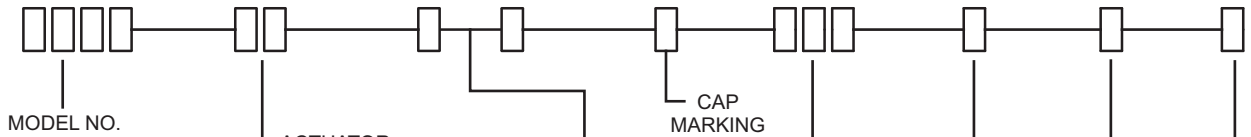


**SPECIFICATIONS****CONTACT RATING:** Dependent upon contact material See Page 55.**MECHANICAL LIFE:** 40,000 make-and-break cycles.**CONTACT RESISTANCE:** 10 mΩ max. initial @ 2-4VDC

100mA for both silver and gold plated contacts.

INSULATION RESISTANCE: 1,000 MΩ min.**DIELECTRIC STRENGTH:** 1,000 Vrms Min.@sea level.**OPERATING TEMPERATURE:** -30°C to 85°C.**MATERIALS****CASE:** Diallyl phthalate (DAP) (UL94v-0).**ACTUATOR:** Nylon,black std.**BUSHING:** Brass,nickel plated.**HOUSING:** Stainless Steel.**SWITCH SUPPORT:** Brass,tin plated.**TERMINAL/CONTACT:** Brass,with silver or gold plated.(See Page 55)**HOW TO ORDER**

MODEL NO. ACTUATOR FRAME COLOR ACTUATOR COLOR CAP MARKING TERMINATIONS CONTACT MATERIAL SEAL ROHS SOLDERING

See below

MODEL NO.

3MS1 SP On-None-On
 3MS2 SP On-None-Mom
 3MS3 SP On-Off-On
 3MS4 SP Mom-Off-Mom
 3MS5 SP On-Off-Mom
 3MD1 DP On-None-On
 3MD2 DP On-None-Mom
 3MD3 DP On-Off-On
 3MD4 DP Mom-Off-Mom
 3MD5 DP On-Off-Mom
 3MD6 DP On-On-On
 3MD7 DP Mom-On-Mom
 3MD8 DP On-On-Mom
 3M31 3P On-None-On
 3M32 3P On-None-Mom
 3M33 3P On-Off-On
 3M34 3P Mom-Off-Mom
 3M35 3P On-Off-Mom
 3M41 4P On-None-On
 3M42 4P On-None-Mom
 3M43 4P On-Off-On
 3M44 4P Mom-Off-Mom
 3M45 4P On-Off-Mom
 3M46 4P On-On-On
 3M47 4P Mom-On-Mom
 3M48 4P On-On-Mom

ACTUATOR

R1 13.49 long rocker - support
 R2 Lever - support
 R3 23.01 long rocker - support
 R4 Lever - support
 R5 33.48 long rocker - support
 R6 Rocker with frame
 R6K Rocker with frame,snap-in
 R7 Lever with frame
 R7K Lever with frame,snap-in
 R8 Lever with frame
 R9 Lever with frame
 R11 9.19 long rocker - support
 R12 Lever - support
 R13 Lever - support
 R16 Lever - support
 R17 Rocker with frame for LED,snap-in
 R18 Lever with frame for LED,snap-in
 RB 17.75 long rocker - support

P.C. MOUNT ONLY

J1 13.49 long rocker
 J2 Lever
 J3 23.01 long rocker
 J4 Lever
 J5 9.19 long rocker
 J6 Lever
 J7 Lever
 J8 Lever
 JB 17.75 long rocker

FRAME COLOR

ACTUATOR COLOR

See below

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

CAP MARKING

1	○ —
2	○
5	← →
6	○
7	— •
8	⊕
9	ON/OFF
F	⊕ —

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

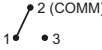
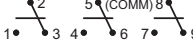
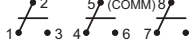
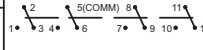
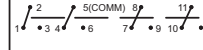
TERMINATIONS

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
 M7N Vertical right angle, snap-in, 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

ROHS SOLDERING

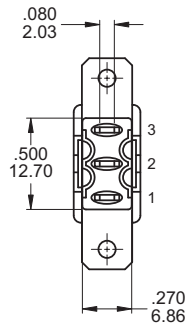
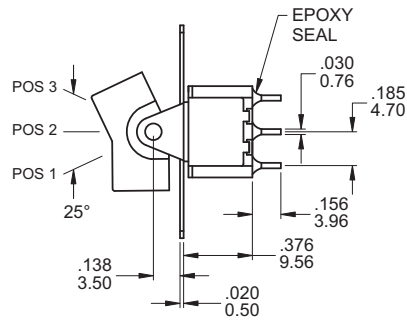
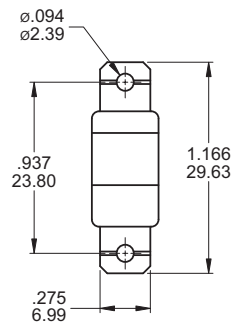
□ RoHS Compliant
 S RoHS & Lead Free
 F Halogen Free+RoHS

SWITCH FUNCTION

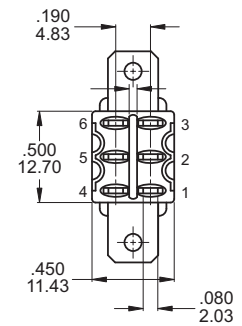
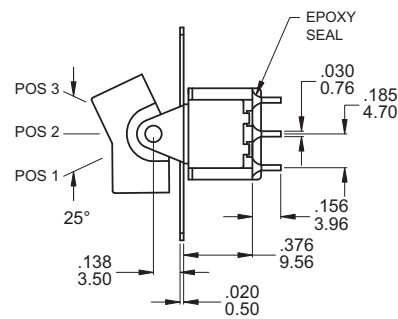
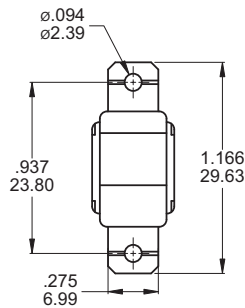
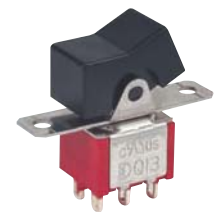
NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC		
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3
								
SP	Q1311	3MS1	ON	NONE	ON	2-3 	N/A	2-1 
	Q1312	3MS2	ON	NONE	MOM		OPEN	
	Q1313	3MS3	ON	OFF	ON			
	Q1314	3MS4	MOM	OFF	MOM			
	Q1315	3MS5	ON	OFF	MOM			
DP	Q1321	3MD1	ON	NONE	ON	2-3,5-6 	N/A	2-1,5-4 
	Q1322	3MD2	ON	NONE	MOM		OPEN	
	Q1323	3MD3	ON	OFF	ON			
	Q1324	3MD4	MOM	OFF	MOM			
	Q1325	3MD5	ON	OFF	MOM			
	Q1326	3MD6	ON	ON	ON	2-3,5-6	2-3,5-4	2-1,5-4
	▲ Q1327	3MD7	MOM	ON	MOM			
	▲ Q1328	3MD8	ON	ON	MOM			
3P	Q1331	3M31	ON	NONE	ON	2-3,5-6,8-9 	N/A	2-1,5-4,8-7 
	Q1332	3M32	ON	NONE	MOM		OPEN	
	Q1333	3M33	ON	OFF	ON			
	Q1334	3M34	MOM	OFF	MOM			
	Q1335	3M35	ON	OFF	MOM			
4P	Q1341	3M41	ON	NONE	ON	2-3,5-6,8-9,11-12 	N/A	2-1,5-4,8-7,11-10 
	Q1342	3M42	ON	NONE	MOM		OPEN	
	Q1343	3M43	ON	OFF	ON			
	Q1344	3M44	MOM	OFF	MOM			
	Q1345	3M45	ON	OFF	MOM			
	Q1346	3M46	ON	ON	ON			
	▲ Q1347	3M47	MOM	ON	MOM	2-3,5-6,8-9,11-12	2-3,5-4,8-9,11-10	2-1,5-4,8-7,11-10
	▲ Q1348	3M48	ON	ON	MOM			

MOM=MOMENTARY

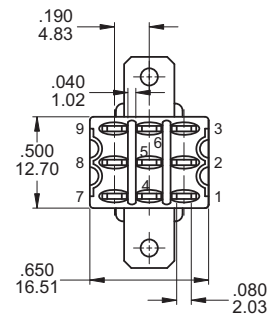
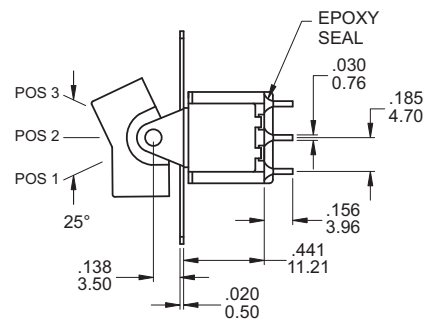
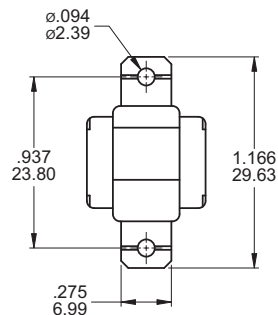
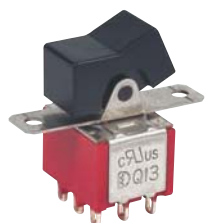
▲ Please check the availability in advance before order

POLE OPTIONS**SPDT**

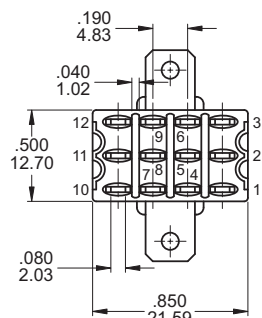
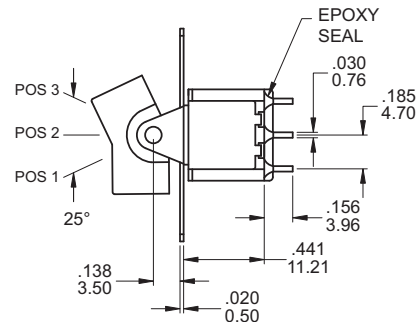
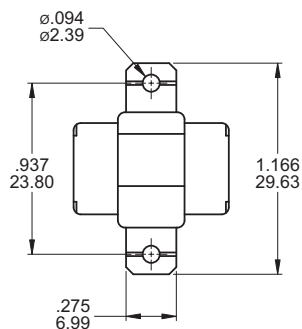
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**DPDT**

Part No. Shown : 3MD1R102M1QE

**3PDT**

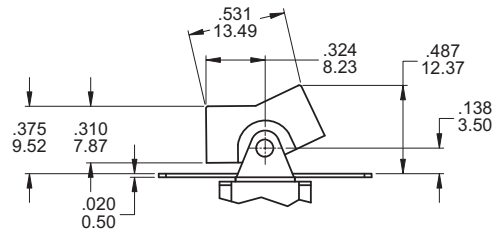
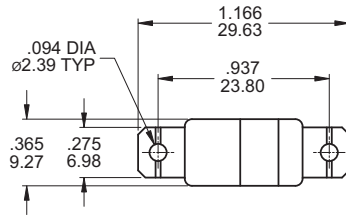
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**4PDT**

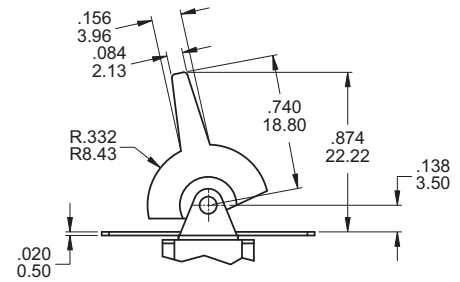
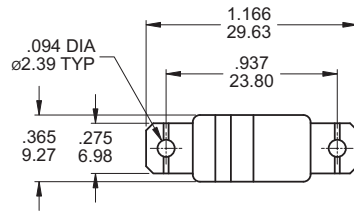
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ACTUATOR OPTIONS FOR PANEL MOUNT ONLY

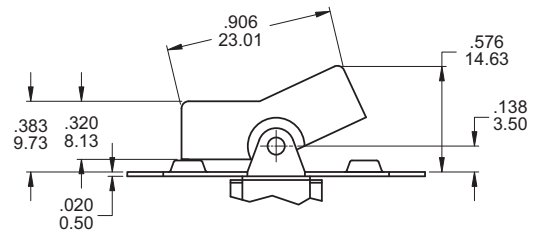
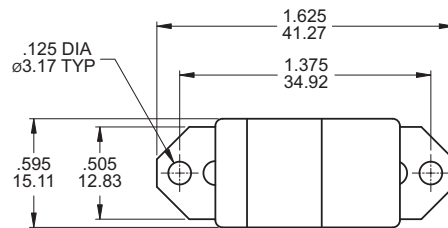
R1



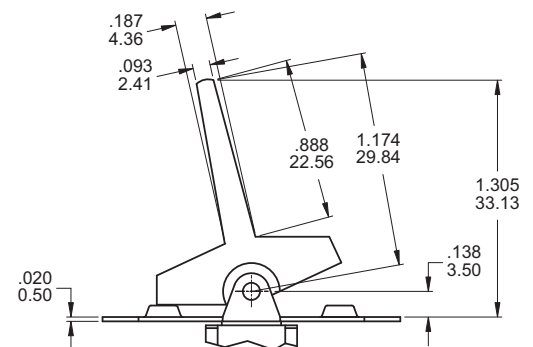
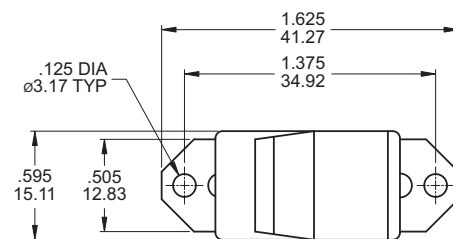
R2



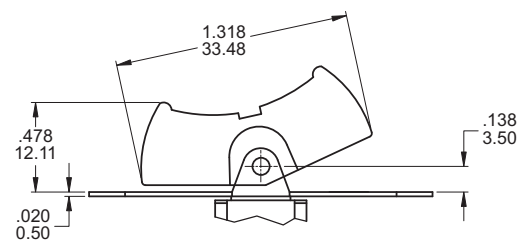
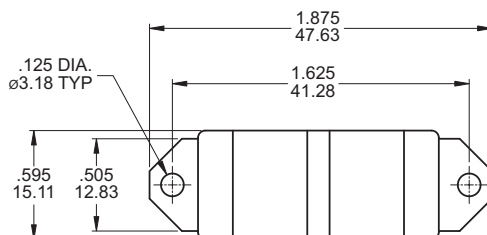
R3

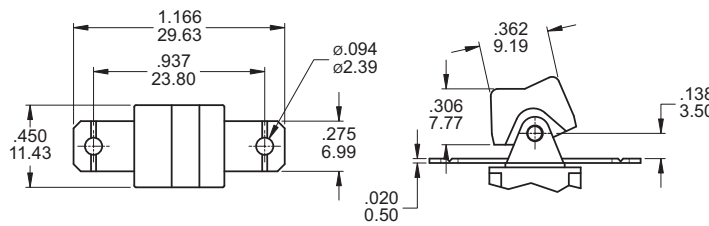
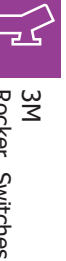
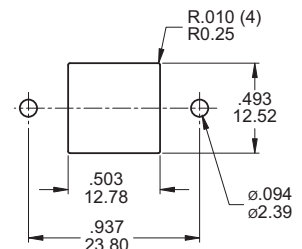
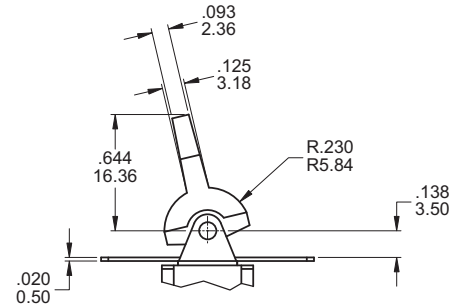
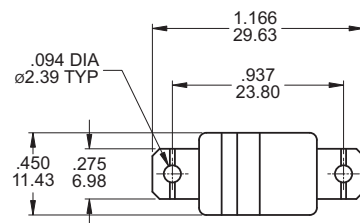
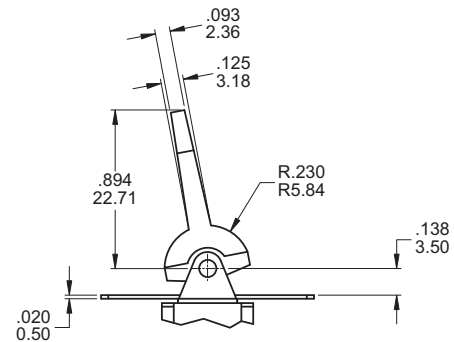
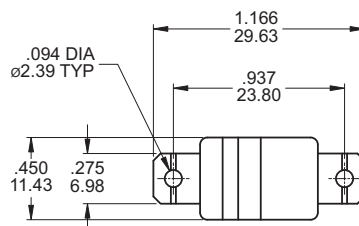
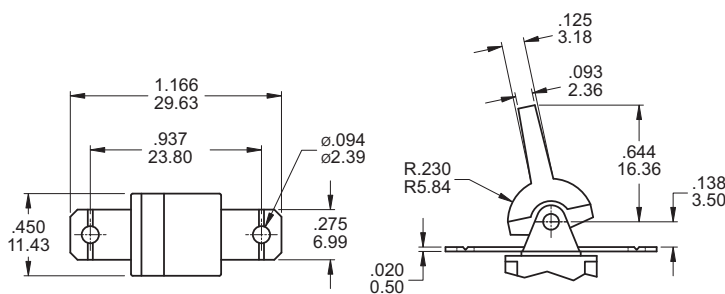
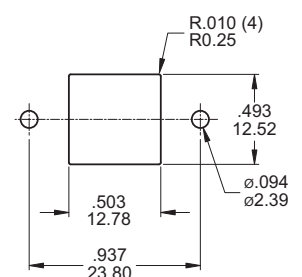


R4



R5

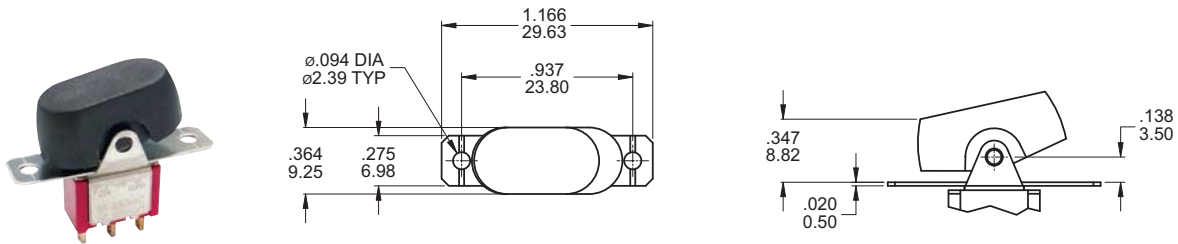


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT**R11****RECOMMENDED MOUNTING****R12****R13****R16****RECOMMENDED MOUNTING**

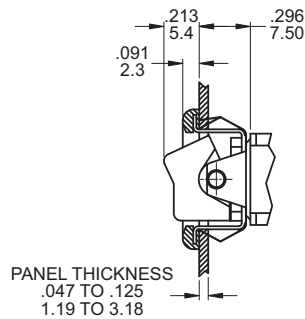
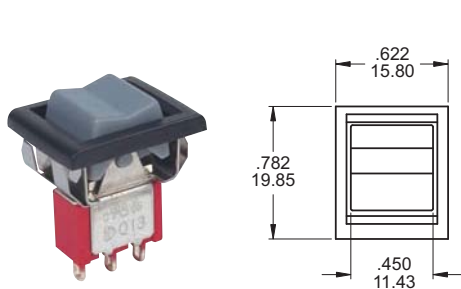
ACTUATOR OPTIONS SNAP-IN FRONT MOUNT

RB

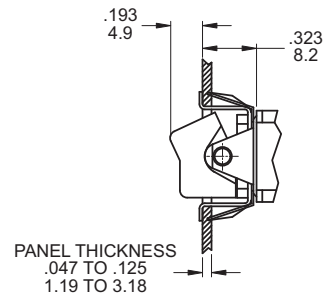
3M
Rocker Switches



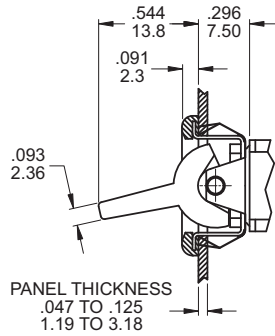
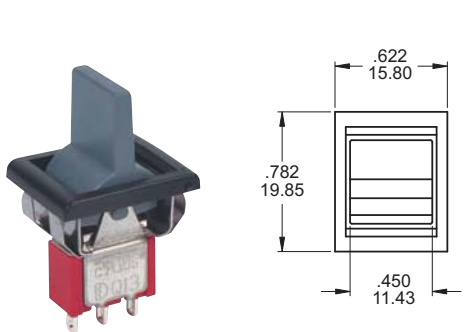
R6



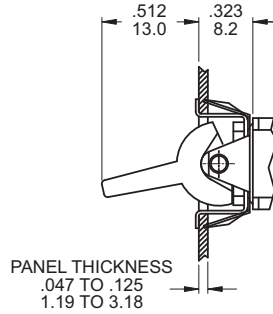
R6K



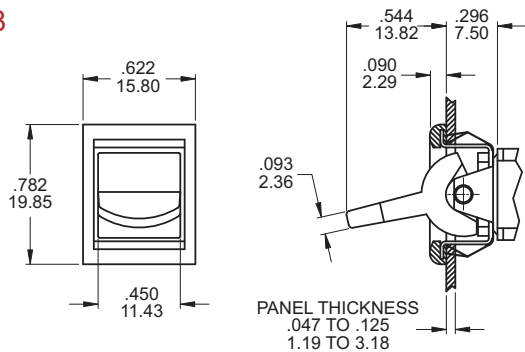
R7



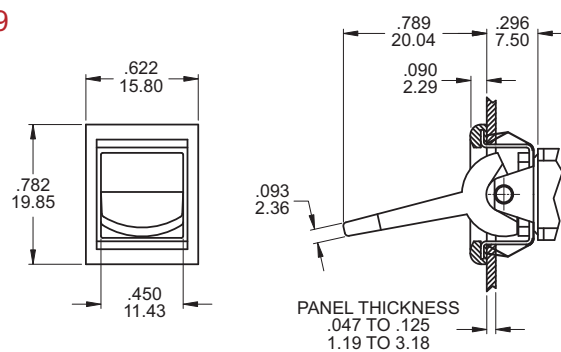
R7K

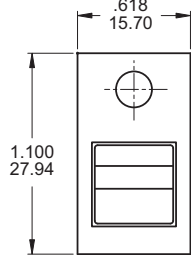
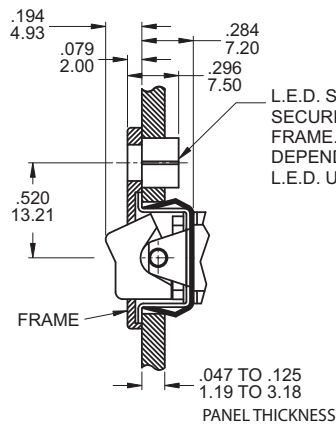
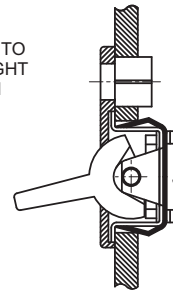


R8



R9



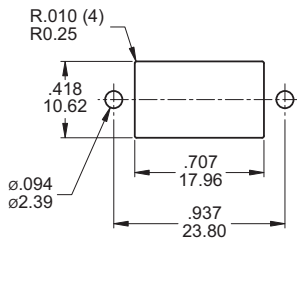
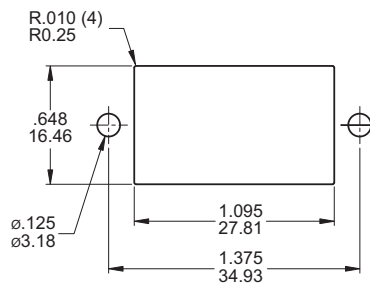
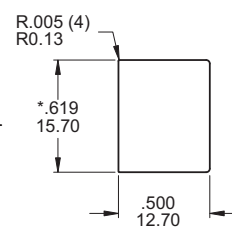
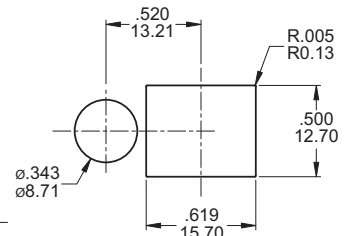
R18

▲R17

▲R18

CAP AND FRAME COLORS

OPTION CODE	COLOR
1	WHITE
2	BLACK (std)
3	RED

LED COLORS

OPTION CODE	COLOR
R	RED (std)
O	ORANGE
G	GREEN

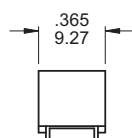
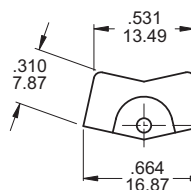
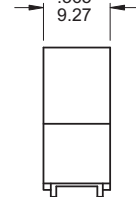
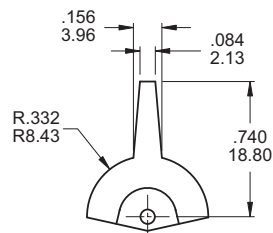
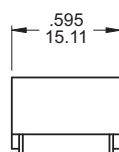
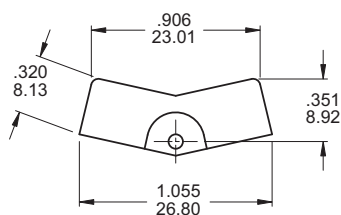
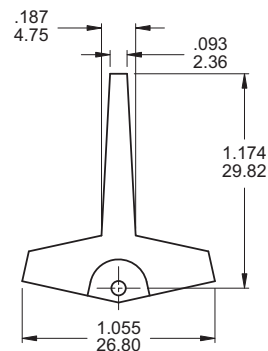
RECOMMENDED MOUNTING

For R1-R2

For R3-R4

For R6-R9

For R17-R18


*For R8 and R9: Increase this dim. to .620/.625(15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

* For R6 and R7: Increase this dim. to .620/.625(15,75/15,88) for .060/.125 (1,52/3,18) thk. panels.

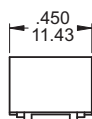
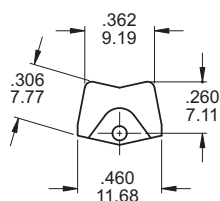
ACTUATOR OPTIONS FOR P.C. MOUNT ONLY

J1

J2

J3

J4


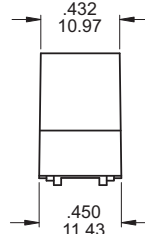
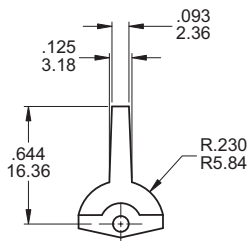


3M
Rocker Switches

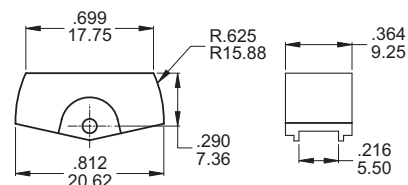
J5



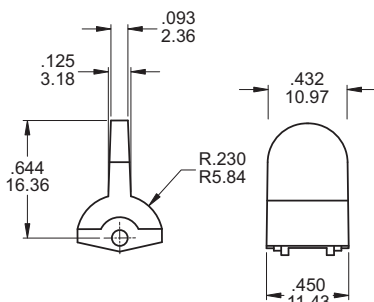
J6



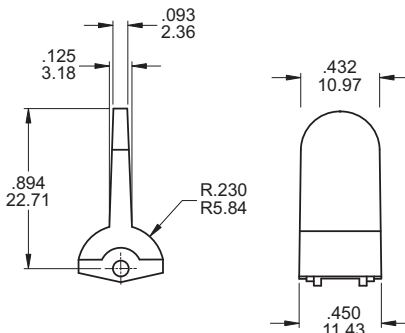
JB



J7



J8

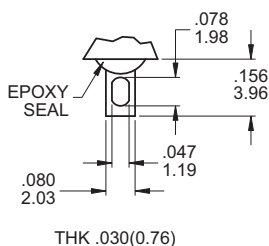


Actuator and Frame colors:

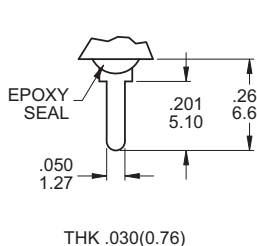
ITEM NO	COLOR
1	White
2	Black (Std)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

TERMINATION OPTIONS

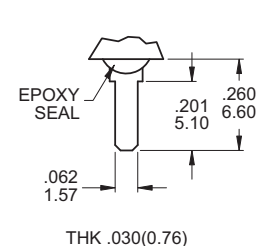
M1 SOLDER LUG



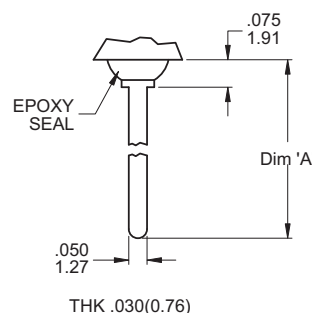
M2 PC THRU-HOLE



M3 QUICK CONNECT



M5 WIRE WRAP



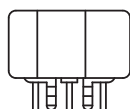
OTHER TERMINATION OPTIONS

- M6 RIGHT ANGLE P.C. MOUNT
- M7 RIGHT ANGLE P.C. MOUNT
- VS2 VERTICAL BRACKET P.C. MOUNT
- VS3 VERTICAL BRACKET P.C. MOUNT
- VS4 VERTICAL BRACKET P.C. MOUNT
- VS5 VERTICAL BRACKET P.C. MOUNT

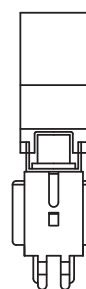
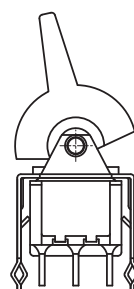
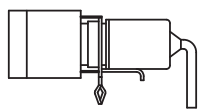
OPTION CODE	DIM. 'A'
M5-1	.736 (18.70)
M5-2	.953 (24.20)
M5-3	.415 (10.55)
M5-4	1.062 (26.97)

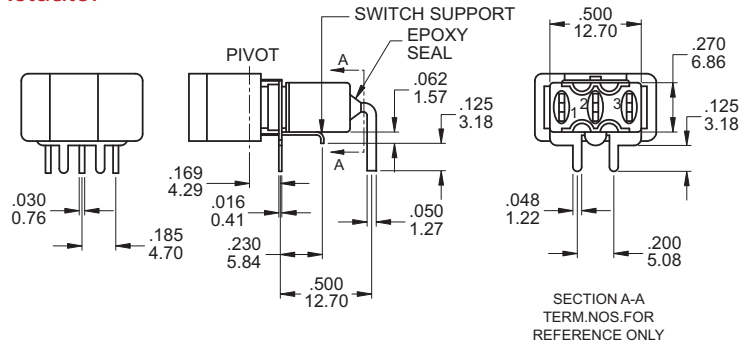
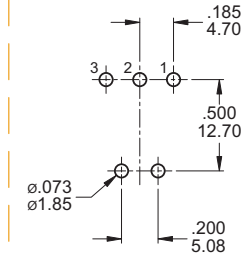
SNAP-IN TERMINATION OPTIONS

M6N

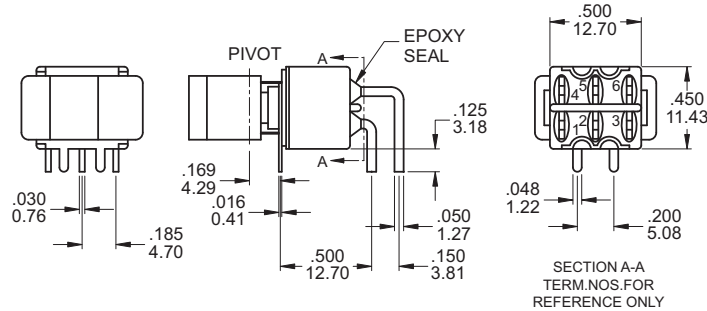
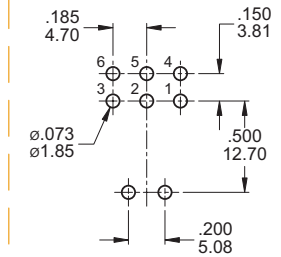


V2N

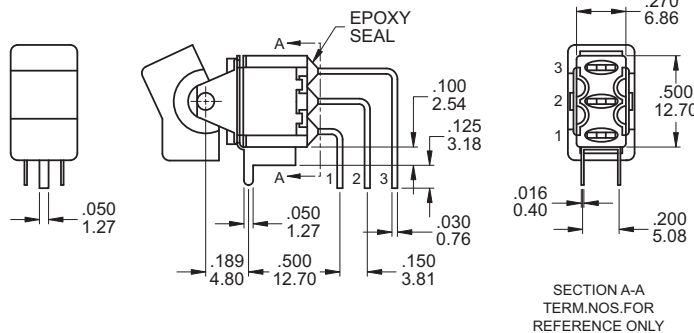
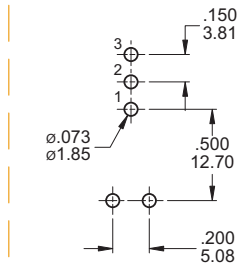


M6 Shown with J1 Actuator

P.C. MOUNTING

SPDT

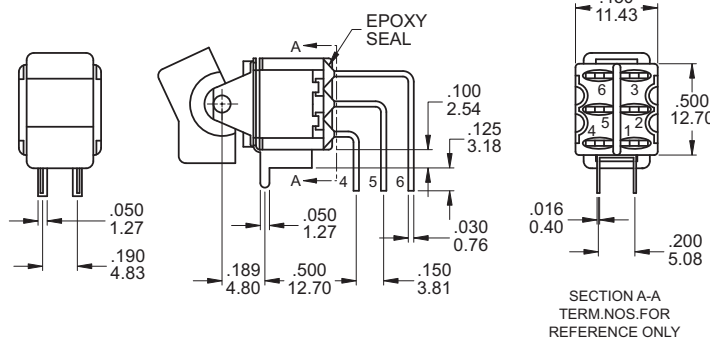
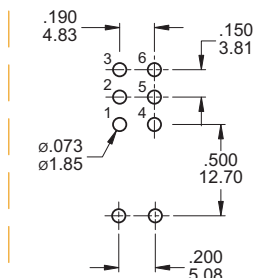
Part No. Shown : 3MS1J102M6QE

M6

P.C. MOUNTING

DPDT

Part No. Shown : 3MD1J102M6QE

M7

P.C. MOUNTING

SPDT

Part No. Shown : 3MS1J102M7QE

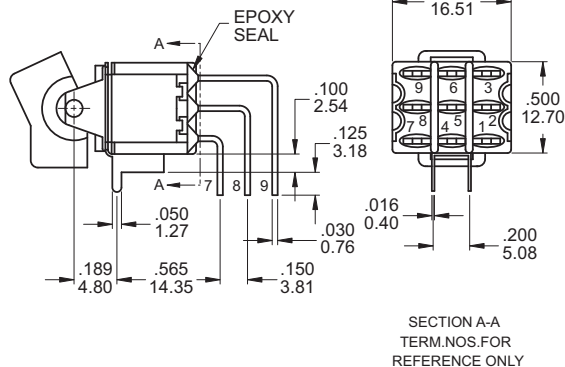
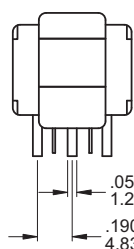
M7

P.C. MOUNTING

DPDT

Part No. Shown : 3MD1J102M7QE

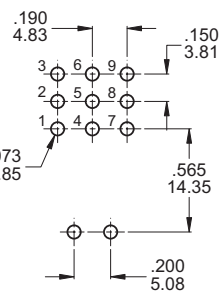


3M
Rocker Switches

M7



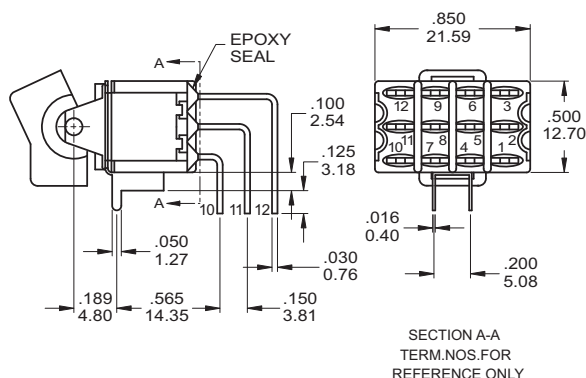
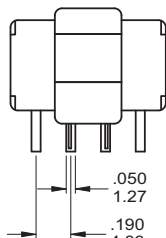
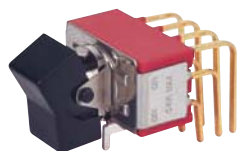
P.C. MOUNTING



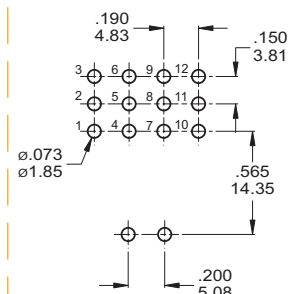
3PDT

Part No. Shown : 3M31J102M7QE

M7



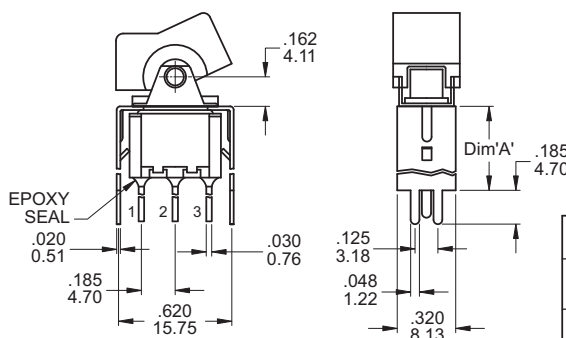
P.C. MOUNTING



4PDT

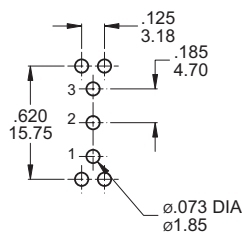
Part No. Shown : 3M41J102M7RE

VS2 - VS3



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

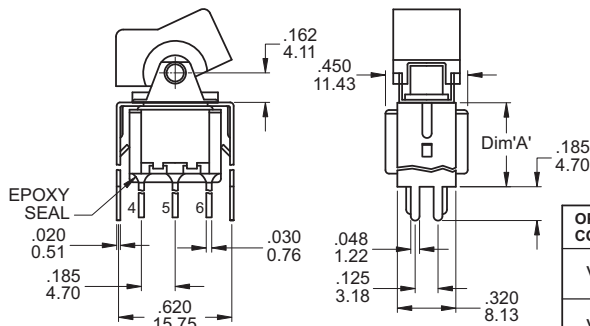
P.C. MOUNTING



SPDT

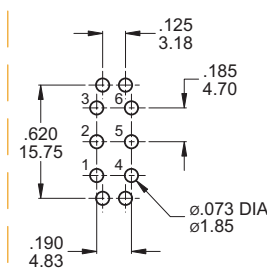
Part No. Shown : 3MS1J102VS2QE

VS2 - VS3



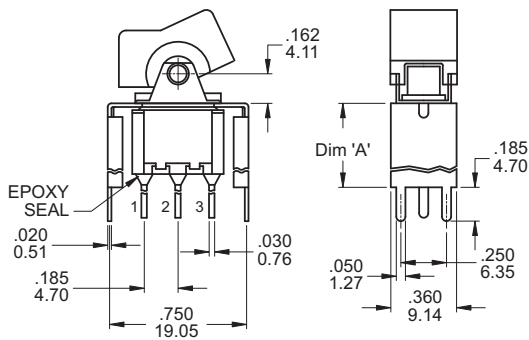
OPTION CODE	DIM. 'A'
VS2	.460 11.68
VS3	.630 16.00

P.C. MOUNTING

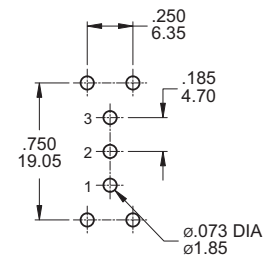


DPDT

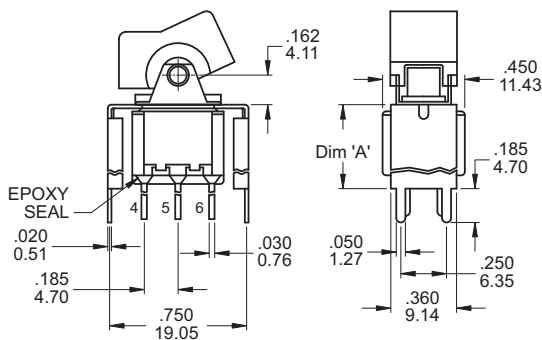
Part No. Shown : 3MD1J102VS2QE

VS4 - VS5

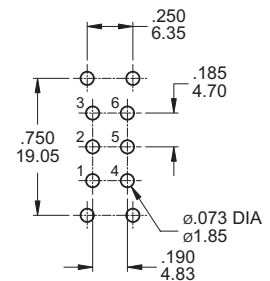
OPTION CODE	DIM. 'A'
VS4	.460 11.68
VS5	.630 16.00

P.C. MOUNTING**SPDT**

Part No. Shown : 3MS1J102VS4QE

VS4 - VS5

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

P.C. MOUNTING**DPDT**

Part No. Shown : 3MD1J102VS5QE

CONTACT MATERIAL OPTIONS

	CONTACT PLATING	TERMINAL PLATING	RATINGS
Q	Silver	Q = Silver	5 Amps with resistant load @ 120VAC or 28VDC 2 Amps with resistant load @ 250VAC
S		S = Silver,pure - tin	
C	Gold over Silver	C = Gold over silver	
K		K = Gold over silver,pure - tin	
R	Gold	R = Gold	0.4 Volt - Amps (VA) max. @ 20V max. (AC or DC)
G		G = Gold,pure - tin	

SOLDERING PROCESSES

MANUAL SOLDERING : Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

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

SOLDERING : Vapor phase