

E 123142 E 123142

SPECIFICATIONS

CONTACT RATING: 5A @125 VAC or 28 VDC (Q contact)
ELECTRICAL LIFE:50,000 make-and-break cycles at full load
CONTACT RESISTANCE: 10 mΩ max. initial @2-4 VDC,100 mA
INSULATION RESISTANCE: 1,000 MΩ min.
DIELECTRIC STRENGTH: 1,500 V RMS @ sea level.
OPERATING TEMPERATURE: -30°C to +85°C

MATERIALS

CASE - diallyl phthalate (DAP)
TOGGLE HANDLE - Copper alloy , chrome plated
BUSHING - Copper alloy , nickel plated
HOUSING - Stainless Steel
CONTACT AND TERMINAL - copper alloy, silver plated

How do you build the switches you need!!

The straight type , please see the (A) ;

(A) T 8 0 1 3 [ ] – S [ ] E [ ] C [ ] Q – E – S 2 0 – T 1 – 2 – [ ]

Switch Function	
T8013	SP on-none-on
T8013A	SP on-none-(on)
T8014	SP on-off-on
T8014A	SP (on)-off-(on)
T8014B	SP on-off-(on)
T8011	DP on-none-on
T8011A	DP on-none-(on)
T8012	DP on-off-on
T8012A	DP (on)-off-(on)
T8012B	DP on-off-(on)
T8301	3P on-none-on
T8303	3P on-none-(on)
T8305	3P on-off-on
T8307	3P (on)-off-(on)
T8309	3P on-off-(on)
T8401	4P on-none-on
T8403	4P on-none-(on)
T8405	4P on-off-on
T8407	4P (on)-off-(on)
T8409	4P on-off-(on)
3 way position switches	
T812	SP3T on-on-on
T812A□	SP3T (on)-on-(on)□
T812B	SP3T on-on-(on)
T845□	DP3T on-on-on□
T847□	DP3T (on)-on-(on)□
T849	DP3T on-on-(on)

Actuator	
S	10.41
T	5.08
X	13.97
W	21.34
V	16.26
Y	21.34
Flatted toggle	
U	11.43
U1□	7.20□
U2	21.30
Large15/32 bushing	
Z	11.68
Z1□	17.45□
Z3□	antirotation (17.45)□
Z4	antirotation (11.68)
Locking Lever	
LK	Round top
LK1	Flat top

Bushing		
E	(STD)	8.89
M	(non-thd)	8.89
K	(metric)	8.89
F	□	7.10
N	(non-thd)	7.10
G	□	7.52
G1	(non-thd)	7.52
H	□	8.00
H1	(non-thd)	8.00
J	(long)	9.60
J1	(non-thd)	9.60
L	(splash-proof)	7.47
none		

the actuator: Z/Z1/Z3/Z4/LK/LK1 No requirement to choose the bushing unless the splash proof (L) ZL/Z1L/LKL/LK1L and the non-thd (N) LKN/LK1N

Termination	
B	solder lug
C	P.C 1.27width
D	Quick connect
D1	wire wrap(19.05)
D3	wire wrap(10.8)

Contact Material	
Q	silver plated
R	gold plated
G	gold over silver
K	tin plated

Epoxy seal	
(none)	none seal
E	epoxy seal

Vertical support Bracket	
(none)	
S20	11.68
S25	16.00
S35	11.68
S40	16.00
V20	snap-in 11.68
V25	snap-in 16.00
V35	snap-in 11.68
V40	snap-in 16.00

Actuator Cap/ Rubber hood Sealing
(none)

Rubber hood	
E1	for inch thd (E bushing)
E2	for 15/32thd (Z/Z1)□
E3	for 15/32thd (Z/Z1)
K1	for K bushing

Actuator Cap	
T1	-10.58 (for actuator S)
T2	- 7.29 (for actuator T)

Cap color	
0	transparent
1	white
2	black
3	red
4	yellow
5	blue
6	green
7	orange

RoHS code	
□	= none
H	= RoHS Compliant

The right angle P.C terminals, please see the (B)

(B) T 8 0 1 9 L [ ] – T [ ] N [ ] Q – E – S – T 2 – 2 – [ ]

Horizon Right Angle	Vertical Right Angle	Switches Function
T8019	T8019L	SP on-none-on
T8019A	T8019LA	SP on-none-(on)
T8020	T8020L	SP on-off-on
T8020A	T8020LA	SP (on)-off-(on)
T8020B	T8020LB	SP on-off-(on)
T8021	T8021L	DP on-none-on
T8021A	T8021LA	DP on-none-(on)
T8022	T8022L	DP on-off-on
T8022A	T8022LA	DP (on)-off-(on)
T8022B	T8022LB	DP on-off-(on)
T8301P(A)	T8301P	3P on-none-on
T8303P(A)	T8303P	3P on-none-(on)
T8305P(A)	T8305P	3P on-off-on
T8307P(A)	T8307P	3P (on)-off-(on)
T8309P(A)	T8309P	3P on-off-(on)
	T8401P	4P on-none-on
	T8403P	4P on-none-(on)
	T8405P	4P on-off-on
	T8407P	4P (on)-off-(on)
	T8409P	4P on-off-(on)
3 way position switches		
T822	T822L	SP3T on-on-on
T822A□	T822LA□	SP3T (on)-on-(on)□
T822B	T822LB	SP3T on-on-(on)
	T845P□	DP3T on-on-on□
	T847P□	DP3T (on)-on-(on)□
	T849P	DP3T on-on-(on)□

Actuator	
S	10.41
T	5.08
X	13.97
W	21.34
V	16.26
Flatted toggle	
U	11.43
U1□	7.2□
U2	21.30
Locking Lever	
LK	Round top(thd)
LK1	Flat top(thd)

Bushing		
E	(STD)	8.89
M	(non-thd)	8.89
K	(metric)	8.89
F		7.10
N	(non-thd)	7.10
G		7.52
G1	(non-thd)	7.52
H		8.00
H1	(non-thd)	8.00
J	(long)	9.60
J1	(non-thd)	9.60□
L	(splash-proof)	7.47
none		

the actuator: LK/LK1 No requirement to choose the bushing unless the splash proof (L) LKL/LK1L and the non-thd (N) LKN/LK1N

Contact Material	
Q	silver plated
R	gold plated
G	gold over silver
K	tin plated

Epoxy seal	
(none)	none seal
E	epoxy seal

Support Bracket type	
(none)	std.
S	snap-in type

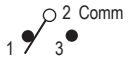
Actuator Cap	
(none)	
T1	-10.58 (actuator S)
T2	- 7.29 (actuator T)

Cap color	
0	transparent
1	white
2	black
3	red
4	yellow
5	blue
6	green□
7	orange

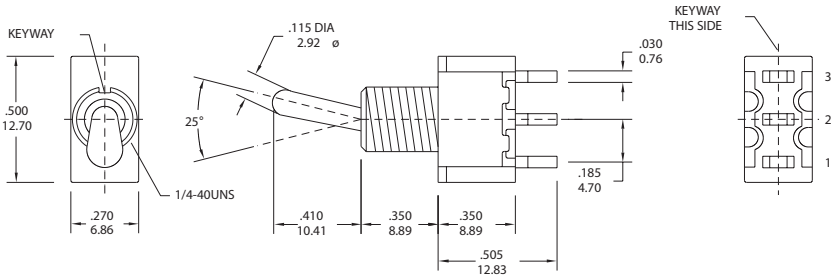
RoHS code	
□	= none
H	= RoHS Compliant

SPDT





Model No.	Switching position		
T8013	ON	none	ON
T8013A	ON	none	(ON)
T8014	ON	OFF	ON
T8014A	(ON)	OFF	(ON)
T8014B	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1



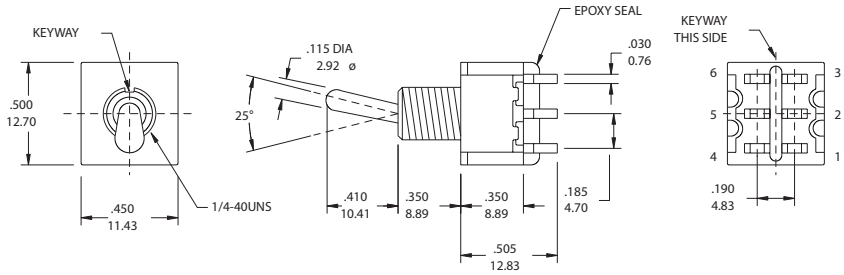
T8013 - SEBQ

DPDT





Model No.	Switching position		
T8011	ON	none	ON
T8011A	ON	none	(ON)
T8012	ON	OFF	ON
T8012A	(ON)	OFF	(ON)
T8012B	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T812	ON	ON	ON
T812A	(ON)	ON	(ON)
T812B	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



T8011 - SEBQ

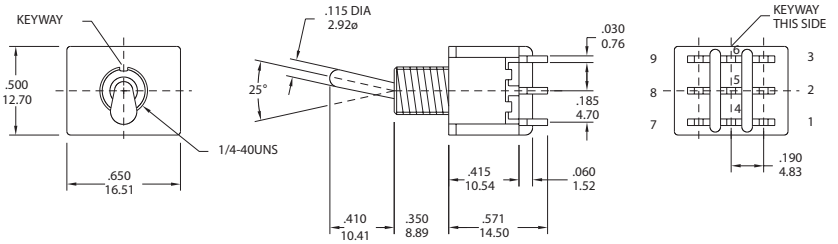
Please see page A14 to know more about T812
(3-way Switches)

3PDT



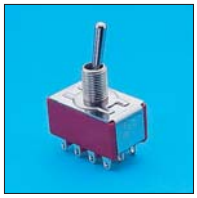


Model No.	Switching position		
T8301	ON	none	ON
T8303	ON	none	(ON)
T8305	ON	OFF	ON
T8307	(ON)	OFF	(ON)
T8309	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7



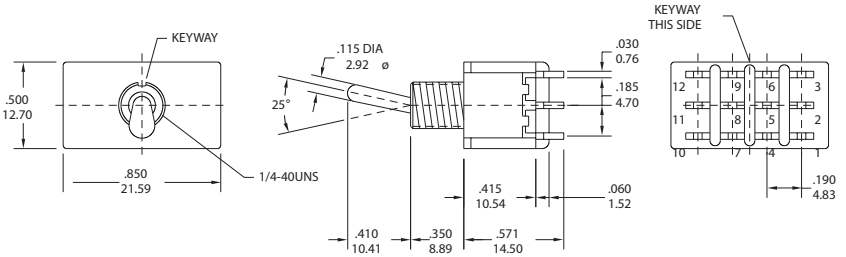
T8301- SEBQ

4PDT





Model No.	Switching position		
T8401	ON	none	ON
T8403	ON	none	(ON)
T8405	ON	OFF	ON
T8407	(ON)	OFF	(ON)
T8409	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	open	2-1,5-4 8-7,11-10
3 way switches (DP3T)			
T845	ON	ON	ON
T847	(ON)	ON	(ON)
T849	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



T8401 - SEBQ

Please see page A14 to know more about T845
(3-way Switches)

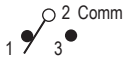
FEATURE

The T80-T series P.C.B Mounted Toggle Swtiches - Right Angle Type - are specially designed for P.C. Boards . Easy to mount and install securely with a vertical support rack . The toggle operates in the same direction as the print connectors . Customers' specifications of pitch are acceptable.

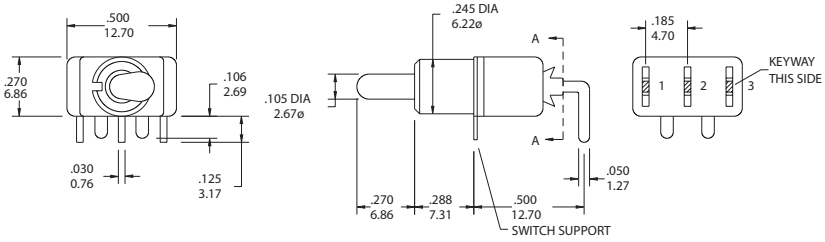
HORISON RIGHT ANGLE

SPDT





Model No.	Switching position		
T8019	ON	none	ON
T8019A	ON	none	(ON)
T8020	ON	OFF	ON
T8020A	(ON)	OFF	(ON)
T8020B	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1



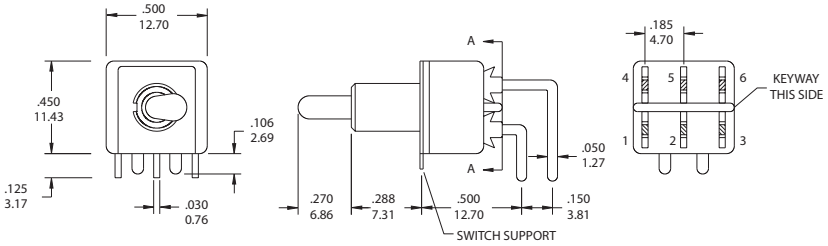
T8019 - TNQ

DPDT





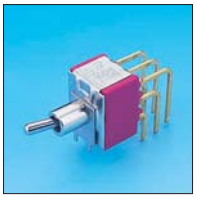
Model No.	Switching position		
T8021	ON	none	ON
T8021A	ON	none	(ON)
T8022	ON	OFF	ON
T8022A	(ON)	OFF	(ON)
T8022B	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T822	ON	ON	ON
T822A	(ON)	ON	(ON)
T822B	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4

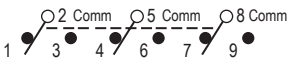


T8021 - TNQ

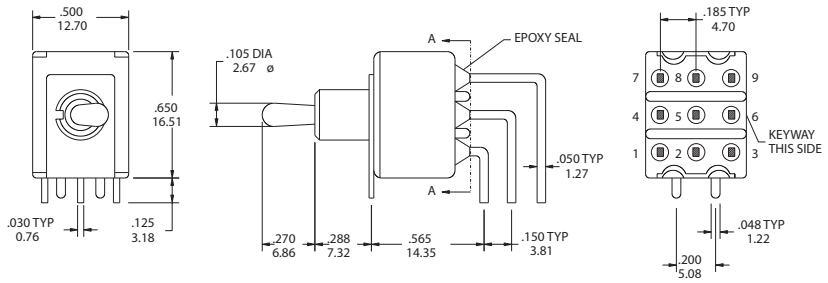
Please see page A14 to know more about T822 (3-way Switches)

3PDT





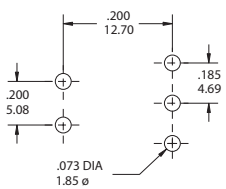
Model No.	Switching position		
T8301P(A)	ON	none	ON
T8303P(A)	ON	none	(ON)
T8305P(A)	ON	OFF	ON
T8307P(A)	(ON)	OFF	(ON)
T8309P(A)	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7



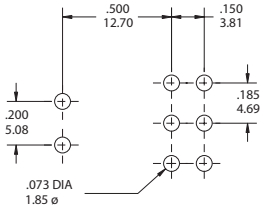
T8301P(A)- TNQ

P.C.B MOUNTING DIMENSIONS

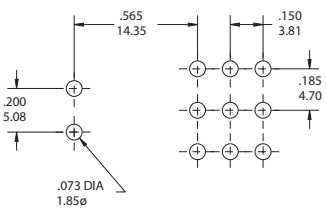
FOR T8019-T8020B



FOR T8021-T8022B



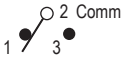
FOR T8301P(A)-T8309P(A)



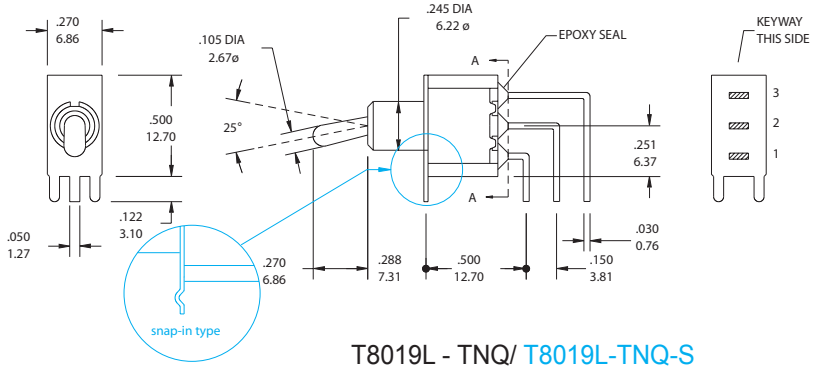
VERTICAL RIGHT ANGLE

SPDT





Model No.	Switching position		
T8019L	ON	none	ON
T8019LA	ON	none	(ON)
T8020L	ON	OFF	ON
T8020LA	(ON)	OFF	(ON)
T8020LB	ON	OFF	(ON)
Term. Comm.	2-3	open	2-1



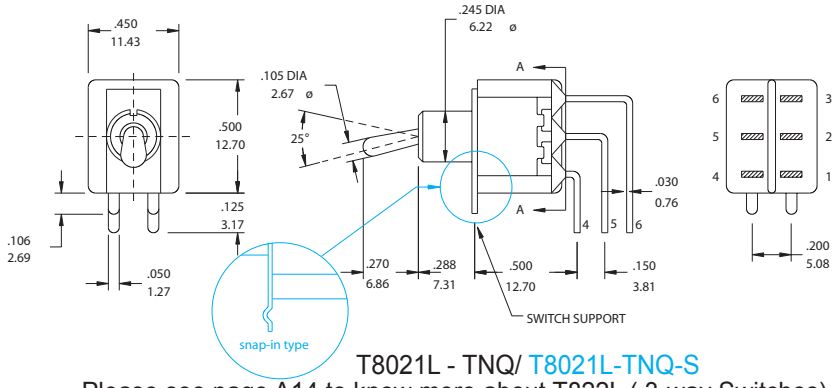
T8019L - TNQ/ T8019L-TNQ-S

DPDT





Model No.	Switching position		
T8021L	ON	none	ON
T8021LA	ON	none	(ON)
T8022L	ON	OFF	ON
T8022LA	(ON)	OFF	(ON)
T8022LB	ON	OFF	(ON)
Term. Comm.	2-3,5-6	open	2-1,5-4
3 way switches (SP3T)			
T822L	ON	ON	ON
T822LA	(ON)	ON	(ON)
T822LB	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4



T8021L - TNQ/ T8021L-TNQ-S

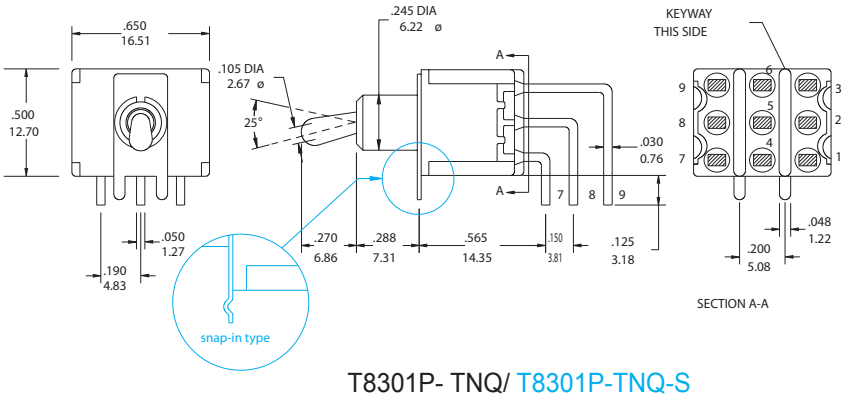
Please see page A14 to know more about T822L (3-way Switches)

3PDT





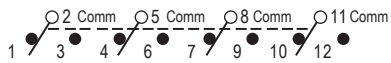
Model No.	Switching position		
T8301P	ON	none	ON
T8303P	ON	none	(ON)
T8305P	ON	OFF	ON
T8307P	(ON)	OFF	(ON)
T8309P	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	open	2-1,5-4 8-7



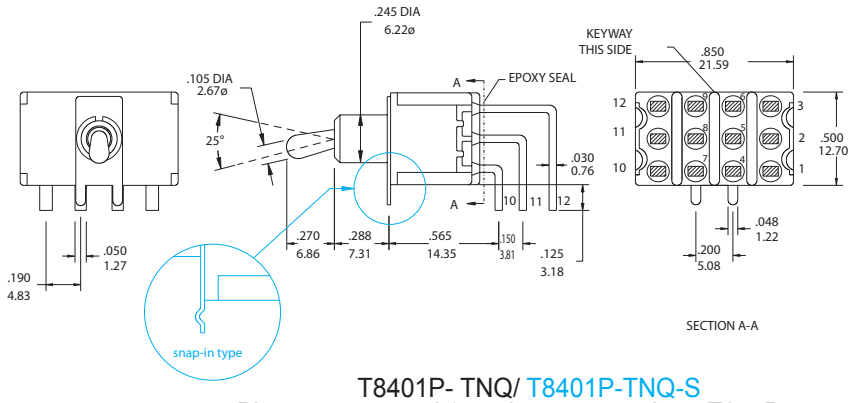
T8301P- TNQ/ T8301P-TNQ-S

4PDT





Model No.	Switching position		
T8401P	ON	none	ON
T8403P	ON	none	(ON)
T8405P	ON	OFF	ON
T8407P	(ON)	OFF	(ON)
T8409P	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9,11-12	open	2-1,5-4 8-7,11-10
3 way switches (DP3T)			
T845P	ON	ON	ON
T847P	(ON)	ON	(ON)
T849P	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

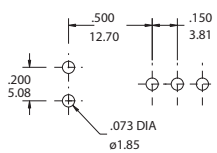


T8401P- TNQ/ T8401P-TNQ-S

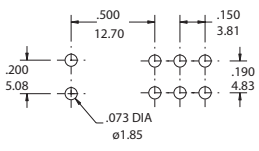
Please see page A14 to know more about T845P (3-way Switches)

P.C.B MOUNTING DIMENSIONS

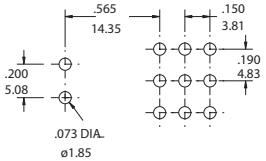
FOR T8019L-T8020LB



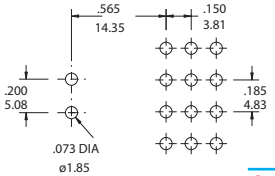
FOR T8021L-T8022LB



FOR T8301P-T8309P

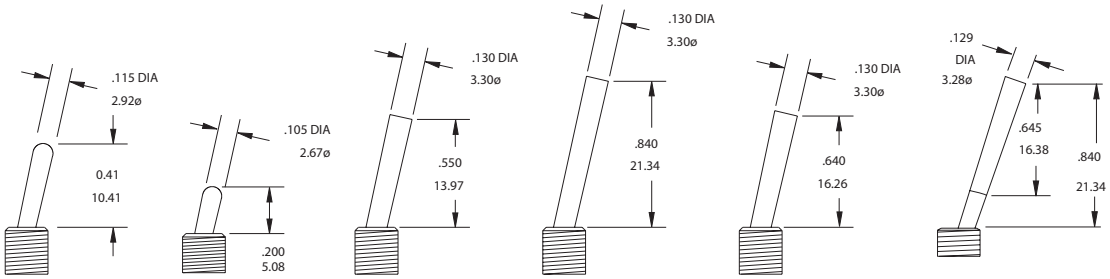


FOR T8401P-T8409P



Actuator Option

S (STD) T(STD) X LONG W LONG V LONG Y PLASTIC



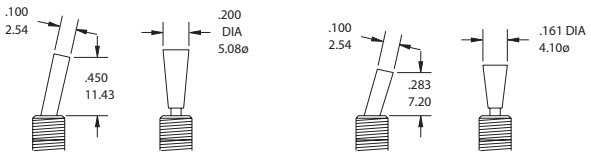
Y HANDLE COLOR NO.	COLOR
1	White
2	Black(std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

the height of actuator is with bushing "E". It will be difference with other bushing option

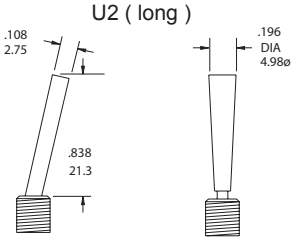
Now the available color is "2". If you need the others, please inquire first.

Flatted Actuator (ONLY APPLY "H""H1"H2" BUSHING)

U (standard) U1 (short)

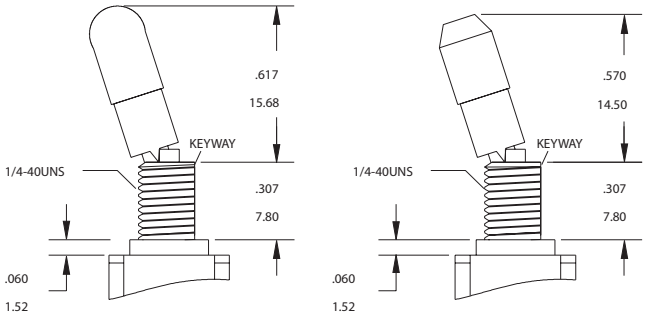


U2 (long)



Locking Lever

LK (round top) LK1(flat top)

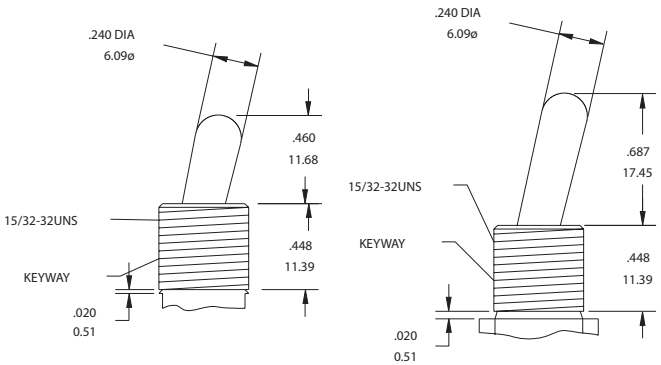


Bushing Option Code not required unless
(1) " L " splashproof bushing ordered --LKL / LK1L
(2) non-thread ordered,choose the bushing code "N" -- LKN / LK1N

only on-on and on-off-on are available
other function are developing ,please inquire our office first.

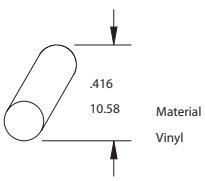
Z LARGE TOGGLE
Z4 ANTIROTATION

Z1 LARGE TOGGLE
Z3 ANTIROTATION

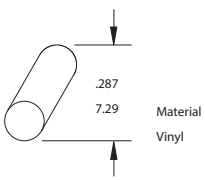


Bushing Option Code not required unless " L " splashproof bushing ordered.

Toggle Cap Option



T1 for actuator "S"only



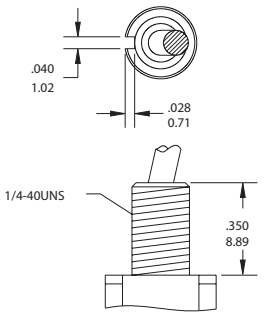
T2 for actuator "T"

Toggle Cap Color Option

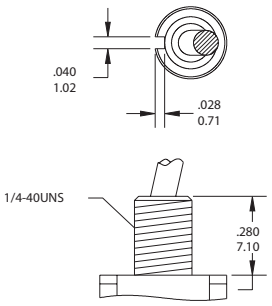
code	color
0	transparent
1	white
2	black
3	red
4	yellow
5	blue
6	green
7	orange

Bushing Option

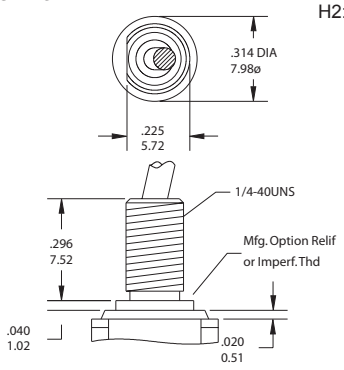
E THD STD. TYPE
M NON-THD



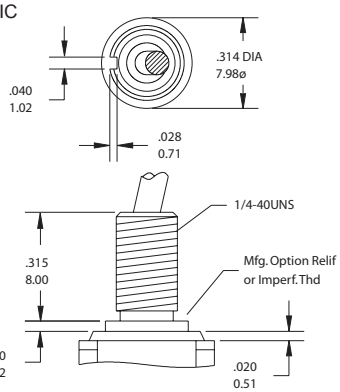
F THD.
N NON-THD



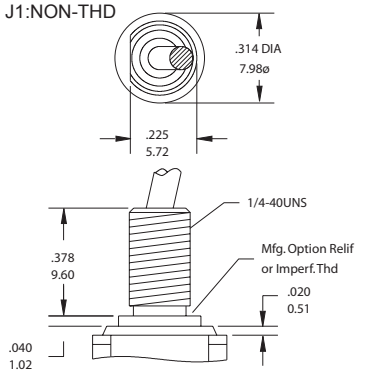
HIGH TORQUE
G:THD STD.TYPE
G1:NON-THD



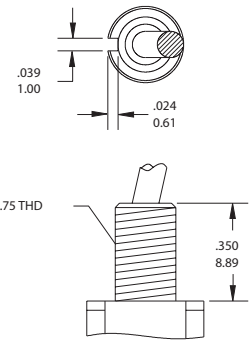
HIGH TORQUE
H:THD STD.TYPE
H1:NON-THD
H2:METRIC



LONG
J:THD STD.TYPE
J1:NON-THD

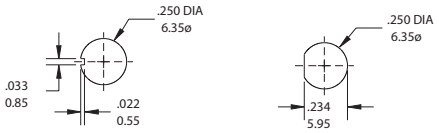


K METRIC

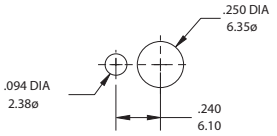


Panel Mounting

1/4 IN. BUSHING

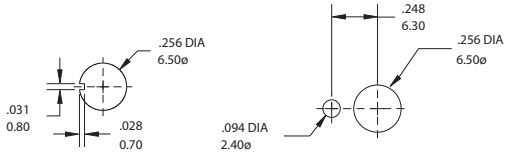


without lock ring

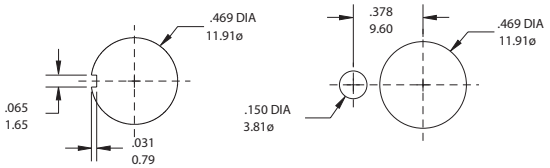


with lock ring

METRIC BUSHING

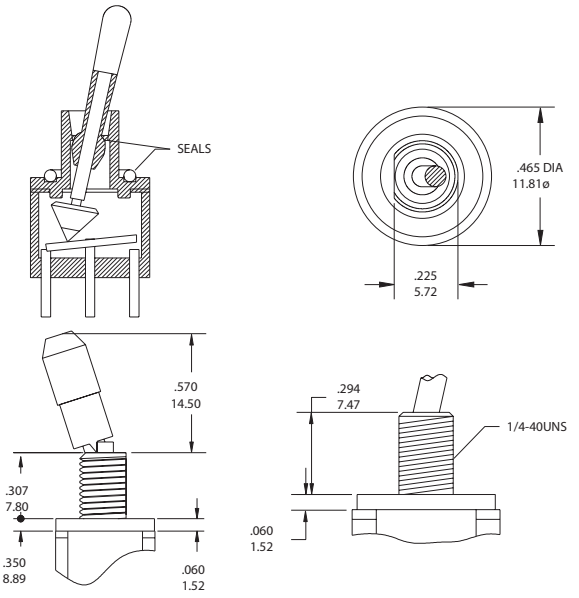


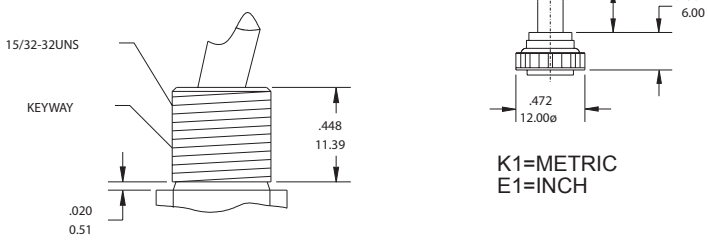
15/32 IN. BUSHING



Splash water proof Solution

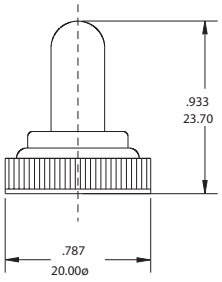
L SPLASH-PROOF -- only for the function ON-ON /ON-OFF-ON



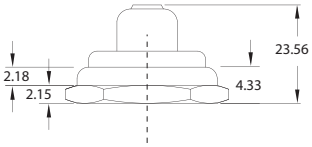


K1=METRIC
E1=INCH

RUBBER HOOD SEALING



E2 for the large toggle
(15/32-32NS)

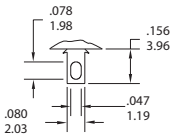


E3 for the large toggle
(15/32-32UNS)

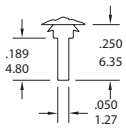
For the Large toggle (Z / Z1 option) , the internal actuator seal standard. External bushingseal washer available from :Multi-Flex Seals Inc.,Hackensack,NJ. Part no:MFS-60064

TERMINAL OPTION (ONLY FOR THE STRAIGHT TYPE T8013~T8401)

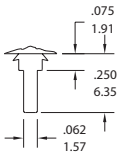
B SOLDER LUG C PRINTED CIRCUIT D QUICK CONNECT WIREWRAP



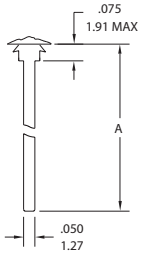
THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)



THK 0.76 (.030)

CODE	"A"dimension
D1	.750 (19.05)
D3	.425 (10.8)

TERMINAL SEAL OPTION

E TERMINAL SEAL

EPOXY SEAL 

CONTACT MATERIAL OPTIONS

CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	5 A @ 125 V AC or 28 V DC; 3 A @ 250 VAC
R	Gold plated over nickel plated	Gold plated over nickel plated	0.4VA MAX @ 20 V AC or DC MAX
G	Gold plated over silver plated	Gold plated over silver plated	0.4 VA MAX @ 20 V AC or DC MAX or 5 A @ 125V AC or 28 VDC; 3 A @ 250 VAC
K	Gold plated over nickel plated	Tin over nickel plated	0.4VA MAX @ 20 V AC or DC MAX

✱ The K option is only for some special item. Please inquire first when you need the "K" option

VERTICAL SUPPORT BRACKET OPTION

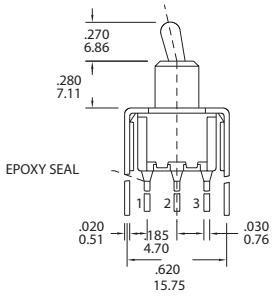
(only apply the straight type terminal -page A 2. Please build the terminal option "c" code)

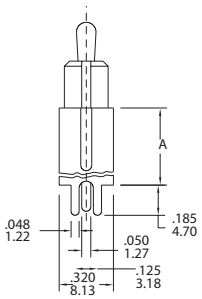
S20 / S25/ V20/V25

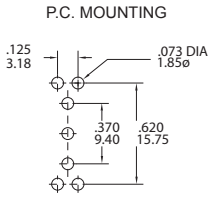


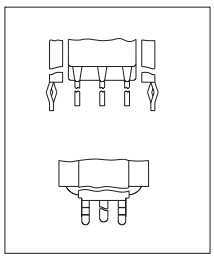
option Code	A dimension
S20/V20	.460 11.68
S25/V25	.630 16.00
V20/V25 : the snap-in type	

SPDT





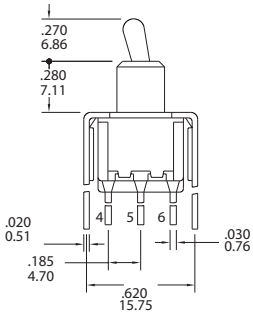


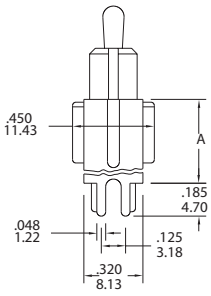


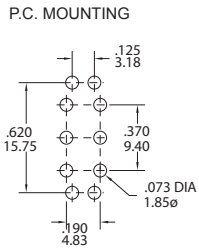
SNAP-IN
V20/ V25

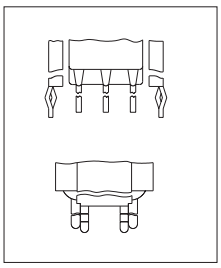
T8013 - TNCQ-S20(S25)

DPDT









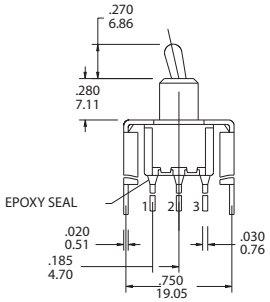
SNAP-IN
V20/ V25

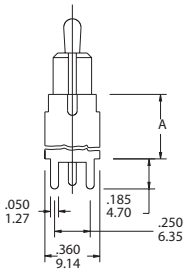
T8011 - TNCQ-S20(S25)

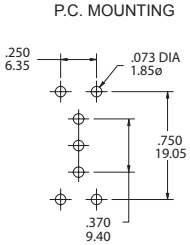
S35/S40 /V35/V40

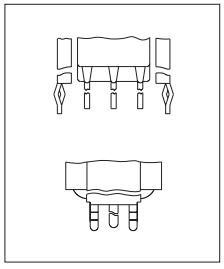


SPDT







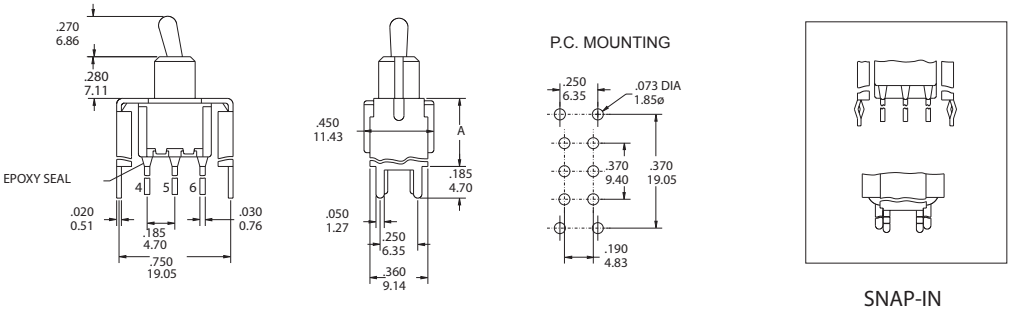


SNAP-IN
V35/ V40

T8013 - TNCQ-S35(S40)

option Code	A dimension
S35/V35	.460 11.68
S40/V40	.630 16.00
V35/V40 : the snap-in type	

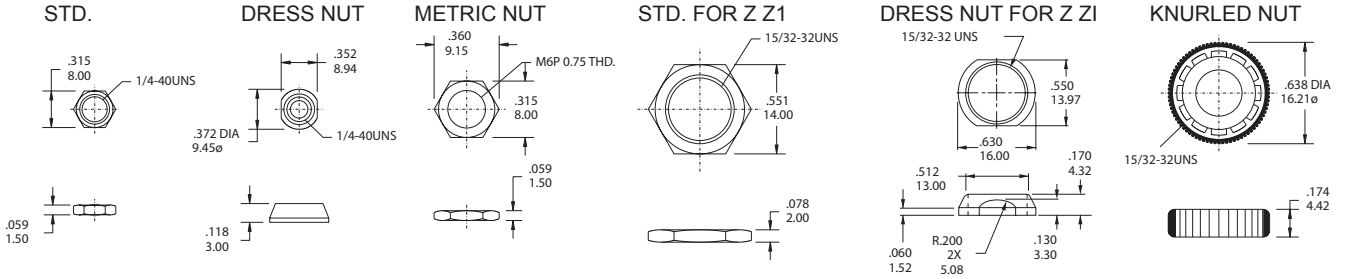
DPDT



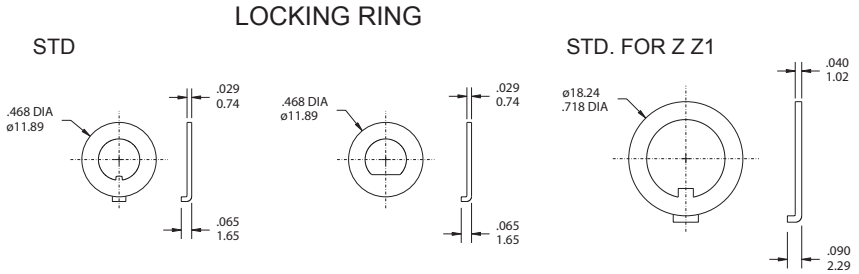
T8011 - TNCQ-S35(S40)

The hardware of T80-T TOGGLE SWITCHES

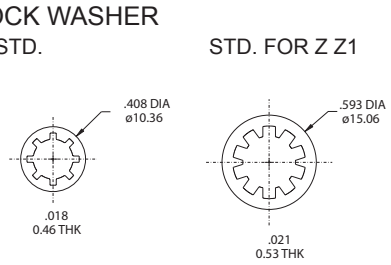
NUT



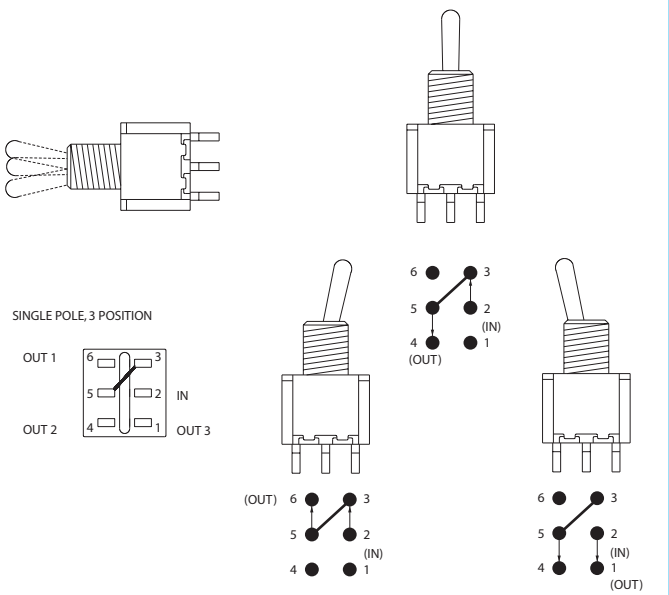
LOCKING RING

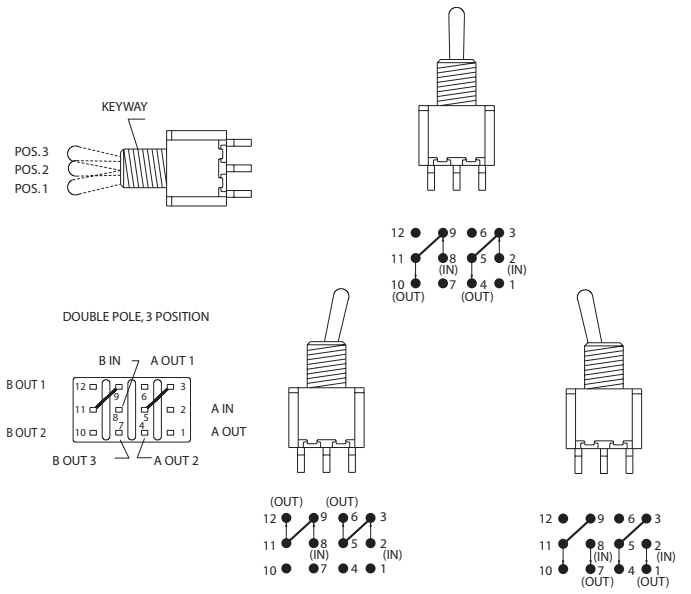


LOCK WASHER



The information of 3-way toggle switches





SP3T **DP3T**