

Minature Toggle Switches



RoHS
Compliant



Specifications:

Mechanical Life	: 40,000 make-and-break cycles
Contact Resistance	: 10m Ω max. initial @ 2-4V DC 100mA for both silver and gold plated contacts
Insulation Resistance	: 1,000M Ω min.
Dielectric Strength	: 1,000V rms min. @ sea level
Operating Temperature	: -30°C to +85°C

Materials:

Case	: Diallyl phthalate (DAP)
Actuator	: Brass,chrome plated
Bushing	: Brass, nickel plated
Housing	: Stainless steel
Switch Support	: Brass, tin plated
Contact / Terminals	: Brass, Silver or gold plated

Minature Toggle Switches



How to Order:

MODEL NO.	ACTUATOR	BUSHING	TERMINATIONS	CONTACT MATERIAL	SEAL	RoHS SOLDERING
Model NO.	Actuator		Terminations	Contact material	Seal	high
1MS1 SP On-None-On	T1 10.41 high		M1 Solder lug	Q Silver	E EPOXY (std)	
1MS2 SP On-None-Mom	T2 5.08 high		M2 PC thru-hole	R Gold	N NO EPOXY	
1MS3 SP On-Off-On	T3 13.97 high		M3 Quick connect	G Gold, pure-tin		
1MS4 SP Mom-Off-Mom	T4 16.26 high		M51 18.70 high, wire wrap	S Silver, pure-tin		
1MS5 SP On-Off-Mom	T5 21.34 high		M52 24.20 high, wire wrap	C Gold over silver		
1MD1 DP On-None-On	T6 Flatted,anti-rotation		M53 10.55 high, wire wrap	K Gold over silver, pure-tin		
1MD2 DP On-None-Mom	T61 Flatted,anti-rotation		M54 26.97 high, wire wrap			
1MD3 DP On-Off-On	T62 Lever handle with cap		M6 Right angle, PC thru-hole			
1MD4 DP Mom-Off-Mom	T63 Flatted,anti-rotation		M6N Right angle, Snap-in, PC thru-hole			
1MD5 DP On-Off-Mom	T62 Lever handle with cap		M7 Vertical right angle, PC thru-hole			
1MD6 DP On-On-On	T63 Flatted,anti-rotation		VS2 11.68 high, V-bracket			
1MD7 DP Mom-On-Mom	T63 Flatted,anti-rotation		V2N 11.68 high, Snap-in, V-bracket			
1MD8 DP On-On-Mom	T63 Flatted,anti-rotation		VS3 16.00 high, V-bracket			
1M31 3P On-None-On	T7 12.37 high, 15/32 bushing		VS4 11.68 high, V-bracket			
1M32 3P On-None-Mom	T8 17.56 high, 15/32 bushing		VS5 16.00 high, V-bracket			
1M33 3P On-Off-On	T9 Plastic, 21.3 high					
1M34 3P Mom-Off-Mom.	TA 26.30 high lever handle		Bushing			
1M35 3P On-Off-Mom	with cap, 15/32 bushing		B1 8.89 high, keyway (thd std)			
1M41 4P On-None-On	T11 Plastic, 12.2 high		B2 8.89 high, keyway (non-thd)			
1M42 4P On-None-Mom	TL1 Locking lever 16.00 high		B3 7.10 high, keyway (thd)			
1M43 4P On-Off-On	TL2 Locking lever 16.26 high		B4 7.10 high, keyway (non-thd)			
1M44 4P Mom-Off-Mom	TL3 Locking lever 17.28 high		B5 7.52 high, flat (torque)			
1M45 4P On-Off-Mom			B6 8.00 high, keyway (torque)			
1M46 4P On-On-On			B7 8.89 high, flat (thd std)			
1M47 4P Mom-On-Mom			B8 8.89 high, keyway (metric thd)			
1M48 4P On-On-Mom			B9 7.52 high, flat (splash proof)			
			B11 7.55 high, keyway (thd std)			
			B12 7.55 high, keyway (non-thd)			
			B13 11.38 high, keyway (15/32 bushing)			
			B14 11.90 high, flat (splash proof)			
			B15 7.55 high, flat (thd std)			
			B16 7.55 high, flat (non-thd)			
			B17 3.50 high, keyway			
			B18 11.38 high, keyway (15/32 bushing)			
			B20 11.38 high, keyway (15/32 bushing)			
			B25 8.00 high, keyway, locking lever (thd)			
			B26 8.00 high, keyway, locking lever (nin-thd)			

RoHS soldering

☐ RoHS Compliant

☐ RoHS & Lead Free

☐ Halogen Free+RoHS

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Switch Function:

No. Poles	UL/CSA Model No.	Model No.	Switch Function			Connected Terminals / Schematic		
			Pos.1	Pos.2	Pos.3	Pos.1	Pos.2	Pos.3
SP	Q1111	1MS1	ON	NONE	ON	2-3 	N/A	2-1
	Q1112	1MS2	ON	NONE	MOM			
	Q1113	1MS3	ON	OFF	ON			
	Q1114	1MS4	MOM	OFF	MOM		OPEN	
	Q1115	1MS5	ON	OFF	MOM			
DP	Q1121	1MD1	ON	NONE	ON	2-3, 5-6 	N/A	2-1, 5-4
	Q1122	1MD2	ON	NONE	MOM			
	Q1123	1MD3	ON	OFF	ON			
	Q1124	1MD4	MOM	OFF	MOM		OPEN	
	Q1125	1MD5	ON	OFF	MOM	2-3, 5-6 		2-1, 5-4
	Q1126	1MD6	ON	ON	ON			
	* Q1127	1MD7	MOM	ON	MOM		2-3, 5-4	
	* Q1128	1MD8	ON	ON	MOM			
3P	Q1131	1M31	ON	NONE	ON	2-3, 5-6, 8-9 	N/A	2-1, 5-4, 8-7
	Q1132	1M32	ON	NONE	MOM			
	Q1133	1M33	ON	OFF	ON			
	Q1134	1M34	MOM	OFF	MOM		OPEN	
	Q1135	1M35	ON	OFF	MOM			
4P	Q1141	1M41	ON	NONE	ON	2-3, 5-6, 8-9, 11-12 	N/A	2-1, 5-4, 8-7, 11-10
	Q1142	1M42	ON	NONE	MOM			
	Q1143	1M43	ON	OFF	ON			
	Q1144	1M44	MOM	OFF	MOM		OPEN	
	Q1145	1M45	ON	OFF	MOM	2-3, 5-6, 8-9, 11-12 		2-1, 5-4, 8-7, 11-10
	Q1146	1M46	ON	ON	ON			
	* Q1147	1M47	MOM	ON	MOM		2-3, 5-4, 8-9, 11-10	
	* Q1148	1M48	ON	ON	MOM			

MOM = Momentary

* Please check the availability in advance before order

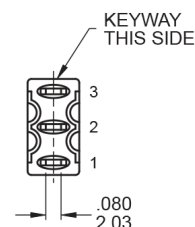
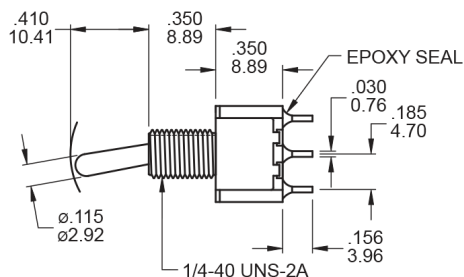
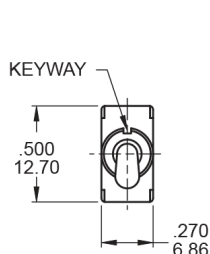
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Pole Options:



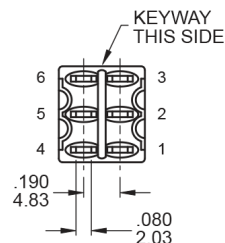
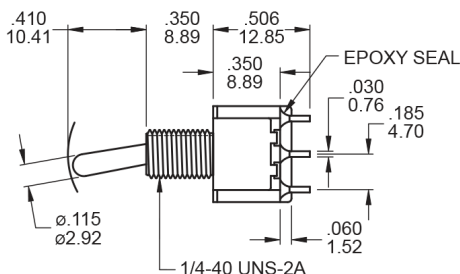
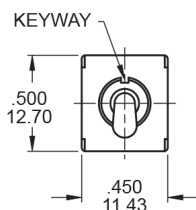
SPDT



Part No. Shown : 1MS1T1B1M1QE



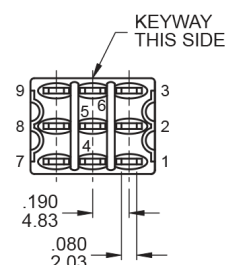
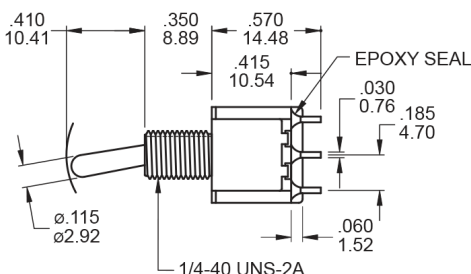
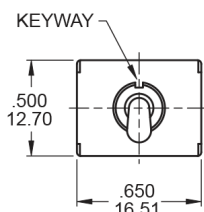
DPDT



Part No. Shown : 1MD1T1B1M1QE



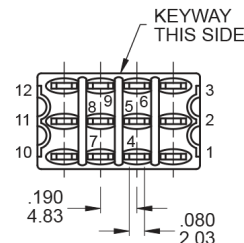
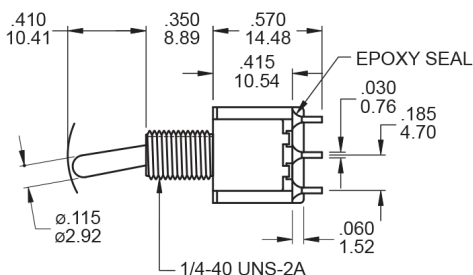
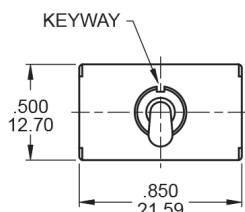
3PDT



Part No. Shown : 1M31T1B1M1QE



4PDT



Part No. Shown : 1M41T1B1M1QE

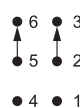
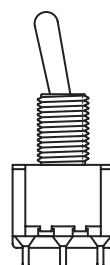
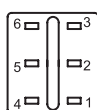
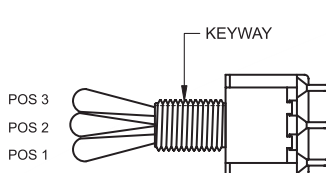
Minature Toggle Switches



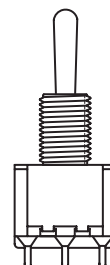
3-Way Switch:

SINGLE POLE, 3 POSITION

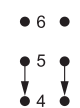
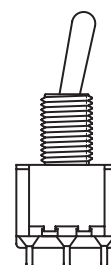
Model No.	POS 1	POS 2	POS 3
1MD6	ON	ON	ON
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



POS. 1



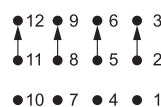
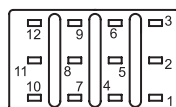
POS. 2



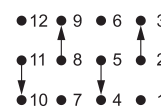
POS. 3

DOUBLE POLE, 3 POSITION

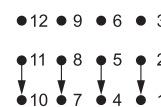
Model No.	POS 1	POS 2	POS 3
1M46	ON	ON	ON
Term. Comm.	2-3,5-6 8-9,11-12	2-3,5-4 8-9,11-10	2-1,5-4 8-7,11-10



POS. 1



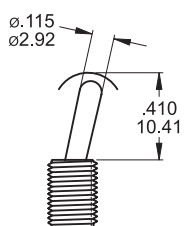
POS. 2



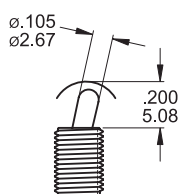
POS. 3

Actuator Options:

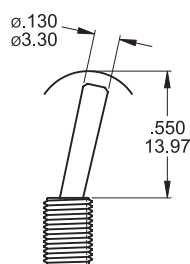
T1 STD



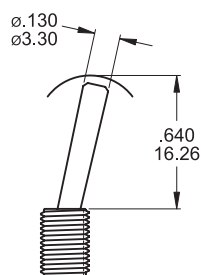
T2



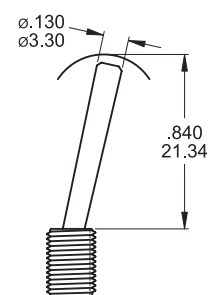
T3



T4



T5



Note: T1 ~ T5 Actuator shown with standard B1 Bushing:

Add .070 (1.78) for B3 Bushing;

Subtract .02 (0.51) for B6 Bushing;

Std for M1 , M2 Terminal sub .016 (0.4) for M6 , M7 , VSX

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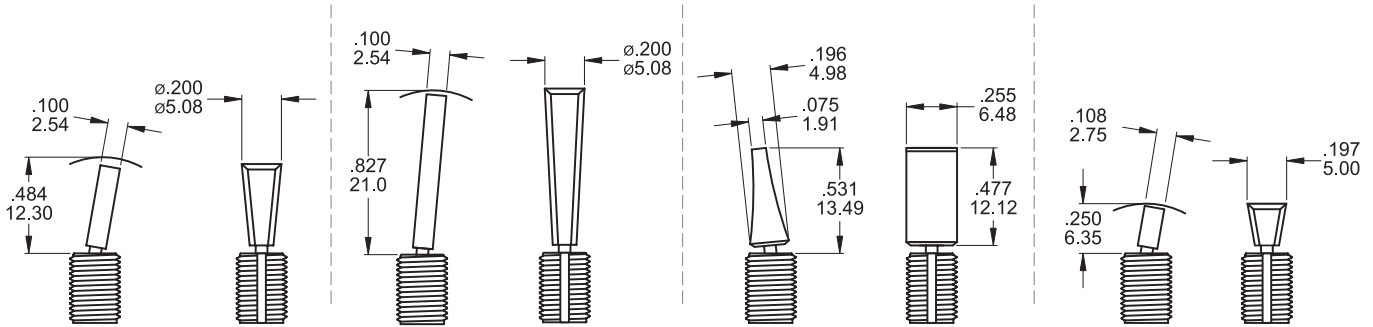
T6

T61

T62

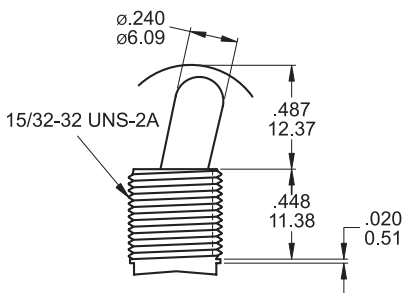
T63

Flatted with Antirotation



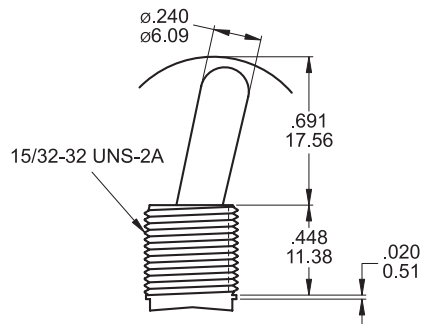
Note T6,T6-1,T6-2 ,T63 use with B11, B12, B15, B16 bushing only.

T7



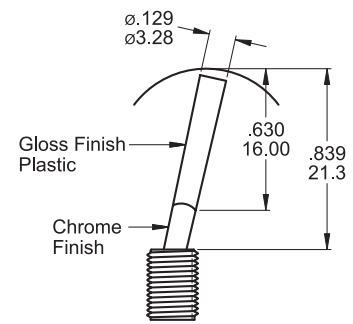
Use with B13 bushing
Use with B18,B20 the lever is antirotation
andthe size of lever is 13.00mm

T8



Use with B13 bushing
Use with B18,B20 the lever is antirotation
and the size of lever is 18.00mm

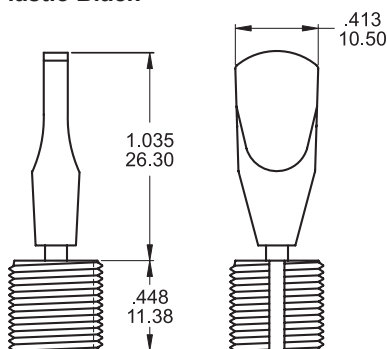
T9



B1 / B2 bushing std
with black and red color only (std.)

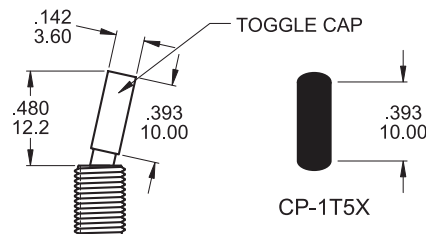
TA

Plastic Black



Use with B18 bushing only

T11



Note T11Actuator shown with standand B1 Bushing ;
Add .07 (1.78) for B3 Bushing ;
Subtract .02 (0.51) for B6 Bushing.
Std for M1,M2 Terminal sub .016 (0.40) for M6,M7.VSX

Plastic No.Colour :

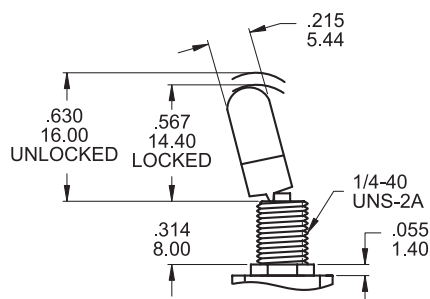
ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

T62 , TA , T9 , T11
Actuator Only

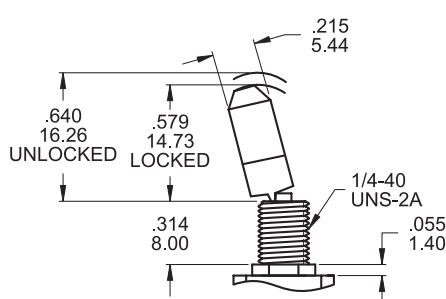
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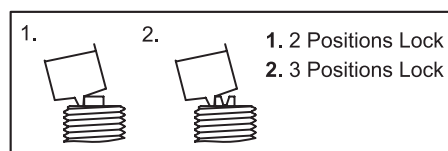
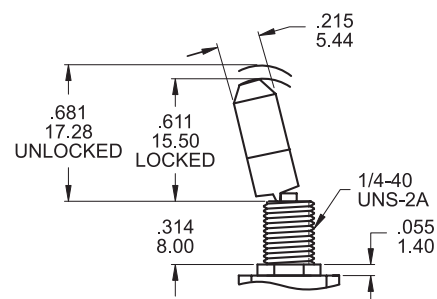
TL1B25



TL2B25

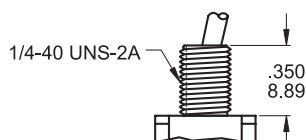
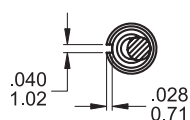


TL3B25

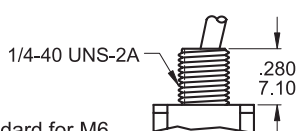
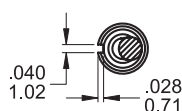


Bushing Options:

**B1 THD STD
B2 NON-THD**

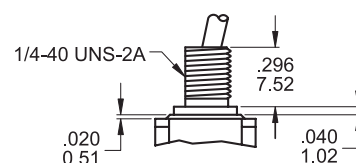
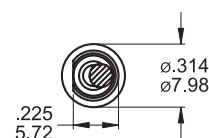


**B3 THD
B4 NON-THD**

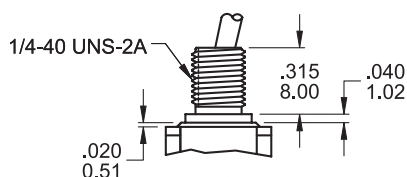
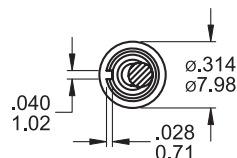


B4 is standard for M6, M7 and VS2~5 termination options.

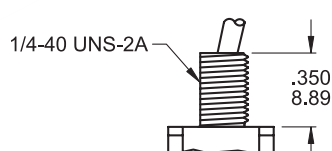
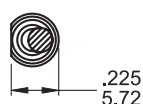
B5 HIGH TORQUE



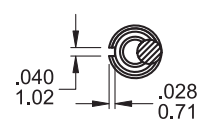
B6 HIGH TORQUE



B7 THD STD



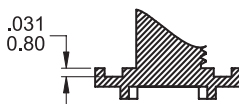
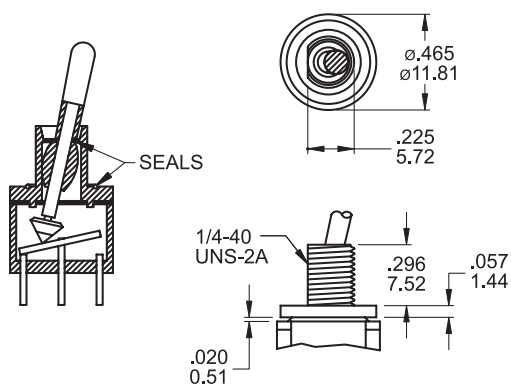
B8 METRIC THD



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B9 SPLASH PROOF

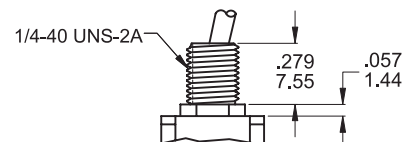
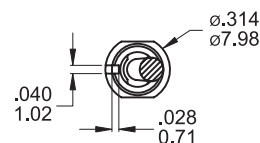


CP-1TEB



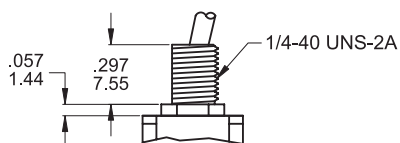
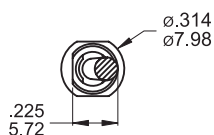
O-Ring
supplied with B9 bushing

B11 THD STD B12 NON-THD



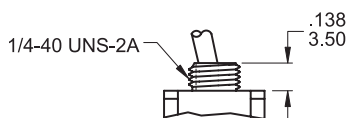
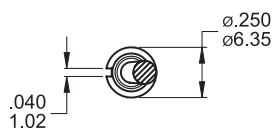
Use with T6 actuators only

B15 THD STD B16 NON-THD

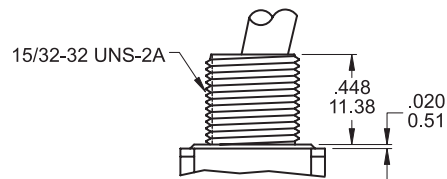
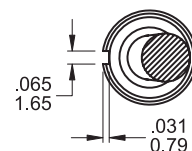


Use with T6 actuators only

B17

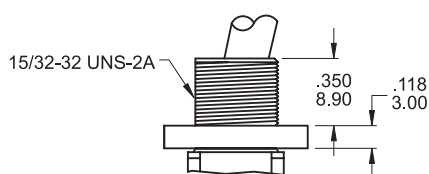
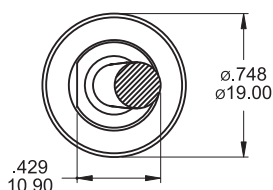


B13



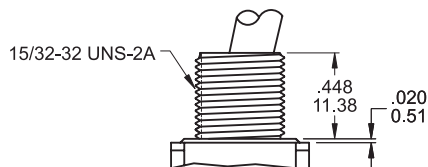
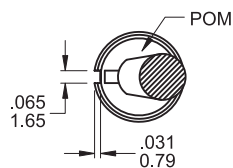
Use with T7,T8 actuators only
B13 Bear strength from top of actuator
up to 10kg aside up to 15kg

B14 SPLASH PROOF



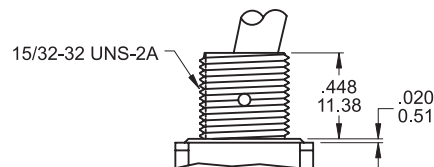
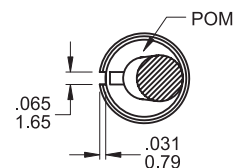
Use with T7 , T8 actuators only

B18



Use with T7,T8 and TA actuators only
with Plastic (POM) Insert

B20



Use with T7,T8 and TA actuators only
with Plastic (POM) Insert

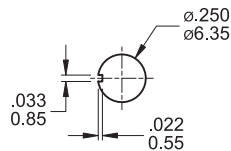
B18 , B20 Bear strength from top of actuator up to 20kg aside up to 15kg

Minature Toggle Switches

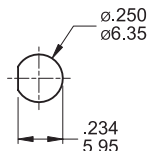


Panel Mounting:

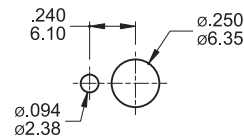
1/4" Bushing



Without locking ring (Keyway)

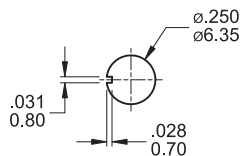


Without locking ring (Flat)

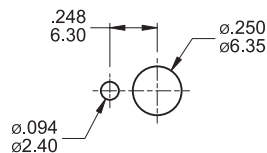


With standard locking ring.

Metric Bushing

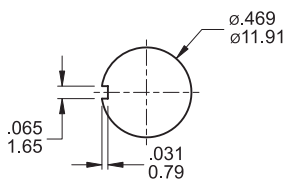


Without locking ring (Keyway)

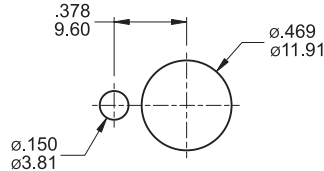


With standard locking ring.

15/32 Bushing

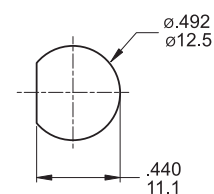


Without locking ring (Keyway)



With standard locking ring.

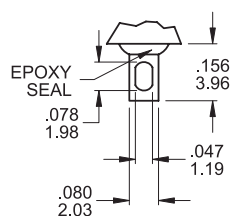
Splash Proof Bushing



Without locking ring (Flat)

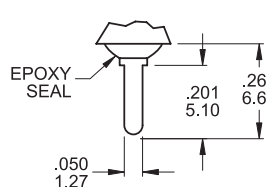
Termination Options:

M1 Solder lug



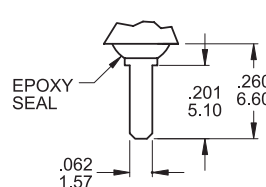
.030(0.76) THK.

M2 PC Thru-hole



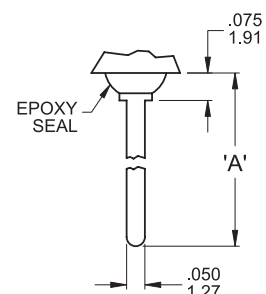
.030(0.76) THK.

M3 Quick connect



.030(0.76) THK.

M5 Wire Wrap



.030(0.76) THK.

Minature Toggle Switches

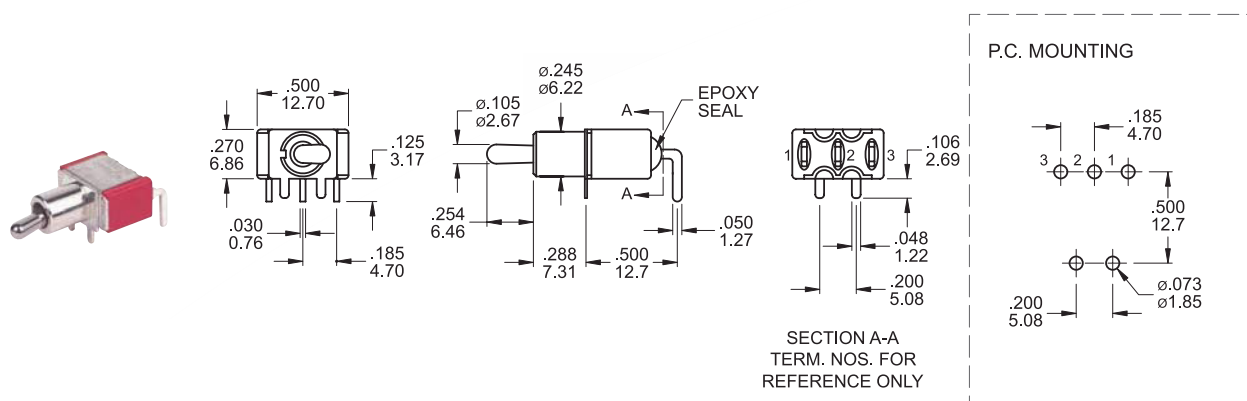


Option Code	Dim. A
M5-1	0.736 (18.7)
M5-2	0.953 (24.20)
M5-3	0.415 (10.55)
M5-4	1.062 (26.97)

Other Termination Options:

- M6** Right Angle P.C. Mount
- M7** Right Angle P.C. Mount
- VS2** Vertical Bracket P.C. Mount
- VS3** Vertical Bracket P.C. Mount
- VS5** Vertical Bracket P.C. Mount

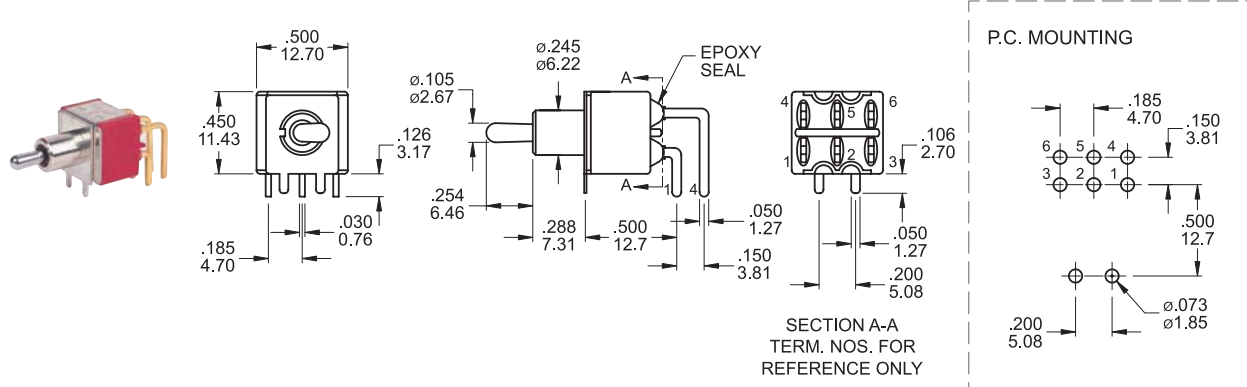
M6



SPDT

Part No. Shown : 1MS1T2B4M6QE

M6

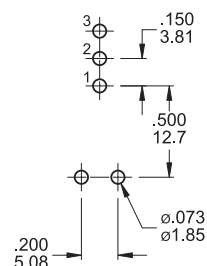


DPDT

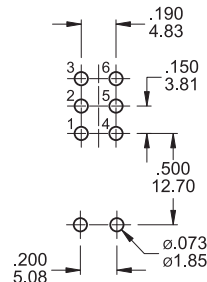
Part No. Shown : 1MD1T2B4M6RE

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www.farnell.com
www.newark.com

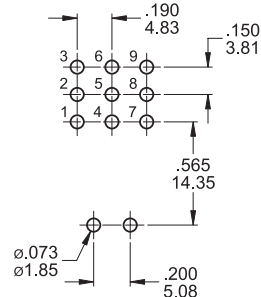




Part No. Shown : 1MS1T2B4M7QE



Part No. Shown : 1MD1T2B4M7QE

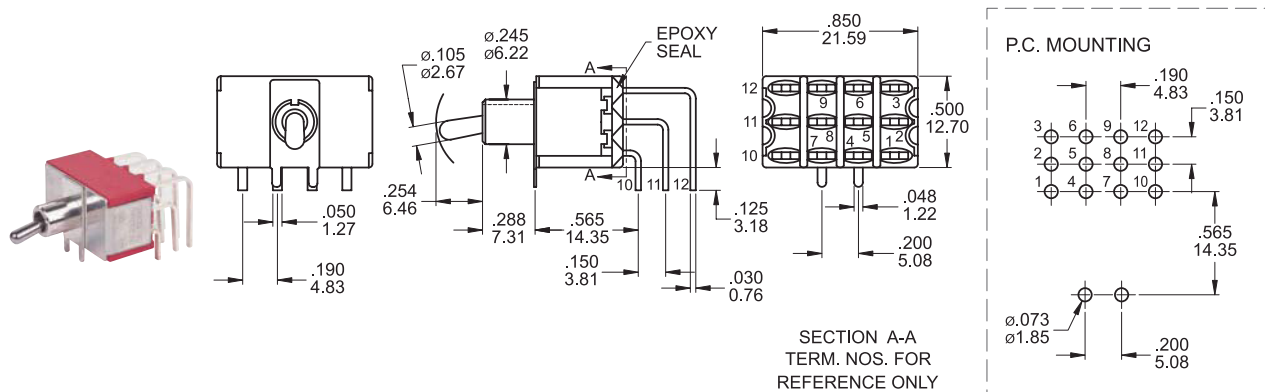


Part No. Shown : 1M31T2B4M7QE

Minature Toggle Switches



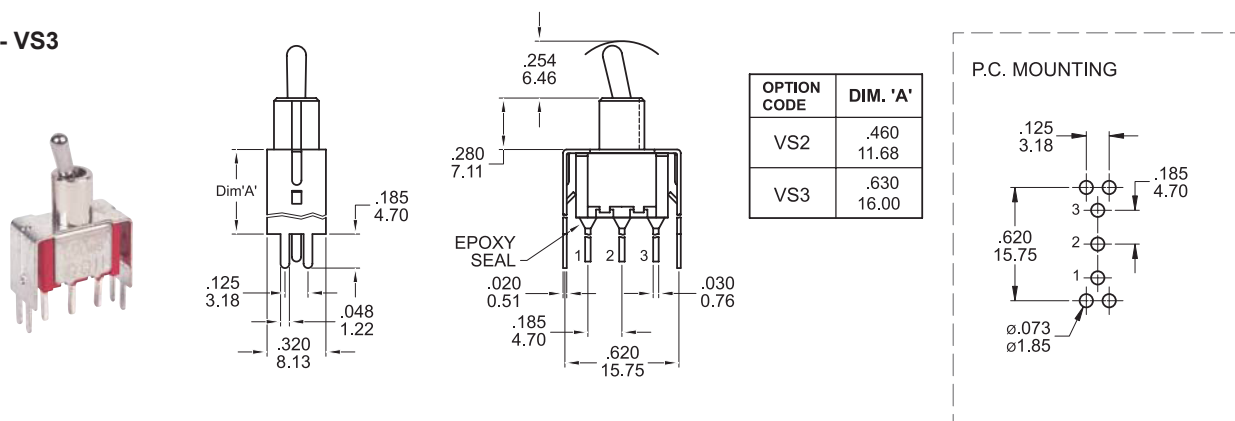
M7



4PDT

Part No. Shown : 1M41T2B4M7QE

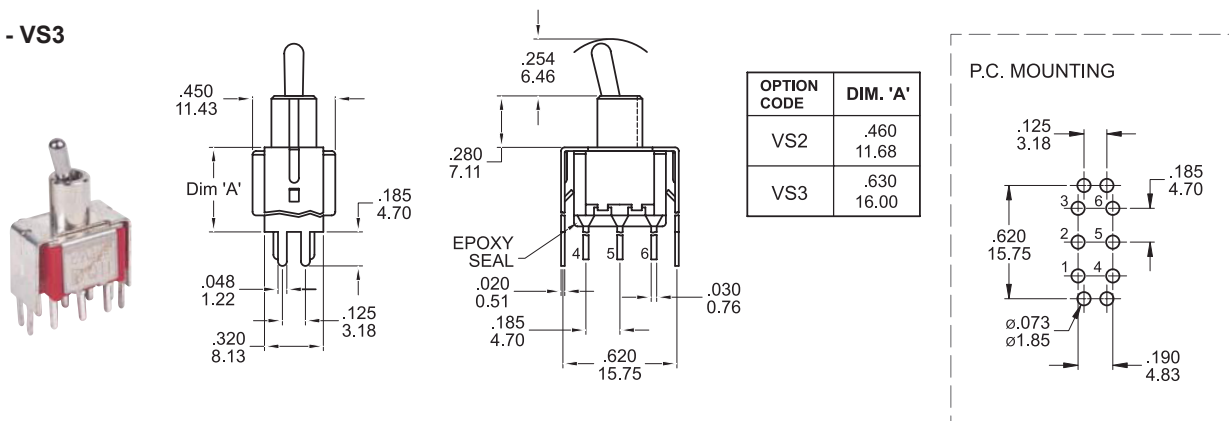
VS2 - VS3



SPDT

Part No. Shown : 1MS1T2B4VS2QE

VS2 - VS3



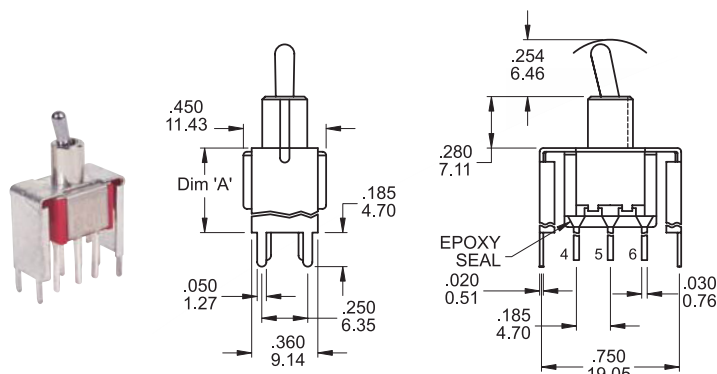
DPDT

Part No. Shown : 1MD1T2B4VS3QE

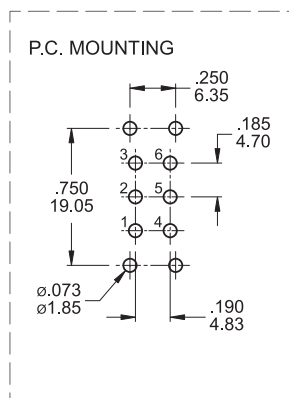
Minature Toggle Switches



VS5



OPTION CODE	DIM. 'A'
VS4	.460 11.68
VS5	.630 16.00

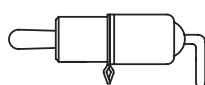
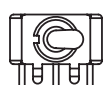


DPDT

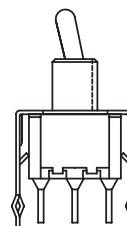
Part No. Shown : 1MD1T2B4VS5QE

Snap-In Termination Options:

M6N

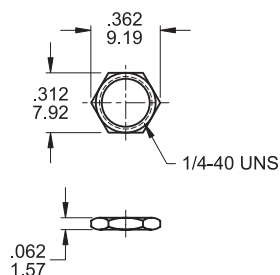


V2N



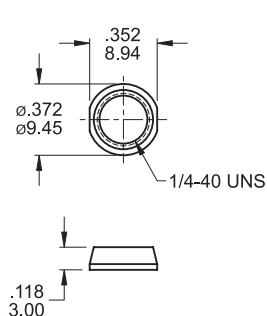
Hardware:

1/4 Nuts HDW2

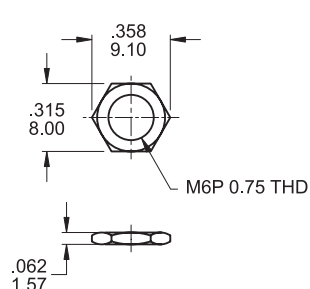


Supplied standard with
B1, B3, B5, B6 and B9 options

Dress Nut HDW3

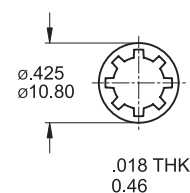


Metric Nut HDW6



Supplied standard with
B8 metric bushing

Lock Washer
HDW11

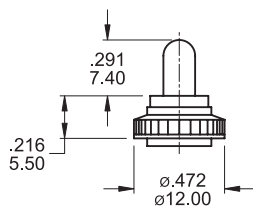


Supplied standard with
B1 / B3 bushing

Minature Toggle Switches

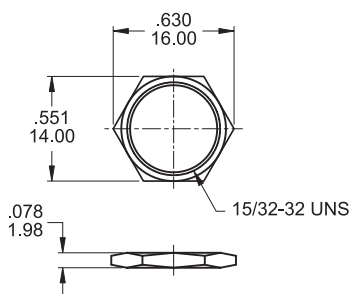


Optional Rubber Hood Sealing



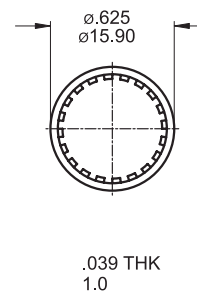
K1=Metric
E1=Inch (Std.)
for actuator T1, T2 and
B1, B3, B5, B6 Bushing only

15/32 Nuts HDW4



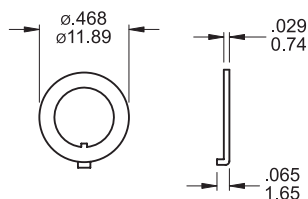
Supplied standard with B13 bushing

Lock Washer HDW12



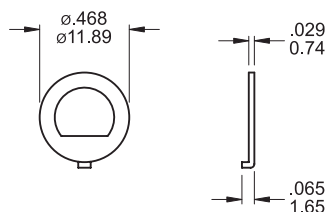
Supplied standard with B13 bushing

HDW15



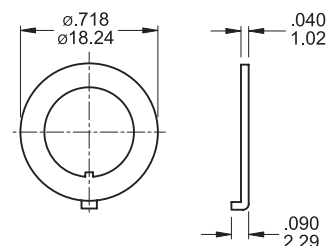
Locking ring supplied standard

HDW16



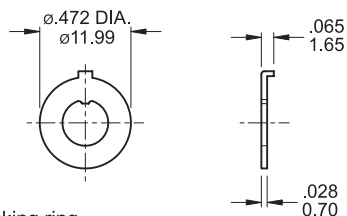
Locking ring
supplied with B5 bushing

HDW17



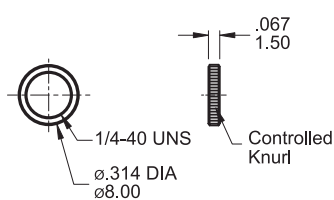
Locking ring
supplied with B13,B18,B20 bushing

HDW18



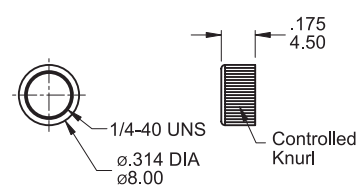
Locking ring
supplied with B8 bushing

HDW19



NU-1M18

HDW20



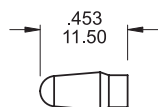
NU-1M24

Minature Toggle Switches



Optional Toggle Cap:

CP-T1XX



Use with T1

CAP Colour :

Item No	Colour
1	White
2	Black (Std)
3	Red
5	Yellow
6	Green
7	Blue
9	Gray

Contact Material Options:

	Contact Plating	Terminal Plating	Ratings
Q	Silver	Q = Silver	5 Amps with resistant load @ 120VAC or 28VDC 2 Amps with resistant load @ 250VAC
S		S = Silver,pure - tin	
C	Gold over Silver	C = Gold over silver	
K		K = Gold over silver,pure - tin	
R	Gold	R = Gold	0.4 Volt - Amps (VA) max. @ 20V max. (AC or DC)
G		G = Gold,pure - tin	

Soldering Processes:

Manual Soldering: Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

Wave Soldering: Recommended Soldering Temperature: 260 ± 5°C Duration of Solder Immersion: Max 5 sec.
(PCB is 1.6mm in thickness)

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