL-STD-202F, Method 204, Test Condition B.

**Operational Torque:** 2 to 6 inch-ounces initially and 1.2 inch-ounces minimum after life.

### Environmental Ratings

**Operating Temperature Range:** -40° to +85°C.

**Storage Temperature Range:** -40° to +85°C.

**Moisture Resistance:** 240 hours with temperature cycling and polarization. Passes insulation resistance and dielectric strength per MIL-STD-202F, Method 106 following exposure.

### Materials and Finishes

**Rotor and Switch Body:** Plastic (UL94V-O)

**Contact Material:** Copper alloy plated. 30 microinches minimum gold over 50 microinches minimum nickel.

**Shorting Member:** Copper alloy plated. 30 microinches minimum gold over 50 microinches minimum nickel.

**Terminals:** Copper alloy, matte tin plated over nickel barrier.

**Internal O-ring:** Rubber BUNA-N

### Soldering Information

\*For the most current soldering & cleaning processing guidelines, reference Grayhill Dip Switch Processing Information, Bulletin 1234

**Soldering Temperature:** 260° C maximum.

**Cleaning:** Acceptable solutions include 1-1-1 Trichlorethane, Freon (TF, TE, or TMS), Isopropyl Alcohol and detergent (140°F maximum). Solutions which are not recommended include Acetone, Methylene Chloride, and Freon TMC.

## CODE & TRUTH TABLES

All switches are continuous rotation.

Dot indicates terminal to common connection.

Octal and Octal Complement outputs are 0 thru 7 positions.

BCD and BCD Complement outputs are 0 thru 9 positions.

Hexadecimal and Hexadecimal Complement outputs are 0 thru F positions.

Standard codes have natural color rotors. Complements have rotors in a contrasting color.

|   | Standard Output |   |   |   | Complement Output |   |   |   |
|---|-----------------|---|---|---|-------------------|---|---|---|
|   | CODE OUTPUT     |   |   |   | CODE OUTPUT       |   |   |   |
|   | 1               | 2 | 4 | 8 | 1                 | 2 | 4 | 8 |
| 0 |                 |   |   |   | •                 | • | • | • |
| 1 | •               |   |   |   |                   | • | • | • |
| 2 |                 | • |   |   | •                 |   | • | • |
| 3 | •               | • |   |   |                   | • | • | • |
| 4 |                 |   | • |   | •                 | • |   | • |
| 5 | •               |   | • |   |                   | • |   | • |
| 6 |                 | • | • |   | •                 |   |   | • |
| 7 | •               | • | • |   |                   |   |   | • |
| 8 |                 |   |   | • | •                 | • | • |   |
| 9 | •               |   |   | • |                   | • | • |   |
| A |                 | • | • |   | •                 |   | • |   |
| B | •               | • | • | • |                   |   | • |   |
| C |                 |   | • | • | •                 | • |   |   |
| D | •               |   | • | • |                   | • |   |   |
| E |                 | • | • | • | •                 |   |   |   |
| F | •               | • | • | • |                   |   |   |   |