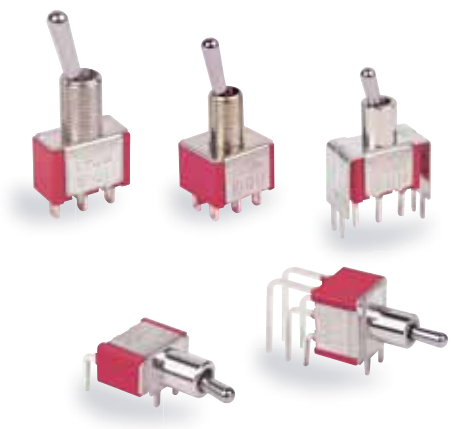


SPECIFICATIONS

CONTACT RATING: Dependent upon contact material.
MECHANICAL LIFE: 40,000 make-and-break cycles.
CONTACT RESISTANCE: 10mΩmax. initial @ 2-4VDC
100mA for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000MΩmin.
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	SP On-None-On
1MS2	SP On-None-Mom
1MS3	SP On-Off-On
1MS4	SP Mom-Off-Mom
1MS5	SP On-Off-Mom
1MD1	DP On-None-On
1MD2	DP On-None-Mom
1MD3	DP On-Off -On
1MD4	DP Mom-Off-Mom
1MD5	DP On-Off-Mom
1MD6	DP On-On-On
1MD7	DP MOm-On-Mom
1MD8	DP On-On-Mom
1M31	3P On-None-On
1M32	3P On-None-Mom
1M33	3P On-Off-On
1M34	3P Mom-Off-Mom.
1M35	3P On-Off-Mom
1M41	4P On-None-On
1M42	4P On-None-Mom
1M43	4P On-Off-On
1M44	4P Mom-Off-Mom
1M45	4P On-Off-Mom
1M46	4P On-On-On
1M47	4P MOm-On-Mom
1M48	4P On-On-Mom

ACTUATOR

T1	10.41 high
T2	5.08 high
T3	13.97 high
T4	16.26 high
T5	21.34 high
T6	Flatted,anti-rotation 12.30 high
T61	Flatted,anti-rotation 21.0 high
T62	Lever handle with cap 13.49 high
T63	Flatted,anti-rotation 6.35 high
T7	12.37 high,15/32 bushing
T8	17.56 high,15/32 bushing
T9	Plastic,21.3 high
TA	26.30 high lever handle with cap,15/32 bushing
T11	Plastic,12.2 high
TL1	Locking lever 16.00 high
TL2	Locking lever 16.26 high
TL3	Locking lever 17.28 high

TERMINATIONS

M1	Solder Lug
M2	PC thru-hole
M3	Quick Connect
M5-1	18.70 high, wire wrap
M5-2	24.20 high, wire wrap
M5-3	10.55 high, wire wrap
M5-4	26.97 high, wire wrap
M6	Right angle, PC thru-hole
M6N	Right angle, snap-in, PC thru-hole
M7	Vertical right angle, PC thru-hole
VS2	11.68 high, V-bracket
V2N	11.68 high, snap-in V-bracket
VS3	16.00 high, V-bracket
VS4	11.68 high, V-bracket
VS5	16.00 high, V-bracket

BUSHING

B1	8.89 high,keyway (thd std)
B2	8.89 high,keyway (non-thd)
B3	7.10 high,keyway (thd)
B4	7.10 high,keyway (non-thd)
B5	7.52 high,flat (torque)
B6	8.00 high,keyway (torque)
B7	8.89 high,flat (thd std)
B8	8.89 high,keyway (metric thd)
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 (non-thd)

CONTACT MATERIAL

Q	Silver
R	Gold
G	Gold,pure-tin
S	Silver,pure-tin
C	Gold over silver
K	Gold over silver,pure-tin

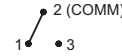
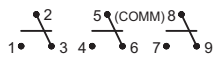
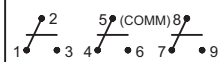
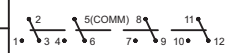
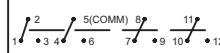
SEAL

E	EPOXY (std)
N	NO EPOXY

ROHS SOLDERING

☐	Rohs Compliant
S	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			
	Q1113	1MS3	ON	OFF	ON		OPEN	
	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			
	Q1123	1MD3	ON	OFF	ON		OPEN	
	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			
	Q1133	1M33	ON	OFF	ON		OPEN	
	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			
	Q1143	1M43	ON	OFF	ON		OPEN	
	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			

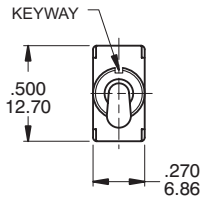
MOM=MOMENTARY

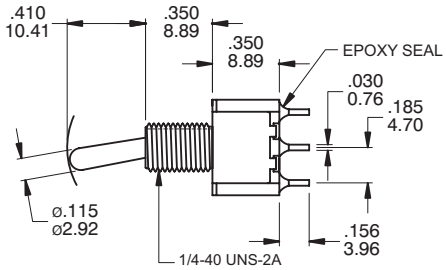
▲ Please check the availability in advance before order

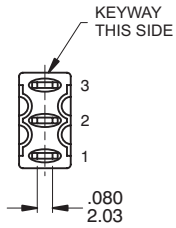
POLE OPTIONS

SPDT





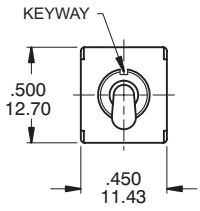


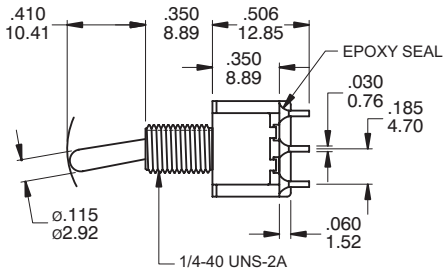


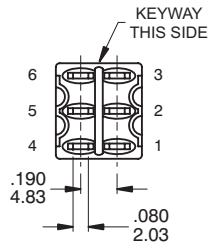
Part No. Shown : 1MS1T1B1M1QE

DPDT





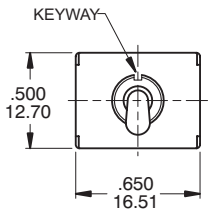


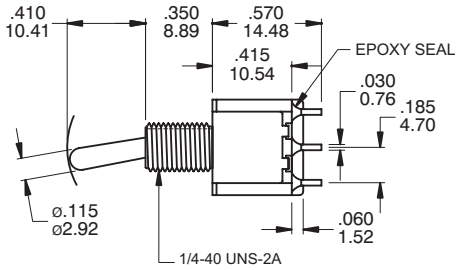


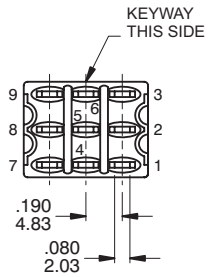
Part No. Shown : 1MD1T1B1M1QE

3PDT





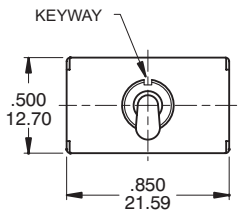


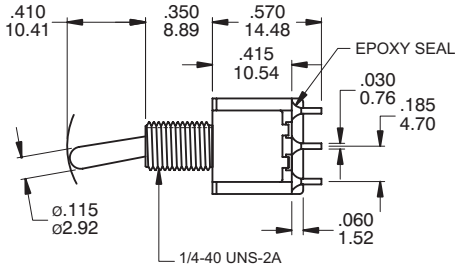


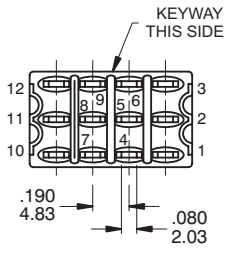
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4PDT









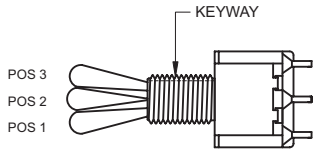
Part No. Shown : 1M41T1B1M1QE

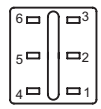
3-WAY SWITCHS

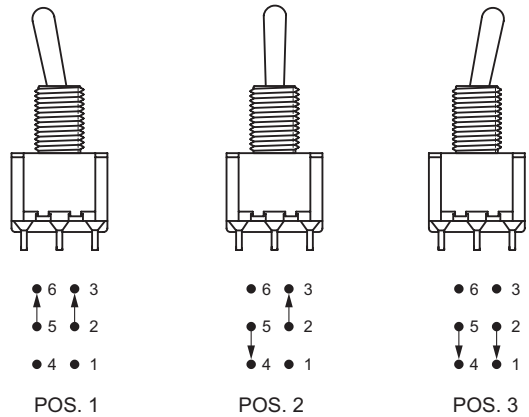
3-WAY WIRING DIAGRAM SCHEMATICS

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

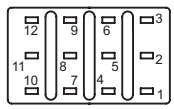


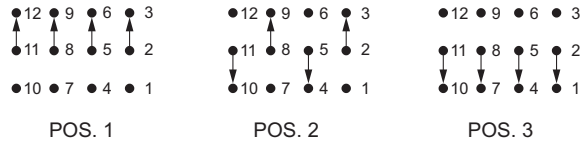




DOUBLE POLE, 3 POSITION

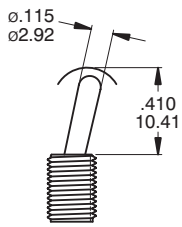
Model No.	POS 1	POS 2	POS 3
1M46	ON	ON	ON
Term. Comm.	2-3,5-6 8-9,11-12	2-3,5-4 8-9,11-10	2-1,5-4 8-7,11-10



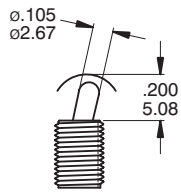


ACTUATOR OPTIONS

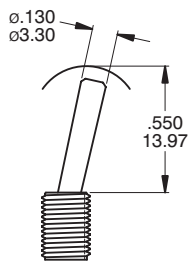
T1 STD



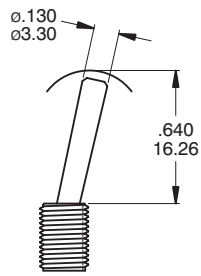
T2



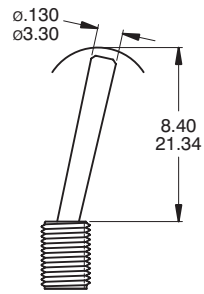
T3



T4

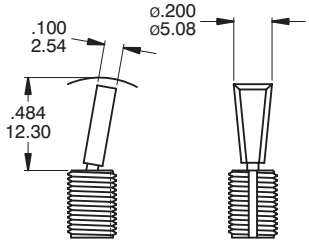


T5

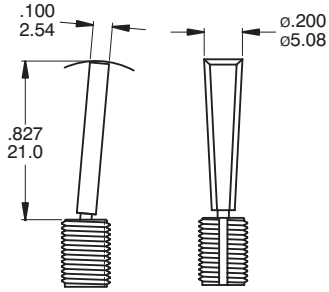


NOTE T1 ~ T5 Actuator shown with standand B1 Bushing :
Add .070 (1.78) for B3 Bushing ;
Subtract .020 (0.51) for B6 Bushing ;
Std for M1 , M2 Terminal sub .016 (0.40) for M6 , M7 , VSX

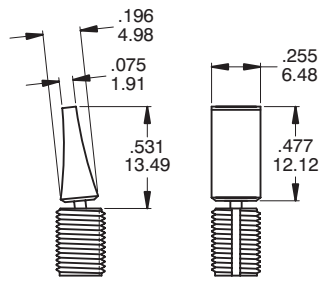
T6 FLATTED WITH ANTIROTATION



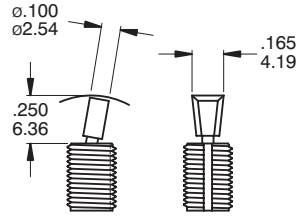
T61



T62

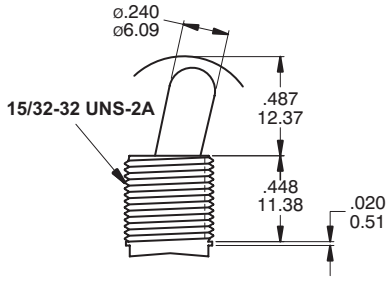


T63



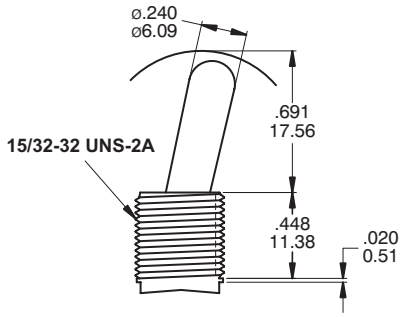
NOTE T6,T6-1,T6-2 ,T63 use with B11, B12, B15, B16 bushing only.

T7



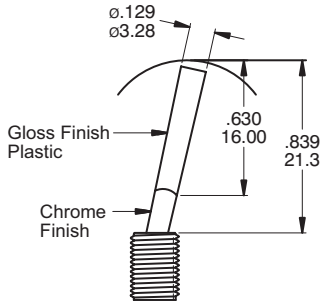
Use with B13 bushing
Use with B18,B20 the lever is antirotation
andthe size of lever is 13.00mm

T8



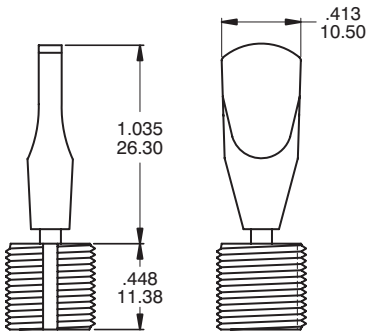
Use with B13 bushing
Use with B18,B20 the lever is antirotation
and the size of lever is 18.00mm

T9



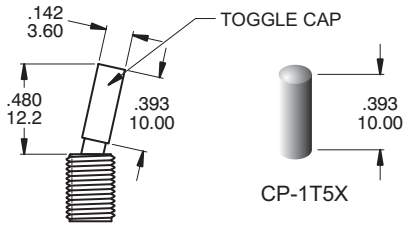
B1 / B2 bushing std
with black and red color only (std.)

TA PLASTIC BLACK



Use with B18 bushing only

T11



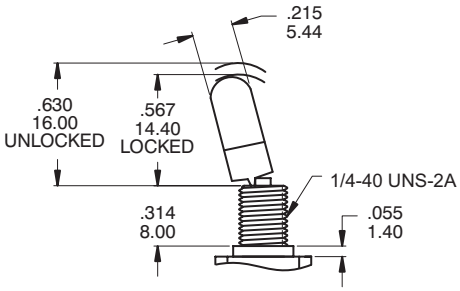
NOTE T11Actuator shown with standand B1 Bushing ;
Add .070 (1.78) for B3 Bushing ;
Subtract .020 (0.51) for B6 Bushing.
Std for M1.M2 Terminal sub .016 (0.40) for M6.M7.VSX

Plastic No.Color :

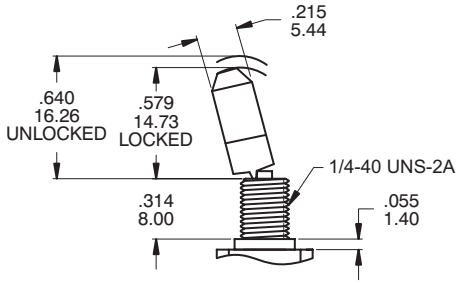
ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

T6-2 , TA , T9 , T11
ACTUATOR ONLY

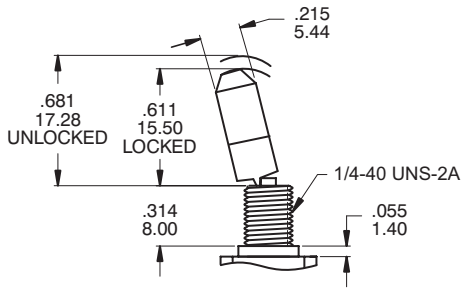
TL1B25

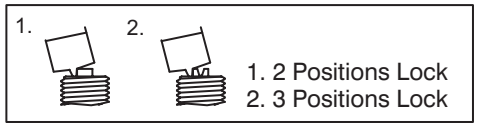


TL2B25



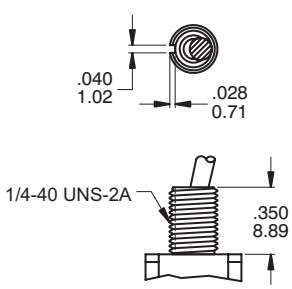
TL3B25



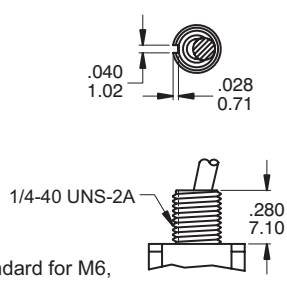


BUSHING OPTIONS

B1 THD STD
B2 NON-THD

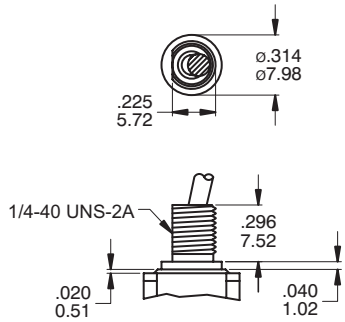


B3 THD
B4 NON-THD

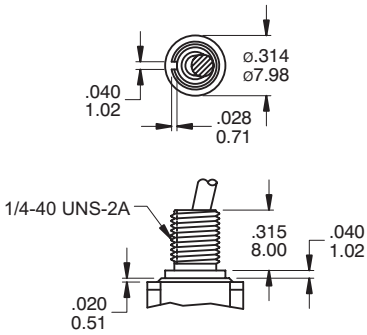


B4 is standard for M6,
M7 and VS2~5 termination
options.

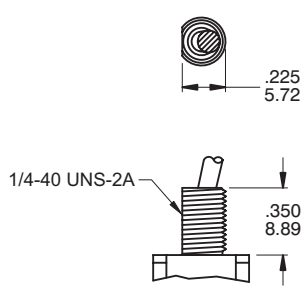
B5 HIGH TORQUE



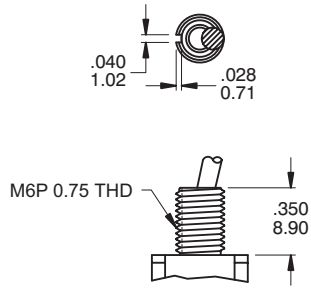
B6 HIGH TORQUE



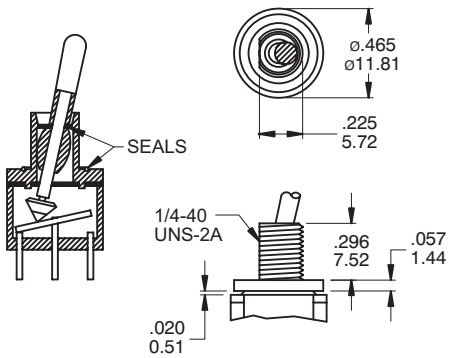
B7 THD STD

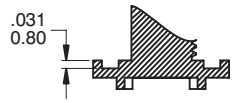


B8 METRIC THD

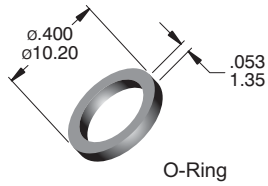


B9 SPLASH PROOF



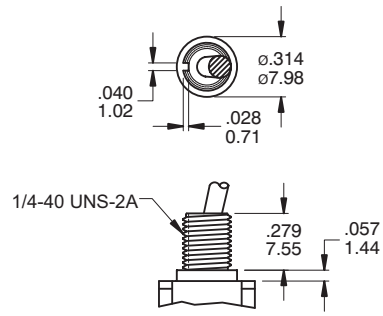


CP-1TEB



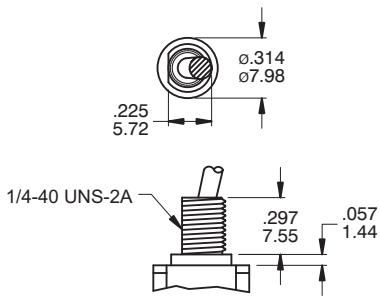
O-Ring
supplied with B9 bushing

B11 THD STD
B12 NON-THD



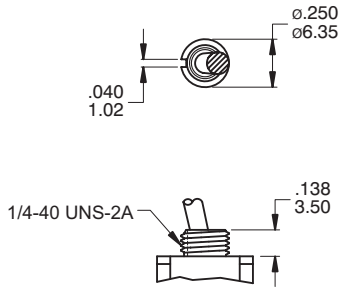
Use with T6 actuators only

B15 THD STD
B16 NON-THD

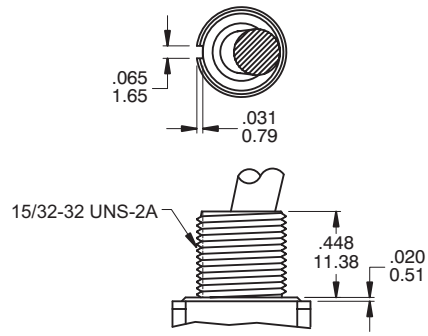


Use with T6 actuators only

B17



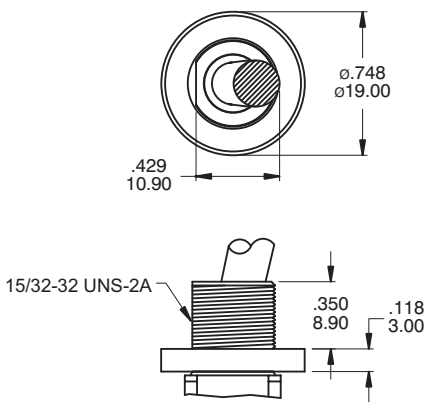
B13



Use with T7,T8 actuators only

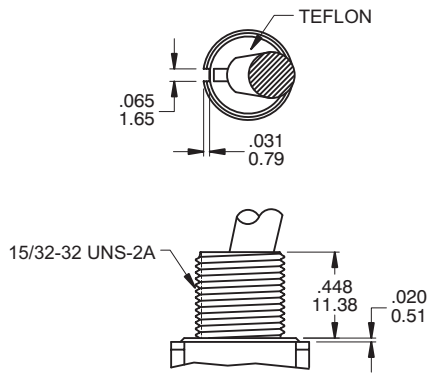
B13 Bear strength from top of actuator up to 10kg aside up to 15kg

B14 SPLASH PROOF



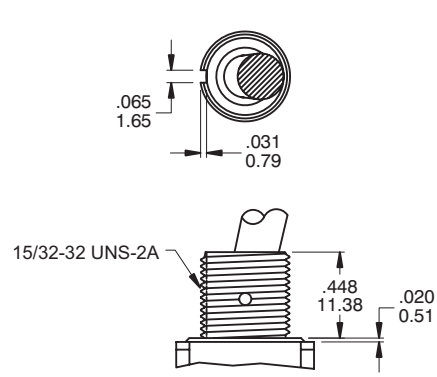
Use with T7 , T8 actuators only

B18



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

B20

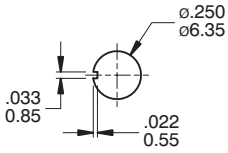


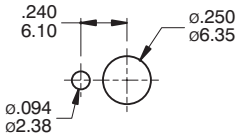
Use with T7,T8 and T10 actuators only

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

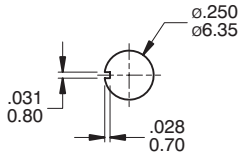
PANEL MOUNTING

1/4 IN BUSHING

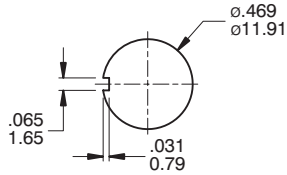




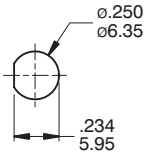
METRIC BUSHING

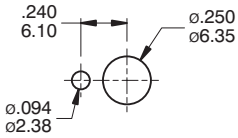


15/32IN BUSHING

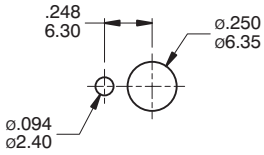


1/4 IN BUSHING

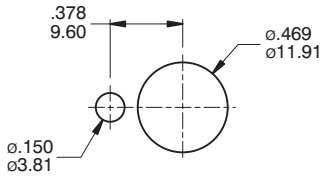




METRIC BUSHING

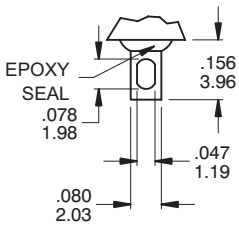


15/32IN BUSHING



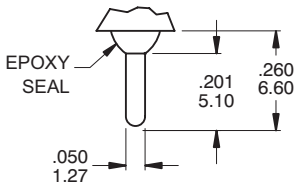
TERMINATION OPTIONS

M1 SOLDER LUG



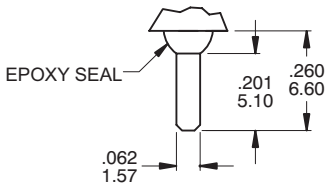
.030(0.76) THK.

M2 PC THRU-HELE



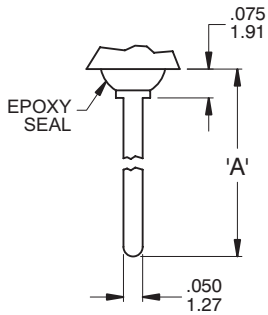
.030(0.76) THK.

M3 QUICK CONNECT



THK .030(0.76)

M5 WIRE WRAP



THK .030(0.76)

OTHER TERMINATION OPTIONS

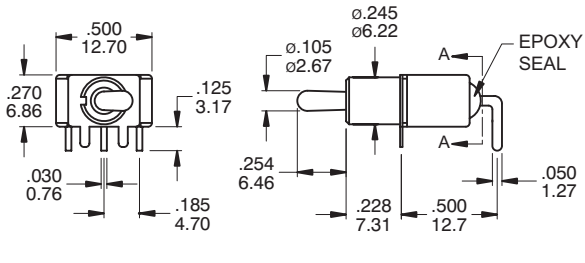
M6 RIGHT ANGLE P.C. MOUNT
M7 RIGHT ANGLE P.C. MOUNT
VS2 VERTICAL BRACKET P.C. MOUNT
VS3 VERTICAL BRACKET P.C. MOUNT
VS5 VERTICAL BRACKET P.C. MOUNT

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)

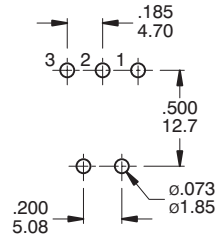
M6





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

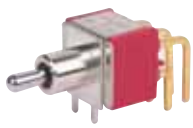
P.C. MOUNTING

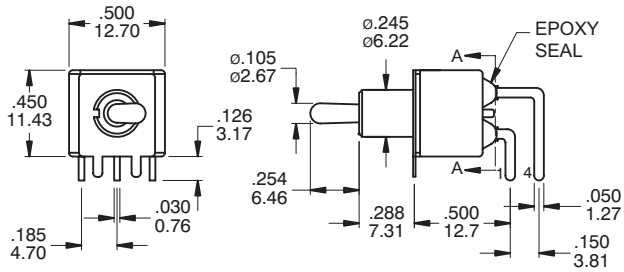


SPDT

Part No. Shown : 1MS1T2B4M6QE

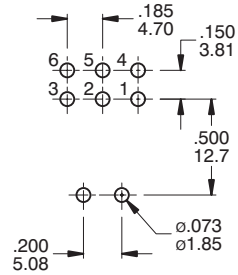
M6





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

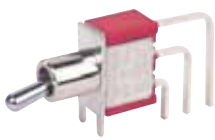
P.C. MOUNTING

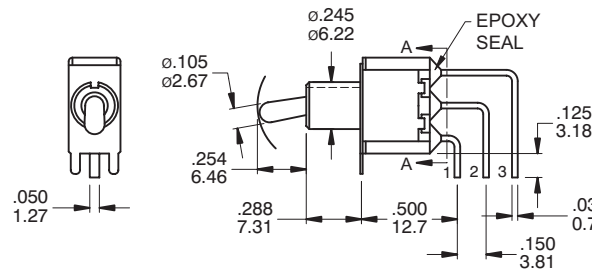


DPDT

Part No. Shown : 1MD1T2B4M6RE

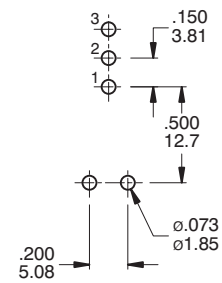
M7





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

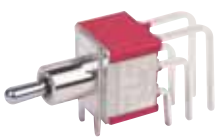
P.C. MOUNTING

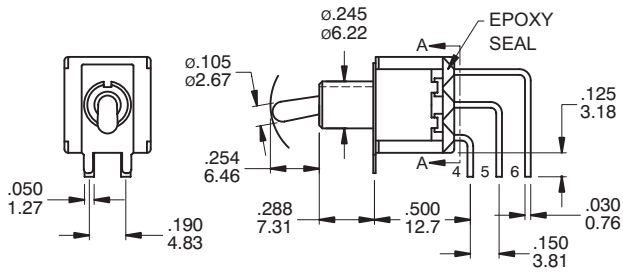


SPDT

Part No. Shown : 1MS1T2B4M7QE

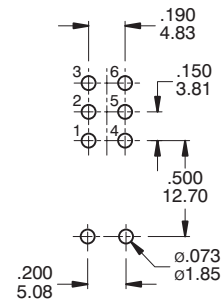
M7





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

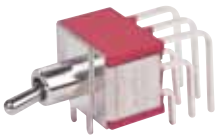
P.C. MOUNTING

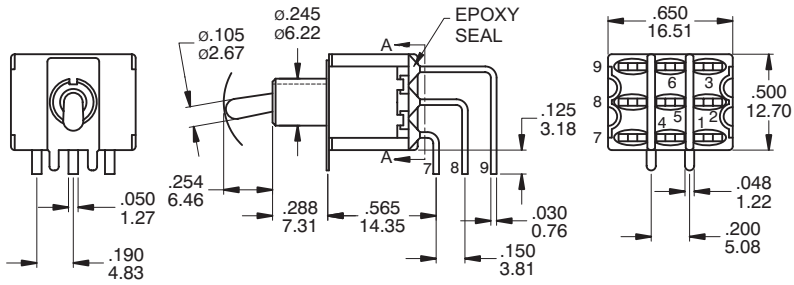


DPDT

Part No. Shown : 1MD1T2B4M7QE

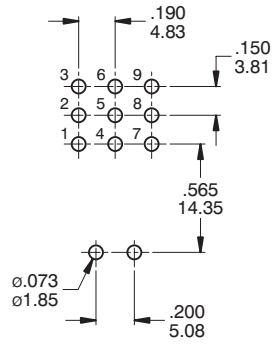
M7





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

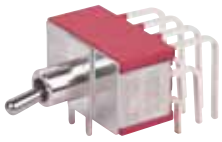
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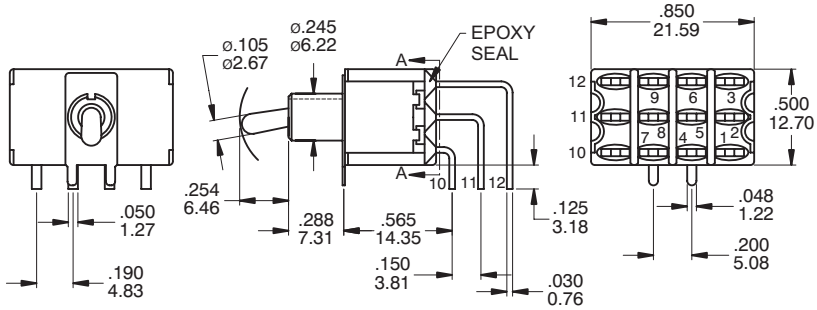


3PDT

Part No. Shown : 1M31T2B4M7QE

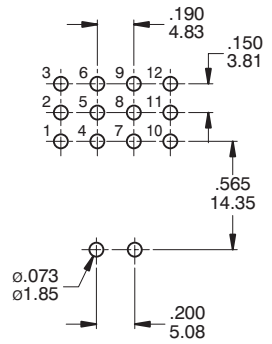
M7





SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

P.C. MOUNTING

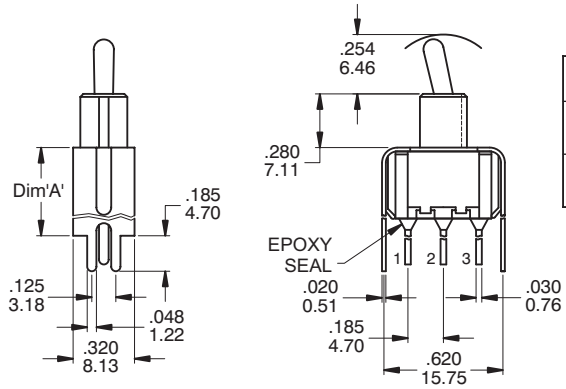


4PDT

Part No. Shown : 1M41T2B4M7QE

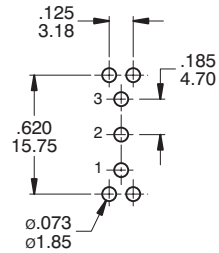
VS2 - VS3





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

P.C. MOUNTING

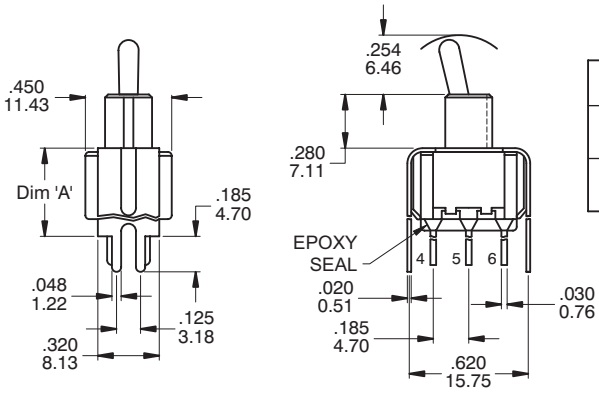


SPDT

Part No. Shown : 1MS1T2B4VS2QE

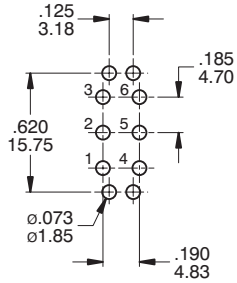
VS2 - VS3





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

P.C. MOUNTING

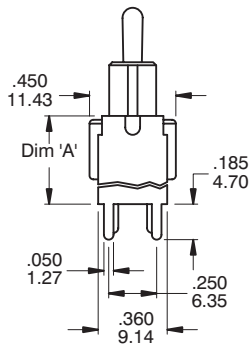


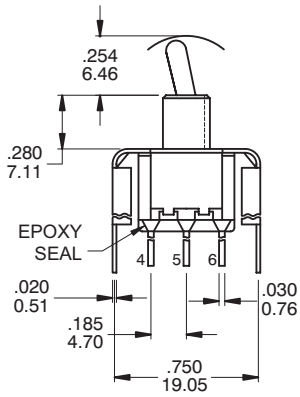
DPDT

Part No. Shown : 1MD1T2B4VS3QE

VS5

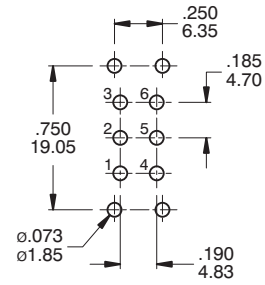






OPTION CODE	DIM. 'A'
VS4	.460 11.68
VS5	.630 16.00

P.C. MOUNTING

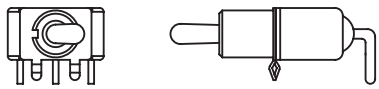


DPDT

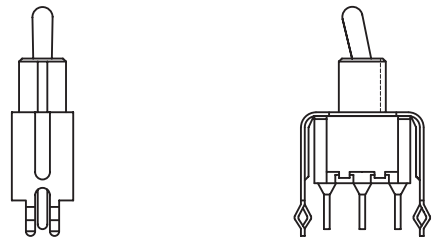
Part No. Shown : 1MD1T2B4VS5QE

SNAP-IN TERMINATION OPTIONS

M6N

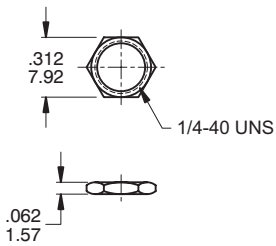


V2N



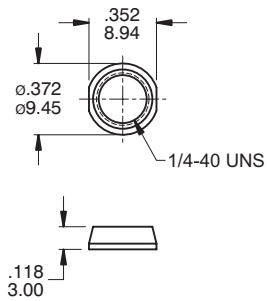
HARDWARE

1/4 NUTS HDW2

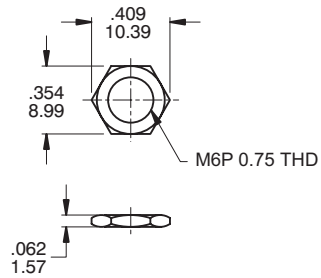


Supplied standard with
B1, B3, B5, B6 and B9 options

DRESS NUT HDW3

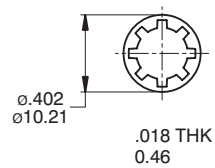


METRIC NUT HDW6



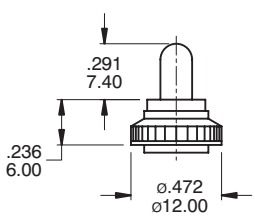
Supplied standard with
B8 metric bushing

LOCK WASHER HDW11



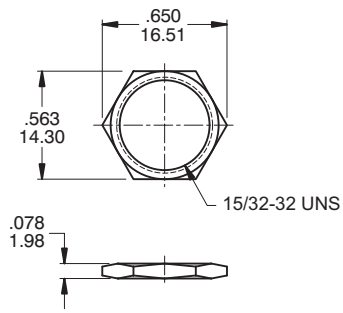
Supplied standard with
B1 / B3 bushing

OPTIONAL RUBBER HOOD SEALING

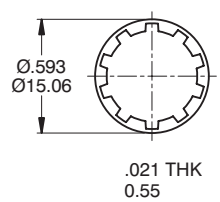


K1=Metric
E1=Inch (Std.)
for actuator T1, T2 and
B1, B3, B5, B6 Bushing only

15/32 NUTS HDW4

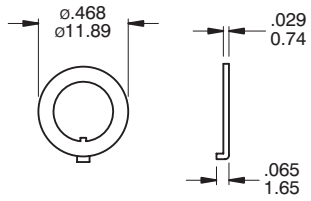


Supplied standard with B13 bushing



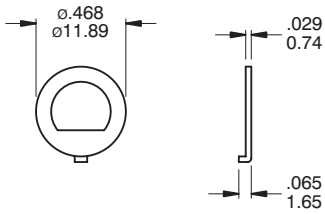
Supplied standard with B13 bushing

HDW15



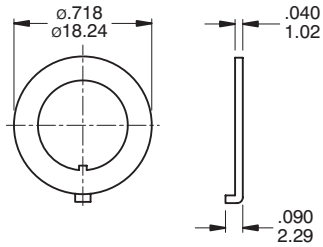
Locking ring supplied standard

HDW16



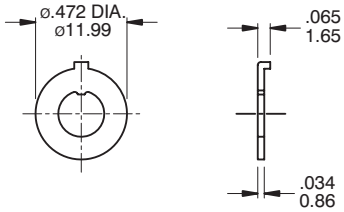
Locking ring
supplied with B5 bushing

HDW17



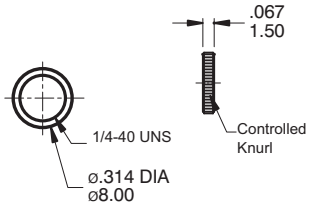
Locking ring
supplied with B13,B18,B20 bushing

HDW18



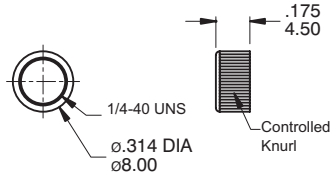
Locking ring
supplied with B8 bushing

HDW19



NU-1M17

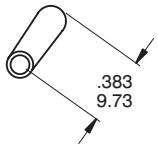
HDW20



NU-1M24

OPTIONAL TOGGLE CAP

CP-1T1X

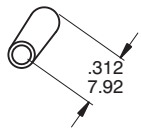


Use with T1

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

Temperature Profile

Zone	Room Temperature	Time (Sec)
Pre-heat (A)	150°C	Min 120s
Soak (B)	180°C ~ 200°C	Min 150s
Peak (C)	200°C ~ 235°C	Min 30s
Peak (D)	235°C ~ 260°C	Min 40s
Peak (E)	260°C	Max 10s

