



TOGGLE SWITCHES

- Save Space and Weight
- SPDT, DPDT, 3PDT, and 4DPT Circuitry
- Choice of Actuators, Bushings and Terminations
- PC and Panel Mount Versions

	Page
TOGGLE SWITCHES	
Selection Chart	3
Miniature Series 34A	4
Sealed Miniature Series 34B	10
Sub-Miniature Series 34C	14
Sealed Sub-Miniature Series 34D	18
Sealed Surface Mount Series 34E	21

Typical Applications:

- Computers and Peripherals
- Instrumentation
- Medical Equipment
- Telecommunications
- Test and Measurement Equipment

TOGGLE SWITCHES

Series	34A	34B	34C	34D	34E
Page Number	4-9	10-13	14-17	18-20	21-24
Size	Miniature	Miniature	Sub-Miniature	Sub-Miniature	Sub-Miniature
Circuitry	SPDT, DPDT, 3PDT, 4PDT	SPDT, DPDT, 3PDT	SPDT, DPDT	SPDT, DPDT	SPDT
Max Contact Rating	5A	5A	3A	3A	0.4VA
Process Sealed		Yes		Yes	Yes
Mounting Options					
PC Vertical	Yes	Yes	Yes	Yes	
PC Vertical w/ Support Bracket	Yes	Yes	Yes	Yes	
PC Right Angle	Yes	Yes	Yes	Yes	
PC Right Angle Vertical	Yes	Yes	Yes	Yes	
Surface Mount					Yes
Panel	Yes	Yes	Yes		
Termination Options					
Solder Lug	Yes	Yes	Yes		
PC Mount	Yes	Yes	Yes	Yes	
PC Mount, Quick Connect	Yes				
Gullwing					Yes

SERIES 34A

Miniature Toggle Switches

FEATURES

- Save Space and Weight
- SPDT, DPDT, 3PDT, and 4PDT Circuitry
- Choice of Actuators, Bushings and Terminations
- UL Recognized

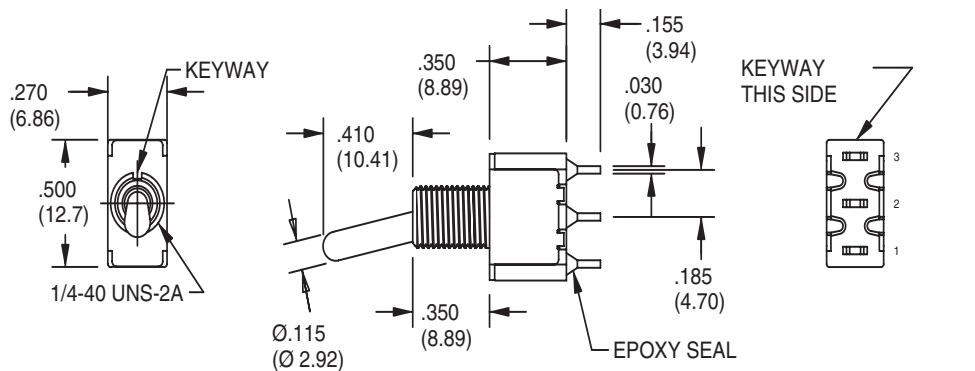
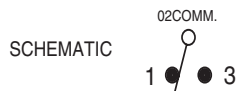


MODELS In inches (and millimeters)

SPDT

MODEL NO.	SWITCH POSITION		
SP1	ON	NONE	ON
SP2	ON	NONE	(ON)
SP3	ON	OFF	ON
SP4	(ON)	OFF	(ON)
SP5	ON	OFF	(ON)
TERM. COMM.	2-3	OPEN	2-1

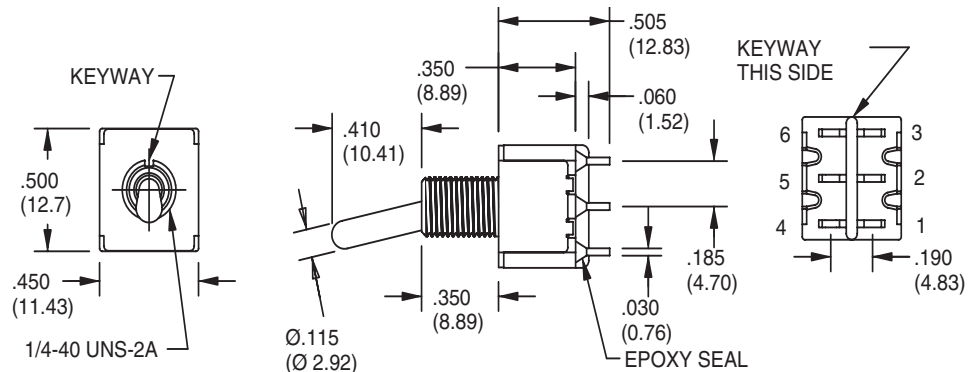
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DPDT

MODEL NO.	SWITCH POSITION		
DP1	ON	NONE	ON
DP2	ON	NONE	(ON)
DP3	ON	OFF	ON
DP4	(ON)	OFF	(ON)
DP5	ON	OFF	(ON)
TERM. COMM.	2-3, 5-6	OPEN	2-1, 5-4

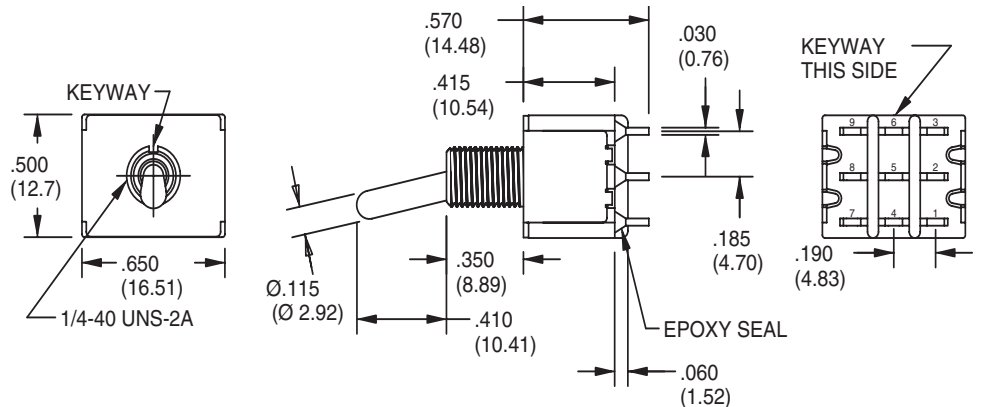
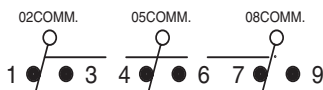
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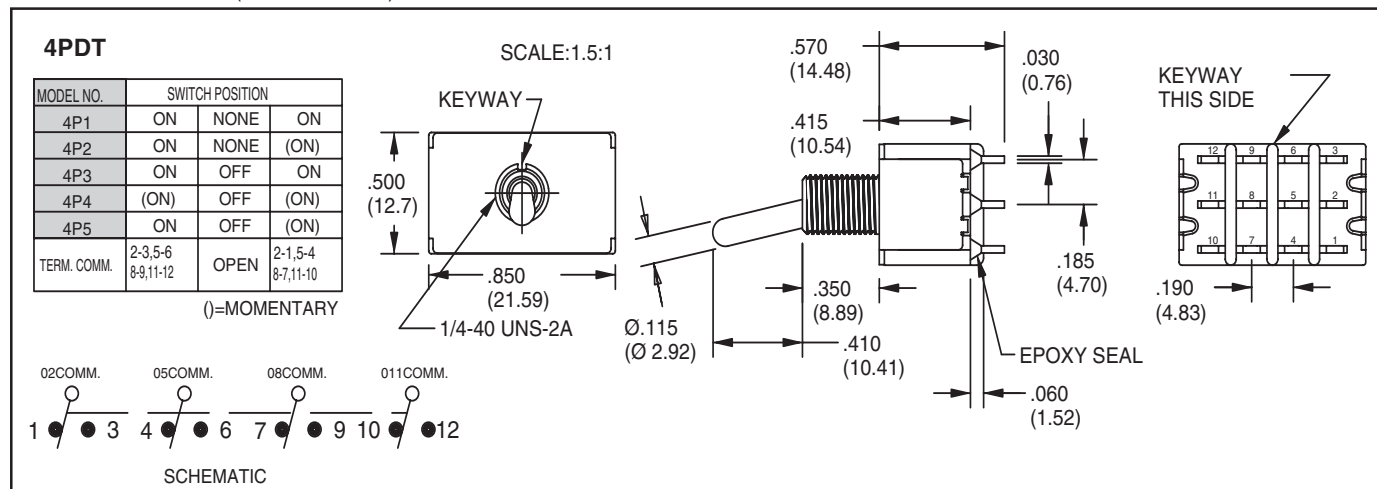
3PDT

MODEL NO.	SWITCH POSITION		
3P1	ON	NONE	ON
3P2	ON	NONE	(ON)
3P3	ON	OFF	ON
3P4	(ON)	OFF	(ON)
3P5	ON	OFF	(ON)
TERM. COMM.	2-3,5-6, 8-9	OPEN	2-1,5-4, 8-7

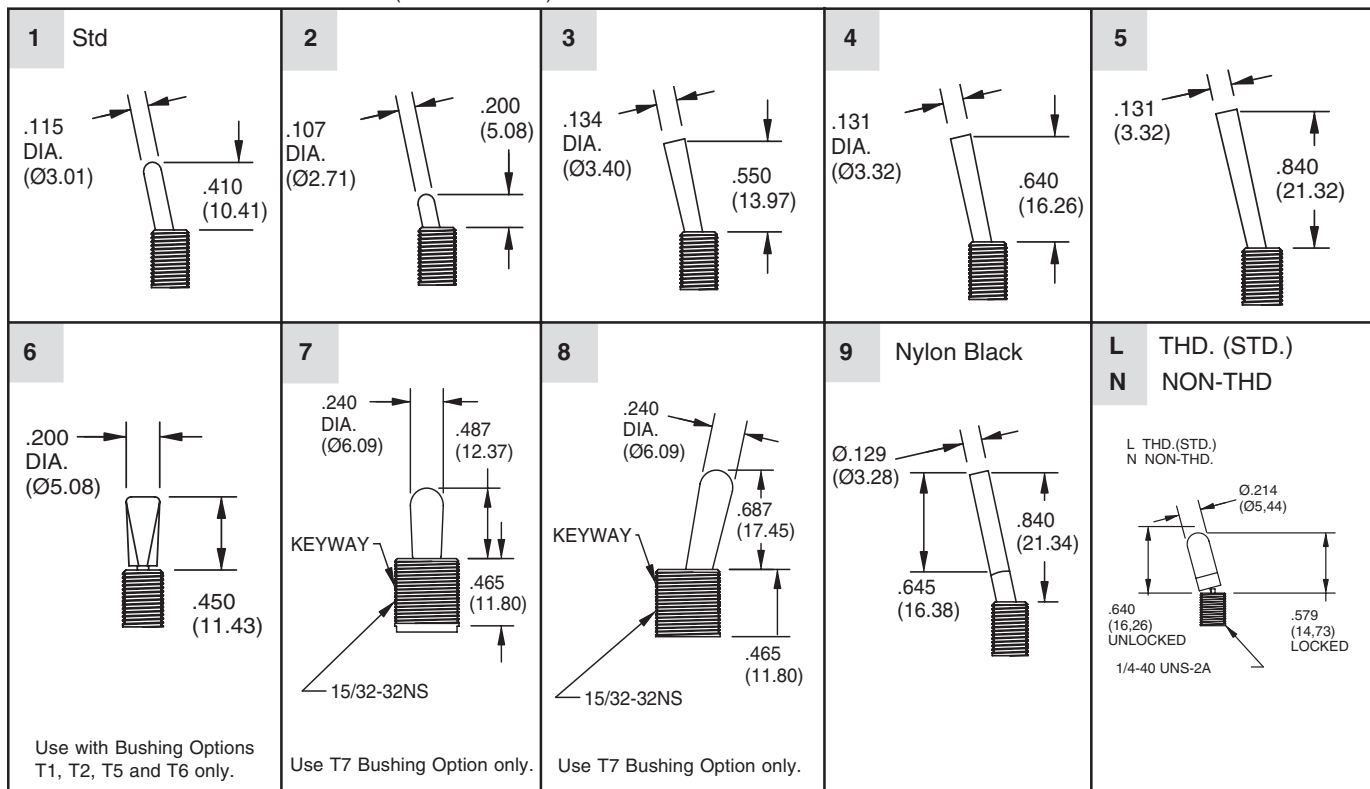
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MODELS In inches (and millimeters)



ACTUATOR OPTIONS In inches (and millimeters)



Actuators 1-5 shown with standard B1 bushing. Add .070 (1.78) for B3, subtract .020 (0.51) for B6 bushing.

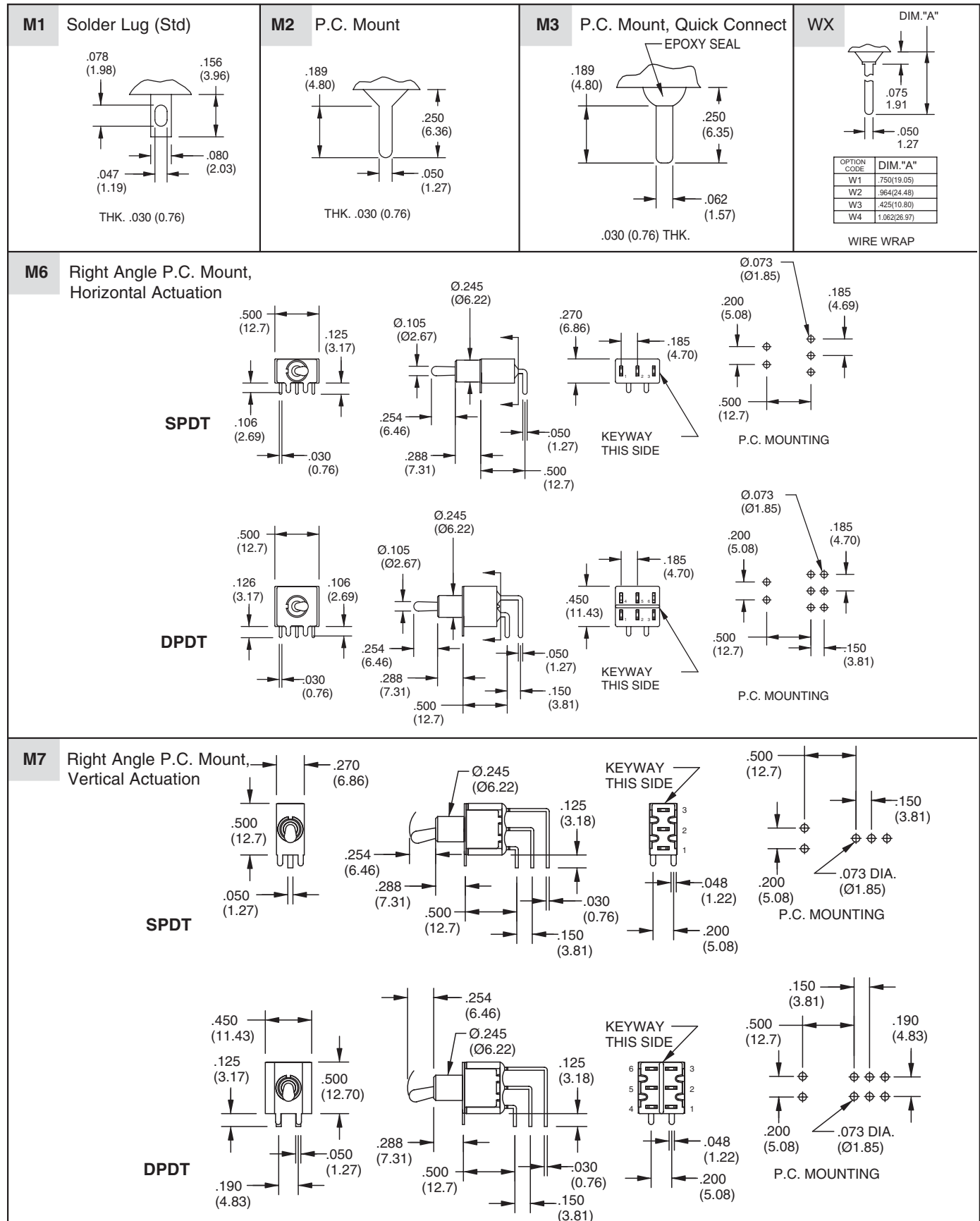
BUSHING OPTIONS In inches (and millimeters)

B1 B2 Thd (Std) Non-Thd	
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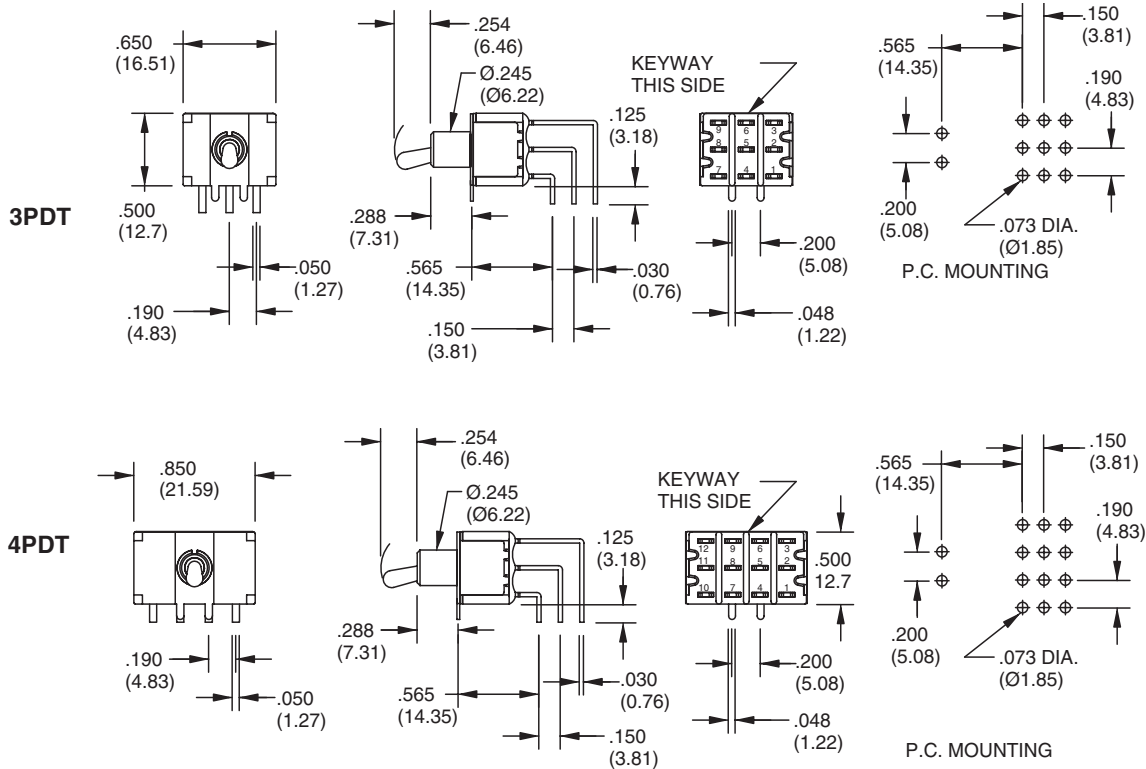
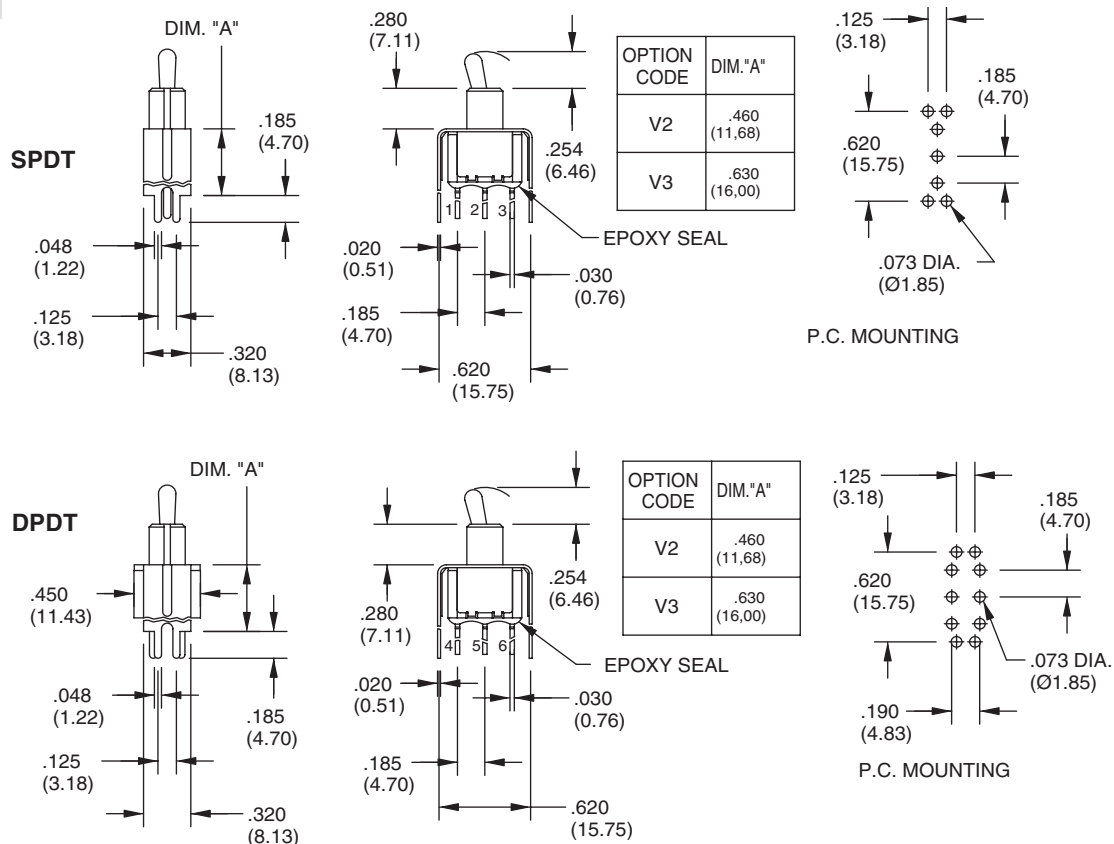
PANEL MOUNTING In inches (and millimeters)

1/4" BUSHING
15/32" BUSHING
METRIC BUSHING

TERMINATION OPTIONS In inches (and millimeters)



TERMINATION OPTIONS In inches (and millimeters)

M7 Right Angle P.C. Mount, Vertical Actuation

V2-V3 Vertical Bracket P.C. Mount


SPECIFICATIONS

RATINGS

Contact Rating: Q option - 5A with resistive load @ 125VAC or 28 VDC; 2A with resistive load @ 250 VAC. R option-0.4 VA max @ 20 Vmax (AC or DC)

Electrical Life: 40,000 make-and-break cycles at full load

Contact Resistance: 10 milliohms max. initial @ 2-4 VDC, 100 mA for both gold & silver contacts

Insulation Resistance: 1,000 megaohms minimum

Dielectric Strength: 1,000 V RMS @ sea level

Operating Temperature: -30°C to 85°C

UL Recognition: File number is E35289

MATERIALS

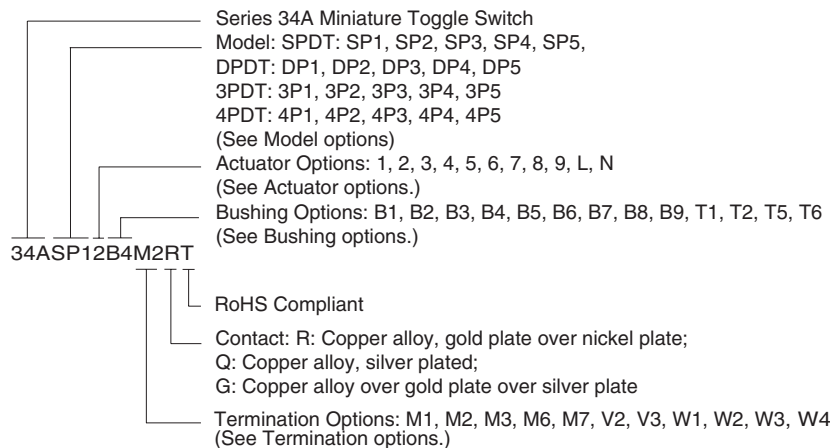
Case: Diallyl phthalate (DAP) (UL94V-0)

Toggle Handle: Brass, chrome-plated

Bushing: Brass, nickel-plated

Housing: Stainless steel

ORDERING INFORMATION

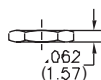
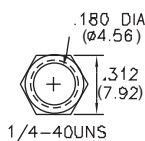


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HARDWARE In inches (and millimeters)

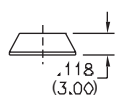
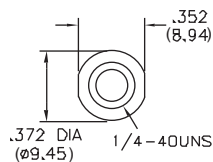
NUTS

Series 34A (Std)



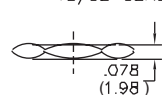
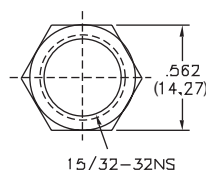
HDW2

Dress Nut



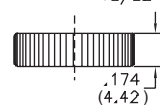
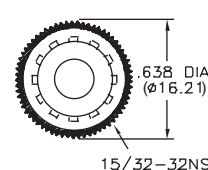
HDW3

For Actuator Options 7, 8 (Std)



HDW4

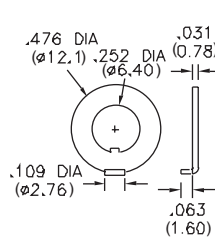
Knurled Nut (Sealed)



HDW5

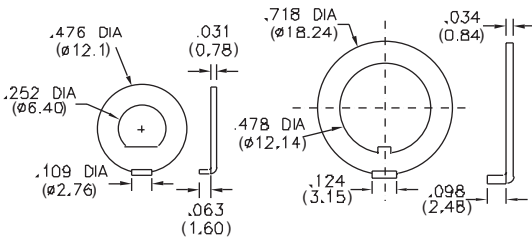
LOCKING RINGS

Series 34A (Std)



HDW15

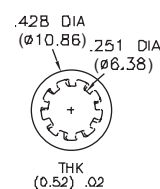
For Actuator Options 7, 8



HDW17

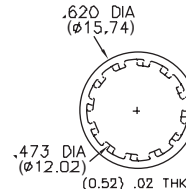
LOCK WASHERS

Series 34A (Std)



HDW11

For Actuator Options 7, 8



HDW12

SERIES 34B

Sealed Miniature Toggle Switches



FEATURES

- Save Space and Weight
- SPDT, DPDT, and 3PDT Circuitry
- Choice of Actuators, Bushings and Terminations
- Sealed per IP67



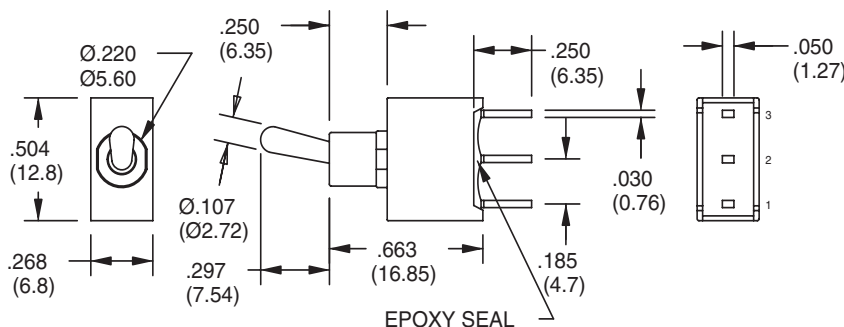
MODELS In inches (and millimeters)

SPDT

Model No.	Switching Position		
			
WSP1	ON	NONE	ON
WSP2	ON	NONE	(ON)
WSP3	ON	OFF	ON
WSP4	(ON)	OFF	(ON)
WSP5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

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SCHEMATIC



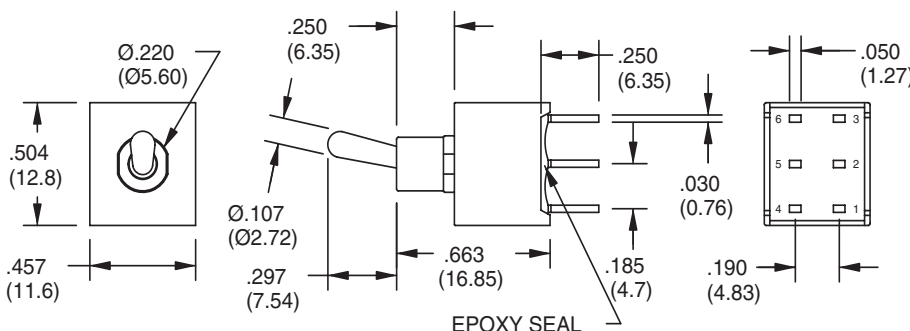
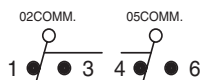
Toggle Switches

DPDT

Model No.	Switching Position		
			
WDP1	ON	NONE	ON
WDP2	ON	NONE	(ON)
WDP3	ON	OFF	ON
WDP4	(ON)	OFF	(ON)
WDP5	ON	OFF	(ON)
Term. Comm.	2-3 5-6	OPEN	2-1 5-4

()=MOMENTARY

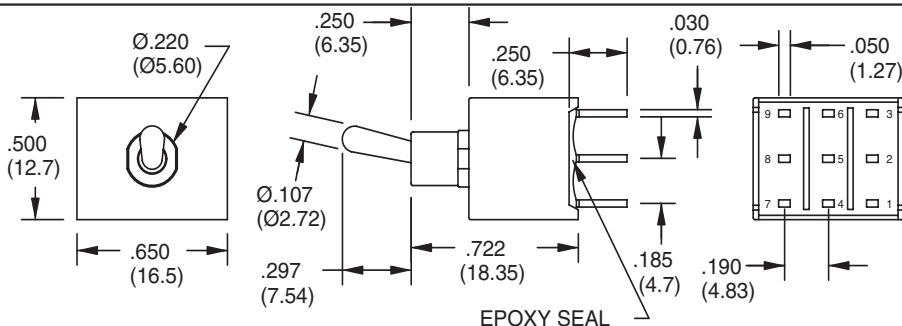
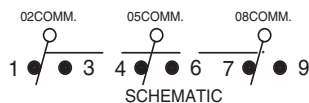
SCHEMATIC



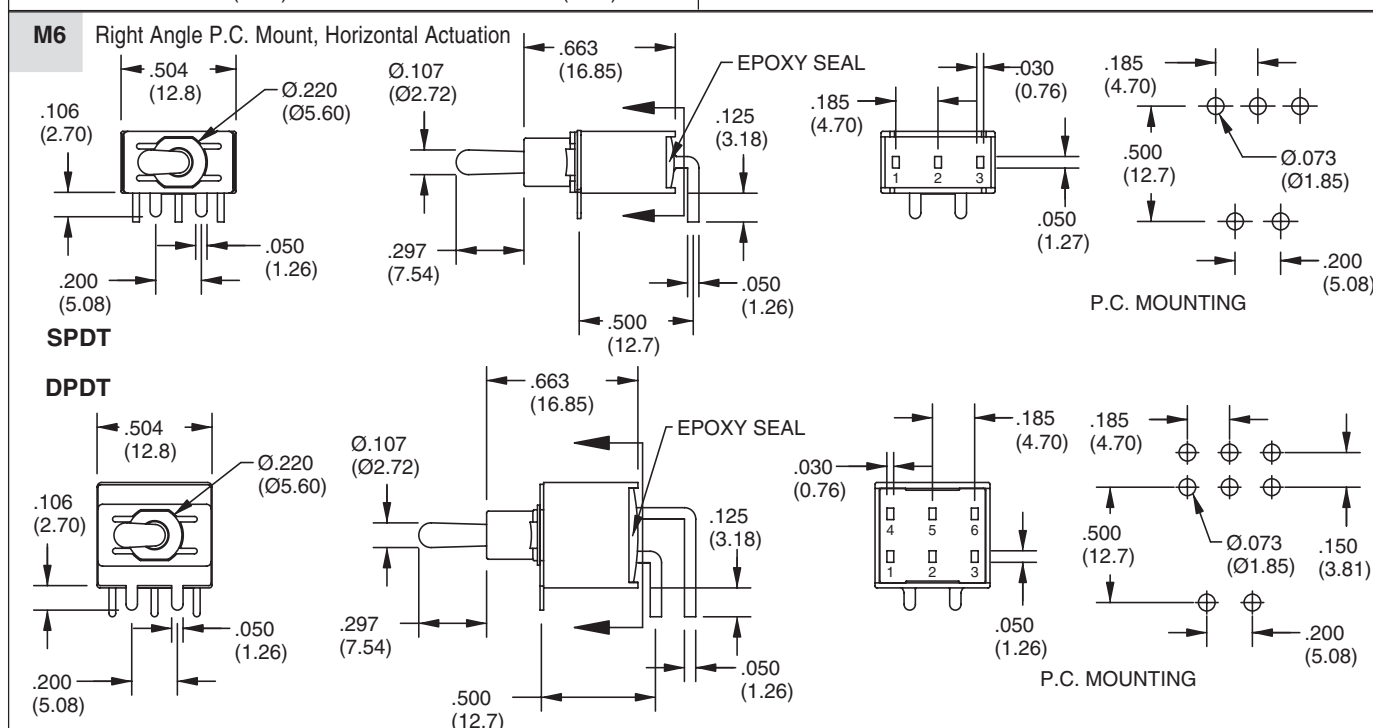
3PDT

Model No.	Switching Position		
			
W3P1	ON	NONE	ON
W3P2	ON	NONE	(ON)
W3P3	ON	OFF	ON
W3P4	(ON)	OFF	(ON)
W3P5	ON	OFF	(ON)
Term. Comm.	2-3 5-6	OPEN	2-1 5-4

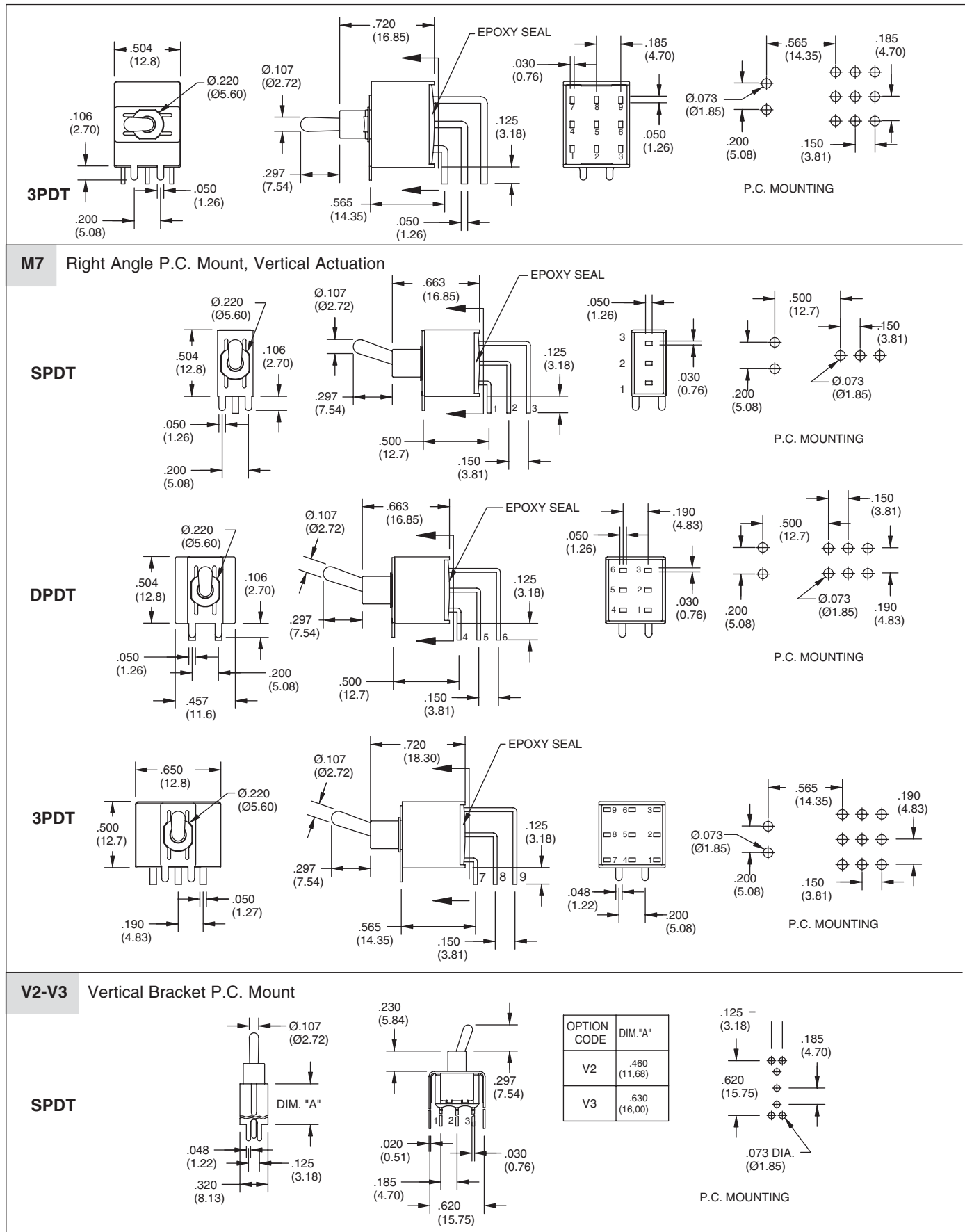
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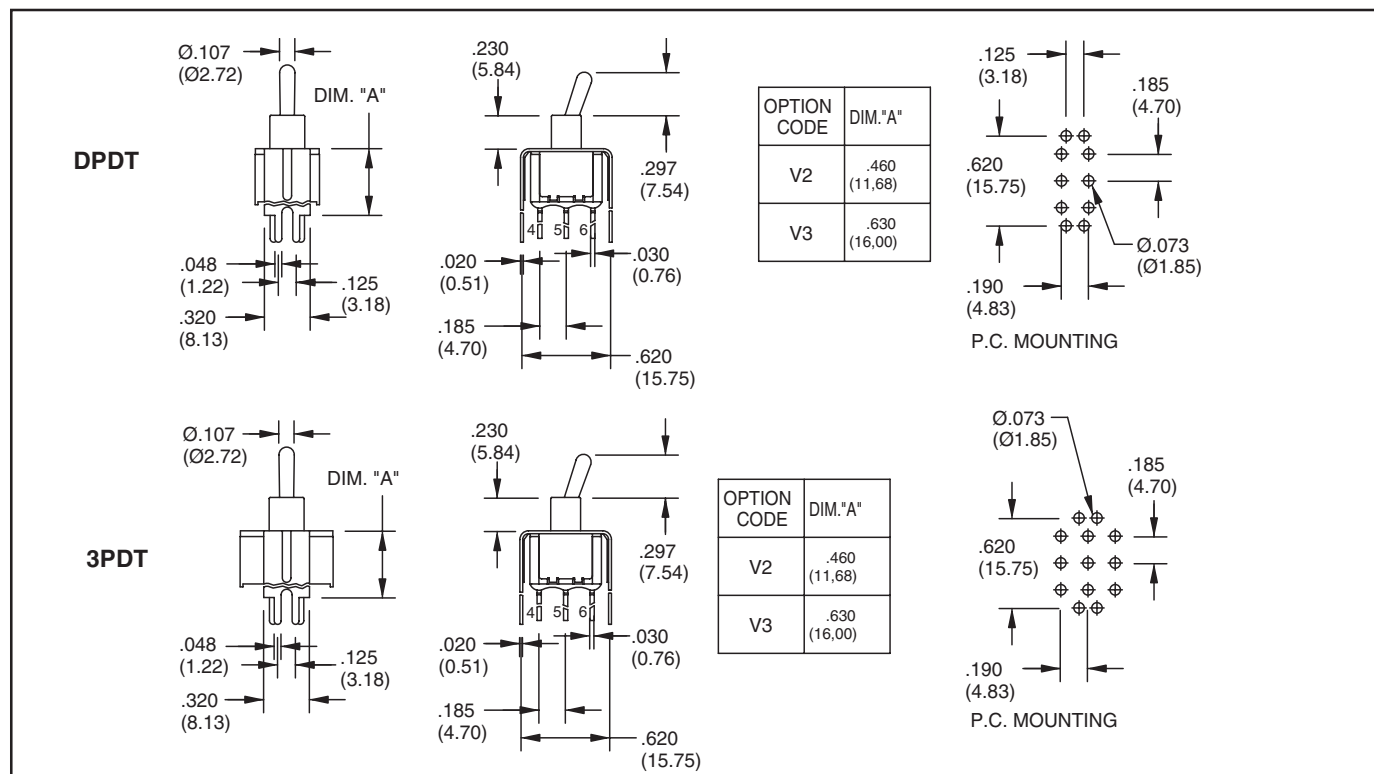
Toggle Switches



TERMINATION OPTIONS In inches (and millimeters)



TERMINATION OPTIONS In inches (and millimeters)



SPECIFICATIONS

RATINGS

Contact Rating: Q option - 5A with resistive load @ 125VAC or 28 VDC; 2A with resistive load @ 250 VAC. R option-0.4 VA max @ 20 Vmax (AC or DC)

Electrical Life: 50,000 make-and-break cycles at full load

Contact Resistance: 10 milliohms max.

initial @ 2-4 VDC, 100 mA

Insulation Resistance: 1,000 megaohms minimum

Dielectric Strength: 1,500 V RMS @ sea level

Operating Temperature: -30°C to 85°C

MATERIALS

Case and Bushings: Glass-filled nylon 6/6,

flame retardant, heat stabilized (UL94V-0)

Actuator: Brass, chrome plated. Internal O-ring seal standard with all actuators.

Frame: Spring steel

Switch Support: Brass, tin-plated

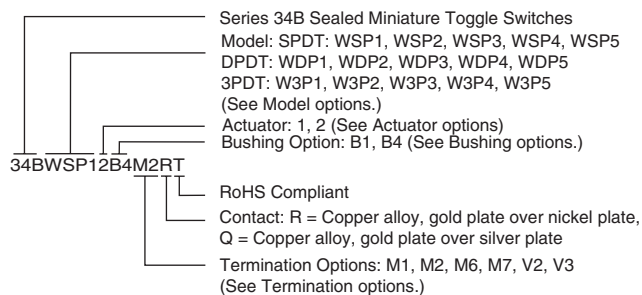
Actuator Pivot & Mounting Bracket: Nylon

Actuator Pivot Retainer: Stainless Steel

Terminal and Contacts: Copper alloy with plated over nickel or silver plate

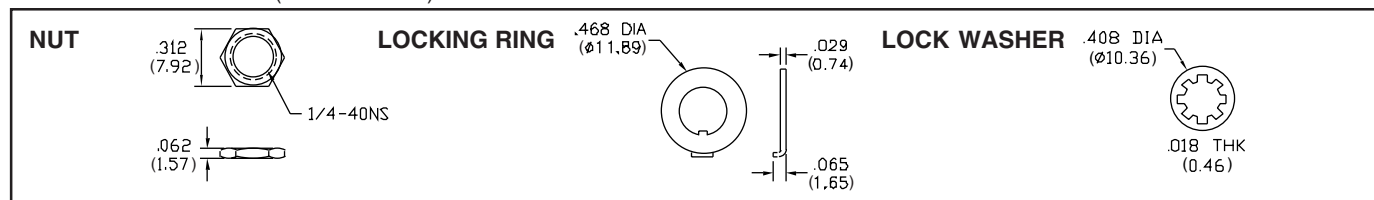
Terminal Seal: Epoxy

ORDERING INFORMATION



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

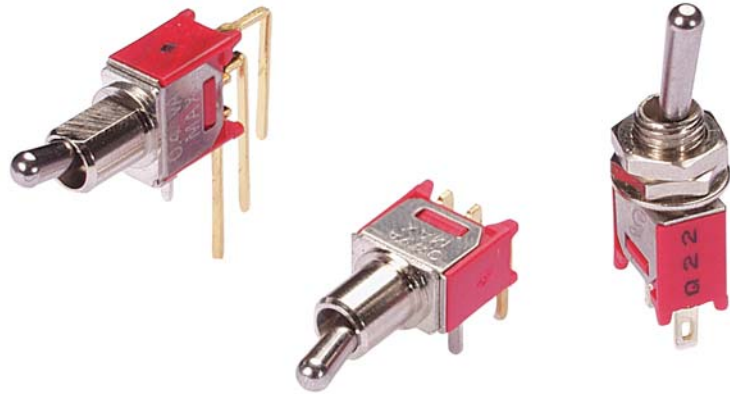
HARDWARE In inches (and millimeters)



SERIES 34C Sub-Miniature Toggle Switches

FEATURES

- Save Space and Weight
- SPDT and DPDT Circuitry
- Choice of Actuators, Bushings, and Terminations
- UL Recognized

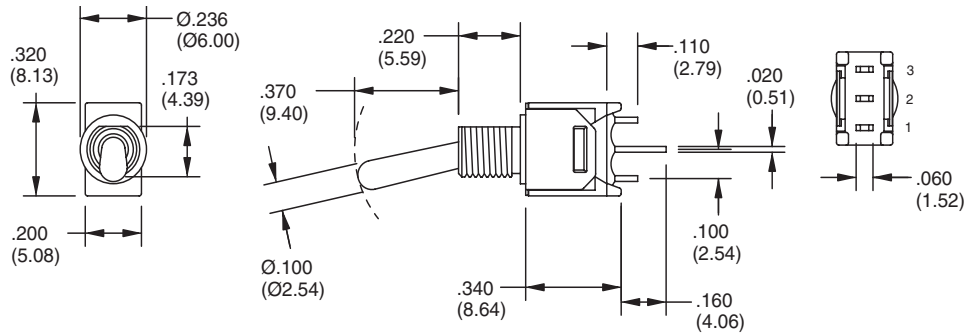


MODELS In inches (and millimeters)

SPDT

MODEL NO.	SWITCH POSITION			
MSP1	ON	NONE	ON	
MSP2	ON	NONE	(ON)	
MSP3	ON	OFF	ON	
MSP4	(ON)	OFF	(ON)	
MSP5	ON	OFF	(ON)	
TERM. COMM.	2-3	OPEN	2-1	

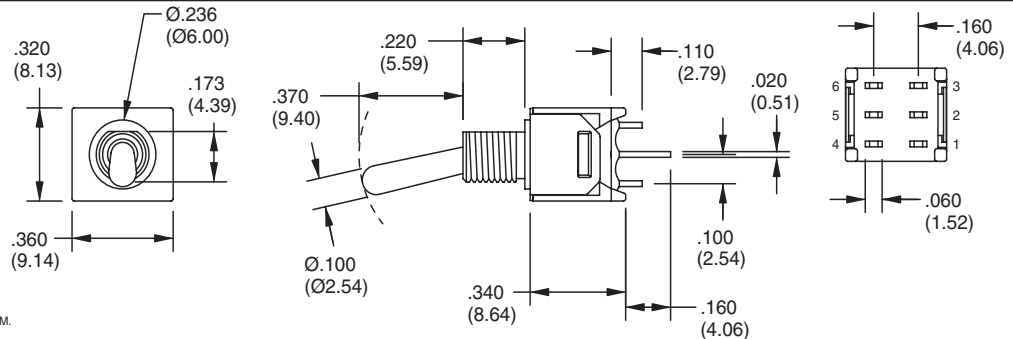
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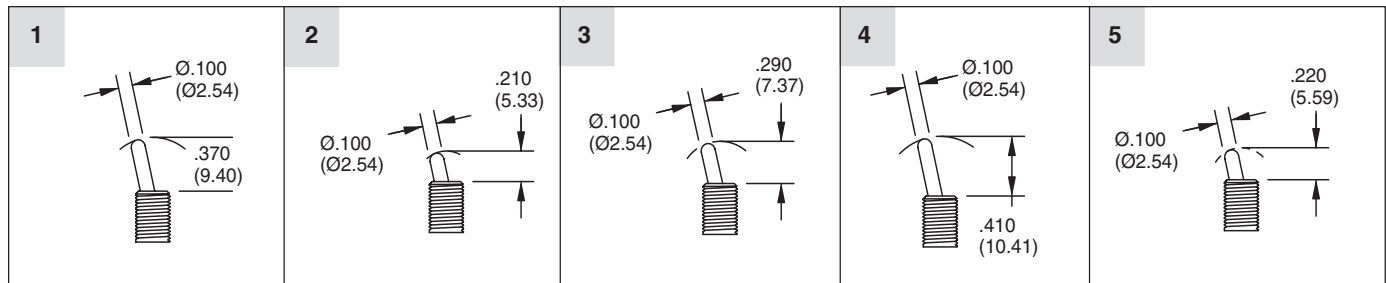
DPDT

MODEL NO.	SWITCH POSITION			
MDP1	ON	NONE	ON	
MDP2	ON	NONE	(ON)	
MDP3	ON	OFF	ON	
MDP4	(ON)	OFF	(ON)	
MDP5	ON	OFF	(ON)	
TERM. COMM.	2-3, 5-6	OPEN	2-1, 5-4	

()=MOMENTARY



ACTUATOR OPTIONS In inches (and millimeters)



Actuator options 1, 2 and 3 shown with B1 to B4 bushing, subtract 0.90 (2.29) for bushing B5, subtract 0.40 (1.02) for B7 bushing.

Actuators 4 and 5 shown with B5 and B6 bushing, add 0.90 (2.29) for bushing B1 to B3, add 0.50 (1.27) for B7 bushing.

BUSHING OPTIONS In inches (and millimeters)

B1 Thd (Std) B2 Non-Thd		B3 Thd (Std) B4 Non-Thd	
B5 Thd (Std) B6 Non-Thd		B7 Thd (Std) B8 Non-Thd	

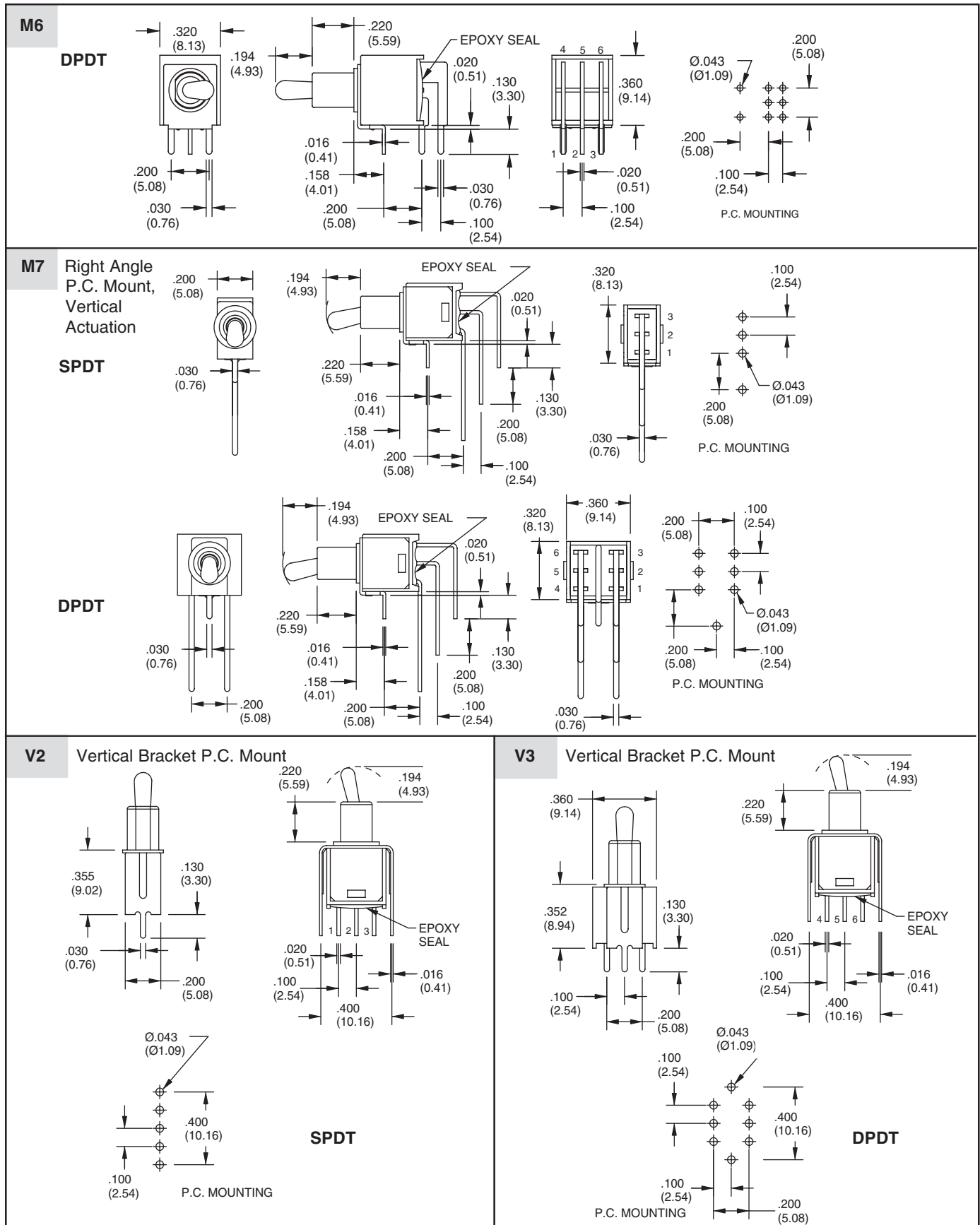
PANEL MOUNTING In inches (and millimeters)

10-48 Bushing WITHOUT LOCKING RING WITH STD. LOCKING RING	1/4" Bushing WITHOUT LOCKING RING WITH STD. LOCKING RING
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TERMINATION OPTIONS In inches (and millimeters)

M1 Solder Lug THK. .020 (0.51) SP THK. .020 (0.51) DP	M2 P.C. Mount (Std) THK. .020 (0.51) SP THK. .020 (0.51) DP
M6 Right Angle P.C. Mount, Horizontal Actuation SPDT P.C. MOUNTING	

TERMINATION OPTIONS In inches (and millimeters)



SPECIFICATIONS

RATINGS

Contact Rating: Q option - 3A with resistive load @ 125VAC or 28 VDC; 1.5A with resistive load @ 250 VAC. R option-0.4 VA max @ 20 Vmax (AC or DC)

Electrical Life: 30,000 make-and-break cycles at full load

Contact Resistance: 10 milliohms max. initial @ 2-4 VDC, 100 mA

Insulation Resistance: 1,000 megaohms minimum

Dielectric Strength: 1,000 V RMS @ sea level

Operating Temperature: -30°C to 85°C

UL Recognition: File number is E35289

MATERIALS

Case: Diallyl phthalate (DAP) (UL 94V-0)

Toggle Handle: Brass, chrome plated

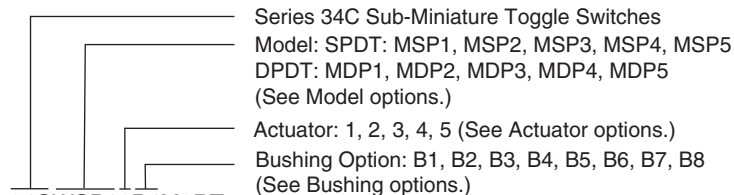
Bushing: Brass, nickel plated

Housing: Stainless steel

Terminal/Switch Support: Brass, electrotin plated

Terminal Seal: Epoxy

ORDERING INFORMATION



RoHS Compliant

Contact: R = Copper alloy, gold plate over nickel plate,

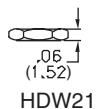
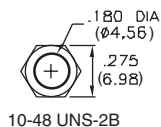
Q = Copper alloy over silver plate

Termination Options: M1, M2, M6, M7, V2, V3
(See Termination options.)

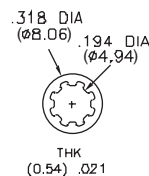
Available from your local Grayhill Component Distributor. For prices and discounts, contact a local Sales Office, an authorized local Distributor or Grayhill.

HARDWARE In inches (and millimeters)

NUT



LOCK WASHER



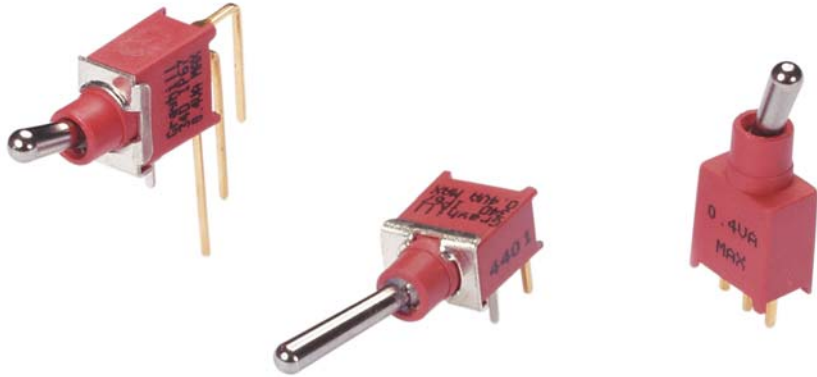
HDW22

SERIES 34D

Sealed Sub-Miniature Toggle Switches

FEATURES

- Save Space and Weight
- SPDT and DPDT Circuitry
- Choice of Actuators, Bushings, and Terminations
- Sealed per IP67

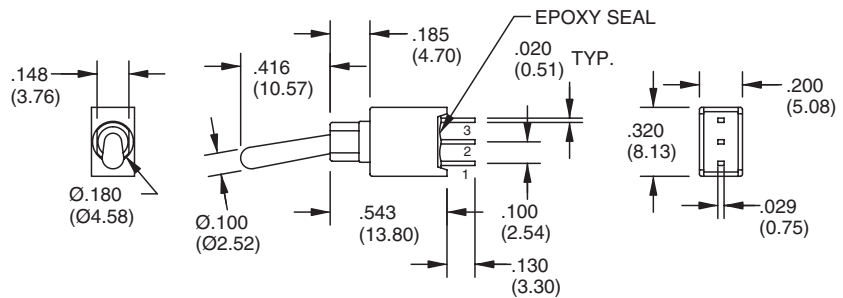


MODELS In inches (and millimeters)

SPDT

Model No.	Switching Position		
			
WMSP1	ON	NONE	ON
WMSP2	ON	NONE	(ON)
WMSP3	ON	OFF	ON
WMSP4	(ON)	OFF	(ON)
WMSP5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

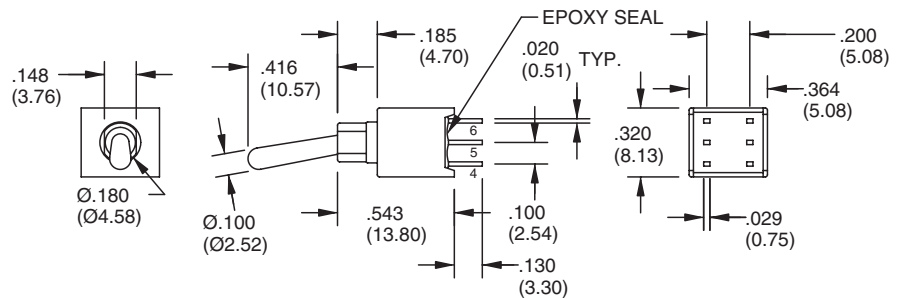
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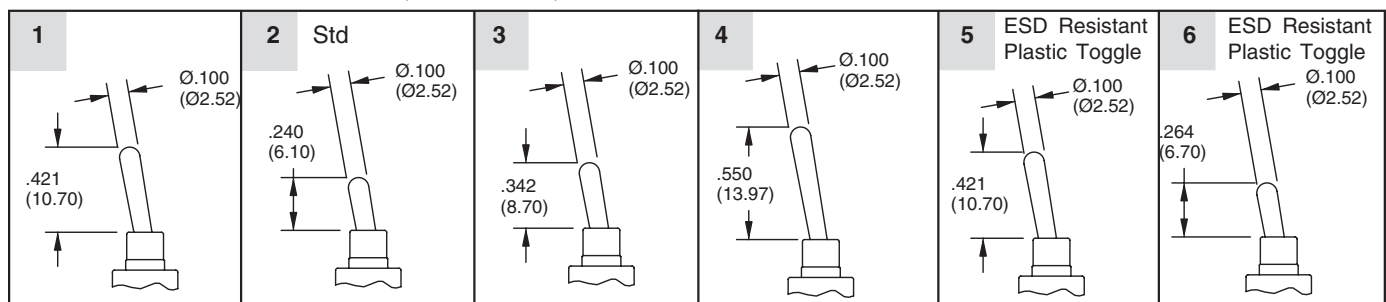
DPDT

Model No.	Switching Position		
			
WMDP1	ON	NONE	ON
WMDP2	ON	NONE	(ON)
WMDP3	ON	OFF	ON
WMDP4	(ON)	OFF	(ON)
WMDP5	ON	OFF	(ON)
Term. Comm.	2-3 5-6	OPEN	2-1 5-4

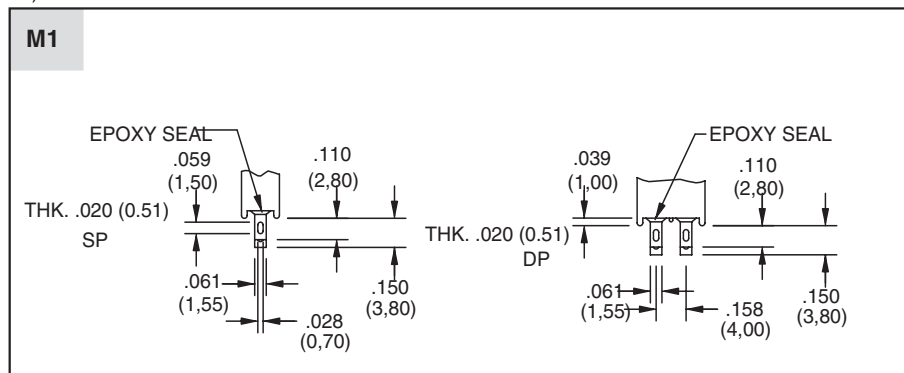
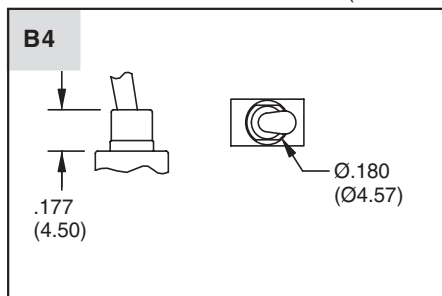
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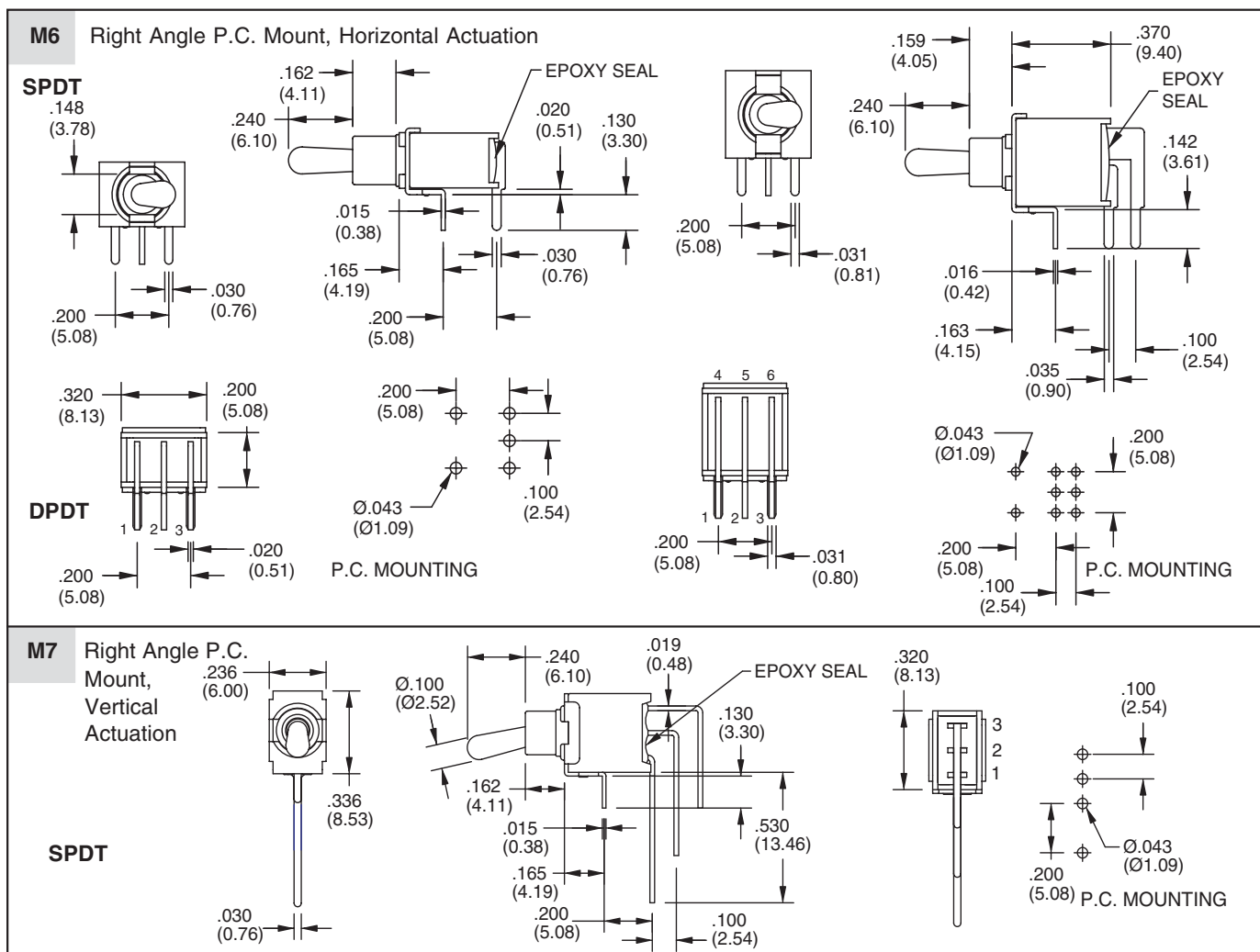
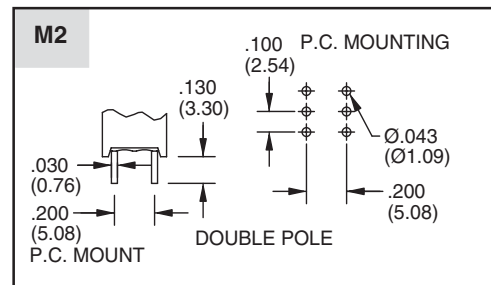
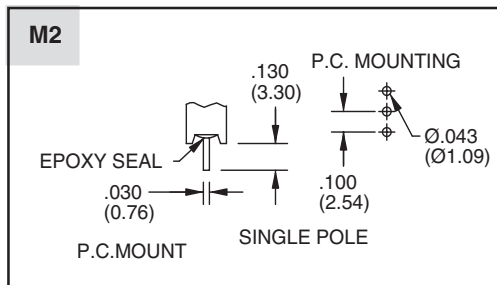
ACTUATOR OPTIONS In inches (and millimeters)



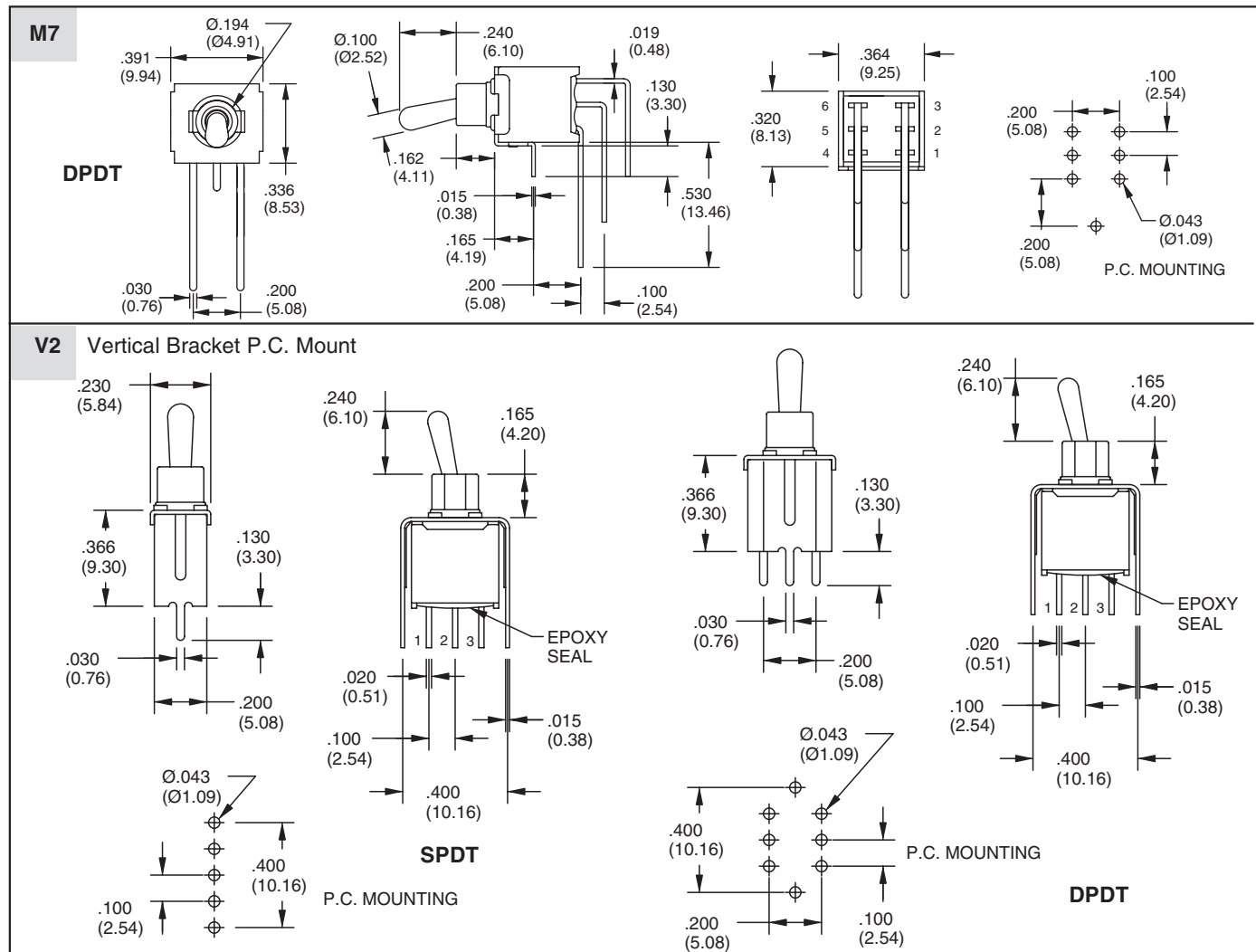
BUSHING OPTION In inches (and millimeters)



TERMINATION OPTIONS In inches (and millimeters)



TERMINATION OPTIONS In inches (and millimeters)



SPECIFICATIONS

RATINGS

Contact Rating: Q option - 3A with resistive load @ 125VAC or 28 VDC; 1.5A with resistive load @ 250 VAC. R option-0.4 VA max @ 20 Vmax (AC or DC)

Electrical Life: 30,000 make-and-break cycles at full load

Contact Resistance: 20 milliohms max.

initial @ 2-4 VDC, 100 mA

Insulation Resistance: 1,000 megaohms minimum

Dielectric Strength: 1,500 V RMS @ sea level

Operating Temperature: -30°C to 85°C

MATERIALS

Case: Diallyl phthalate (DAP) (UL94V-0)

Toggle Handle: Brass, chrome plated

Bushing: Brass, nickel plated

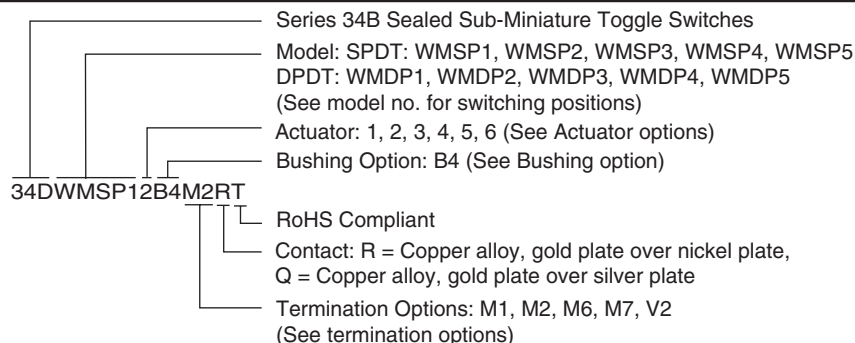
Housing: Stainless steel

Terminal/Switch Support: Brass, electroplated

Contacts & Terminals: Copper alloy, gold plate over nickel plate or silver plate

Terminal Seal: Epoxy

ORDERING INFORMATION



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

SERIES 34E

Sealed Surface Mount Toggle Switches

FEATURES

- Save Space and Weight
- SPDT Circuitry
- Choice of Actuators and Terminations
- Sealed per IP67



MODELS In inches (and millimeters)

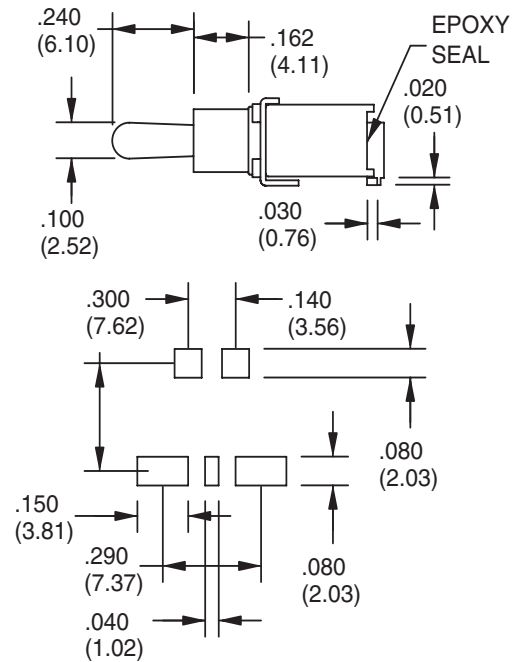
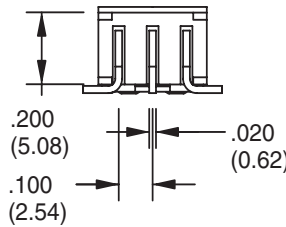
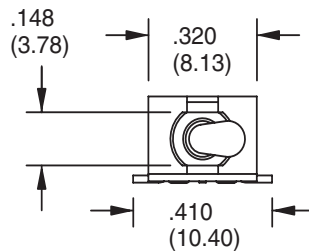
M6

SPDT

MODEL NO.	SWITCH POSITION		
WMSP1	ON	NONE	ON
WMSP2	ON	NONE	(ON)
WMSP3	ON	OFF	ON
WMSP4	(ON)	OFF	(ON)
WMSP5	ON	OFF	(ON)
TERM. COMM.	2-3	OPEN	2-1

()=MOMENTARY

SCHEMATIC

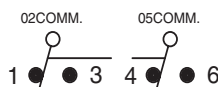


S6

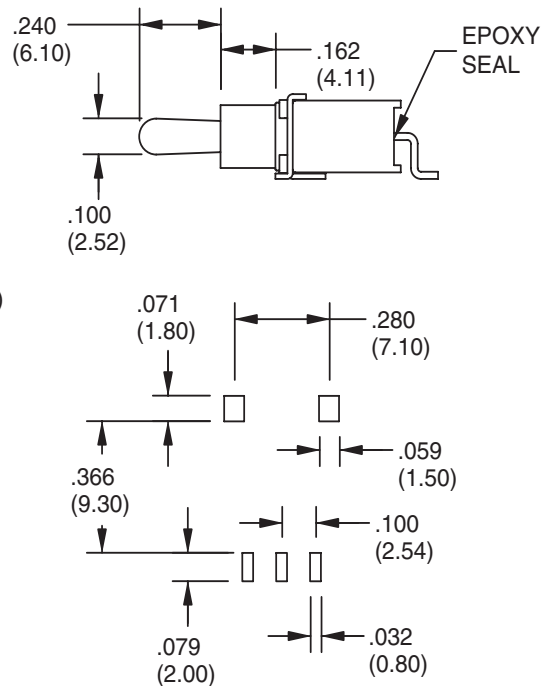
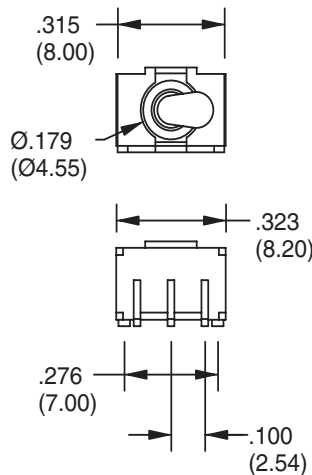
SPDT

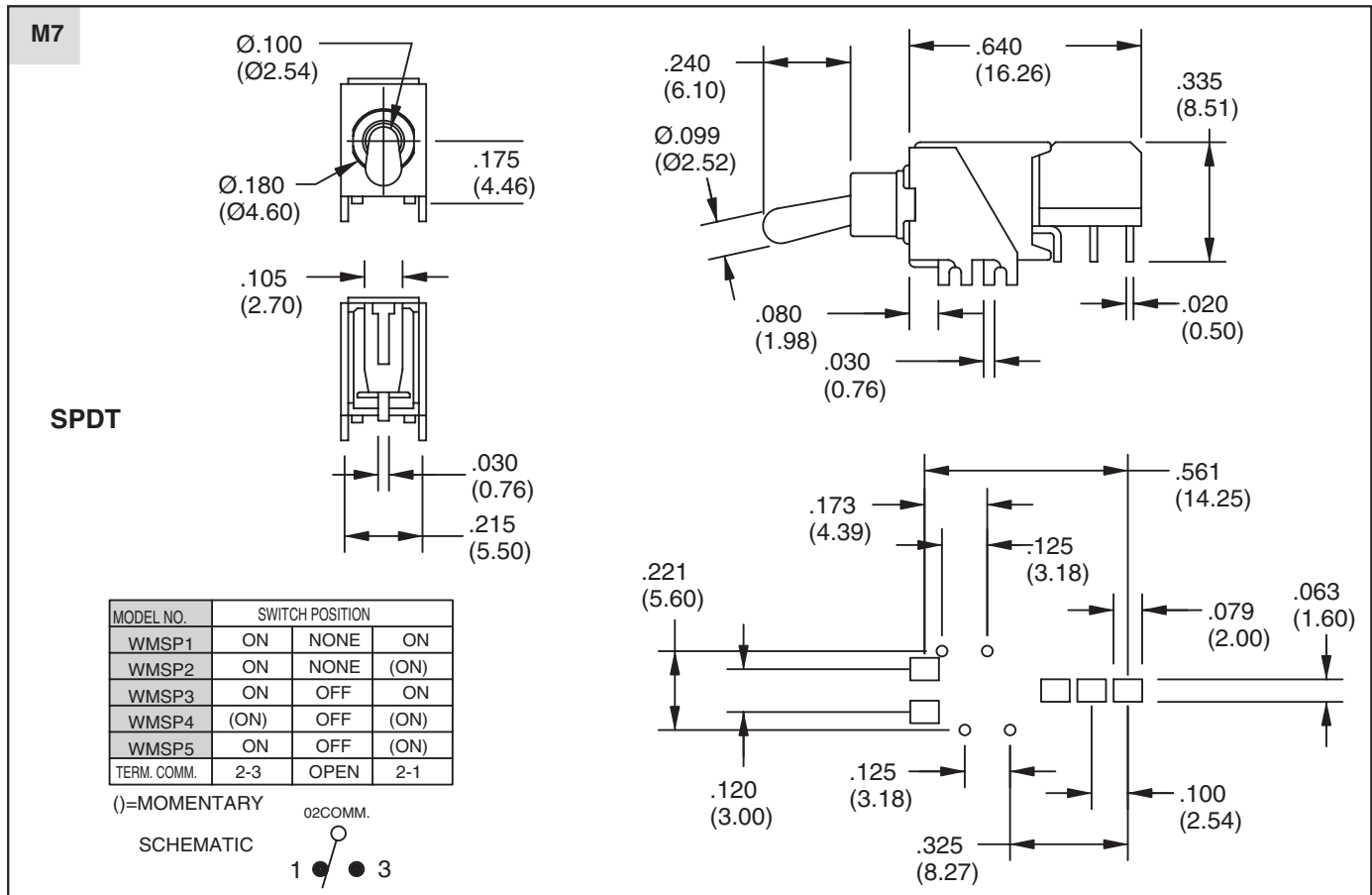
MODEL NO.	SWITCH POSITION		
WMSP1	ON	NONE	ON
WMSP2	ON	NONE	(ON)
WMSP3	ON	OFF	ON
WMSP4	(ON)	OFF	(ON)
WMSP5	ON	OFF	(ON)
TERM. COMM.	2-3	OPEN	2-1

()=MOMENTARY

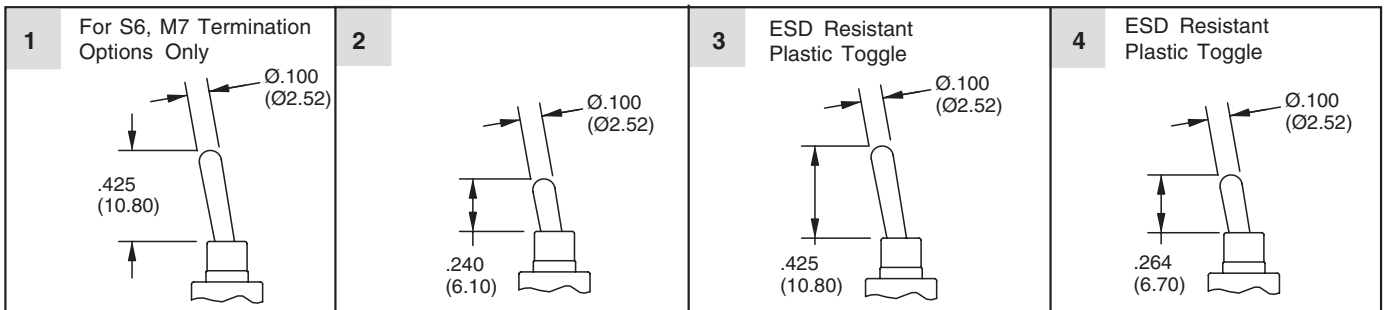


SCHEMATIC

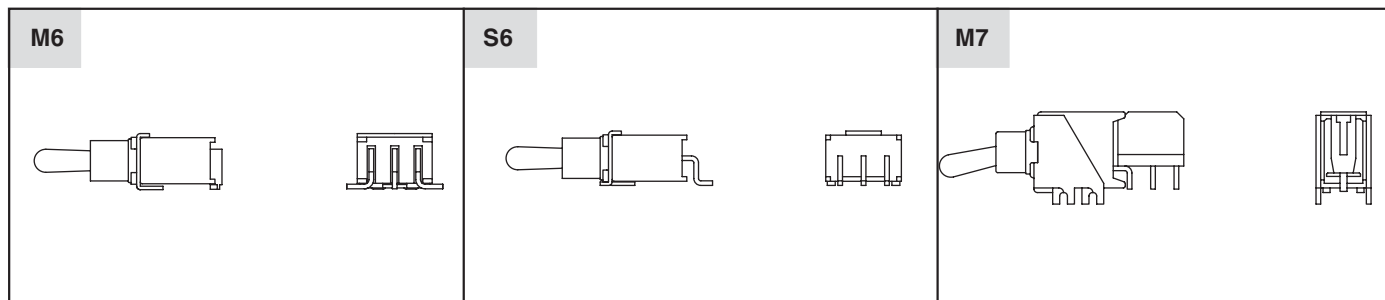




ACTUATOR OPTIONS In inches (and millimeters)

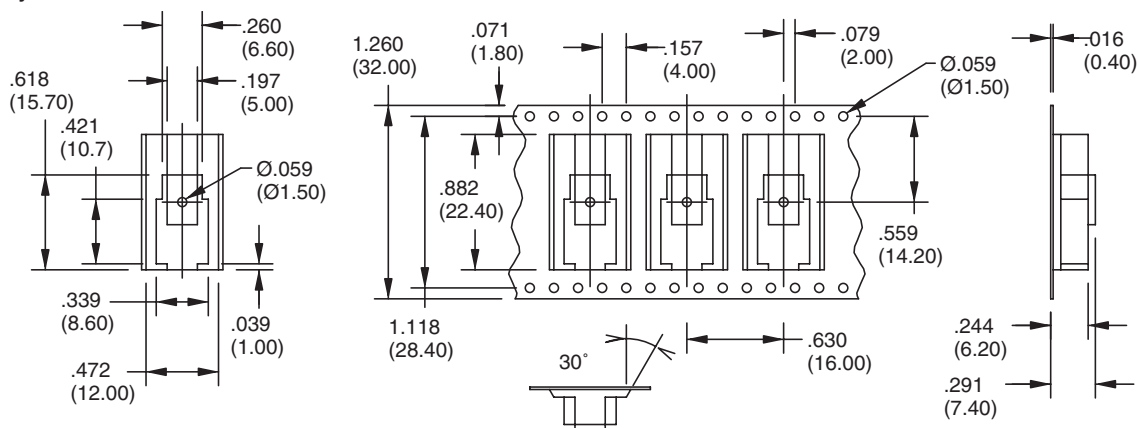


TERMINATION OPTIONS

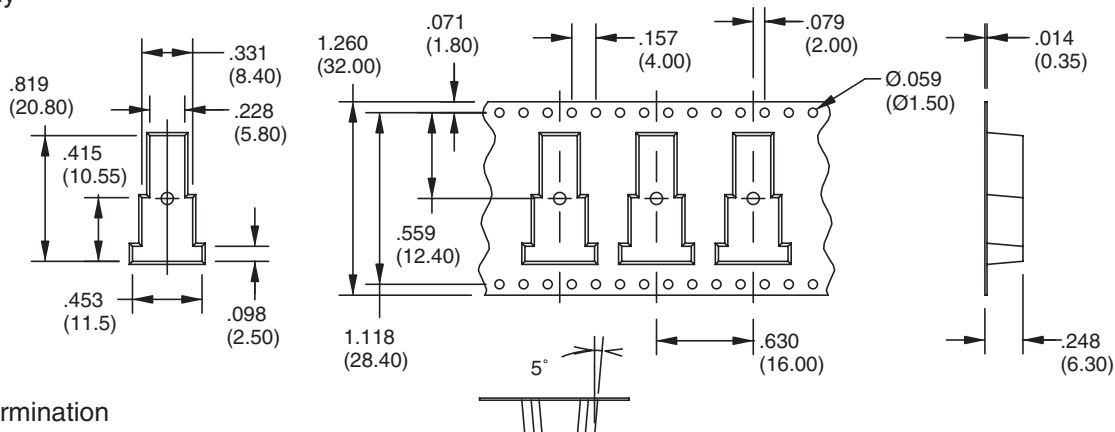


TAPE AND REEL PACKAGING In inches (and millimeters)

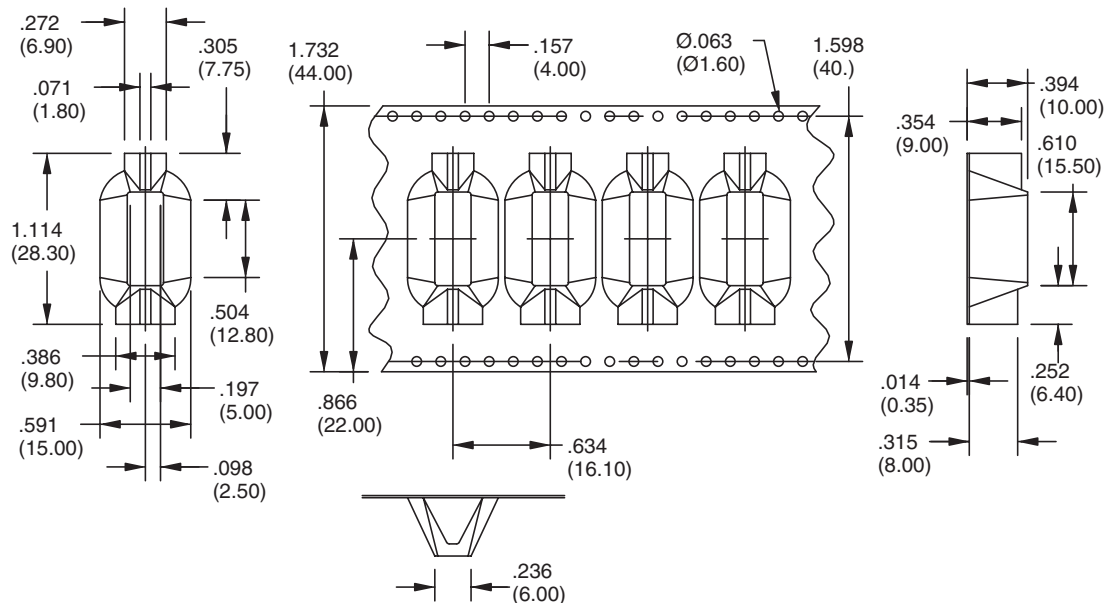
For M6 Termination
Option Only



For S6 Termination
Option Only



For M7 Termination
Option Only



SPECIFICATIONS

RATINGS

Contact Rating: 0.4 VA max. @ 20V max.
(AC or DC)

Mechanical and Electrical Life: 30,000
make-and-break cycles at full load

Contact Resistance: 20 milliohms max. typ.
initial @ 2-4 VDC, 100 mA

Insulation Resistance: 1,000 megaohms
minimum

Dielectric Strength: 1,500 V RMS @ sea
level

Operating Temperature: -30°C to 85°C

MATERIALS

Case and Bushings: Glass-filled nylon 4/6,

flame retardant, heat stabilized (UL94V-0)

Actuator: Brass, chrome plated

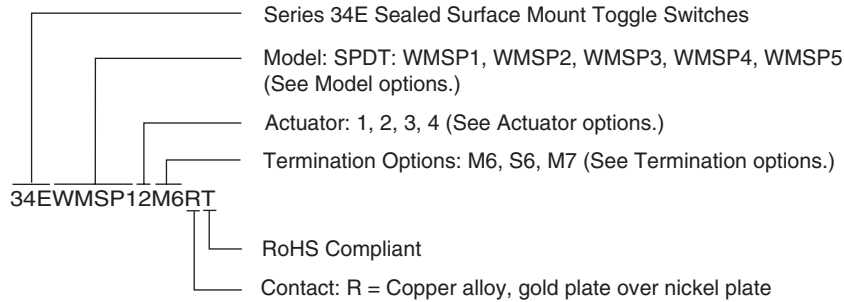
Contacts: Copper alloy, gold plate over
nickel plate

Terminals: Copper alloy, tin plate over nickel
plate

Terminal Seal: Epoxy

Tape and Reel: 500 pcs/per reel

ORDERING INFORMATION



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