

### SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material See Page 69.

**MECHANICAL LIFE:** 30,000 make-and-break cycles.

**CONTACT RESISTANCE:** 20 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 or Zinc, nickel plated.

**HOUSING:** Stainless Steel.

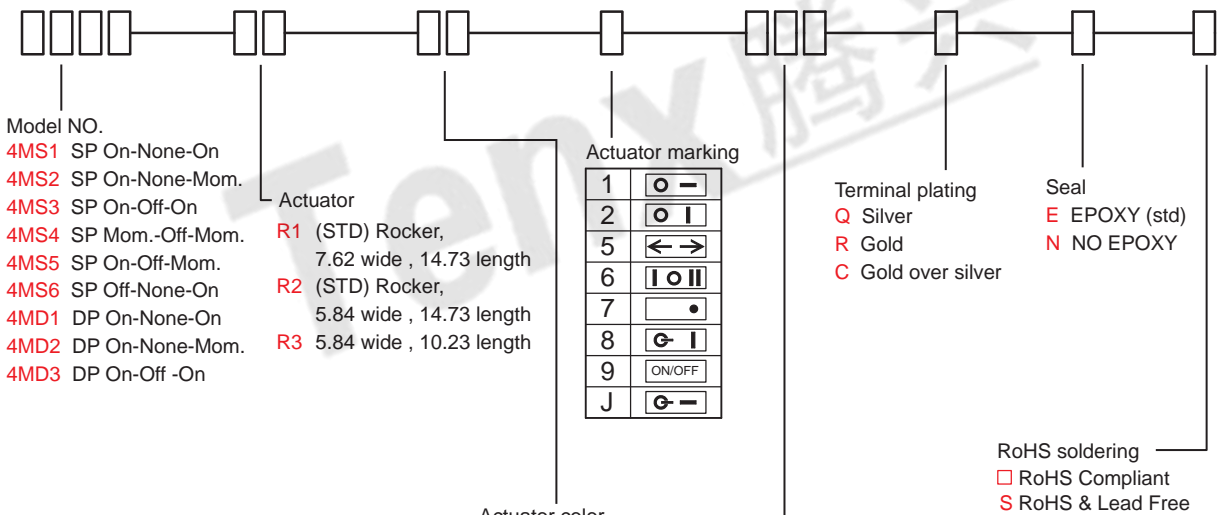
**SWITCH SUPPORT:** SUS or Brass, tin plated.

**TERMINAL/CONTACT:** Copper alloy or Brass, with silver or gold plated. (See Page 69)



## HOW TO ORDER

MODEL NO.    ACTUATOR    ACTUATOR COLOR    ACTUATOR MARKING    TERMINATIONS    TERMINAL PLATING    SEAL    RoHS SOLDERING



- Model NO.
- 4MS1 SP On-None-On
  - 4MS2 SP On-None-Mom.
  - 4MS3 SP On-Off-On
  - 4MS4 SP Mom.-Off-Mom.
  - 4MS5 SP On-Off-Mom.
  - 4MS6 SP Off-None-On
  - 4MD1 DP On-None-On
  - 4MD2 DP On-None-Mom.
  - 4MD3 DP On-Off -On

- Actuator
- R1 (STD) Rocker, 7.62 wide , 14.73 length
  - R2 (STD) Rocker, 5.84 wide , 14.73 length
  - R3 5.84 wide , 10.23 length

Actuator marking

|   |        |
|---|--------|
| 1 | ○ —    |
| 2 | ○      |
| 5 | ← →    |
| 6 | ○      |
| 7 | — •    |
| 8 | ⊖      |
| 9 | ON/OFF |
| J | ⊖ —    |

- Terminal plating
- Q Silver
  - R Gold
  - C Gold over silver

- Seal
- E EPOXY (std)
  - N NO EPOXY

- RoHS soldering
- RoHS Compliant
  - S RoHS & Lead Free

Actuator color

| ITEM NO | COLOR       |
|---------|-------------|
| 01      | White       |
| 02      | Black (Std) |
| 03      | Red         |
| 04      | Orange      |
| 05      | Yellow      |
| 06      | Green       |
| 07      | Blue        |
| 08      | Brown       |
| 09      | Gray        |

\* Besides standard color, other colors need to check stocks available.

Terminations

- M1 Solder Lug
- M2 PC thru-hole
- M5 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 8.94 high, V-bracket
- V2N 8.94 high, snap-in V-bracket
- VS3 8.94 high, V-bracket
- V3N 8.94 high, snap-in V-bracket



# 4M Series

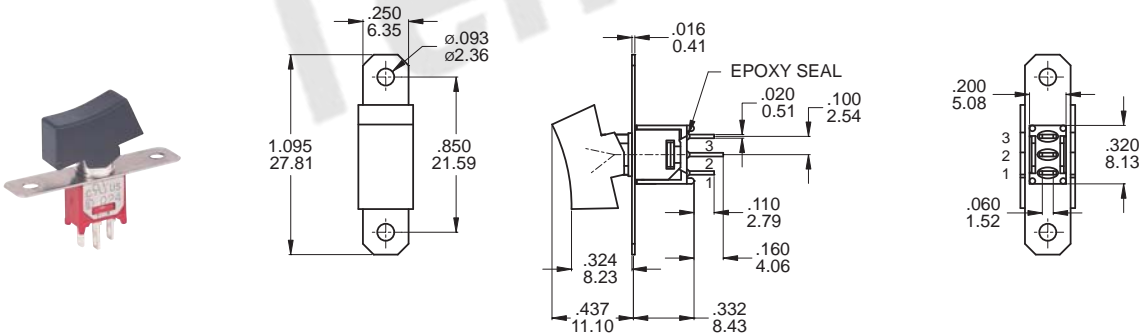
Sub-Miniature Rocker Switches

## 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        | Q2411            | 4MS1      | ON              | NONE  | ON    | 2-3                             | N/A   | 2-1     |
|           | Q2412            | 4MS2      | ON              | NONE  | MOM   |                                 |       |         |
|           | Q2413            | 4MS3      | ON              | OFF   | ON    |                                 | OPEN  |         |
|           | Q2414            | 4MS4      | MOM             | OFF   | MOM   |                                 |       |         |
|           | Q2415            | 4MS5      | ON              | OFF   | MOM   | OPEN                            | N/A   | 3-1     |
|           | Q2416            | 4MS6      | OFF             | NONE  | ON    |                                 |       |         |
| DP        | Q2421            | 4MD1      | ON              | NONE  | ON    | 2-3,5-6                         | N/A   | 2-1,5-4 |
|           | Q2422            | 4MD2      | ON              | NONE  | MOM   |                                 |       |         |
|           | Q2423            | 4MD3      | ON              | OFF   | ON    |                                 | OPEN  |         |

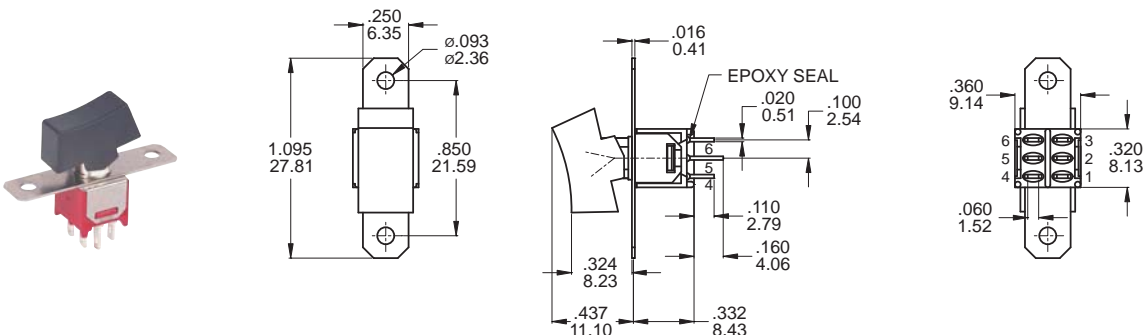
MOM=MOMENTARY

## POLE OPTIONS



SPDT

Part No. Shown : 4MS1R102M1QE

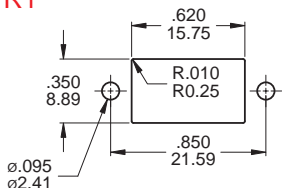


DPDT

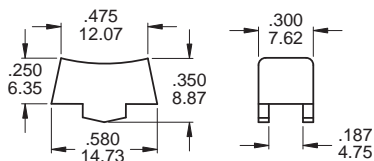
Part No. Shown : 4MD1R102M1QE

### ACTUATOR OPTIONS - PANEL MOUNT

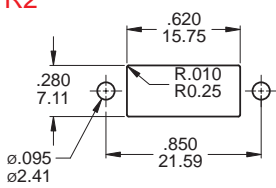
R1



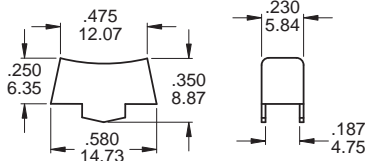
PANEL MOUNTING-R1



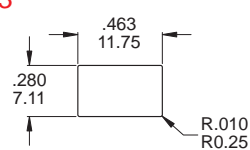
R2



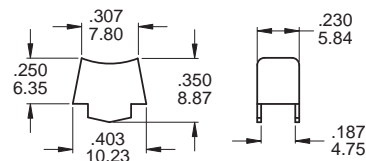
PANEL MOUNTING-R2



R3

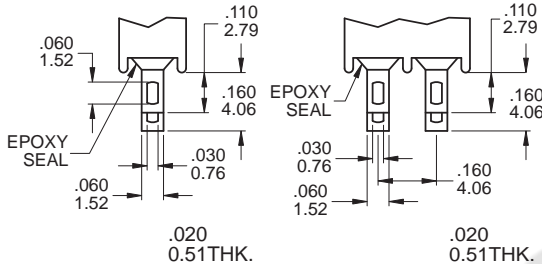


PANEL MOUNTING-R3



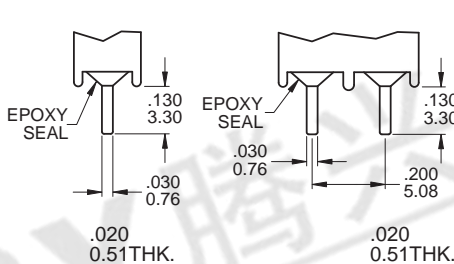
### TERMINATION OPTIONS

M1 Solder lug



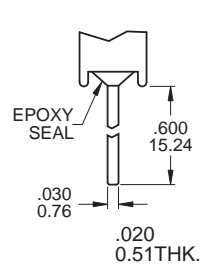
Double Pole

M2 PC Thru-hole

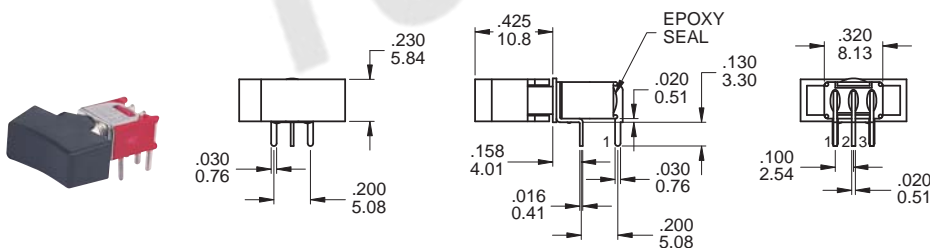


Double Pole

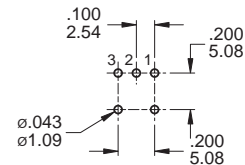
M5 Wire Wrap



M6



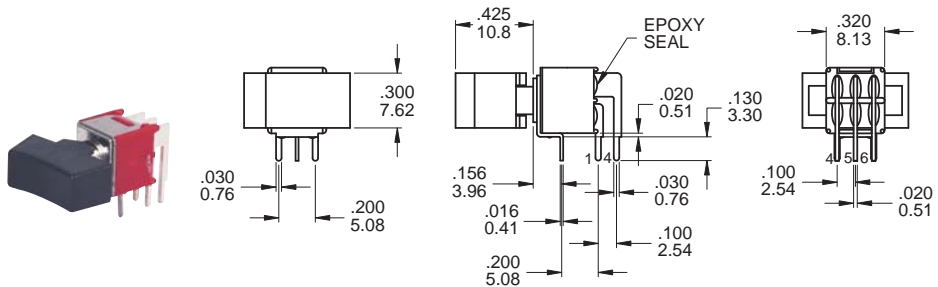
P.C. MOUNTING



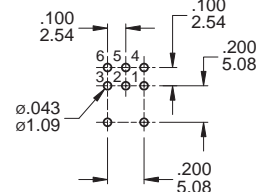
SPDT

Part No. Shown : 4MS1R202M6QE

M6



P.C. MOUNTING



DPDT

Part No. Shown : 4MD1R102M6QE



4M  
Rocker Switches

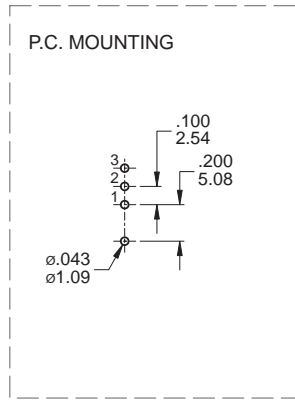
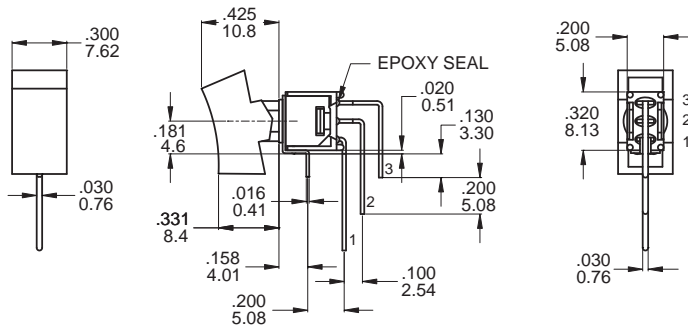
# 4M Series

Sub-Miniature Rocker Switches



4M  
Rocker Switches

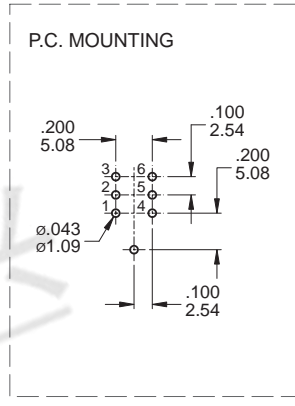
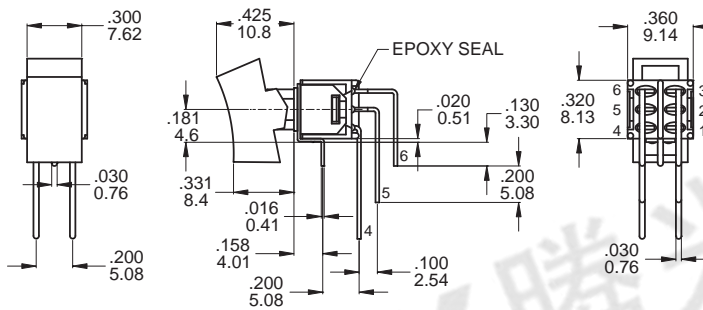
## M7



## SPDT

Part No. Shown : 4MS1R102M7QE

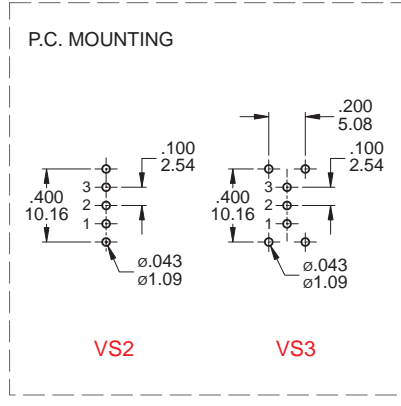
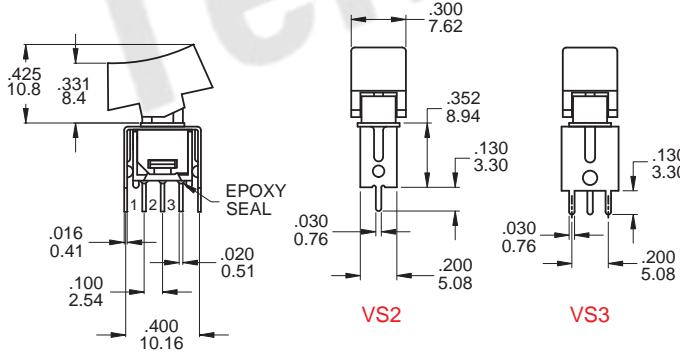
## M7



## DPDT

Part No. Shown : 4MD1R102M7QE

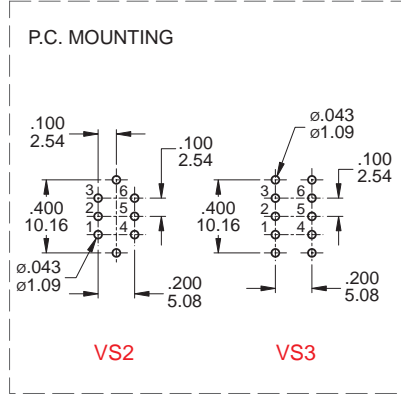
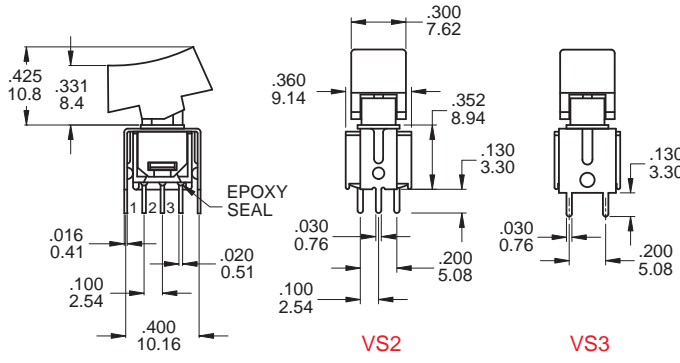
## VS2 - VS3



## SPDT

Part No. Shown : 4MS1R102VS2QE

## VS2 - VS3



## DPDT

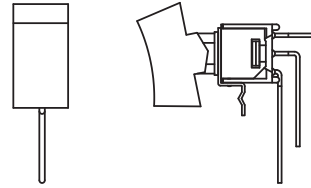
Part No. Shown : 4MD1R102VS2QE

## SNAP-IN TERMINATION OPTIONS

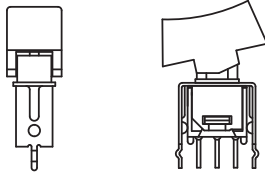
M6N



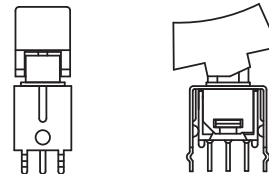
M7N



V2N



V3N



## CONTACT MATERIAL OPTIONS

|   | CONTACT PLATING  | TERMINAL PLATING     | RATINGS   |
|---|------------------|----------------------|---|
| Q | Silver           | Q = Silver           | 3 Amps with resistant load @ 120VAC or 28VDC<br>1 Amps with resistant load @ 250VAC |
| C | Gold over Silver | C = Gold over silver |   |
| R | Gold             | R = Gold             | 0.4 Volt - Amps ( VA ) max. @ 20V max. ( AC or DC )                                 |

## 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: 270 ± 5°C  
Duration of Solder Immersion: Max 5 sec. (PCB is 1.6mm in thickness)

