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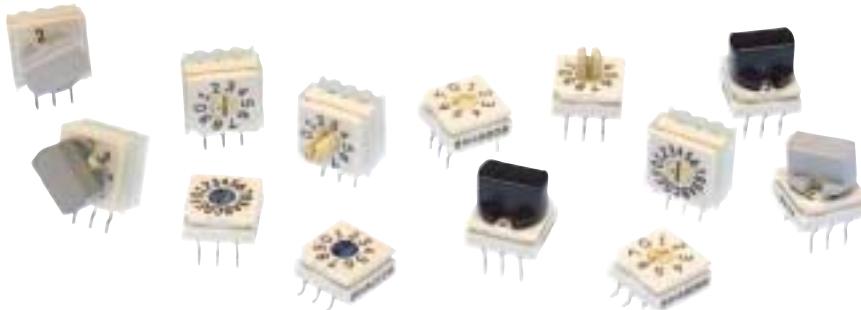
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Jameco Part Number 473246

## SERIES 94H

### Binary Coded

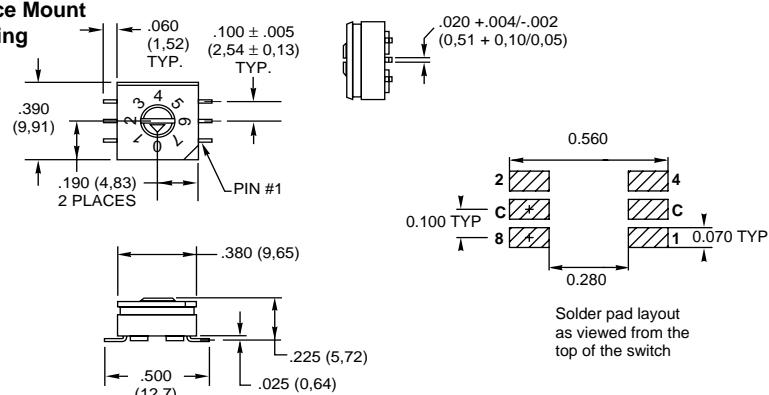


#### DIMENSIONS In inches (and millimeters)

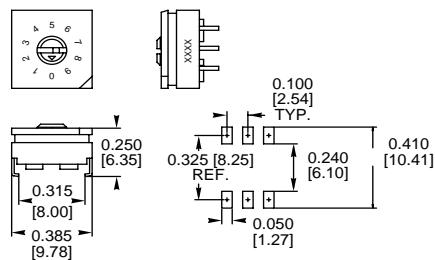
Tolerances are  $\pm .010$  inches unless specified otherwise.

##### Surface Mount

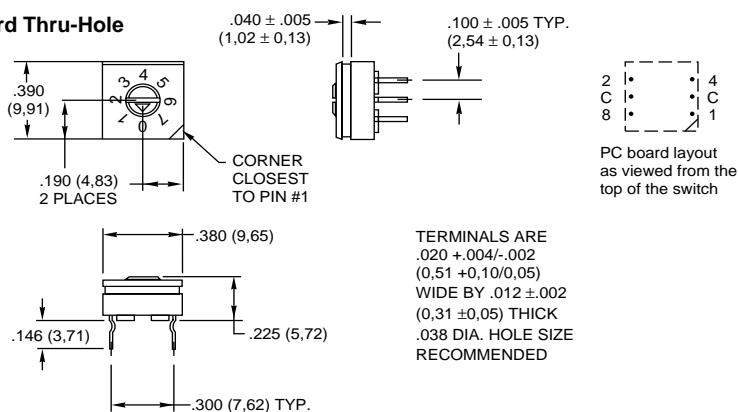
###### Gullwing



###### 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

## ACTUATOR STYLES



Octal-8 position



BCD-10 position



Hex-16 position



Figure 1

"A" style rotor

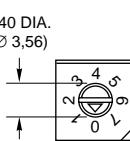


Figure 2

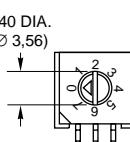
"F" style rotor

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

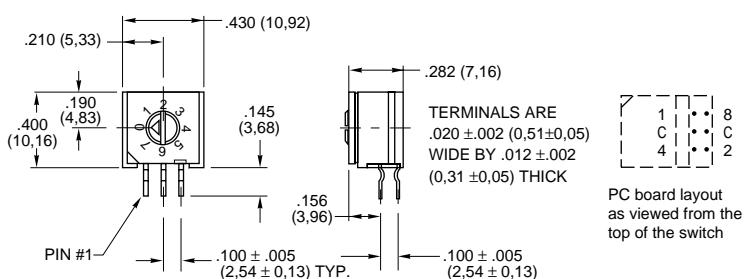


.140 DIA. (Ø 3.56)  
0.270 (6.86)  
OR  
.170 (4.32)  
OR  
.090 (2.29)  
SEE ORDERING INFORMATION

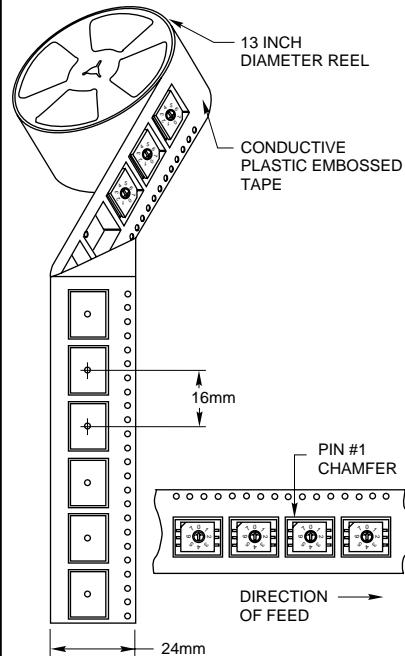


.140 DIA. (Ø 3.56)  
.270 (6.86)  
OR  
.170 (4.32)  
OR  
.090 (2.29)  
SEE ORDERING INFORMATION

Figure 3

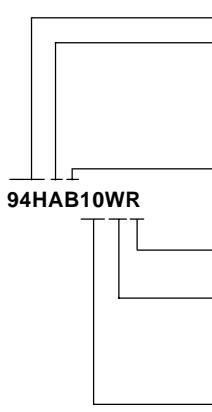
**DIMENSIONS** In inches (and millimeters)**Right Angle Thru-Hole****TAPE AND REEL PACKAGING:**  
**Series 94H**

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

**ORDERING INFORMATION: Series 94H**

**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, C = Complementary

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

**Terminal Style:** RA = Right Angle, Thru-Hole

J = J-Lead

W = Surface Mount

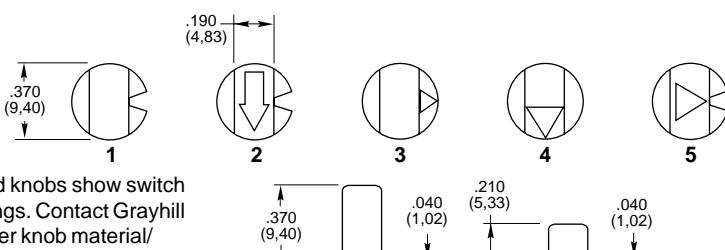
Blank = Thru-Hole

**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.

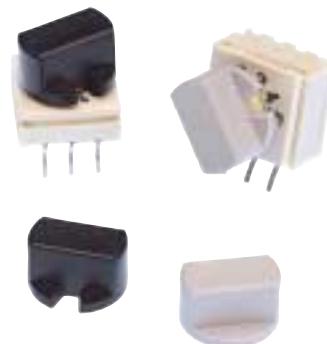
**SERIES 94 High Temperature Knobs: For Shaft Extensions**

\* 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

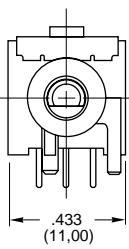
\*Ordered as a separate item.



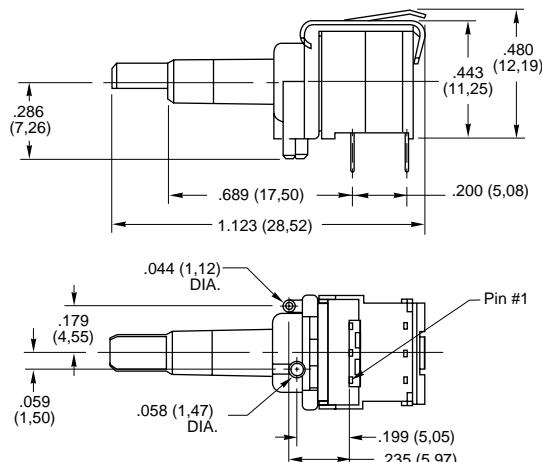
Available from your local Grayhill Distributor.  
 For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

**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

**DIMENSIONS** In inches (and millimeters)

PC board layout  
as viewed from the  
top of the switch



Unless otherwise indicated, tolerances are  $\pm .010$  (0.25)

**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, 0.5mS, halfsine 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 plated. 100 microinches minimum 90/10 tin lead solder over 50 microinches minimum nickel.

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

**Soldering Information**

**Soldering Temperature:** 250°C for 10 seconds 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:****Series 94H and 94R**

Standard Output	CODE OUTPUT								CODE OUTPUT								Complement Output
	1	2	4	8	1	2	4	8	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.

**ORDERING INFORMATION: Series 94R**

<b>Continuous Rotation Versions</b>			
<b>Code</b>	<b>No. of Positions</b>	<b>Standard Code Part Number</b>	<b>Complement Part Number</b>
Octal	8	94RB08C	94RC08C
BCD	10	94RB10C	94RC10C
Hexadecimal	16	94RB16C	94RC16C

<b>Rotational Stop Versions*</b>			
<b>Code</b>	<b>No. of Positions</b>	<b>Standard Code Part Number</b>	<b>Complement Part Number</b>
Hexadecimal	16	94RB16F	94RC16F

\* Consult Grayhill for 8 or 10 position