



SPECIFICATIONS

CONTACT RATING: Dependent upon contact material See page 11.

MECHANICAL LIFE: 40,000 make-and-break cycles.

CONTACT RESISTANCE: 10mΩ max. initial @ 2-4VDC
100mA for both silver and gold plated contacts.

INSULATION RESISTANCE: 1,000 MΩ min.

DIELECTRIC STRENGTH: 1,000 Vrms min.@sea level.

OPERATING TEMPERATURE: -30°C to 85°C.

MATERIALS

CASE: Diallyl phthalate (DAP) (UL94v-0).

ACTUATOR: Brass,chrome plated.

BUSHING: Brass, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass, tin plated.

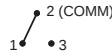
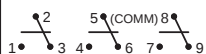
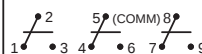
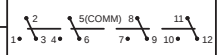
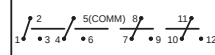
CONTACT / TERMINALS: Brass, Silver or gold plated.(See Page 11)



HOW TO ORDER

MODEL NO.	ACTUATOR	BUSHING	TERMINATIONS	CONTACT MATERIAL	SEAL	RoHS SOLDERING
Model NO. 1MS1 1MS2 1MS3 1MS4 1MS5 1MD1 1MD2 1MD3 1MD4 1MD5 1MD6 1MD7 1MD8 1M31 1M32 1M33 1M34 1M35 1M41 1M42 1M43 1M44 1M45 1M46 1M47 1M48	Actuator T1 T2 T3 T4 T5 T6 T61 T62 T63 T7 T8 T88 T9 TA T11 TL1 TL2 TL3	Bushing B1 B2 B3 B4 B5 B6 B7 B8 B9 B11 B12 B13 B14 B15 B16 B17 B18 B20 B25 B26 B52	Terminations M1 M2 M3 M51 M52 M53 M54 M6 M6N M7 VS2 V2N VS3 VS4 VS5	Contact material Q R G S C K	Seal E N	RoHS soldering R S F


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		OPEN	
	Q1113	1MS3	ON	OFF	ON			
	Q1114	1MS4	MOM	OFF	MOM			
	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		OPEN	
	Q1123	1MD3	ON	OFF	ON			
	Q1124	1MD4	MOM	OFF	MOM			
	Q1125	1MD5	ON	OFF	MOM			
	Q1126	1MD6	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4
	Q1127	1MD7	MOM	ON	MOM			
	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		OPEN	
	Q1133	1M33	ON	OFF	ON			
	Q1134	1M34	MOM	OFF	MOM			
	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		OPEN	
	Q1143	1M43	ON	OFF	ON			
	Q1144	1M44	MOM	OFF	MOM			
	Q1145	1M45	ON	OFF	MOM			
	Q1146	1M46	ON	ON	ON	2-3,5-6,8-9,11-12	2-3,5-4,8-9,11-10	2-1,5-4,8-7,11-10
	Q1147	1M47	MOM	ON	MOM			
	Q1148	1M48	ON	ON	MOM			

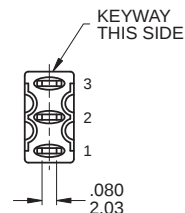
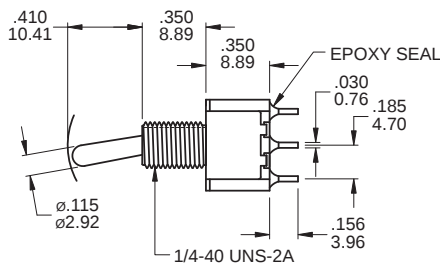
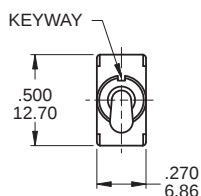
MOM= MOMENTARY

▲ Please check the availability in advance before order



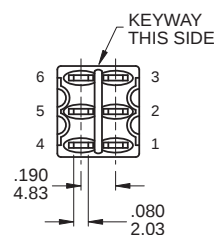
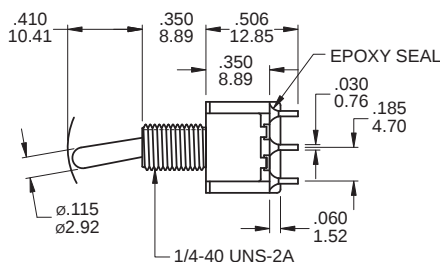
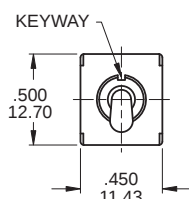


POLE OPTIONS



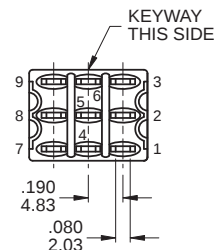
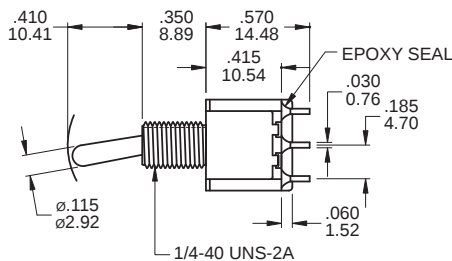
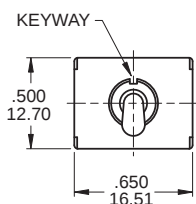
SPDT

Part No. Shown : 1MS1T1B1M1QE



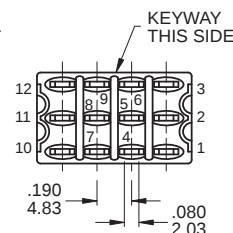
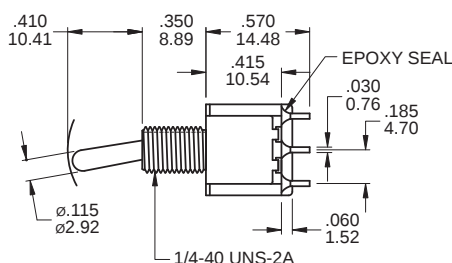
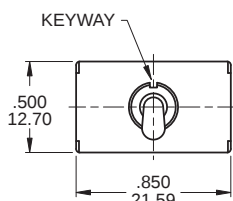
DPDT

Part No. Shown : 1MD1T1B1M1QE



3PDT

Part No. Shown : 1M31T1B1M1QE



4PDT

Part No. Shown : 1M41T1B1M1QE



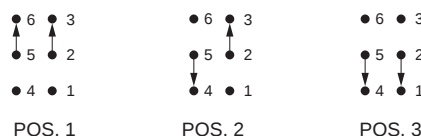
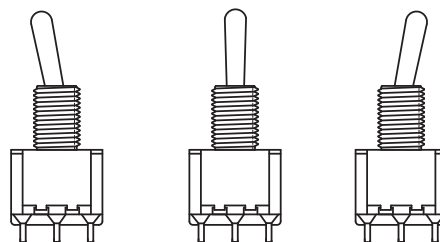
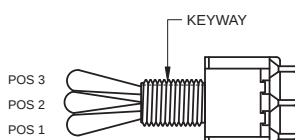


3-WAY SWITCH

3-Way Wiring Diagram Schematics

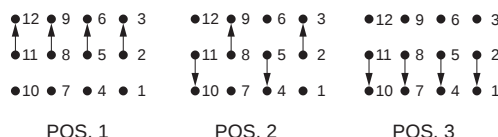
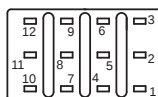
SINGLE POLE, 3 POSITION

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



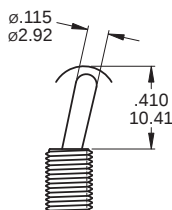
DOUBLE POLE, 3 POSITION

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

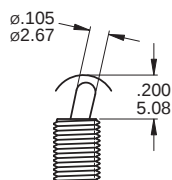


ACTUATOR OPTIONS

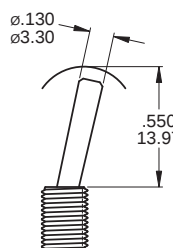
T1 STD



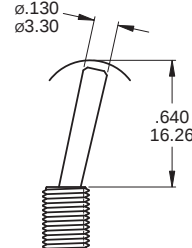
T2



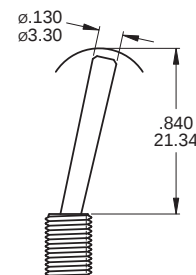
T3



T4

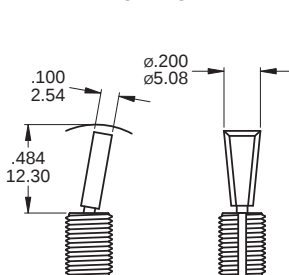


T5

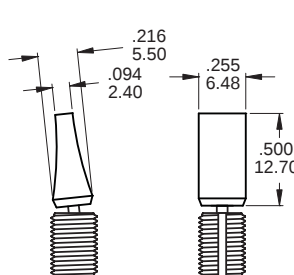
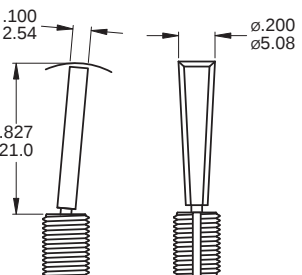


NOTE T1 ~ T5 Actuator shown with standard B1 Bushing ;
Add .070 (1.78) for B3 Bushing ;
Subtract .020 (0.51) for B6 Bushing ;
Std for M1 , M2 Terminal sub .016 (0.40) for M6 , M7 , VSX

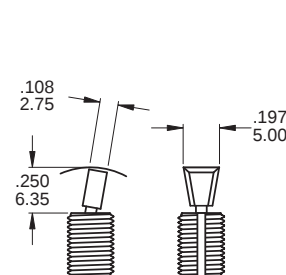
T6 FLATTED WITH ANTIROTATION



T61



T63

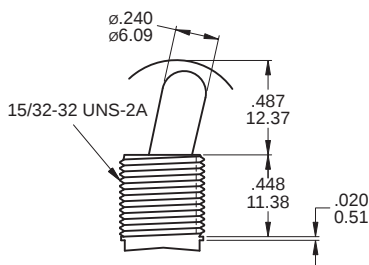


NOTE T6,T6-1,T6-2 ,T63 use with B11, B12, B15, B16 bushing only.



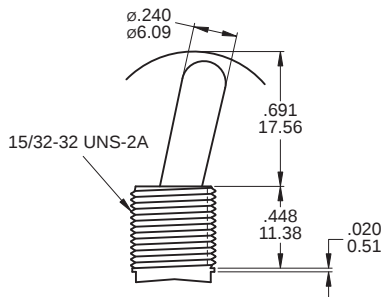


T7



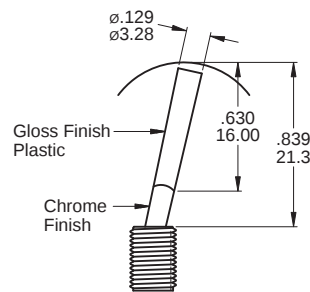
Use with B13 bushing
Use with B18,B20 the lever is antirotation
and the size of lever is 13.00mm

T8



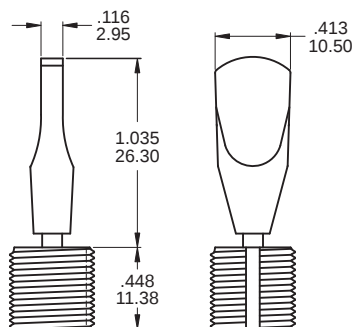
Use with B13 bushing
Use with B18,B20 the lever is antirotation
and the size of lever is 18.00mm

T9



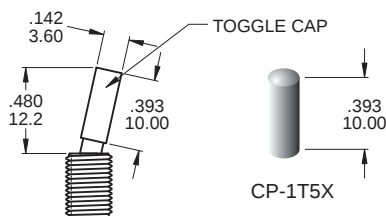
B1 / B2 bushing std
with black and red color only (std.)

TA PLASTIC BLACK



Use with B18 bushing only

T11



NOTE T11 Actuator shown with standard B1 Bushing ;
Add .070 (1.78) for B3 Bushing ;
Subtract .020 (0.51) for B6 Bushing.
Std for M1.M2 Terminal sub .016 (0.40) for M6.M7.VSX

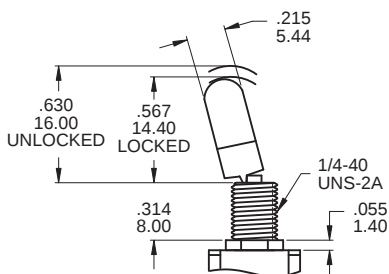
Plastic No.Color :

T62 , TA , T9 , T11 Actuator Only

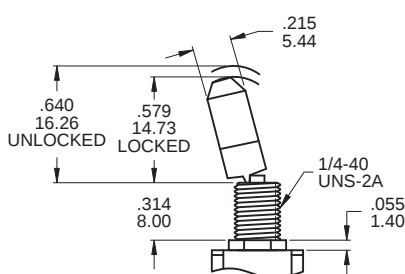
ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

* Besides standard color,
other colors need to check
stocks available.

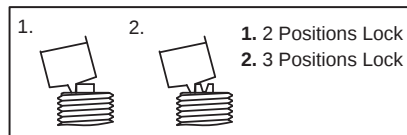
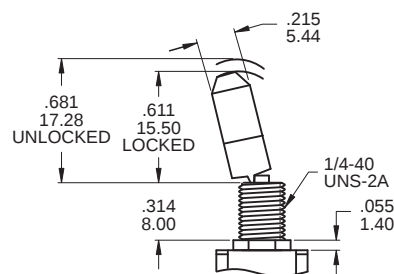
TL1B25



TL2B25



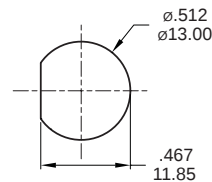
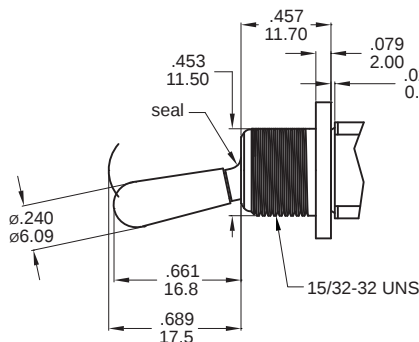
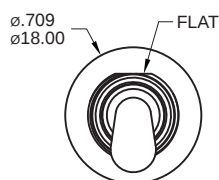
TL3B25



T88B52

SPLASH PROOF

Std SPDT for M1.M2 Terminal

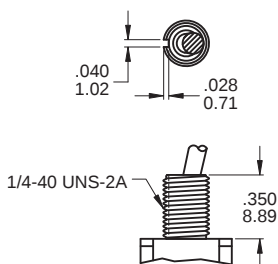


PANEL MOUNTING
Without locking ring (Flat)

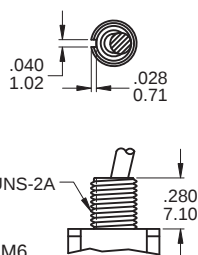


BUSHING OPTIONS

B1 THD STD
B2 NON-THD

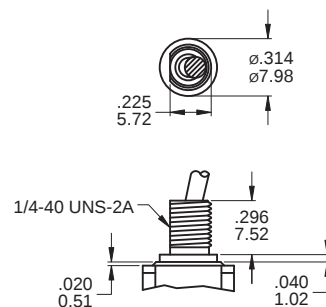


B3 THD
B4 NON-THD

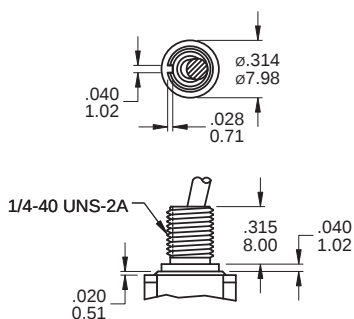


B4 is standard for M6, M7 and VS2-5 termination options.

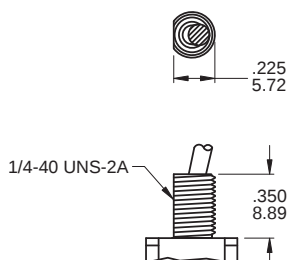
B5 HIGH TORQUE



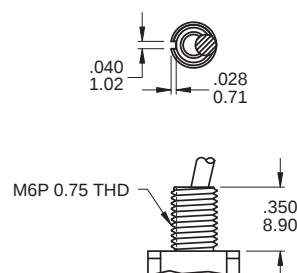
B6 HIGH TORQUE



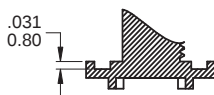
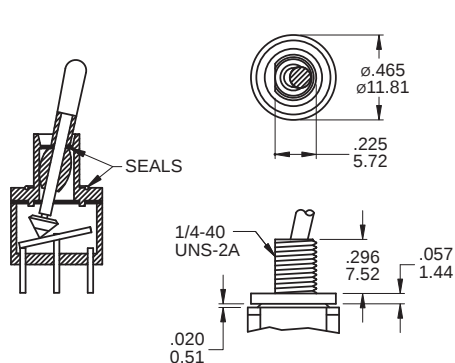
B7 THD STD



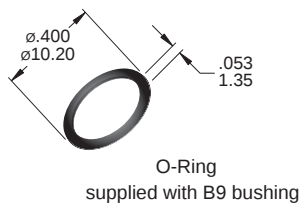
B8 METRIC THD



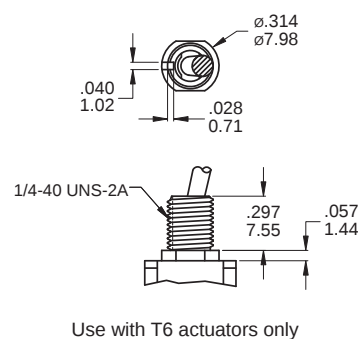
B9 SPLASH PROOF



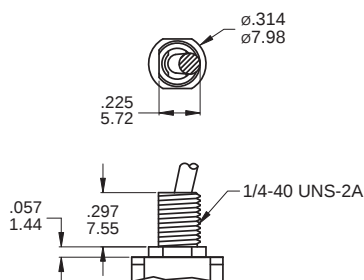
CP-1TEB



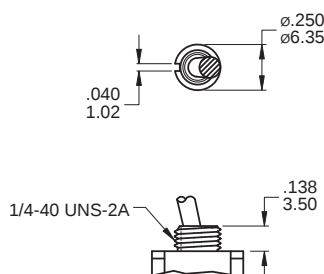
B11 THD STD
B12 NON-THD



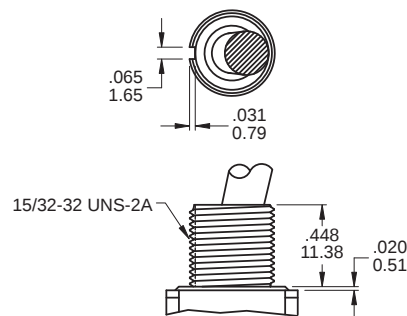
B15 THD STD
B16 NON-THD



B17



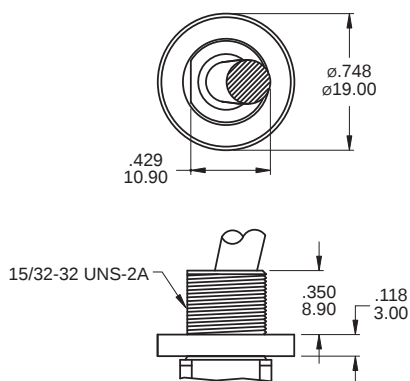
B13



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

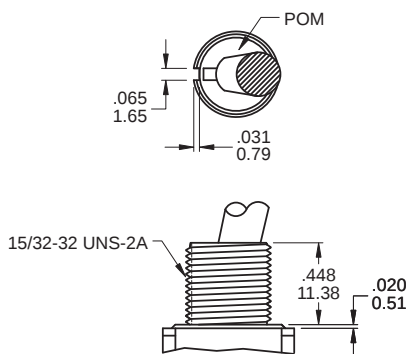


B14 SPLASH PROOF



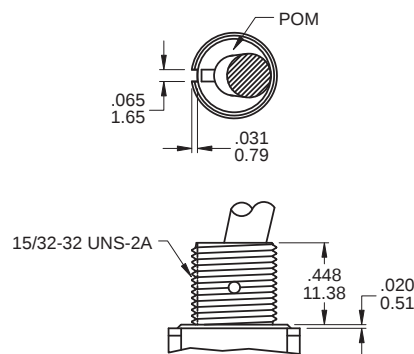
Use with T7 , T8 actuators only

B18



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

B20

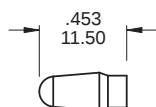


Use with T7,T8 and TA actuators only with Plastic (POM) Insert

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

OPTIONAL TOGGLE CAP

CP-T1XX



Use with T1 actuator

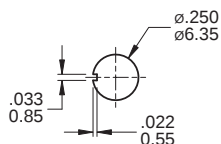
CAP Color :

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

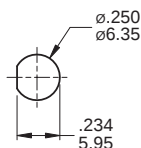
* Besides standard color, other colors need to check stocks available.

PANEL MOUNTING

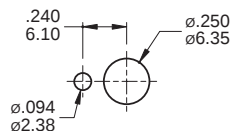
1/4 IN BUSHING



Without locking ring (Keyway)

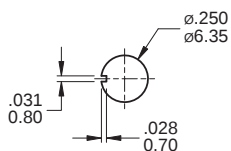


Without locking ring (Flat)

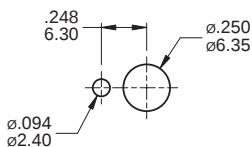


With standard locking ring.

METRIC BUSHING

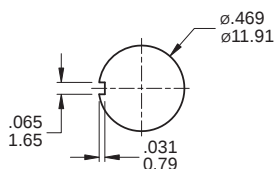


Without locking ring (Keyway)

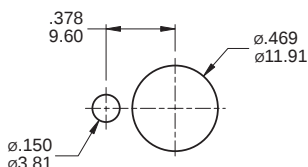


With standard locking ring.

15/32 IN BUSHING

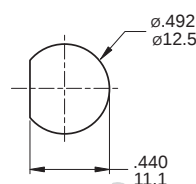


Without locking ring (Keyway)



With standard locking ring.

SPLASH PROOF BUSHING

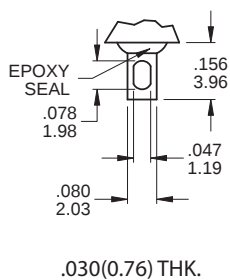


Without locking ring (Flat)

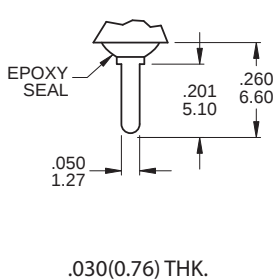


TERMINATION OPTIONS

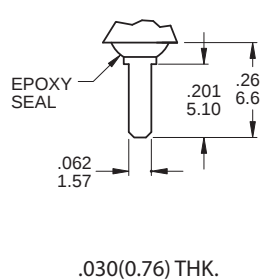
M1 Solder lug



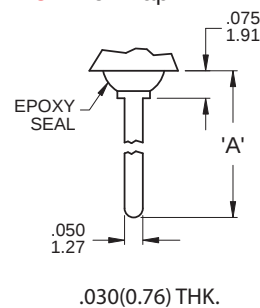
M2 PC Thru-hole



M3 Quick connect



M5 Wire Wrap

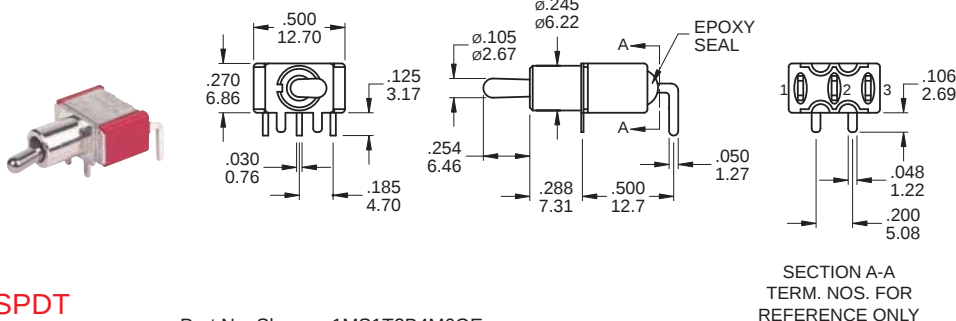


OTHER TERMINATION OPTIONS

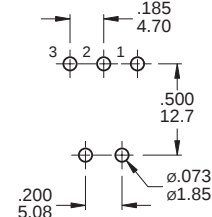
- M6** RIGHT ANGLE P.C. MOUNT
- M7** RIGHT ANGLE P.C. MOUNT
- VS2** VERTICAL BRACKET P.C. MOUNT
- VS3** VERTICAL BRACKET P.C. MOUNT
- VS5** VERTICAL BRACKET P.C. MOUNT

OPTION CODE	DIM. 'A'
M5-1	.736 (18.70)
M5-2	.953 (24.20)
M5-3	.415 (10.55)
M5-4	1.062 (26.97)

M6



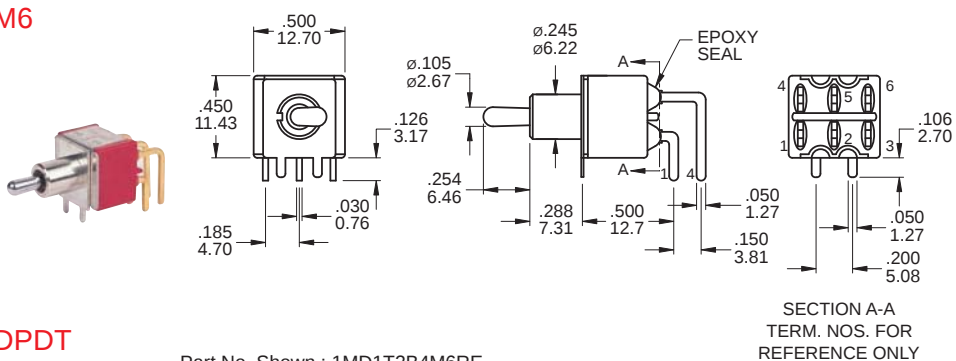
P.C. MOUNTING



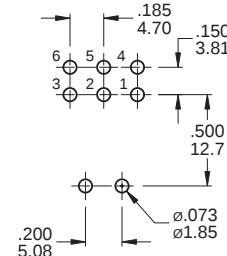
SPDT

Part No. Shown : 1MS1T2B4M6QE

M6



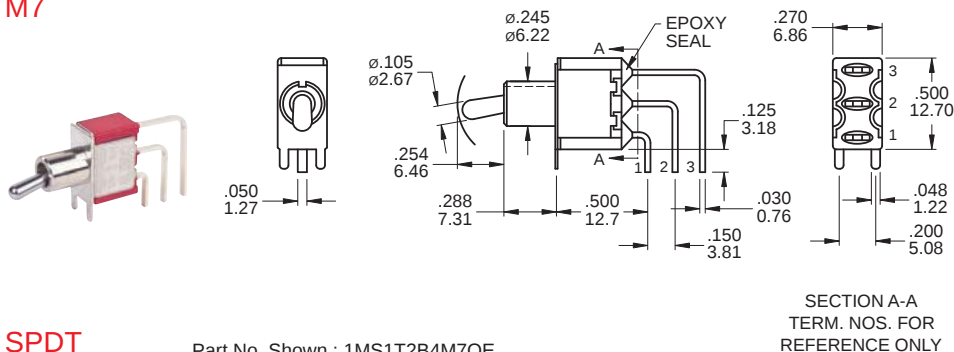
P.C. MOUNTING



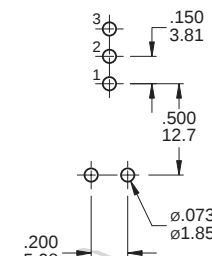
DPDT

Part No. Shown : 1MD1T2B4M6RE

M7



P.C. MOUNTING

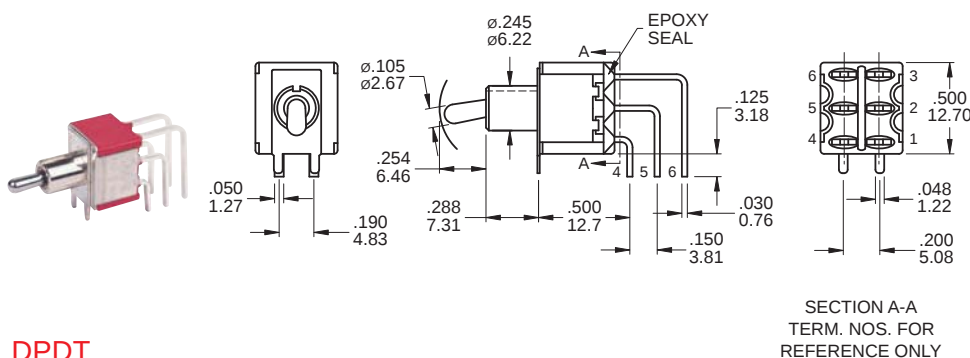


SPDT

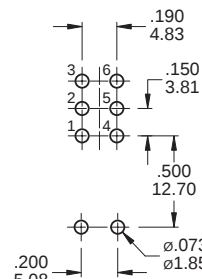
Part No. Shown : 1MS1T2B4M7QE



M7



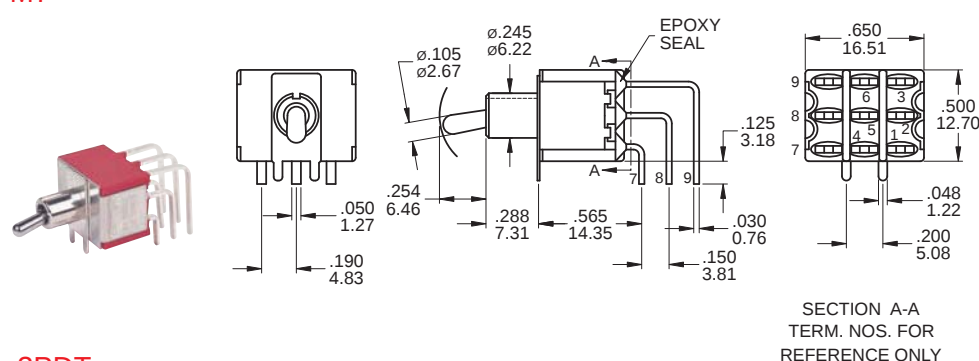
P.C. MOUNTING



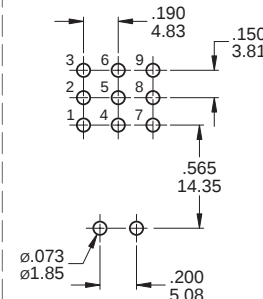
DPDT

Part No. Shown : 1MD1T2B4M7QE

M7



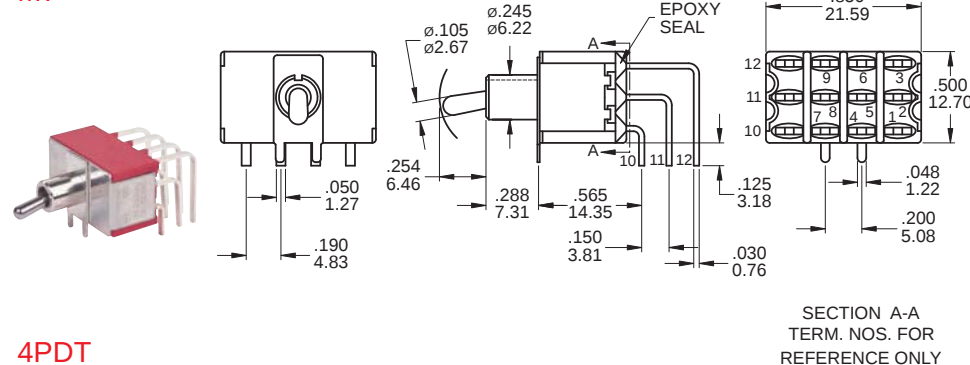
P.C. MOUNTING



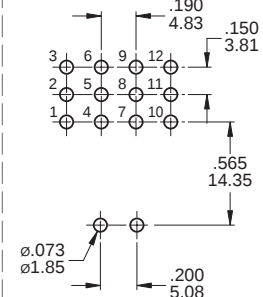
3PDT

Part No. Shown : 1M31T2B4M7QE

M7



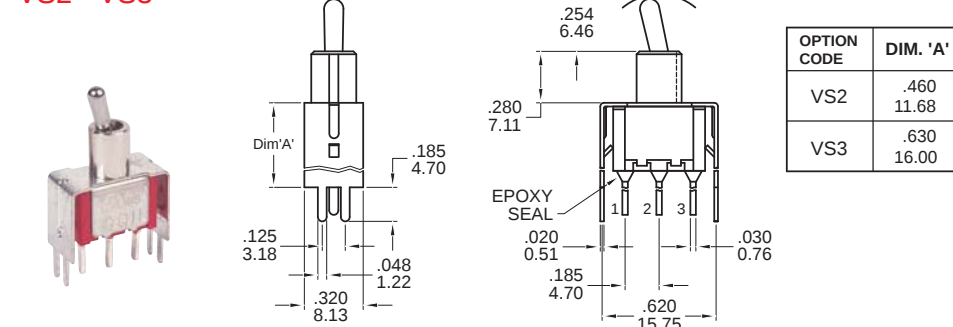
P.C. MOUNTING



4PDT

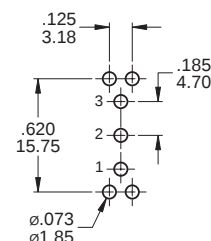
Part No. Shown : 1M41T2B4M7QE

VS2 - VS3



OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

P.C. MOUNTING

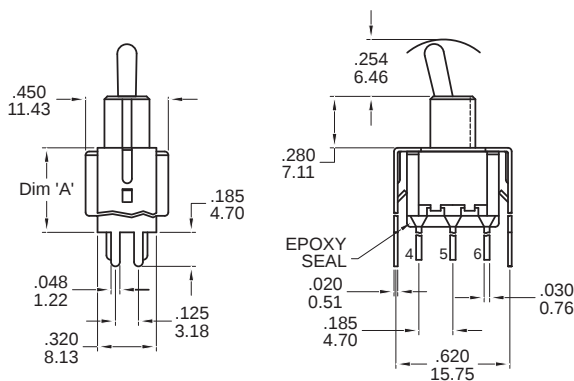


SPDT

Part No. Shown : 1MS1T2B4VS2QE

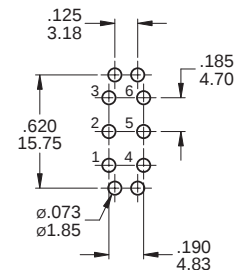


VS2 - VS3



OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

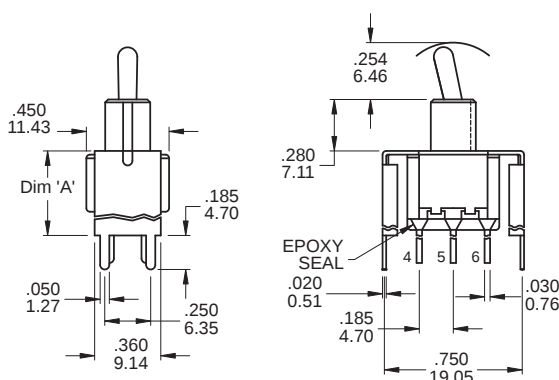
P.C. MOUNTING



DPDT

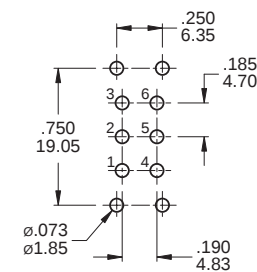
Part No. Shown : 1MD1T2B4VS3QE

VS5



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

P.C. MOUNTING

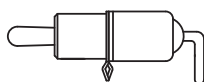
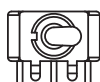


DPDT

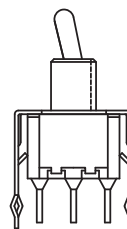
Part No. Shown : 1MD1T2B4VS5QE

SNAP-IN TERMINATION OPTIONS

M6N

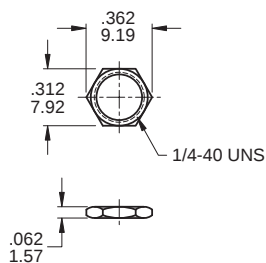


V2N



HARDWARE

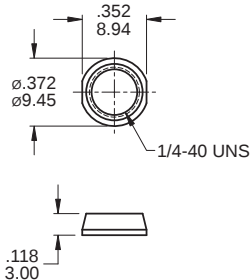
1/4 NUT



MNU-1M01A

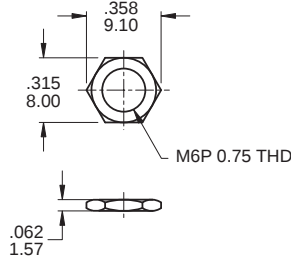
Supplied standard with B1, B3, B5, B6 and B9 options

DRESS NUT



MNU-1M29

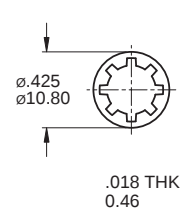
METRIC NUT



MNU-1M04

Supplied standard with B8 metric bushing

LOCK WASHER

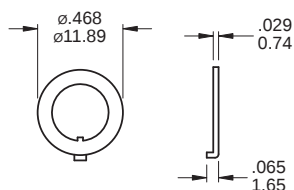


MNU-1M03

Supplied standard with B1 / B3 bushing



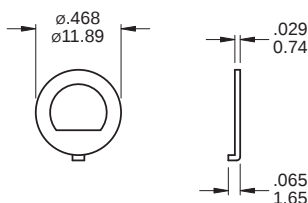
LOCKING RING



MNU-1M02

Locking ring supplied standard

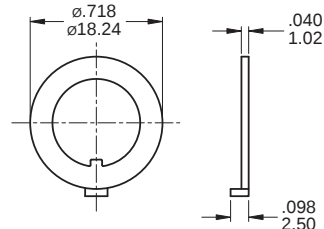
LOCKING RING



MNU-1M11

Locking ring supplied with B5 bushing

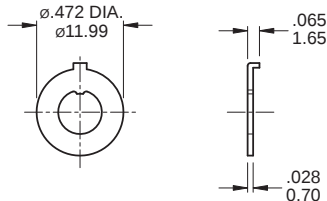
LOCKING RING



MNU-1M08

Locking ring supplied with B13,B18,B20 bushing

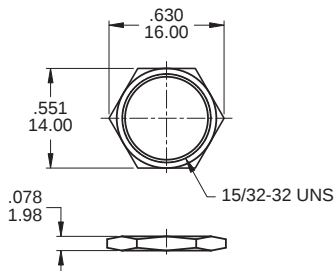
LOCKING RING



MNU-1M05

Locking ring supplied with B8 bushing

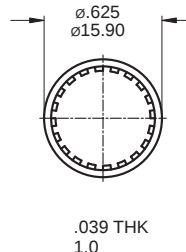
15/32 NUT



MNU1M07

Supplied standard with B13 bushing

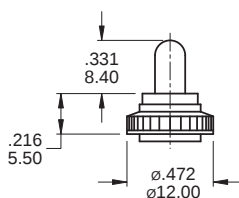
LOCK WASHER



MNU-1M09

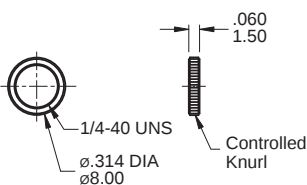
Supplied standard with B13 bushing

OPTIONAL RUBBER HOOD SEALING



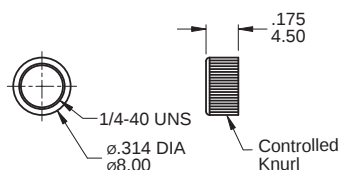
K1=Metric
E1=Inch (Std.)
for actuator T1, T2 and
B1, B3, B5, B6 Bushing only

DRESS NUT



MNU-1M18

DRESS NUT



MNU-1M24

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)

