



SPECIFICATIONS

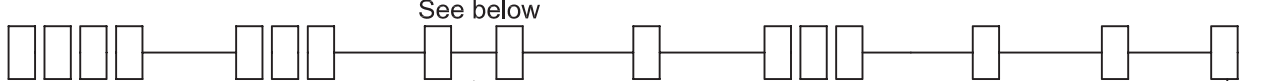
CONTACT RATING: Dependent upon contact material.
MECHANICAL LIFE: 40,000 make-and-break cycles.
CONTACT RESISTANCE: 10mΩ max. initial @ 2-4VDC 100mA
 for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000MΩ min.
DIELECTRIC STRENGTH: 1,000 V RMS@sea level.
OPERATING TEMPERATURE: -30°C to 85°C.

MATERIALS

CASE - Diallyl phthalate(DAP)(UL94V-0).
ACTUATOR - 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 58)

HOW TO ORDER

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



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

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

FRAME COLOR ACTUATOR COLOR

See below

ITEN 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	
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

ROHS SOLDERING

- RoHS Compliant
- RoHS & Lead Free

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 10.50 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

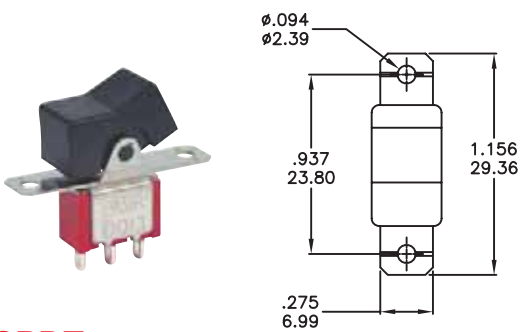
SWITCH FUNCTION

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			
	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			
	Q1323	3MD3	ON	OFF	ON			
	Q1324	3MD4	MOM	OFF	MOM			
	Q1325	3MD5	ON	OFF	MOM			
	Q1326	3MD6	ON	ON	ON			
	▲ 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			
	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			
	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			
	▲ Q1348	3M48	ON	ON	MOM			

MOM=MOMENTARY

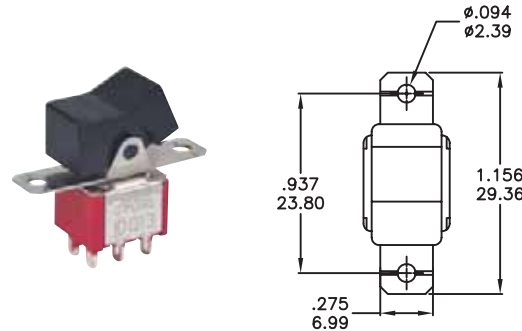
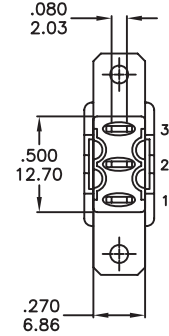
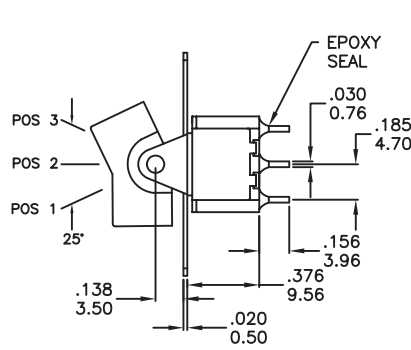
▲ Please check the availability in advance before order

POLE OPTIONS



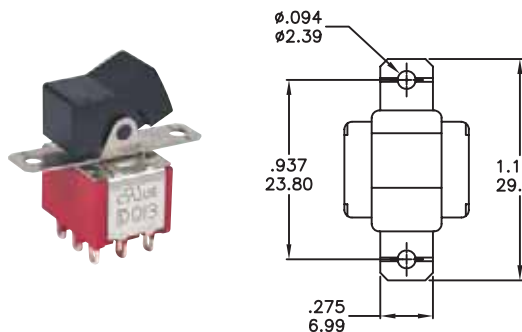
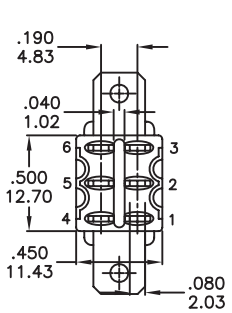
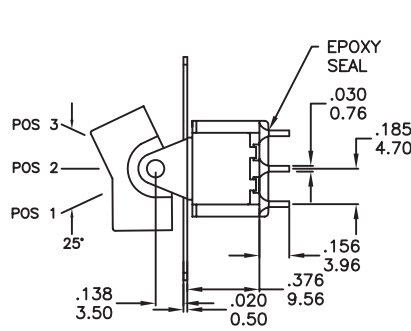
SPDT

Part No. Shown : 3MS1R102M1QE



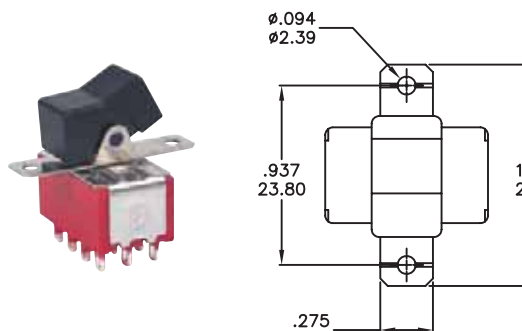
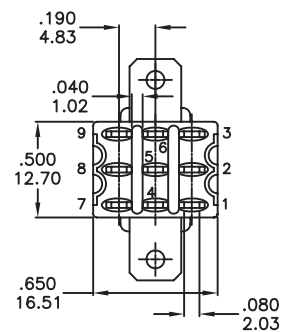
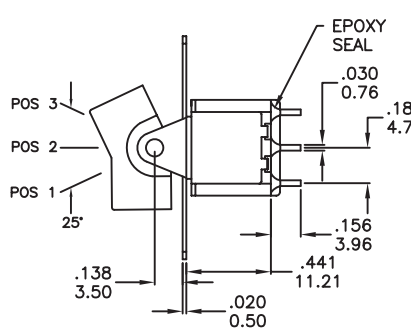
DPDT

Part No. Shown : 3MD1R102M1QE



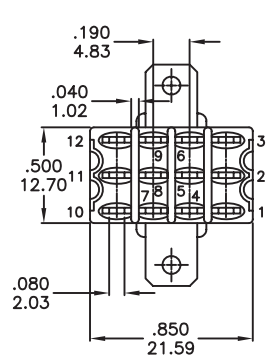
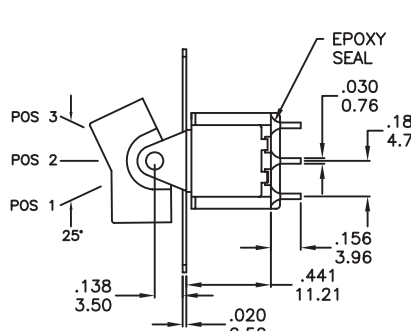
3PDT

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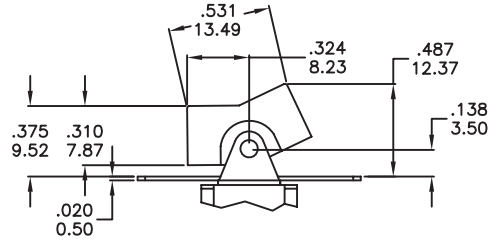
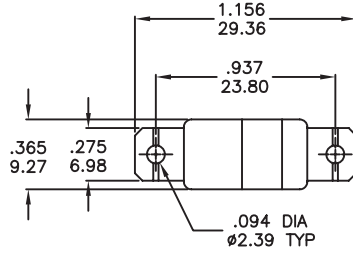
4PDT

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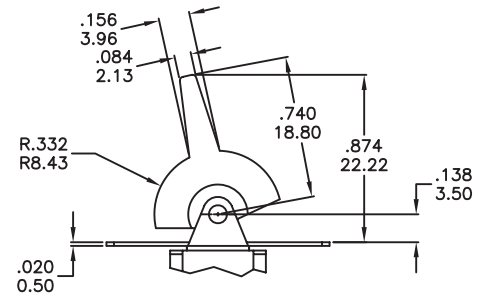
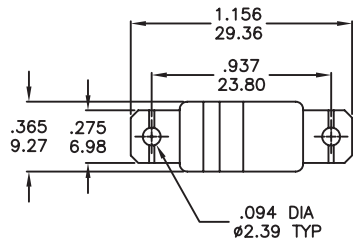


ACTUATOR OPTIONS FOR PANEL MOUNT ONLY

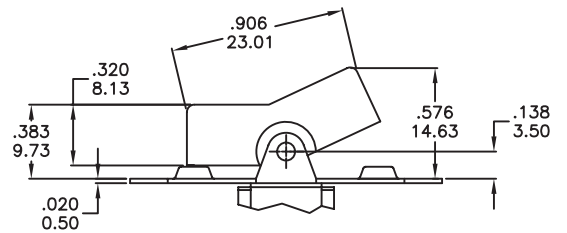
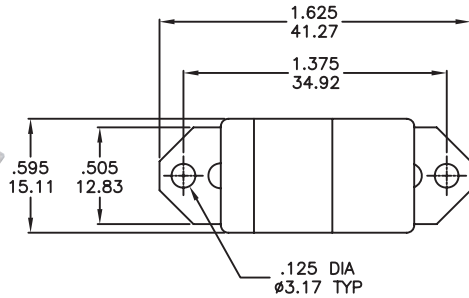
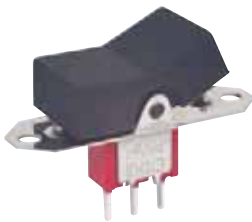
R1



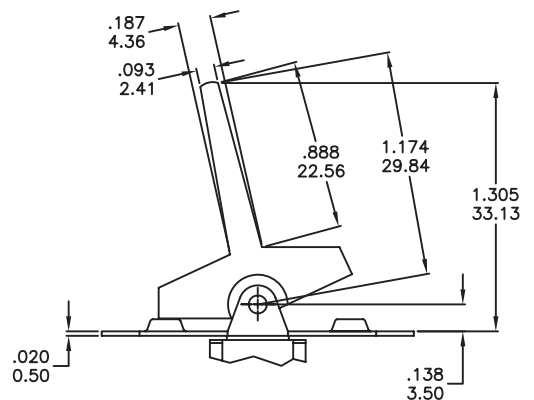
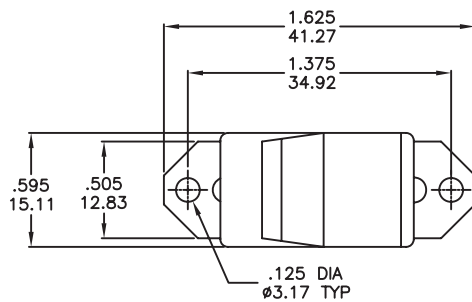
R2



R3

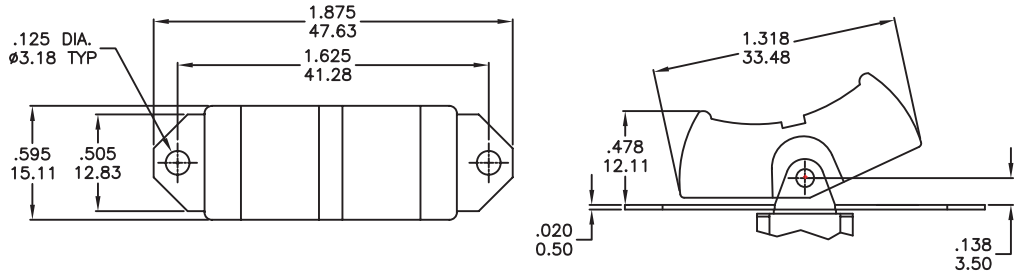


R4

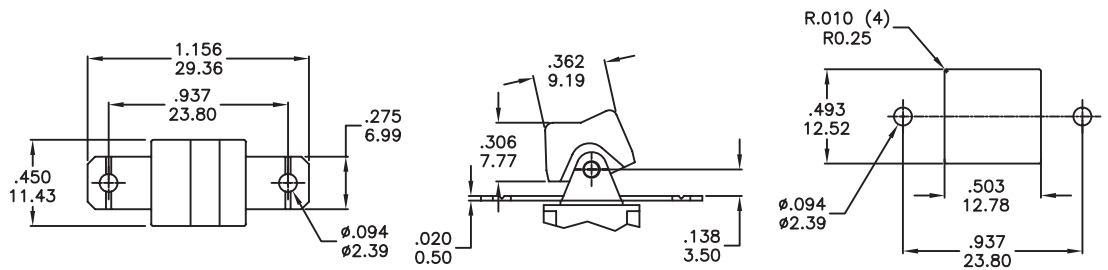


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

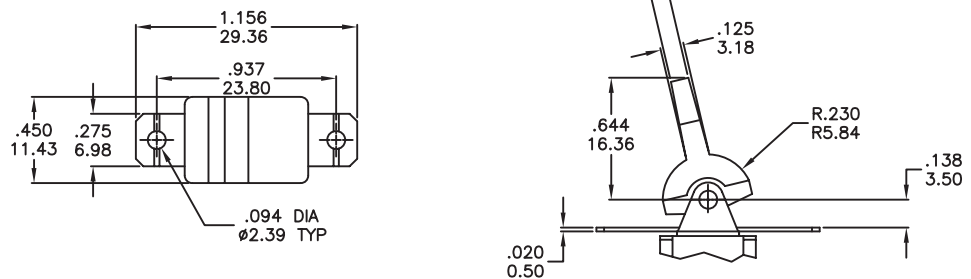
R5



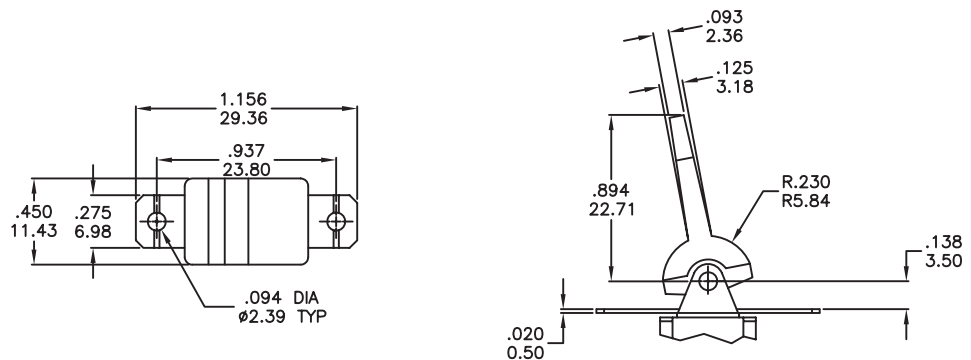
R11



R12

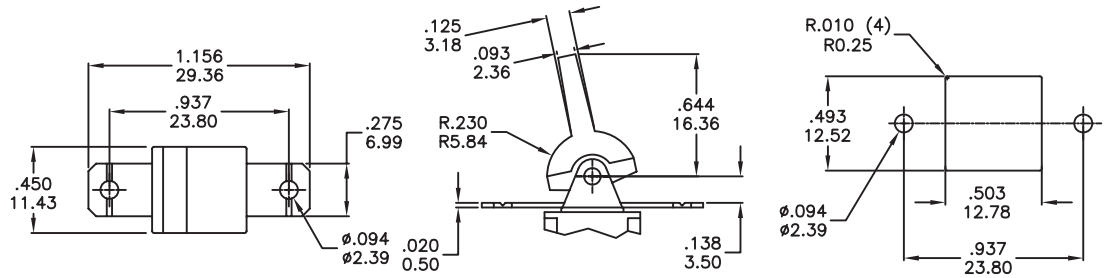


R13

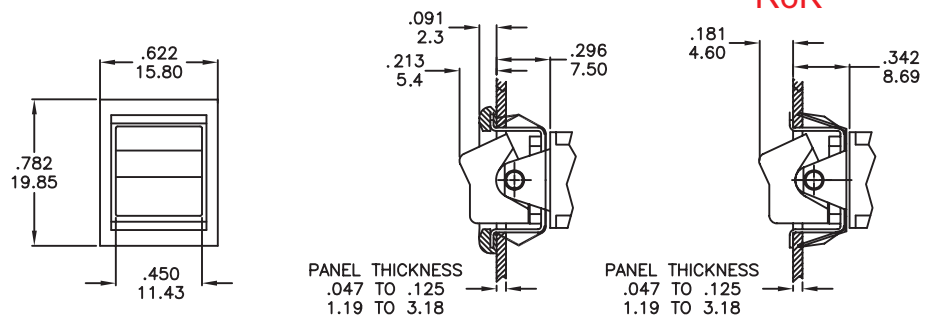


ACTUATOR OPTIONS SNAP-IN FRONT MOUNT

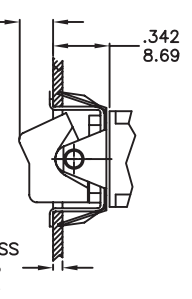
R16



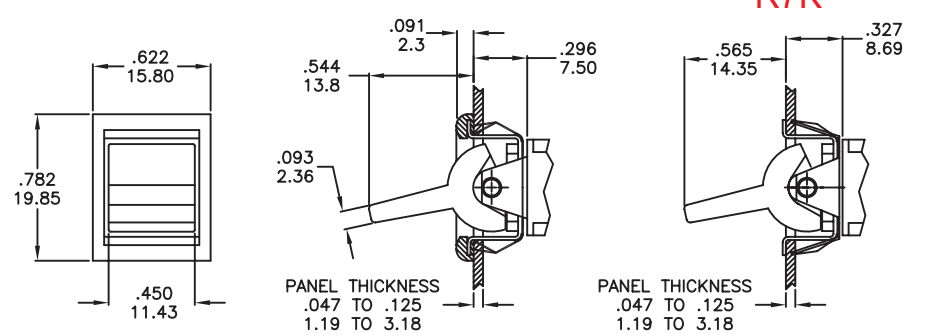
R6



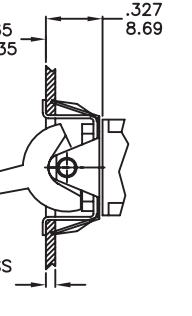
R6K



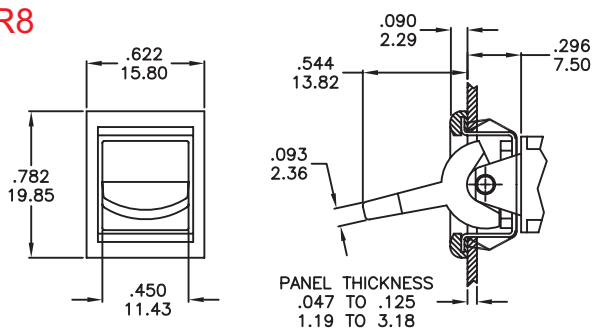
R7



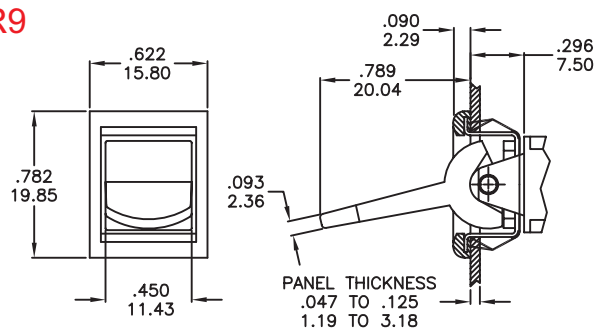
R7K



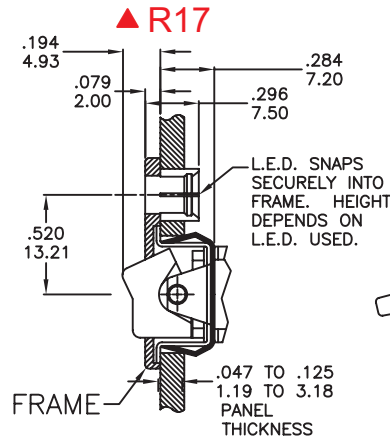
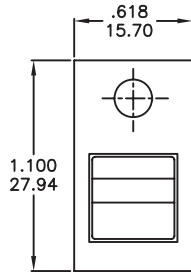
R8



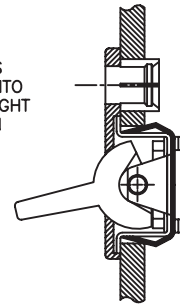
R9



R18



▲ R18



CAP AND FRAME COLORS

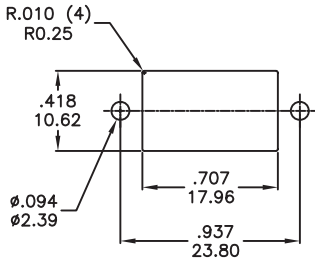
OPTION CODE	COLOR
1	WHITE
2	BLACK(std)
3	RED

LED COLORS

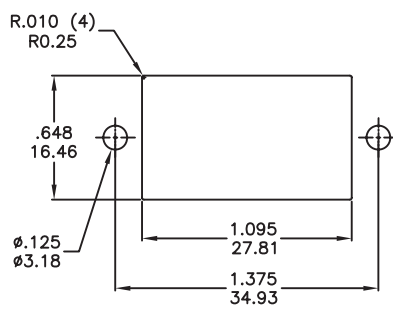
OPTION CODE	COLOR
R	RED(std)
O	ORANGE
G	GREEN

RECOMMENDED MOUNTING

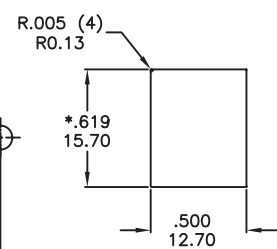
For R1-R2



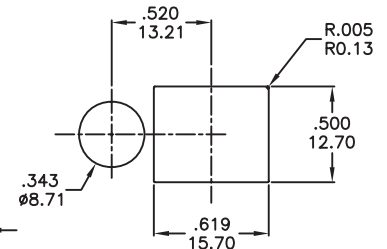
For R3-R4



For R6-R9



For R17-R18

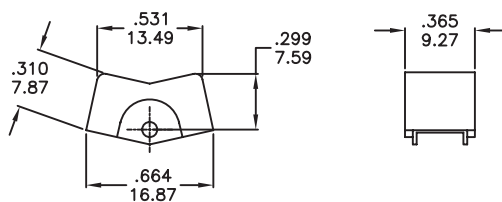


*For R8 and R9: Increase this dim. to .620/.625(15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

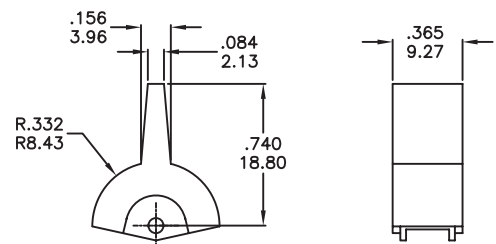
* For R6 and R7: Increase this dim. to .620/.625(15,75/15,88) for .060/.125 (1,52/3,18) thk. panels.

ACTUATOR OPTIONS FOR P.C. MOUNT ONLY

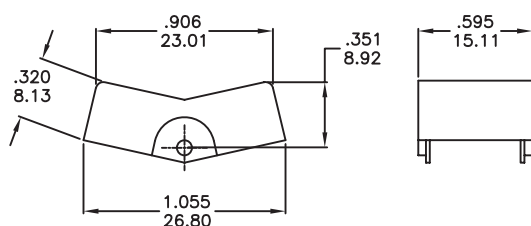
J1



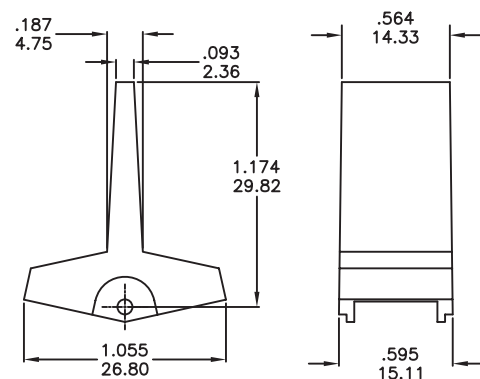
J2



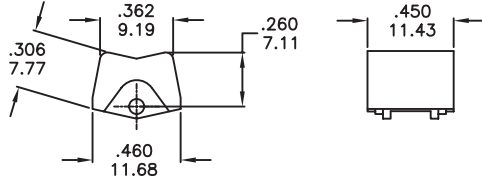
J3



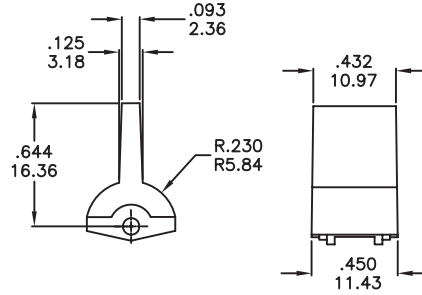
J4



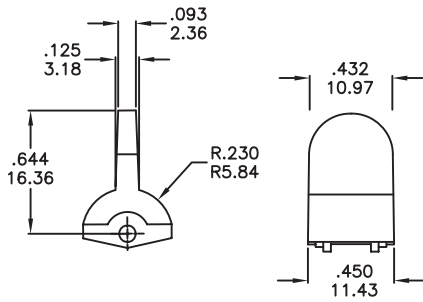
J5



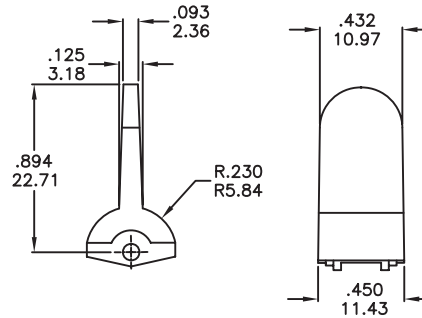
J6



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

3M Miniature Rocker & Paddle Switches

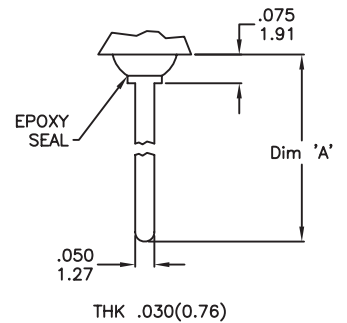
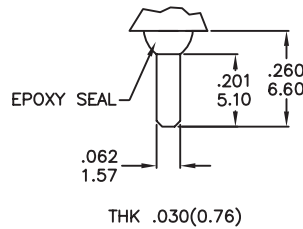
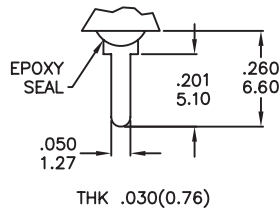
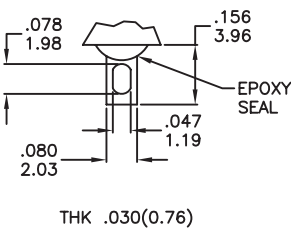
TERMINATION OPTIONS

M1 SOLDER LUG

M2 PC THRU-HOLE

M3 QUICK CONNECT

M5 WIRE WRAP

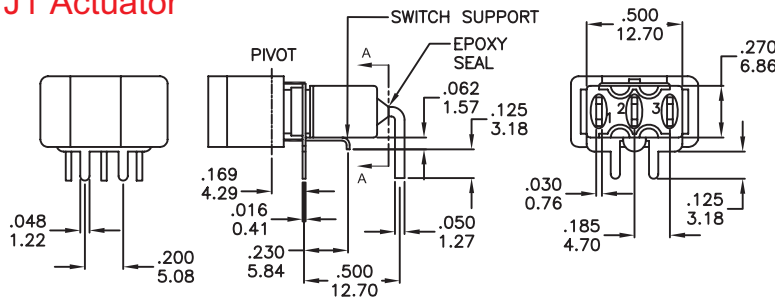


OTHER TERMINATION OPTIONS

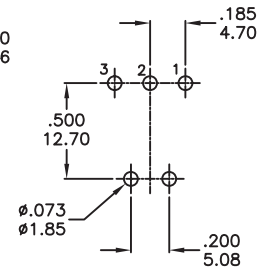
- M6 RIGHT ANGLE P.C. MOUNT
- M7 RIGHT ANGLE P.C. MOUNT
- VS2 VERTICAL BRACKET P.C. MOUNT
- VS3 VERTICAL BRACKET P.C. MOUNT
- VS4 VERTICAL BRACKET P.C. MOUNT
- VS5 VERTICAL BRACKET P.C. MOUNT

OPTION CODE	DIM. 'A'
M5-1	.737(18.70)
M5-2	.953(24.20)
M5-3	.415(10.55)
M5-4	1.062(26.97)

M6 Shown with J1 Actuator



P.C. MOUNTING

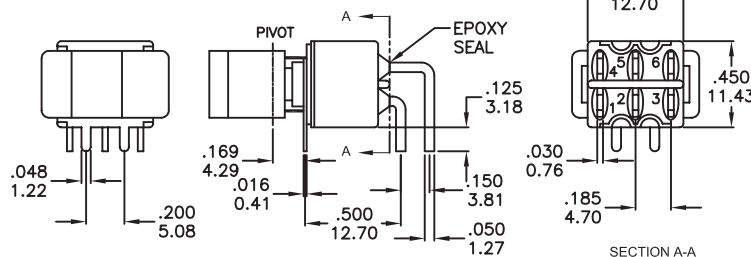


SPDT

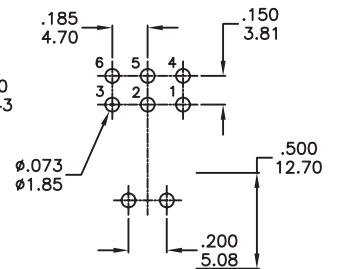
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SECTION A-A
TERM.NOS.FOR
REFERENCE ONLY

M6



P.C. MOUNTING

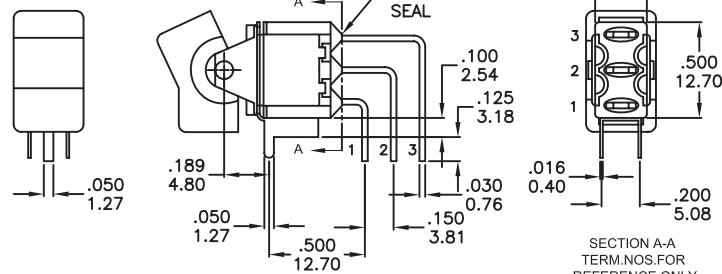


DPDT

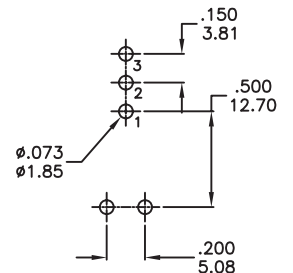
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SECTION A-A
TERM.NOS.FOR
REFERENCE ONLY

M7



P.C. MOUNTING

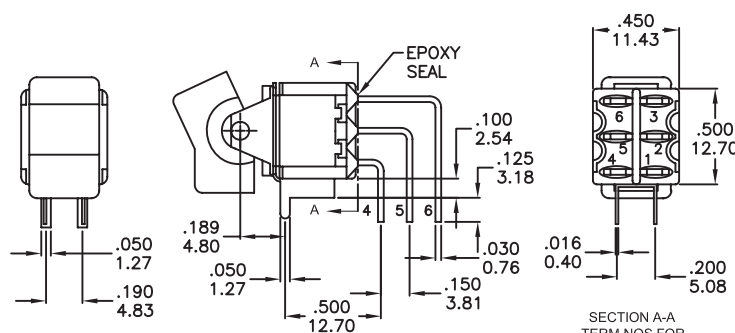


SPDT

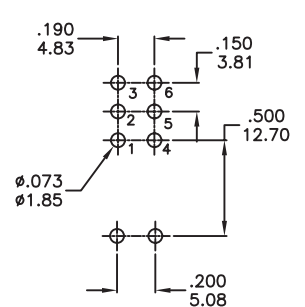
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SECTION A-A
TERM.NOS.FOR
REFERENCE ONLY

M7



P.C. MOUNTING



DPDT

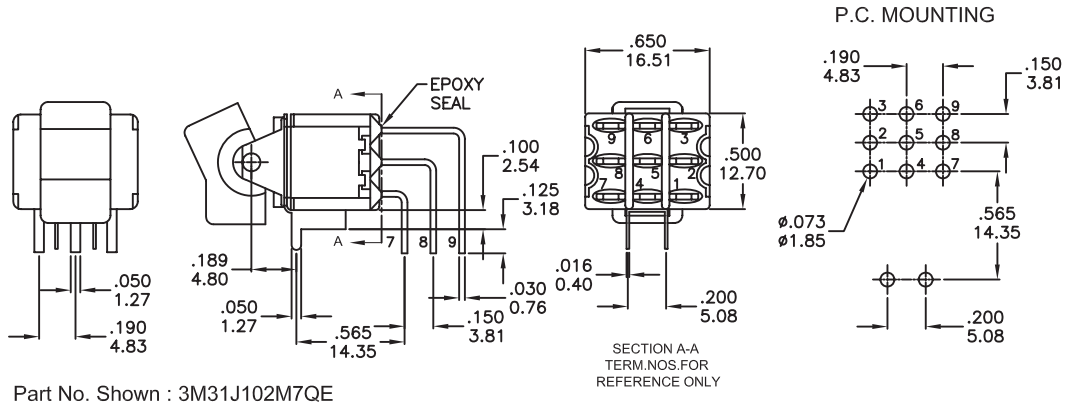
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SECTION A-A
TERM.NOS.FOR
REFERENCE ONLY

M7



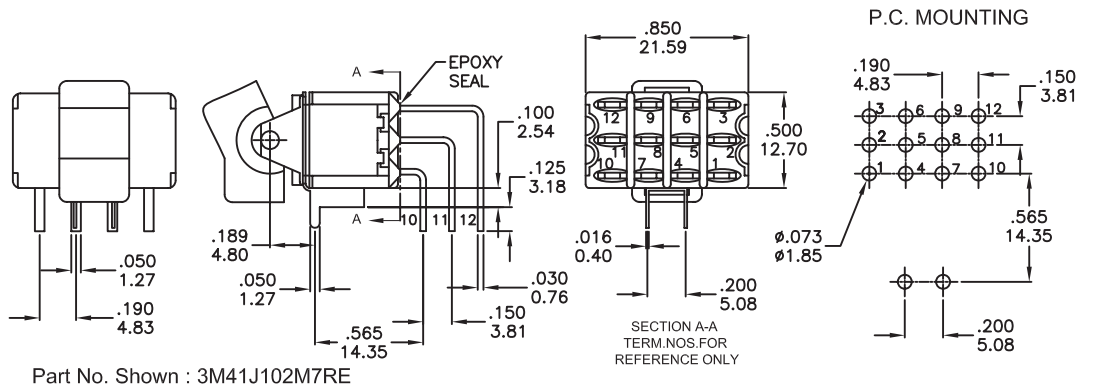
3PDT



M7



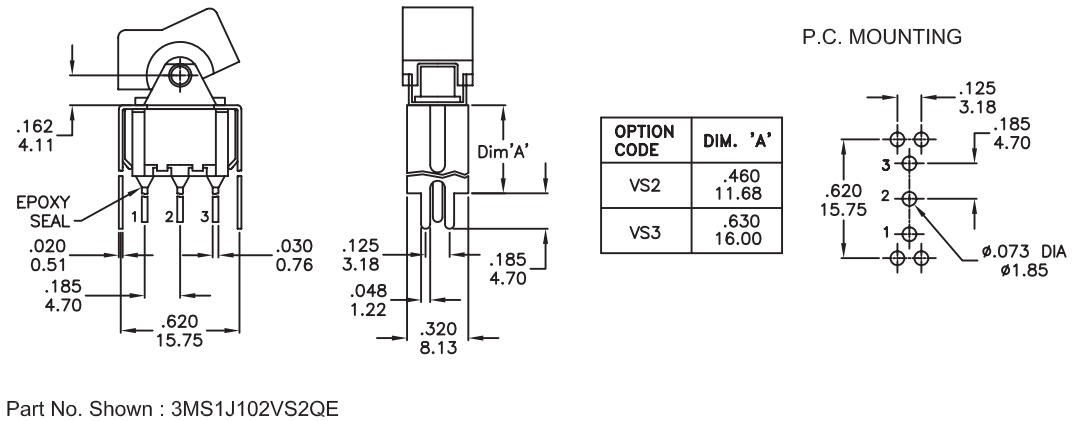
4PDT



VS2-VS3



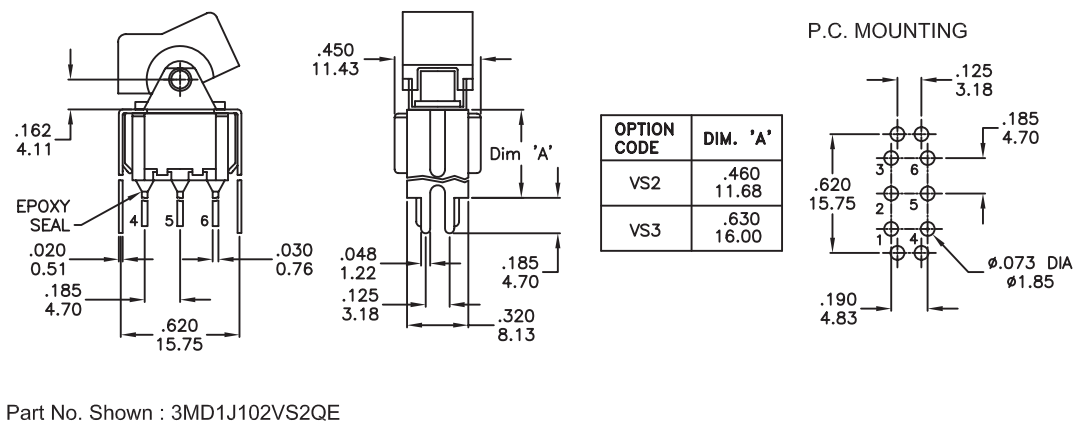
SPDT



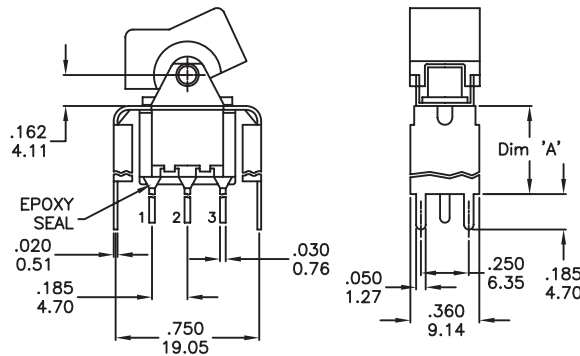
VS2-VS3



DPDT

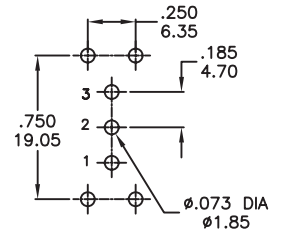


VS4-VS5



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

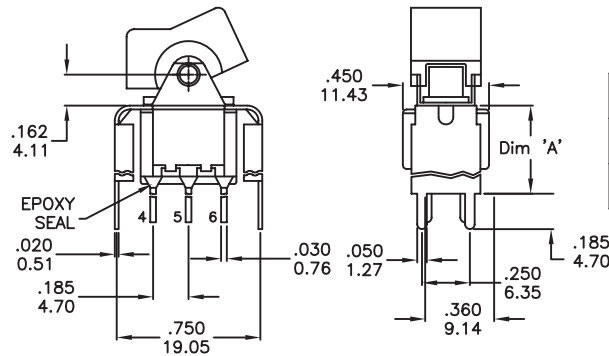
P.C. MOUNTING



SPDT

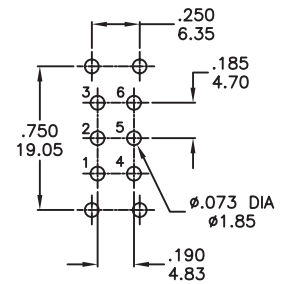
Part No. Shown : 3MS1J102VS4QE

VS5



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

P.C. MOUNTING

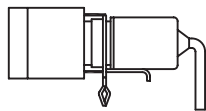
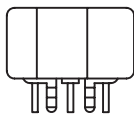


DPDT

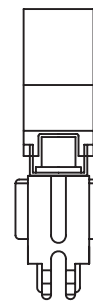
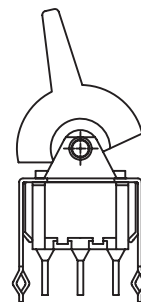
Part No. Shown : 3MD1J102VS5QE

SNAP-IN TERMINATION OPTIONS

M6N



V2N



CONTACT MATERIAL OPTIONS

	CONTACT MATERIAL	TERMINATION RATING	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: 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

