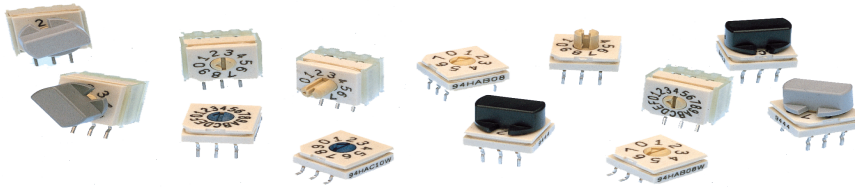




## SERIES 94H

### Binary Coded

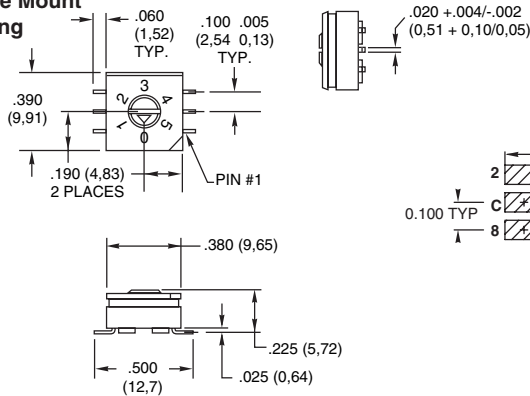


## DIMENSIONS

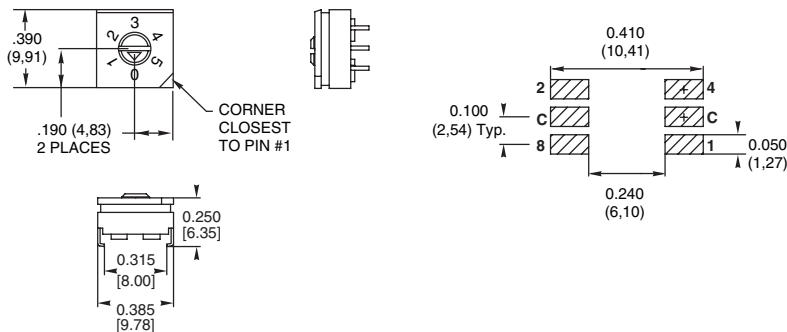
In inches (and millimeters)

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

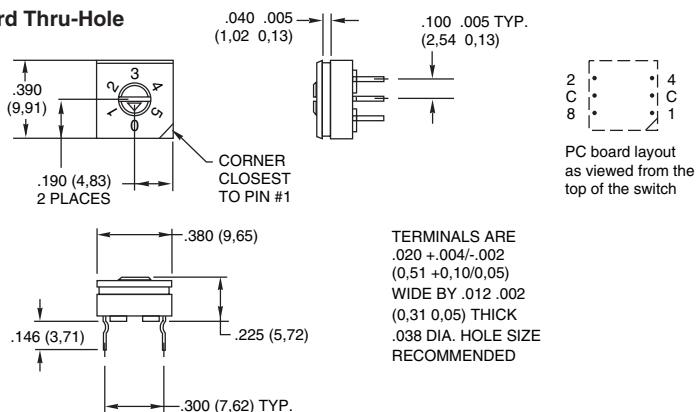
### Surface Mount Gullwing



### Surface Mount J-Lead



### Standard Thru-Hole



TERMINALS ARE  
.020 +.004/-.002  
(0,51 + 0,10/0,05)  
WIDE BY .012 .002  
(0,31 0,05) THICK  
.038 DIA. HOLE SIZE  
RECOMMENDED

## 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

## 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

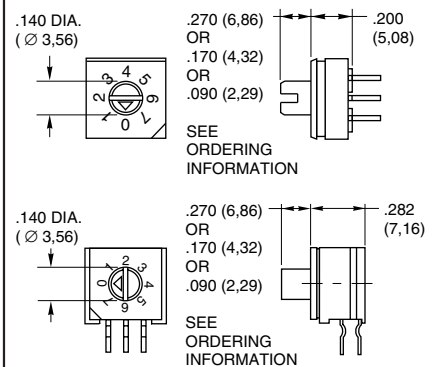
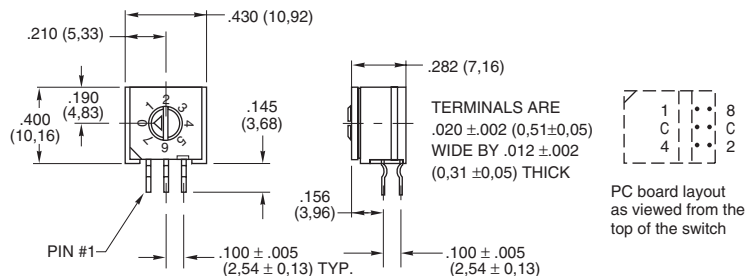


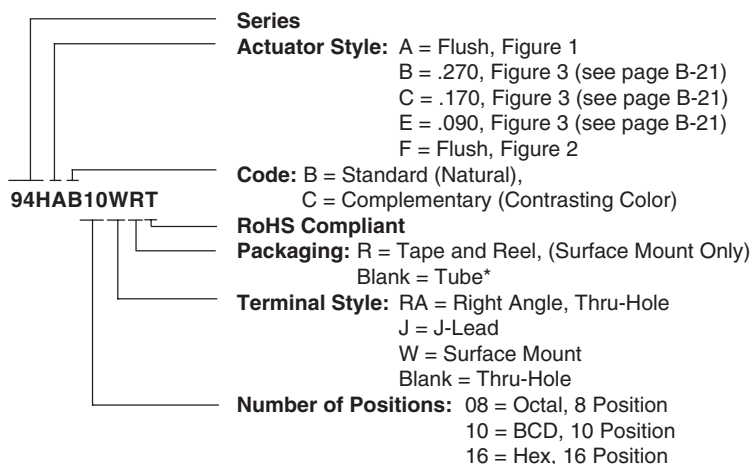
Figure 3

## DIMENSIONS In inches (and millimeters)

### Right Angle Thru-Hole

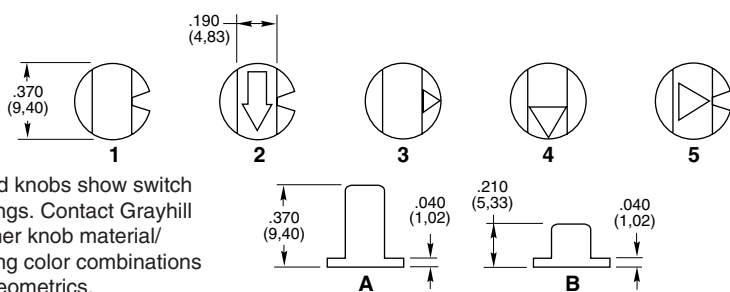


## ORDERING INFORMATION: Series 94H



\* 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

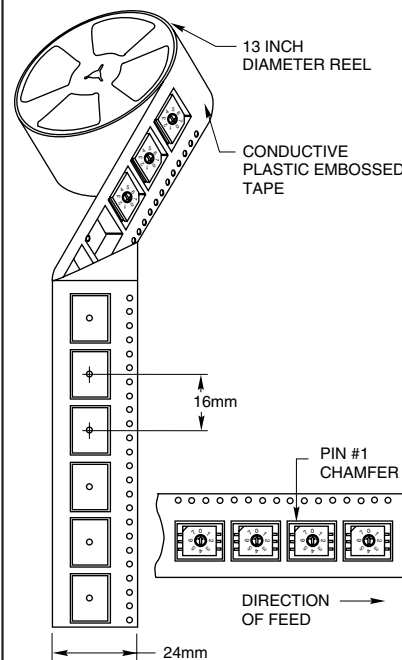
## ORDERING INFORMATION: Series 94 High Temperature Knobs\*

| 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).

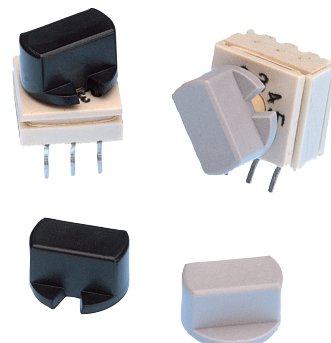
## TAPE AND REEL PACKAGING: Series 94H

Meets requirements of EIA 481-2.



Each reel contains the following number of switches with a 15.35 inch (390 mm) minimum leader and a 6.30 inch (160 mm) minimum trailer.

|            |             |
|------------|-------------|
| 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 local Distributor or Grayhill.

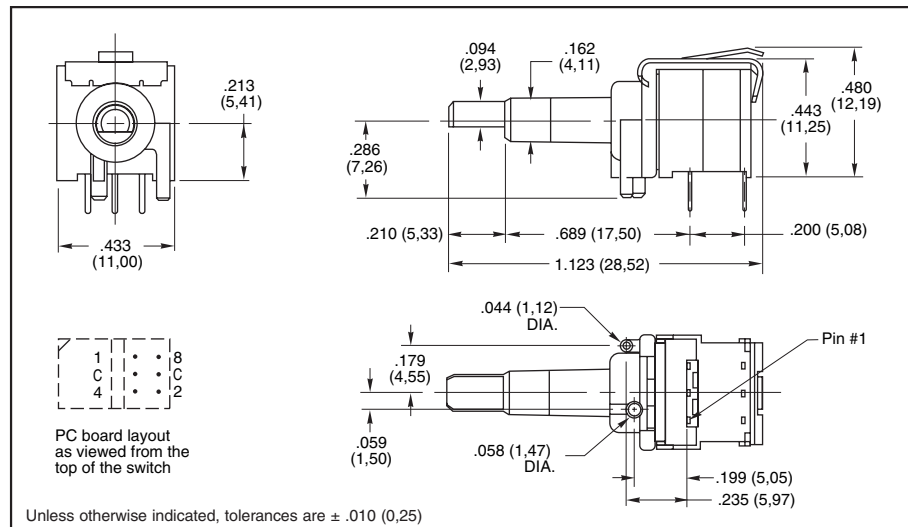
## SERIES 94R

Economical, Binary Coded

### FEATURES

- 10,000 Cycles of Operation
- Gold-Plated Contacts
- Sealed Contact System
- Right Angle Mount
- Octal, BCD & Hexadecimal Codes
- Standard or Complement
- RoHS Compliant

### DIMENSIONS In inches (and millimeters)



### SPECIFICATIONS: Series 94H and 94R

#### 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, 0.5 mS, 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.



### CODE & TRUTH TABLES:

Series 94H and 94R

| Standard Output | SWITCH POSITION | CODE OUTPUT |   |   |   | CODE OUTPUT |   |   |   | Complement 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               |             |   |   |   | •           | • | • | • |                   |

Dot indicates terminal to common connection. All switches are continuous rotation.

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.

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

#### Soldering Information

**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.

### ORDERING INFORMATION: Series 94R

| Continuous Rotation Versions |                  |                           |                        |
|------------------------------|------------------|---------------------------|------------------------|
| Code                         | No. of Positions | Standard Code Part Number | Complement Part Number |
| Octal                        | 8                | 94RB08CT                  | 94RC08CT               |
| BCD                          | 10               | 94RB10CT                  | 94RC10CT               |
| Hexadecimal                  | 16               | 94RB16CT                  | 94RC16CT               |
| Rotational Stop Versions*    |                  |                           |                        |
| Code                         | No. of Positions | Standard Code Part Number | Complement Part Number |
| Hexadecimal                  | 16               | 94RB16FT                  | 94RC16FT               |

\* Consult Grayhill for 8 or 10 position