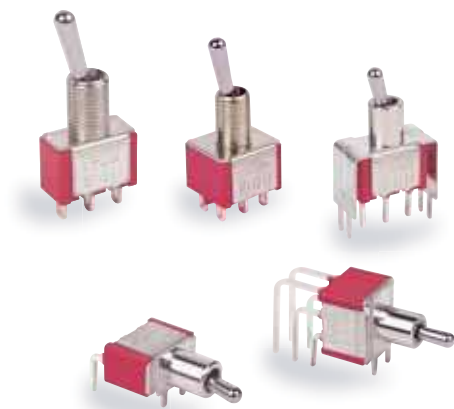




SPECIFICATIONS

CONTACT RATING: Dependent upon contact material.

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: 1,000MΩ min.

DIELECTRIC STRENGTH: 1,000 V RMS@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.

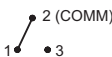
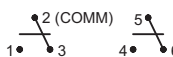
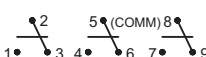
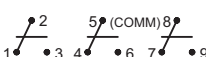
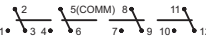
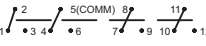
SWITCH SUPPORT: Brass,tin plated.

TERMINAL/CONTACT: 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 SP On-None-On SP On-None-Mom SP On-Off-On SP Mom-Off-Mom SP On-Off-Mom DP On-None-On DP On-None-Mom DP On-Off-On DP Mom-Off-Mom DP On-Off-Mom DP On-On-On DP MOM-On-Mom DP On-On-Mom 3P On-None-On 3P On-None-Mom 3P On-Off-On 3P Mom-Off-Mom. 3P On-Off-Mom 4P On-None-On 4P On-None-Mom 4P On-Off-On 4P Mom-Off-Mom 4P On-Off-Mom 4P On-On-On 4P MOM-On-Mom 4P On-On-Mom	ACTUATOR T1 T2 T3 T4 T5 T6 T61 T62 T63 T7 T8 T9 TA T11 TL1 TL2 TL3 10.41 high 5.08 high 13.97 high 16.26 high 21.34 high Flatted,anti-rotation Flatted,anti-rotation Lever handle with cap 13.49 high Flatted,anti-rotation 6.35 high 12.37 high,15/32 bushing 17.56 high,15/32 bushing Plastic,21.3 high 26.30 high lever handle with cap,15/32 bushing Plastic,12.2 high Locking lever 16.00 high Locking lever 16.26 high Locking lever 17.28 high	BUSHING B1 B2 B3 B4 B5 B6 B7 B8 B9 B11 B12 B13 B14 B15 B16 B17 B18 B20 B25 B26 8.89 high,keyway (thd std) 8.89 high,keyway (non-thd) 7.10 high,keyway (thd) 7.10 high,keyway (non-thd) 7.52 high,flat (torque) 8.00 high,keyway (torque) 8.89 high,flat (thd std) 8.89 high,keyway (metric thd) 7.52 high,flat (splash proof) 7.55 high,keyway (thd std) 7.55 high,keyway (non-thd) 11.38 high,keyway (15/32 bushing) 11.90 high,flat (splash proof) 7.55 high,flat (thd std) 7.55 high,flat (non-thd) 3.50 high,keyway 11.38 high,keyway (15/32 bushing) 11.38 high,keyway (15/32 bushing) 8.00 high,keyway,locking lever (thd) 8.00 high,keyway,locking lever (non-thd)	TERMINATIONS M1 M2 M3 M5-1 M5-2 M5-3 M5-4 M6 M6N M7 VS2 V2N VS3 VS4 VS5 Solder Lug PC thru-hole Quick Connect 18.70 high, wire wrap 24.20 high, wire wrap 10.55 high, wire wrap 26.97 high, wire wrap Right angle, PC thru-hole Right angle, snap-in, PC thru-hole Vertical right angle, PC thru-hole 11.68 high, V-bracket 11.68 high, snap-in V-bracket 16.00 high, V-bracket 11.68 high, V-bracket 16.00 high, V-bracket	CONTACT MATERIAL Q R G S C K Silver Gold Gold,pure-tin Silver,pure-tin Gold over silver Gold over silver,pure-tin	SEAL E N EPOXY (std) NO EPOXY	ROHS SOLDERING □ S Rohs Compliant Rohs & Lead Free

SWITCH FUNCTION

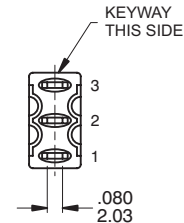
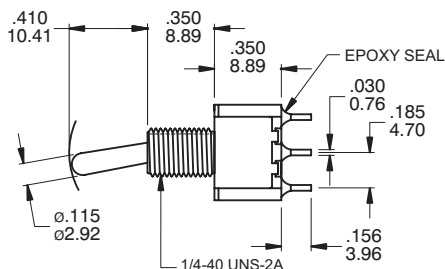
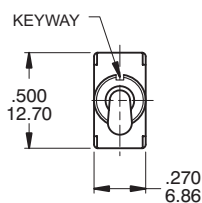
NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC		
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3
								
SP	Q1111	1MS1	ON	NONE	ON	2-3 	N/A	2-1 
	Q1112	1MS2	ON	NONE	MOM		OPEN	
	Q1113	1MS3	ON	OFF	ON			
	Q1114	1MS4	MOM	OFF	MOM			
	Q1115	1MS5	ON	OFF	MOM			
DP	Q1121	1MD1	ON	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

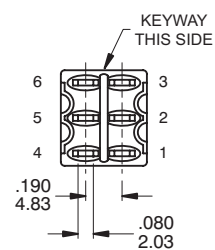
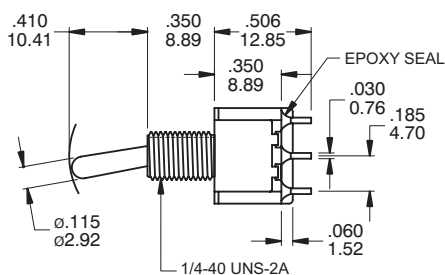
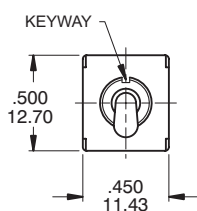
POLE OPTIONS

SPDT



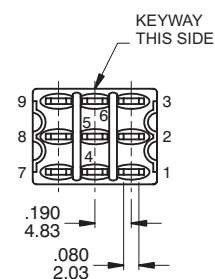
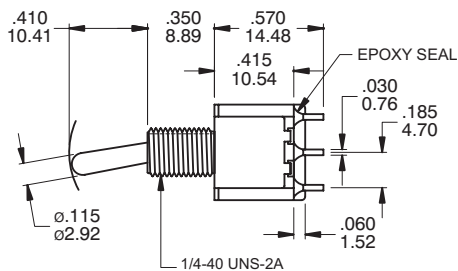
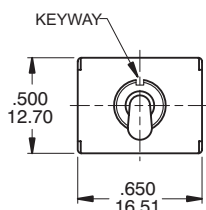
Part No. Shown : 1MS1T1B1M1QE

DPDT



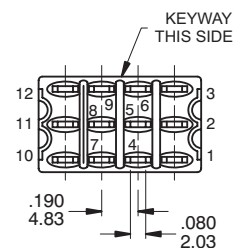
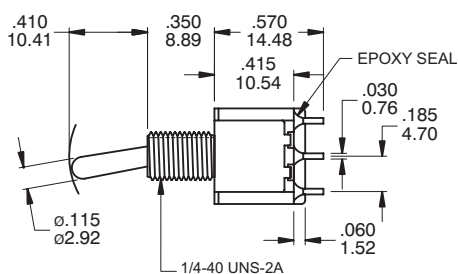
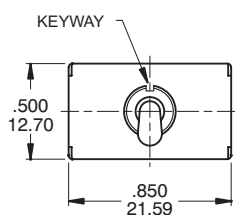
Part No. Shown : 1MD1T1B1M1QE

3PDT



Part No. Shown : 1M31T1B1M1QE

4PDT



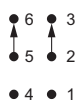
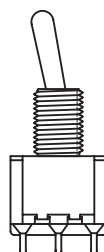
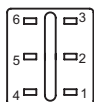
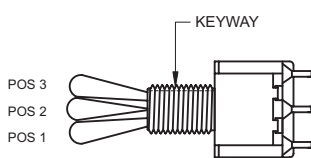
Part No. Shown : 1M41T1B1M1QE

3-WAY SWITCHES

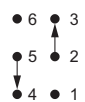
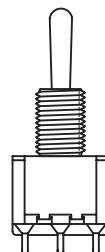
3-WAY WIRING DIAGRAM SCHEMATICS

SINGLE POLE, 3 POSITION

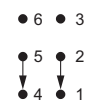
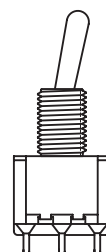
Model No.	POS 1	POS 2	POS 3
1MD6	ON	ON	ON
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



POS. 1



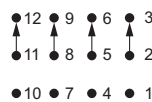
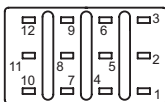
POS. 2



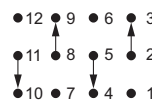
POS. 3

DOUBLE POLE, 3 POSITION

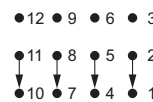
Model No.	POS 1	POS 2	POS 3
1M46	ON	ON	ON
Term. Comm.	2-3,5-6 8-9,11-12	2-3,5-4 8-9,11-10	2-1,5-4 8-7,11-10



POS. 1



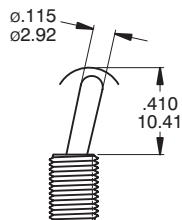
POS. 2



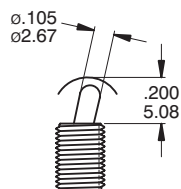
POS. 3

ACTUATOR OPTIONS

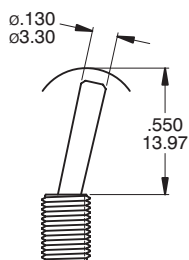
T1 STD



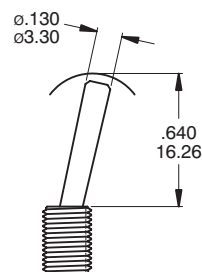
T2



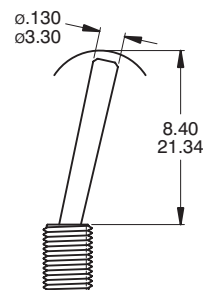
T3



T4



T5



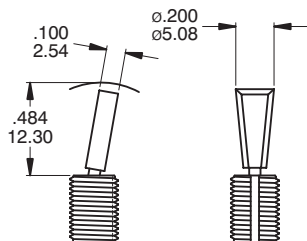
NOTE T1 ~ T5 Actuator shown with standard B1 Bushing :

Add .070 (1.78) for B3 Bushing ;

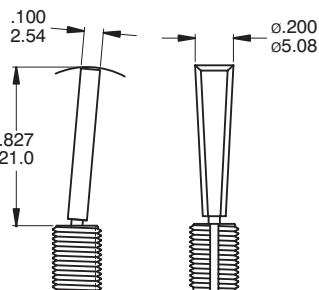
Subtract .020 (0.51) for B6 Bushing ;

Std for M1 , M2 Terminal sub .016 (0.40) for M6 , M7 , VSX

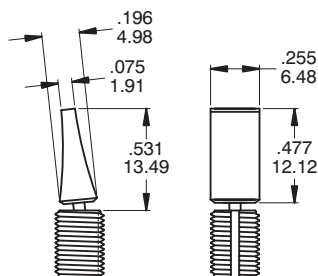
T6 FLATTED WITH ANTIROTATION



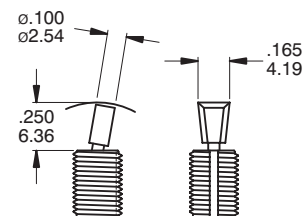
T61



T62

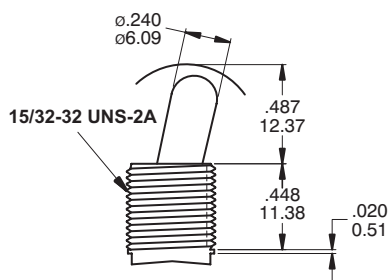


T63



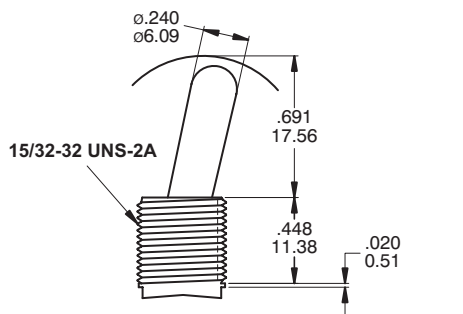
NOTE T6,T6-1,T6-2 ,T63 use with B11, B12, B15, B16 bushing only.

T7



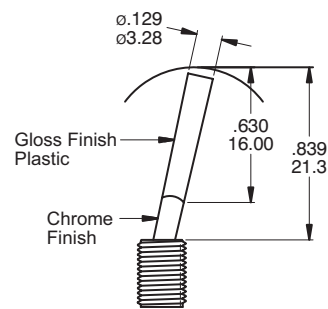
Use with B13 bushing
Use with B18,B20 the lever is antirotation
and the size of lever is 13.00mm

T8



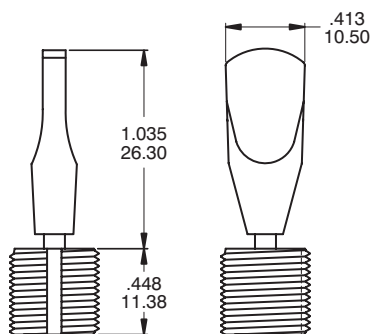
Use with B13 bushing
Use with B18,B20 the lever is antirotation
and the size of lever is 18.00mm

T9



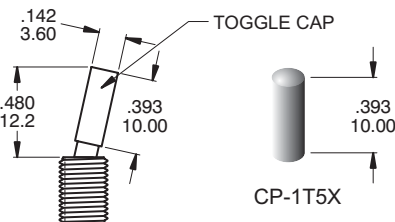
B1 / B2 bushing std
with black and red color only (std.)

TA PLASTIC BLACK



Use with B18 bushing only

T11



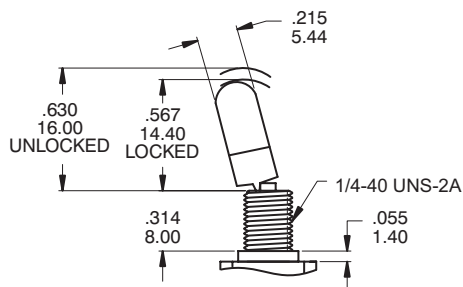
NOTE T11 Actuator shown with standard B1 Bushing ;
Add .070 (1.78) for B3 Bushing ;
Subtract .020 (0.51) for B6 Bushing.
Std for M1.M2 Terminal sub .016 (0.40) for M6.M7.VSX

Plastic No.Color :

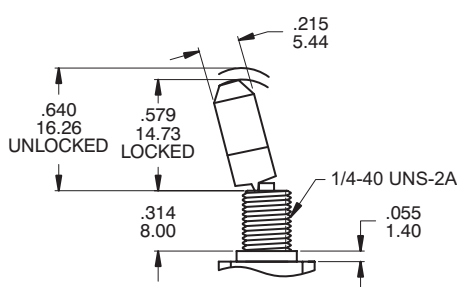
ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

T6-2 , TA , T9 , T11
ACTUATOR ONLY

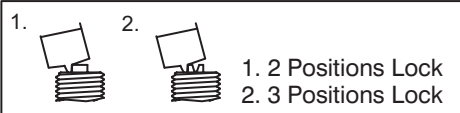
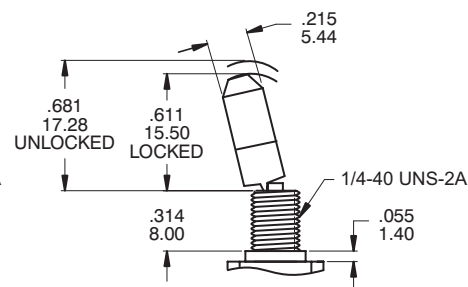
TL1B25



TL2B25

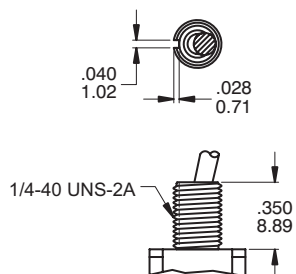


TL3B25

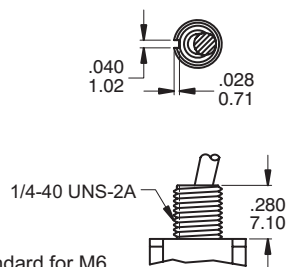


BUSHING OPTIONS

**B1 THD STD
B2 NON-THD**

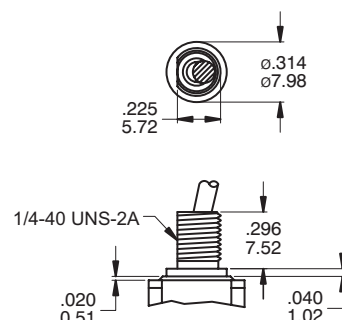


**B3 THD
B4 NON-THD**

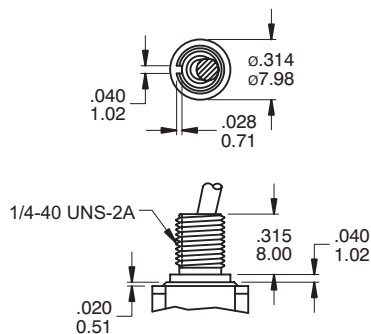


B4 is standard for M6,
M7 and VS2~5 termination
options.

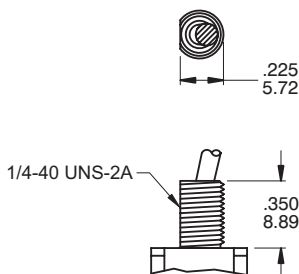
B5 HIGH TORQUE



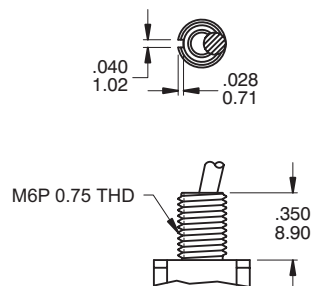
B6 HIGH TORQUE



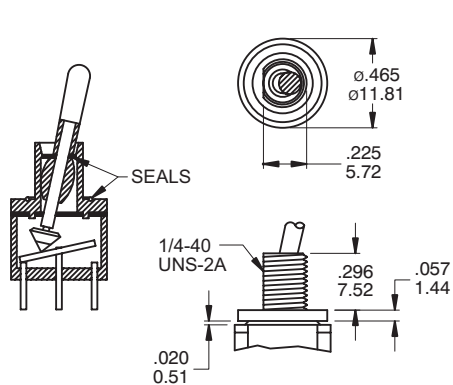
B7 THD STD



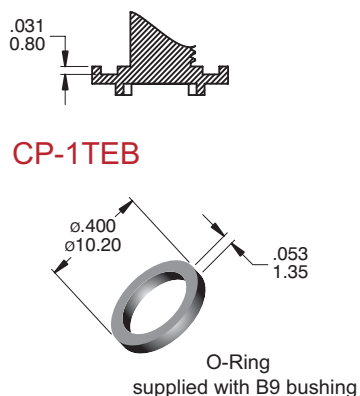
B8 METRIC THD



B9 SPLASH PROOF

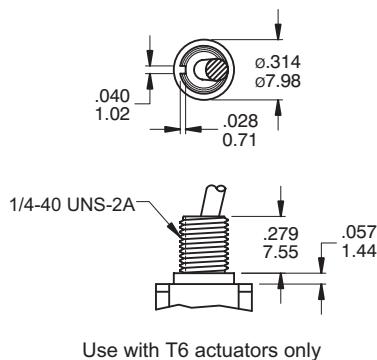


CP-1TEB



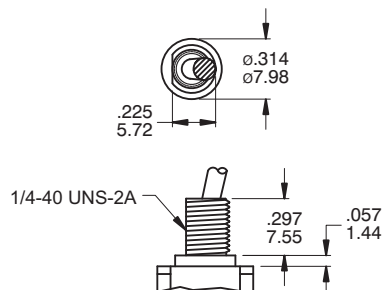
B11 THD STD

B12 NON-THD



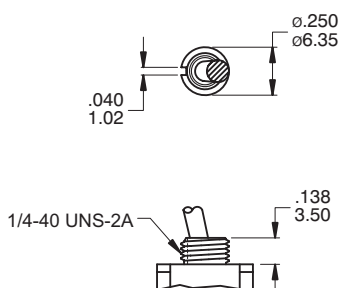
B15 THD STD

B16 NON-THD

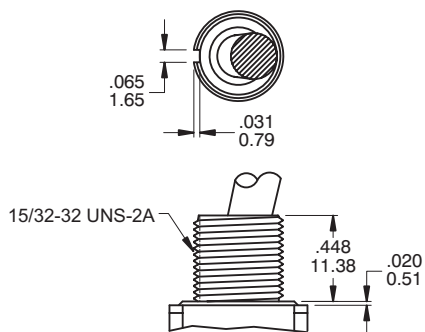


Use with T6 actuators only

B17

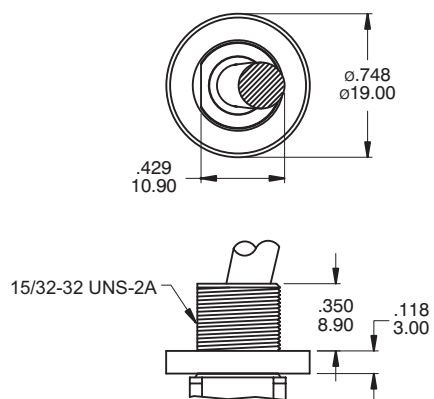


B13



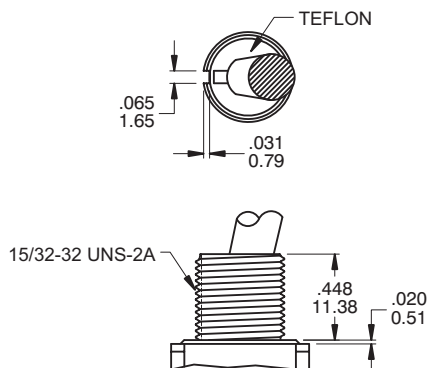
Use with T7,T8 actuators only
B13 Bear strength from top of actuator up to 10kg aside up to 15kg

B14 SPLASH PROOF



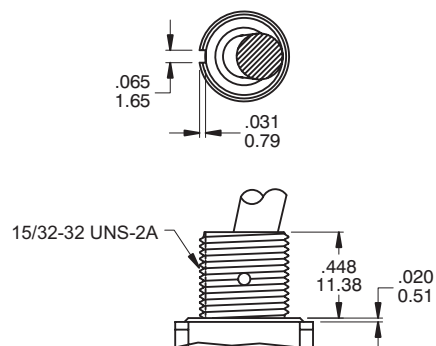
Use with T7 , T8 actuators only

B18



Use with T7,T8 and T10 actuators only
with Plastic (Teflon) Insert

B20

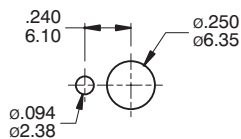
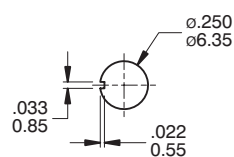


Use with T7,T8 and T10 actuators only

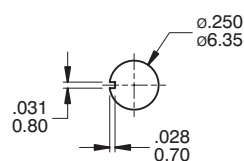
B18 , B20 Bear strength from top of actuator up to 20kg aside up to 15kg

PANEL MOUNTING

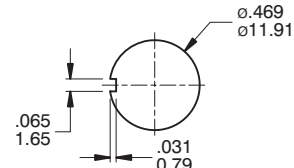
1/4 IN BUSHING



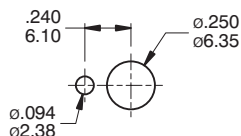
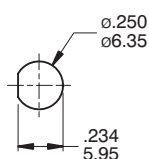
METRIC BUSHING



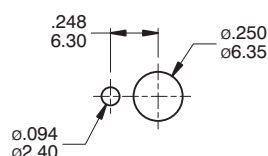
15/32IN BUSHING



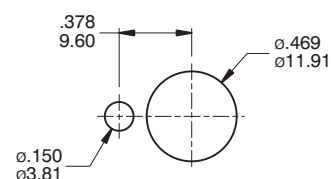
1/4 IN BUSHING



METRIC BUSHING

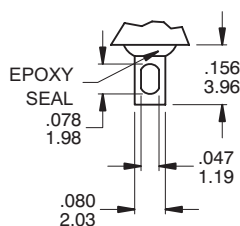


15/32IN BUSHING



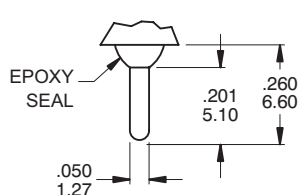
TERMINATION OPTIONS

M1 SOLDER LUG



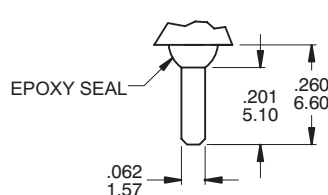
.030(0.76) THK.

M2 PC THRU-HOLE



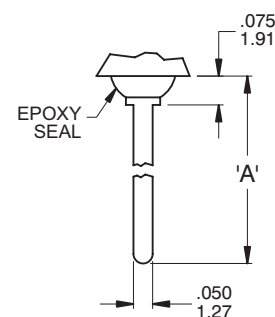
.030(0.76) THK.

M3 QUICK CONNECT



THK .030(0.76)

M5 WIRE WRAP



THK .030(0.76)

OTHER TERMINATION OPTIONS

M6 RIGHT ANGLE P.C. MOUNT

M7 RIGHT ANGLE P.C. MOUNT

VS2 VERTICAL BRACKET P.C. MOUNT

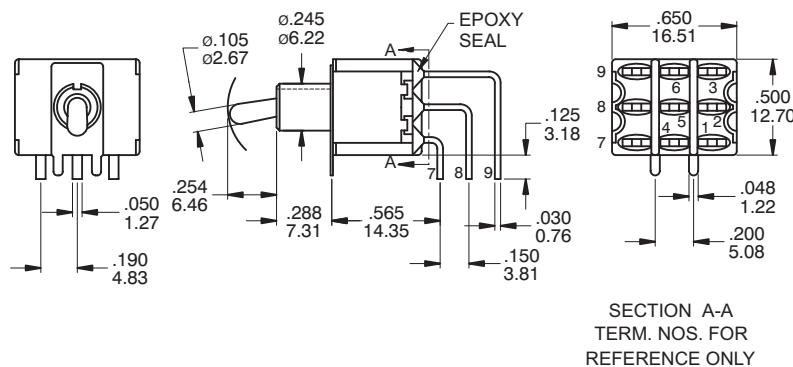
VS3 VERTICAL BRACKET P.C. MOUNT

VS5 VERTICAL BRACKET P.C. MOUNT

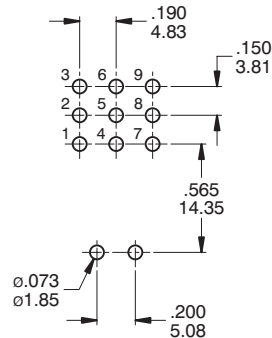
RE Mating Quick Connector
Amp P/N 60900-1

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)

M7



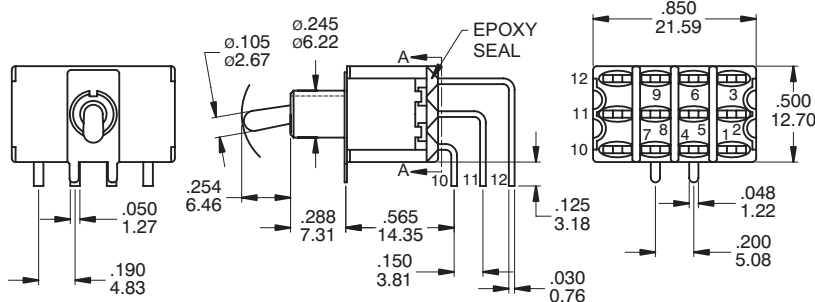
P.C. MOUNTING



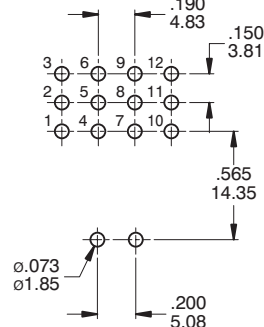
3PDT

Part No. Shown : 1M31T2B4M7QE

M7



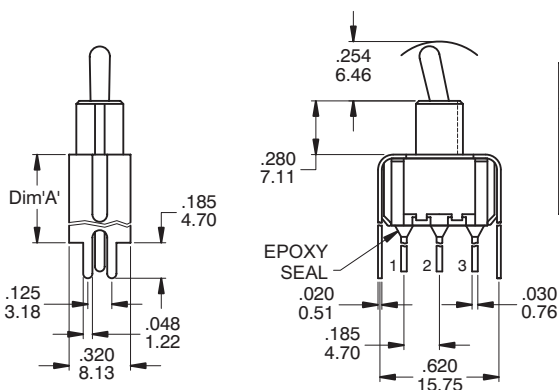
P.C. MOUNTING



4PDT

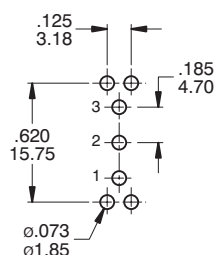
Part No. Shown : 1M41T2B4M7QE

VS2 - VS3



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

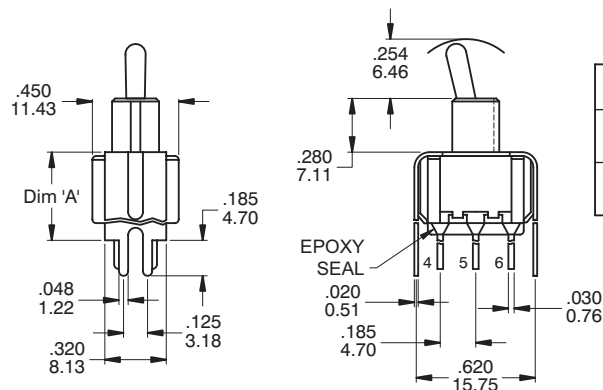
P.C. MOUNTING



SPDT

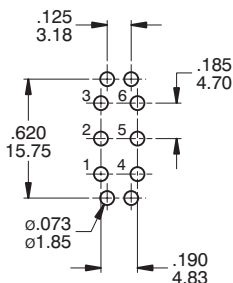
Part No. Shown : 1MS1T2B4VS2QE

VS2 - VS3



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

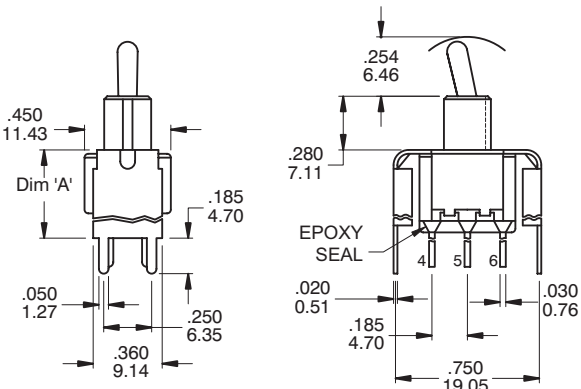
P.C. MOUNTING



DPDT

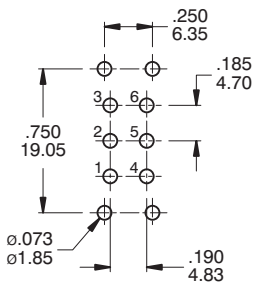
Part No. Shown : 1MD1T2B4VS3QE

VS5



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

P.C. MOUNTING

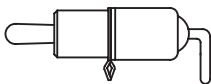


DPDT

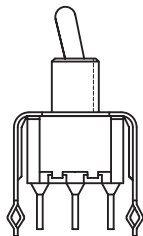
Part No. Shown : 1MD1T2B4VS5QE

SNAP-IN TERMINATION OPTIONS

M6N

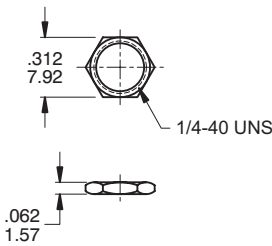


V2N



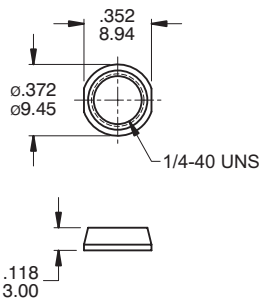
HARDWARE

1/4 NUTS HDW2

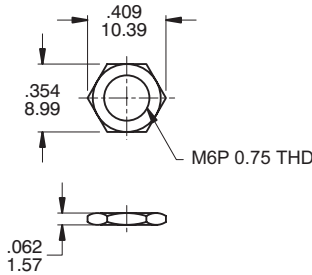


Supplied standard with B1, B3, B5, B6 and B9 options

DRESS NUT HDW3

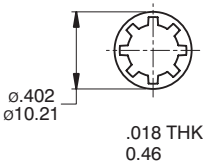


METRIC NUT HDW6



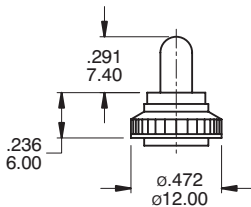
Supplied standard with B8 metric bushing

LOCK WASHER HDW11



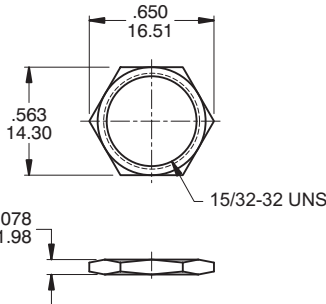
Supplied standard with B1 / B3 bushing

OPTIONAL RUBBER HOOD SEALING

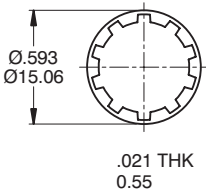


K1=Metric
E1=Inch (Std.)
for actuator T1, T2 and
B1, B3, B5, B6 Bushing only

15/32 NUTS HDW4



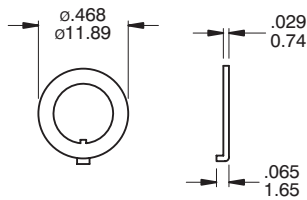
Supplied standard with B13 bushing



Supplied standard with B13 bushing

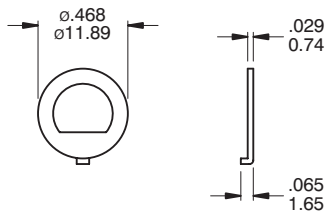
Miniature Toggle Switches **1M SERIES**

HDW15



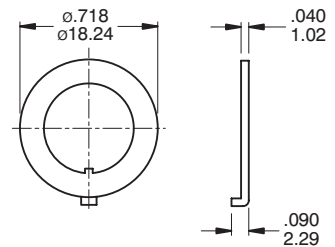
Locking ring supplied standard

HDW16



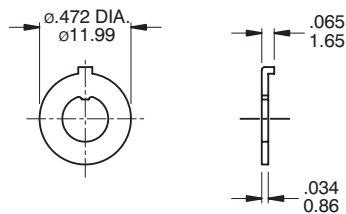
Locking ring supplied with B5 bushing

HDW17



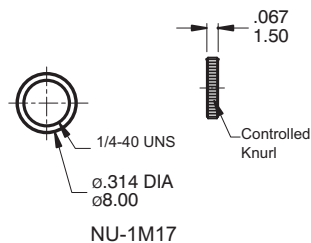
Locking ring supplied with B13,B18,B20 bushing

HDW18



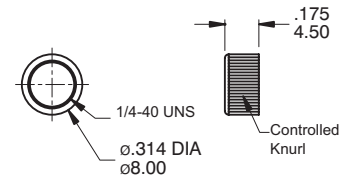
Locking ring supplied with B8 bushing

HDW19



NU-1M17

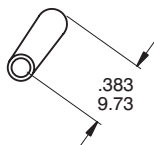
HDW20



NU-1M24

OPTIONAL TOGGLE CAP

CP-1T1X

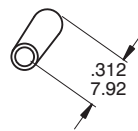


Use with T1

CAP Color :

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

CP-1T2X



Use with T2

CAP Color :

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

CONTACT MATERIAL OPTIONS

	CONTACT MATERIAL	TERMINAL PLATING	RATINGS
Q	Silver	Q = Silver	5 Amps with resistant load @ 120VAC or 28VDC 2 Amps with resistant load @ 250VA
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 st 350°C approximately 5 seconds while applying solder.

WAVE SOLDERING : Recommended Soldering Temperature : 260 ± 5°C
Duration of Solder Immersion : 5 ± 1 seconds
(PCB is 1.6mm in thickness)

SOLDERING : Vapor phase

