

SPECIFICATIONS

CONTACT RATING: 5A @120 VAC or 28 VDC
 3A @250 VAC
 ELECTRICAL LIFE: 30,000 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)
 SLIDE HANDLE - Nylon
 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) ;

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

(A) T S - 1 3 - A 1 - 2 - C Q - E - S 2 0 -

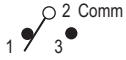
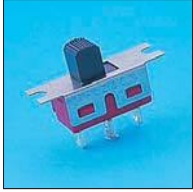
Switches Function		Actuator		Actuator color		Termination		Contact Material		Vertical support Bracket	
TS-13	SPDT on-none-on	A1	5.08	1	white	B	solder lug	Q	silver plated	(none)	
TS-13A	SPDT on-none-mom	A2	7.35	2	black (std.)	C	P.C	R	gold plated	S20	8.89 (SPDT)
TS-14	SPDT on-off-on	A3	9.40	9	gray	D	Quick connect	G	gold over silver	S20	10.16 (DPDT)
TS-11	DPDT on-none-on	A4	3.60			D1	wire wrap 19.05	Epoxy seal (none) none seal E epoxy seal		RoHS code ☐ = none H = RoHS Compliant	
TS-12	DPDT on-off-on	A5	5.08			D3	wire wrap 10.8				
		A6	12.32								
		A7	4.20								

(B) T S - 1 3 P - A 1 - 2 - Q - E -

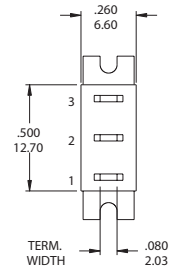
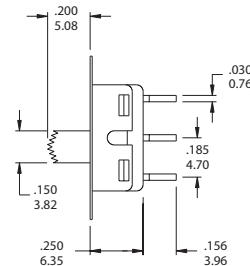
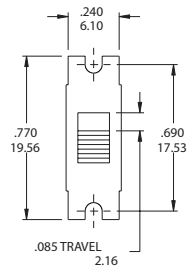
Horizon Right Angle	Vertical Right Angle	Switches Function	Actuator		Actuator color		Contact Material		RoHS code	
TS-13P	TS-13L	SPDT on-none-on	A1	4.72	1	white	Q	silver plated	☐ = none H = RoHS Compliant	
TS-13PA	TS-13LA	SPDT on-none-mom	A2	6.96	2	black	R	gold plated		
TS-14P	TS-14L	SPDT on-off-on	A3	8.96	9	gray	G	gold over silver	Epoxy seal (none) none seal E epoxy seal	
TS-11P	TS-11L	DPDT on-none-on	A4	3.10						
TS-12P	TS-12L	DPDT on-off-on	A6	11.92						

INDEX TOGGLE ROCKER SLIDE PUSH BUTTON DIP TACT

SPDT



Model No.	Switching position		
TS-13	ON	NONE	ON
TS-13A	(ON)	NONE	ON
TS-14	ON	OFF	ON
Term. Comm.	2-3	open	2-1

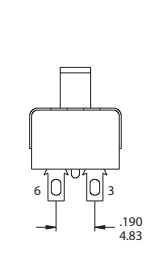
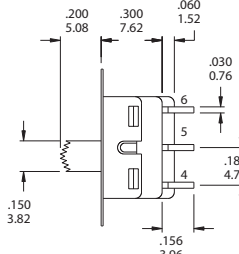
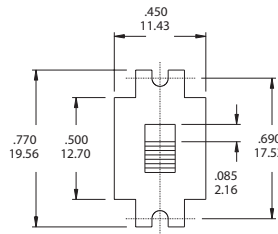


TS-13-A1-2-BQ

DPDT



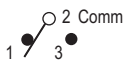
Model No.	Switching position		
TS-11	ON	NONE	ON
TS-12	ON	OFF	ON
Term. Comm.	2-3 □	open	2-1 □
	5-6		5-4



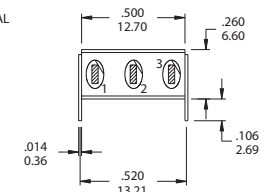
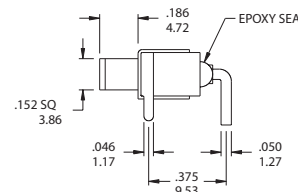
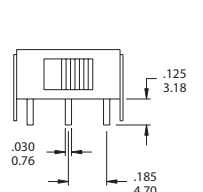
TS-11-A1-2-BQ

HORISON RIGHT ANGLE

SPDT



Model No.	Switching position		
TS-13P	ON	NONE	ON
TS-13PA	(ON)	NONE	ON
TS-14P	ON	OFF	ON
Term. Comm.	2-3	open	2-1

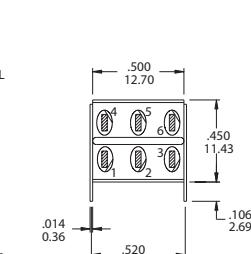
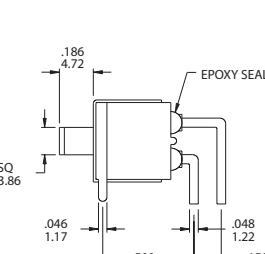
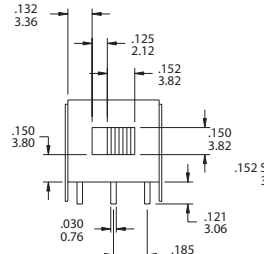


TS-13P-A1-2-Q(-E)

DPDT



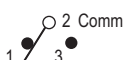
Model No.	Switching position		
TS-11P	ON	NONE	ON
TS-12P	ON	OFF	ON
Term. Comm.	2-3 □	open	2-1 □
	5-6		5-4



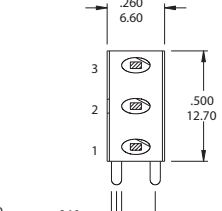
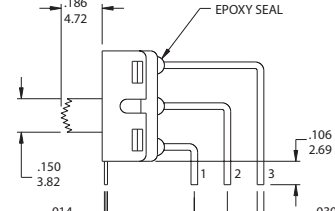
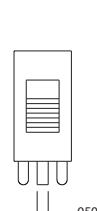
TS-11P-A1-2-Q(-E)

VERTICAL RIGHT ANGLE

SPDT



Model No.	Switching position		
TS-13L	ON	NONE	ON
TS-13LA	(ON)	NONE	ON
TS-14L	ON	OFF	ON
Term. Comm.	2-3	open	2-1

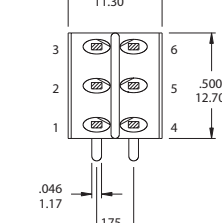
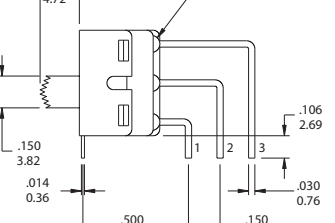
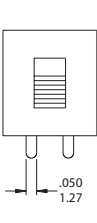


TS-13L-A1-2-Q(-E)

DPDT



Model No.	Switching position		
TS-11L	ON	NONE	ON
TS-12L	ON	OFF	ON
Term. Comm.	2-3 □	open	2-1 □
	5-6		5-4



TS-11L-A1-2-Q(-E)

Actuator Option				Actuator Color								
A1 	A2 	A3 	A4 	<table border="1"> <thead> <tr> <th>COLOR NO.</th> <th>COLOR</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>white</td> </tr> <tr> <td>2</td> <td>black</td> </tr> <tr> <td>9</td> <td>gray</td> </tr> </tbody> </table>	COLOR NO.	COLOR	1	white	2	black	9	gray
COLOR NO.	COLOR											
1	white											
2	black											
9	gray											
A5 	A6 	A7 	<ul style="list-style-type: none"> the height of actuator is for the straight type. It will be shorter while applying in Right Angle type. 									

TERMINAL OPTION	Terminal Seal Option
B SOLDER LUG <p>THK 0.76 (.030)</p>	E TERMINAL SEAL <p>EPOXY SEAL</p>
C PRINTED CIRCUIT <p>THK 0.76 (.030)</p>	
D QUICK CONNECT <p>THK 0.76 (.030)</p>	
WIREWRAP <p>THK 0.76 (.030)</p>	

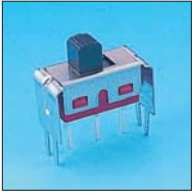
PANEL MOUNTING DIMENSION	THE P.C.B MOUNTING		
	TS-13/TS-14 	TS-13P/TS-14P 	TS-13L/TS-14L
	TS-11/TS-12 	TS-11P/TS-12P 	TS-11L/TS-12L

CONTACT MATERIAL OPTIONS			
CODE	CONTACT MATERIAL	TERMINAL MATERIAL	RATING
Q	Silver plated	Silver plated	5 A @ 120V 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 @ 120V AC or 28 V DC; 3 A @ 250 VAC
K	Gold plated over nickel plated	Tin over nickel plated	0.4VA MAX @ 20 V AC or DC MAX

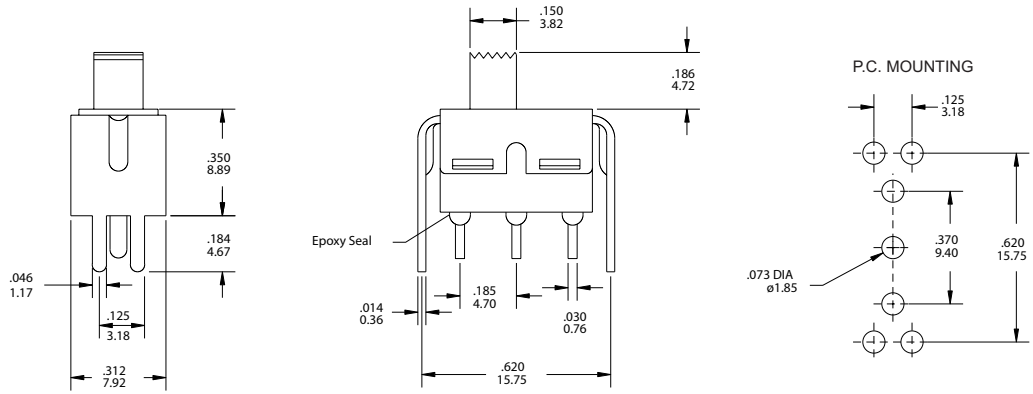
* THE K option is only for some special item. Please inquire first when you need the "K" option

VERTICAL SUPPORT BRACKET OPTION
 (only apply the straight type terminal - Please modify the terminal option is "c" code)

S20

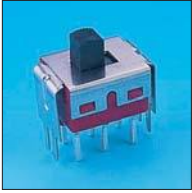


SPDT

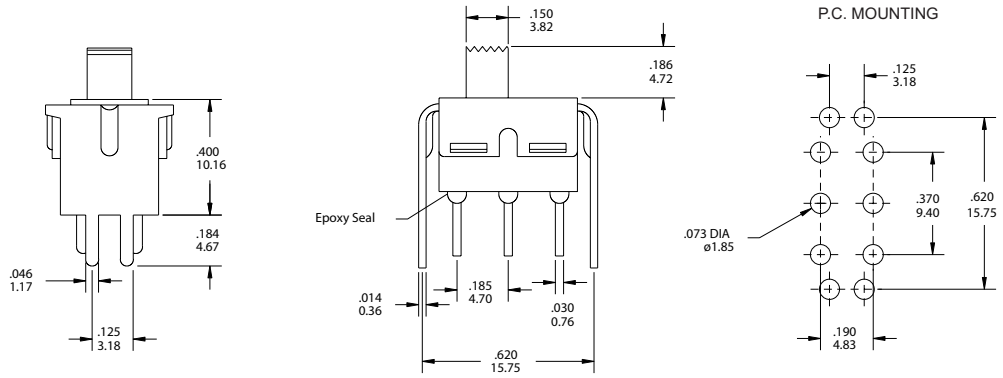


TS-13-A1-2-CQ-S20

S20



DPDT



TS-11-A1-2-CQ-S20

INDEX

TOGGLE

ROCKER

SLIDE

PUSHBUTTON

DIP

TACT