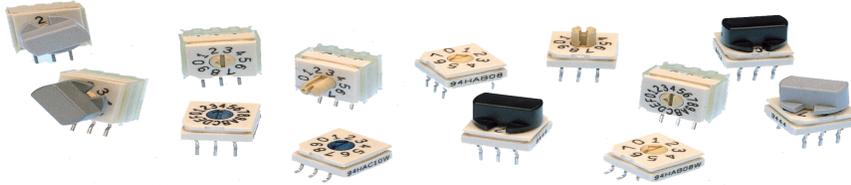


**SERIES 94H**  
Binary Coded



**FEATURES**

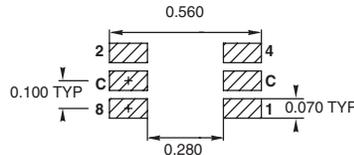
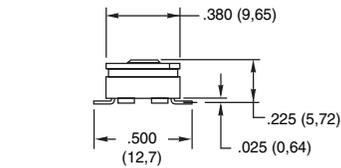
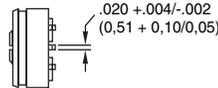
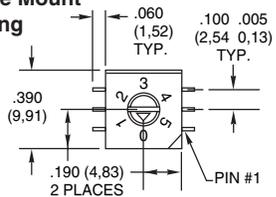
- Sealed Construction; No Tape Seal Required
- Surface Mount or Thru-Hole Style
- Tube or Tape and Reel Packaging
- Octal, BCD, and Hexadecimal Code
- In Standard or Complement
- Standard and Right Angle Mount
- Flush or Extended Actuators
- Gold-Plated Contacts

DIP Switches

**DIMENSIONS** In inches (and millimeters)

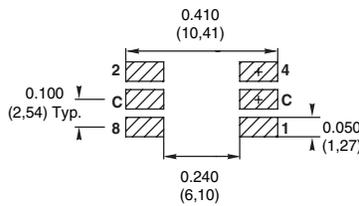
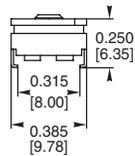
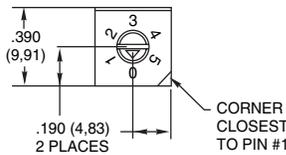
Tolerances are  $\pm .010$  inches unless specified otherwise.

**Surface Mount Gullwing**

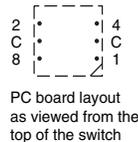
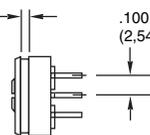
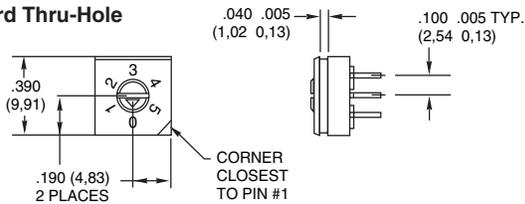


Solder pad layout as viewed from the top of the switch

**Surface Mount J-Lead**



**Standard Thru-Hole**



TERMINALS ARE  
.020 +.004/-0.002  
(0,51 + 0,10/0,05)  
WIDE BY .012 .002  
(0,31 0,05) THICK  
.038 DIA. HOLE SIZE  
RECOMMENDED

**ACTUATOR STYLES**



**Octal-8 position**



**BCD-10 position**



**Hex-16 position**

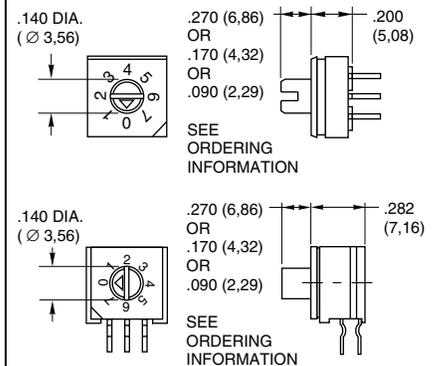


**Figure 1**  
"A" style rotor

**Figure 2**  
"F" style rotor

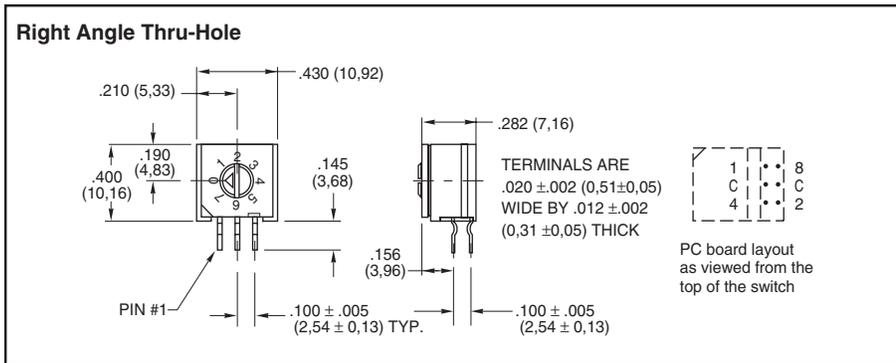
All actuation types are available in octal (8), binary coded decimal (10), or hexadecimal (16) codes; with either standard or complement output. Standard code outputs have natural color rotors; complements in a contrasting color.

**EXTENDED ACTUATOR TYPES**



**Figure 3**

## DIMENSIONS In inches (and millimeters)



## ORDERING INFORMATION: Series 94H

**94HAB10WRT**

**Series**  
**Actuator Style:** A = Flush, Figure 1  
 B = .270, Figure 3 (see page B-21)  
 C = .170, Figure 3 (see page B-21)  
 E = .090, Figure 3 (see page B-21)  
 F = Flush, Figure 2

**Code:** B = Standard (Natural),  
 C = Complementary (Contrasting Color)

**RoHS Compliant**

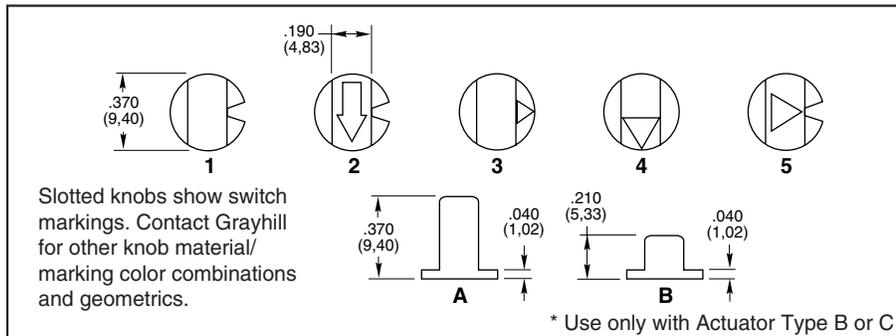
**Packaging:** R = Tape and Reel, (Surface Mount Only)  
 Blank = Tube\*

**Terminal Style:** RA = Right Angle, Thru-Hole  
 J = J-Lead  
 W = Surface Mount  
 Blank = Thru-Hole

**Number of Positions:** 08 = Octal, 8 Position  
 10 = BCD, 10 Position  
 16 = Hex, 16 Position

\* 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



## 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.

13 INCH DIAMETER REEL

CONDUCTIVE PLASTIC EMBOSSED TAPE

16mm

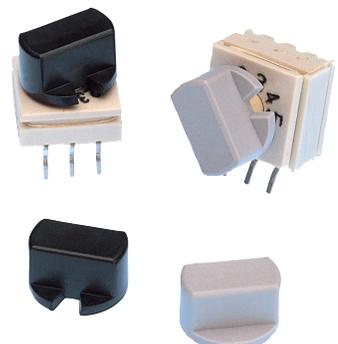
PIN #1 CHAMFER

24mm

DIRECTION OF FEED

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

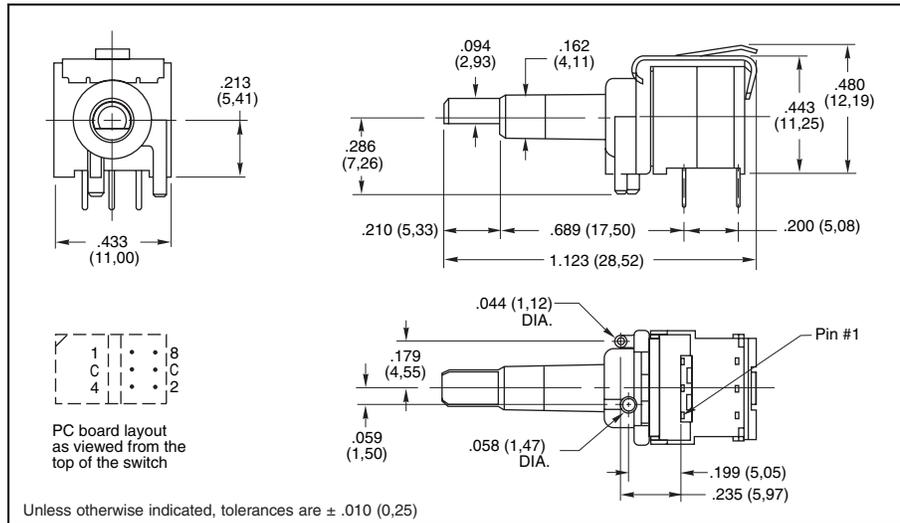
Economical, Binary Coded

### 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	CODE OUTPUT				CODE OUTPUT				Complement Output
	1	2	4	8	1	2	4	8	
0					•	•	•	•	
1	•								•
2		•							•
3			•						•
4				•					•
5					•				•
6						•			•
7							•		•
8	•	•	•	•					
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