

**1M1-Series**  
Miniature Rocker &  
Paddle Switch



**1MS-Series**  
**Sealed** Miniature  
Rocker & Paddle  
Switch

### Specifications

|                               |                                                           |
|-------------------------------|-----------------------------------------------------------|
| Contact Rating . . . . .      | refer to ordering scheme.                                 |
| Electrical Life . . . . .     | <b>1M1-Series:</b> 50,000 make & break cycles @ full load |
|                               | <b>1MS-Series:</b> 30,000 make & break cycles @ full load |
| Contact Resistance. . . . .   | 10 mΩ max. initial @ 2-4 VDC                              |
|                               | 100mA for both silver & gold plated contacts.             |
| Insulation Resistance . . . . | 1000 MΩ min.                                              |
| Dielectric Strength . . . . . | 1500 Volts RMS @ sea level                                |
| Operating Temperature . . .   | -30°C to +85°C                                            |
| Index of Protection . . . . . | <b>1MS-Series:</b> IP67                                   |
| Solder Heat Resistance. . .   | MIL-STD-202, Method 210                                   |
| Actuator Travel . . . . .     | 25°                                                       |

### Materials

|                               |                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------|
| Case . . . . .                | <b>1M1-Series:</b> Dially phthalate (DAP) (UL 94V-0)                                   |
|                               | <b>1MS-Series:</b> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) |
| Rocker/Paddle. . . . .        | <b>1M1-Series:</b> Nylon (UL 94V-0)                                                    |
|                               | <b>1MS-Series:</b> Nylon, black standard, internal o-ring sealed                       |
| Bushing . . . . .             | <b>1M1-Series:</b> Brass, nickel plated                                                |
|                               | <b>1MS-Series:</b> Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0) |
| Housing. . . . .              | <b>1M1-Series:</b> Stainless Steel                                                     |
|                               | <b>1MS-Series:</b> Spring Steel                                                        |
| Actuator Pivot & Mounting     |                                                                                        |
| Bracket . . . . .             | <b>1M1-Series:</b> Stainless Steel                                                     |
|                               | <b>1MS-Series:</b> Nylon (UL 94V-0)                                                    |
| Actuator Pivot Retainer . . . | <b>1MS-Series:</b> Stainless Steel                                                     |
| Switch Support . . . . .      | Brass, tin plated                                                                      |
| Terminal Seal . . . . .       | Epoxy                                                                                  |

## 1M1-Series Ordering Scheme



### 1 SERIES

**1M1** Miniature Rocker Switch

### 2 POLES

**SP** single pole - uses terminals 1, 2 & 3.  
**DP** double pole uses terminals 1, 2, 3, 4, 5 & 6.  
**3P** double pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9.  
**4P** double pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

### 3 CIRCUIT

( ) - momentary

#### Switching Position:

|   | 2-3, 5-6, 8-9, 11-12 | OPEN | 2-1, 5-4, 8-7, 11-10 |
|---|----------------------|------|----------------------|
| 1 | ON                   | NONE | ON                   |
| 2 | ON                   | NONE | (ON)                 |
| 3 | ON                   | OFF  | ON                   |
| 4 | (ON)                 | OFF  | (ON)                 |
| 5 | ON                   | OFF  | (ON)                 |

### 4 ACTUATOR STYLE

|           |               |           |                    |
|-----------|---------------|-----------|--------------------|
| <b>R1</b> | Small rocker  | <b>R5</b> | Large rocker       |
| <b>R2</b> | Small paddle  | <b>R6</b> | Rocker & frame     |
| <b>R3</b> | Medium rocker | <b>R7</b> | Paddle & frame     |
| <b>R4</b> | Large paddle  | <b>R8</b> | Rocker w/out frame |
|           |               | <b>R9</b> | Paddle w/out frame |

### 5 ACTUATOR COLOR & 6 FRAME COLOR<sup>1,2</sup>

|         |          |         |
|---------|----------|---------|
| 1 white | 4 orange | 7 blue  |
| 2 black | 5 yellow | 8 brown |
| 3 red   | 6 green  | 9 gray  |

- 1 Black is standard. Other colors available, consult factory for details.  
 2 Selection 6 is blank if actuator style R8 or R9 (no frame)

### 7 TERMINATION

|             |                                                |             |                                               |
|-------------|------------------------------------------------|-------------|-----------------------------------------------|
| <b>M1</b>   | Solder Lug                                     | <b>VS4</b>  | PC Mount, U bracket, .460 high                |
| <b>M2</b>   | PCB                                            | <b>VS5</b>  | PC Mount, U bracket, .630 high                |
| <b>M3</b>   | Quick Connect                                  | <b>M61</b>  | Snap-In, U bracket, 90° horizontal            |
| <b>M5-1</b> | Wire Wrap .750 [19.05]                         | <b>M71</b>  | Snap-In, U bracket, 90° vertical              |
| <b>M5-2</b> | Wire Wrap .964 [24.48]                         | <b>VS21</b> | Snap-In, U bracket, .620 mounting x .460 high |
| <b>M5-3</b> | Wire Wrap .425 [10.80]                         | <b>VS31</b> | Snap-In, U bracket, .620 mounting x .630 high |
| <b>M5-4</b> | Wire Wrap 1.062 [26.97]                        | <b>VS41</b> | Snap-In, U bracket .620 mounting x .630 high  |
| <b>M6</b>   | PC Mount, 90° horizontal                       | <b>VS51</b> | Snap-In, U bracket                            |
| <b>M7</b>   | PC Mount, 90° vertical                         |             |                                               |
| <b>VS2</b>  | PC Mount, U bracket, .620 mounting x .460 high |             |                                               |
| <b>VS3</b>  | PC Mount, U bracket, .620 mounting x .630 high |             |                                               |

### 8 CONTACT

|          | Material            | Terminal Plating              | Rating                            | Approvals |
|----------|---------------------|-------------------------------|-----------------------------------|-----------|
| <b>G</b> | silver <sup>1</sup> | gold over silver <sup>2</sup> | 5A @ 125VAC or 28VDC, 2A @ 250VAC | UL CSA    |
| <b>K</b> | gold <sup>2</sup>   | tin-lead <sup>4</sup>         | 0.4VA max. @20V max (AC/DC)       | —         |
| <b>P</b> | silver <sup>1</sup> | tin-lead <sup>4</sup>         | 5A @ 125VAC or 28VDC, 2A @ 250VAC | UL CSA    |
| <b>Q</b> | silver <sup>1</sup> | silver <sup>1</sup>           | 5A @ 125VAC or 28VDC, 2A @ 250VAC | UL CSA    |
| <b>R</b> | gold <sup>2</sup>   | gold <sup>2</sup>             | 0.4VA max. @20V max (AC/DC)       | —         |

#### NOTE:

- Tin-lead option available with PC type terminations only.  
 1 Moveable contact & terminals: copper alloy, silver plate  
 2 Moveable contact & terminals: copper alloy with gold plate over nickel plate  
 3 Terminals: silver plate with outer layer in gold plating  
 4 Outer terminals: copper alloy with tin-lead over nickel plate

### 9 EPOXY SEAL

**E** epoxy seal

## 1MS-Series Ordering Scheme



### 1 SERIES

**1MS** Sealed Miniature Rocker Switch

### 2 POLES

**SP** single pole - uses terminals 1, 2 & 3.  
**DP** double pole uses terminals 1, 2, 3, 4, 5 & 6.  
**3P** double pole uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9.

### 3 CIRCUIT

( ) - momentary

#### Switching Position:

|   | 2-3, 5-6, 8-9 | OPEN | 2-1, 5-4, 8-7 |
|---|---------------|------|---------------|
| 1 | ON            | NONE | ON            |
| 2 | ON            | NONE | (ON)          |
| 3 | ON            | OFF  | ON            |
| 4 | (ON)          | OFF  | (ON)          |
| 5 | ON            | OFF  | (ON)          |

### 4 ACTUATOR STYLE

|           |               |           |                    |
|-----------|---------------|-----------|--------------------|
| <b>R1</b> | Small rocker  | <b>R5</b> | Large rocker       |
| <b>R2</b> | Small paddle  | <b>R6</b> | Rocker & frame     |
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| <b>R4</b> | Large paddle  | <b>R8</b> | Rocker w/out frame |
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### 5 TERMINATION

|             |                                                |             |                                                |
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| <b>M6</b>   | PC Mount, 90° horizontal                       |             |                                                |
| <b>M7</b>   | PC Mount, 90° vertical                         |             |                                                |
| <b>VS2</b>  | PC Mount, U bracket, .620 mounting x .460 high |             |                                                |

### 6 CONTACT

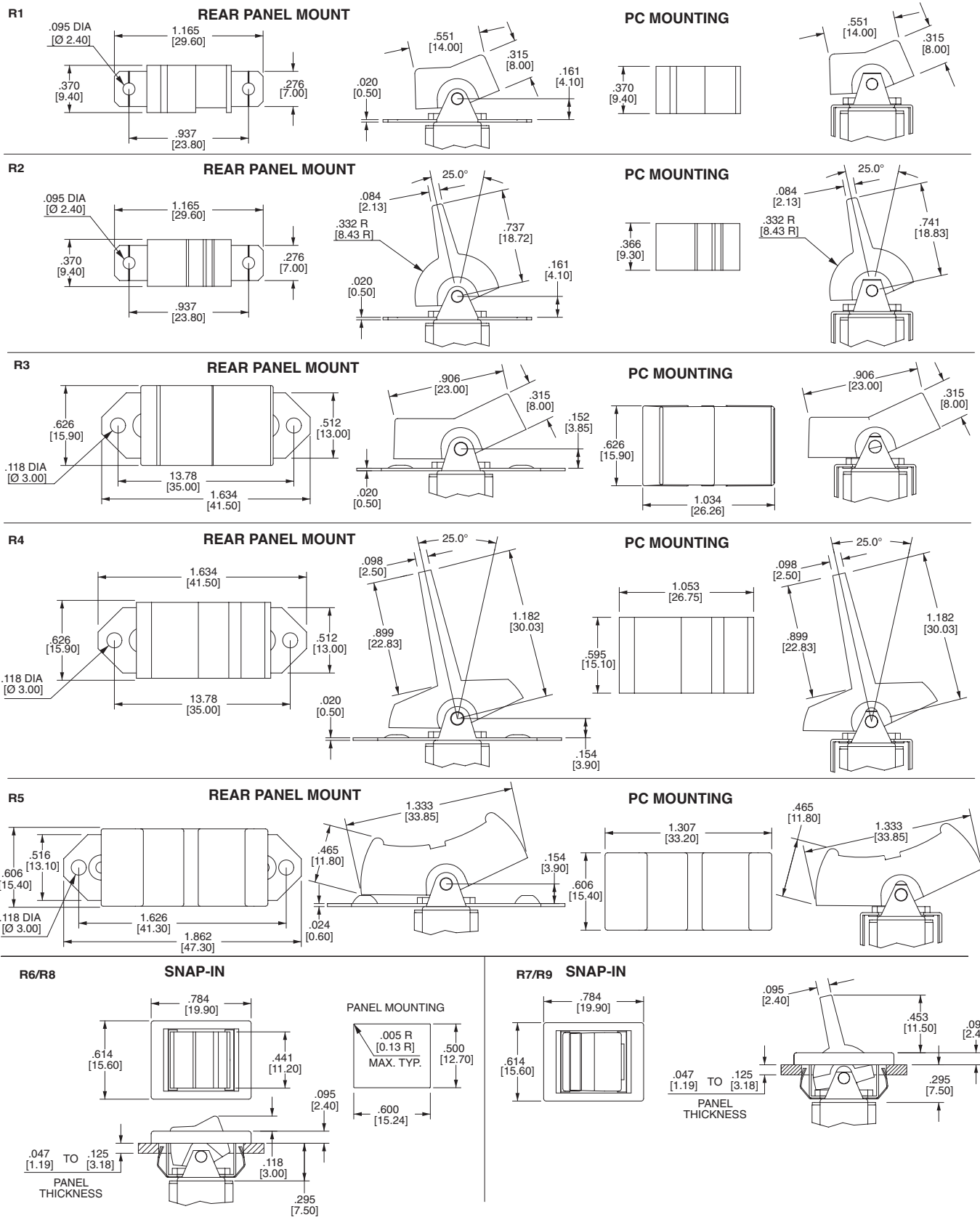
|          | Material            | Terminal Plating              | Rating                            | Approvals |
|----------|---------------------|-------------------------------|-----------------------------------|-----------|
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| <b>K</b> | gold <sup>2</sup>   | tin-lead <sup>4</sup>         | 0.4VA max. @20V max (AC/DC)       | —         |
| <b>P</b> | silver <sup>1</sup> | tin-lead <sup>4</sup>         | 5A @ 125VAC or 28VDC, 2A @ 250VAC | UL CUL    |
| <b>R</b> | gold <sup>2</sup>   | gold <sup>2</sup>             | 0.4VA max. @20V max (AC/DC)       | —         |

#### NOTE:

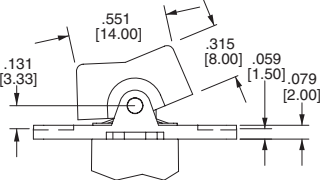
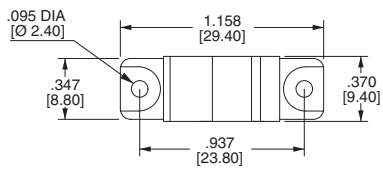
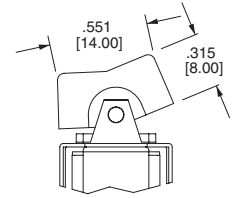
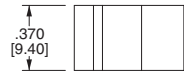
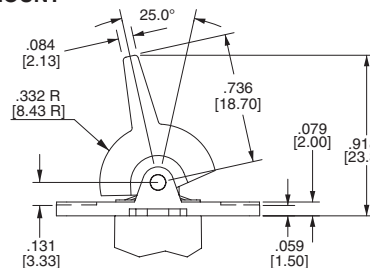
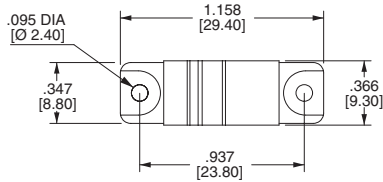
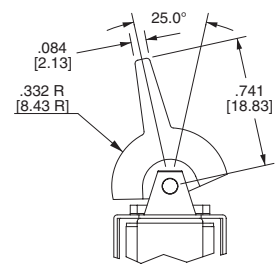
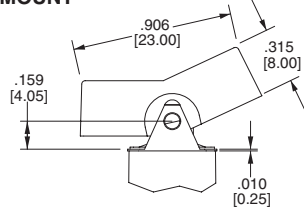
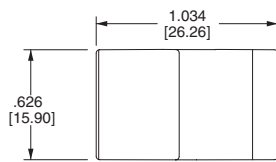
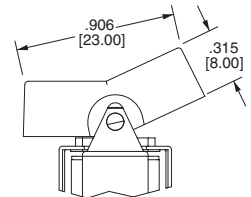
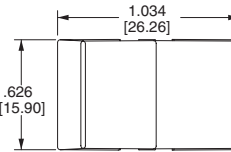
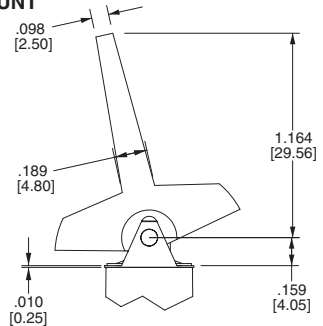
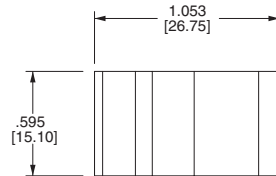
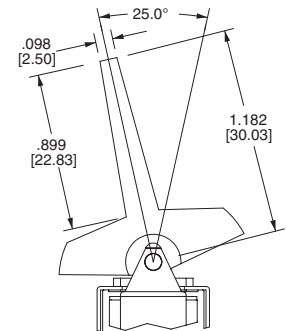
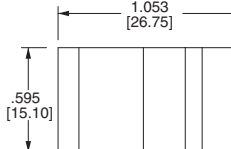
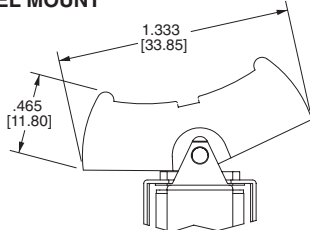
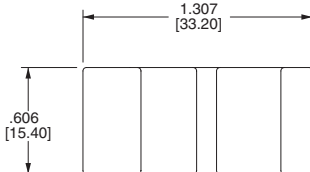
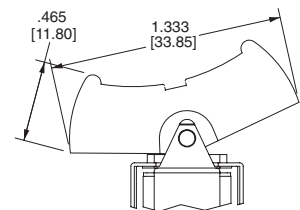
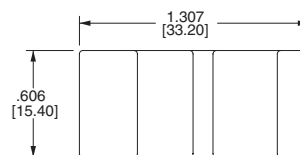
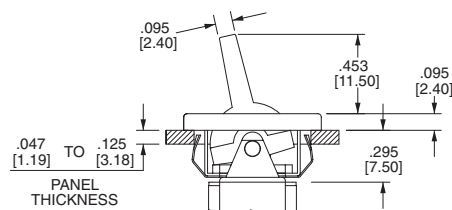
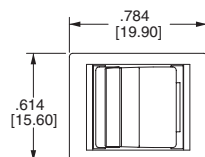
- Tin-lead option available with PC type terminations only.  
 1 Moveable contact & terminals: copper alloy, silver plate  
 2 Moveable contact & terminals: copper alloy with gold plate over nickel plate  
 3 Terminals: silver plate with outer layer in gold plating  
 4 Outer terminals: copper alloy with tin-lead over nickel plate

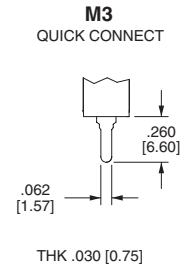
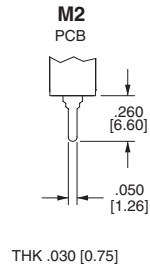
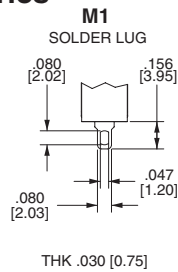
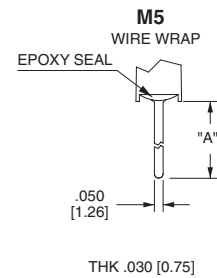
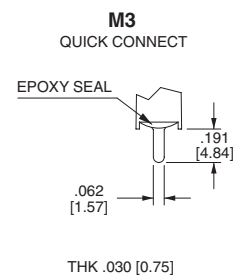
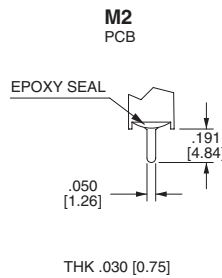
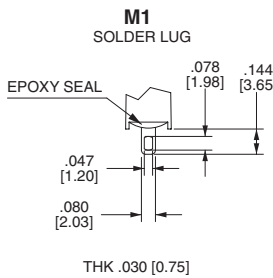
### 7 EPOXY SEAL

**E** epoxy seal

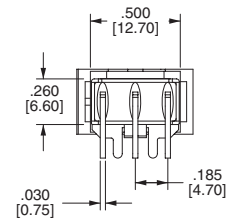
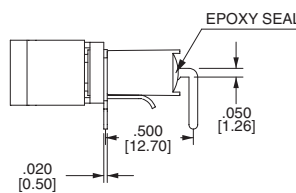
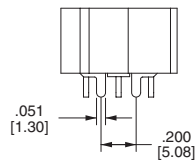
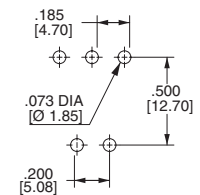
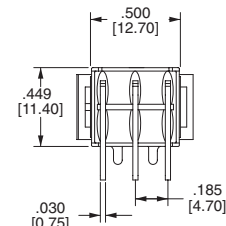
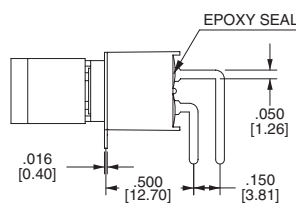
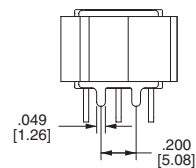
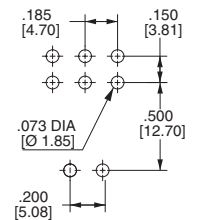
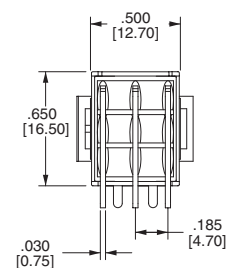
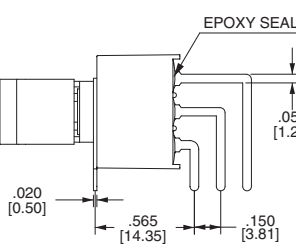
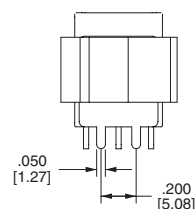
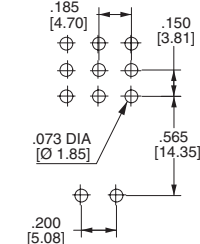
**1M1-Series Dimensional Specifications: in.[mm]**
**ACTUATOR**


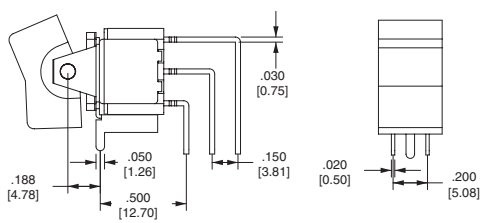
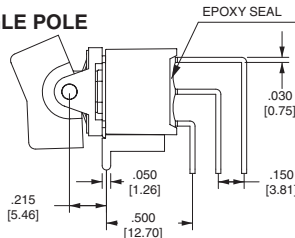
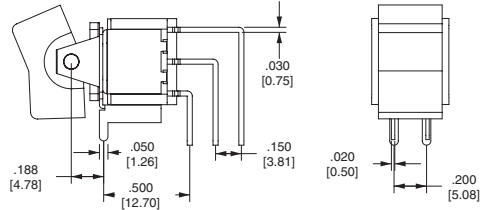
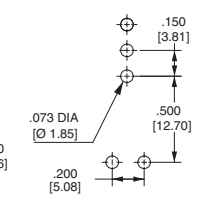
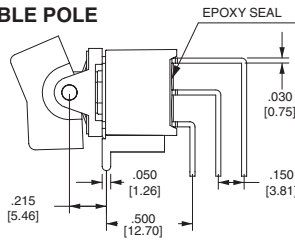
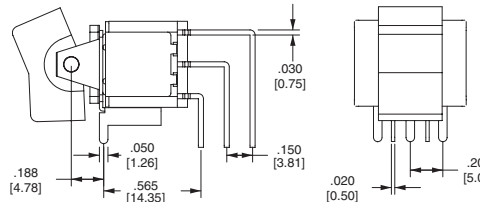
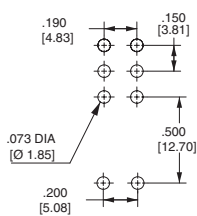
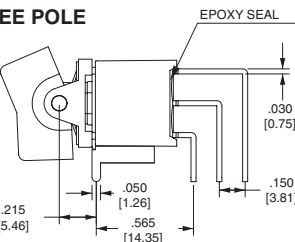
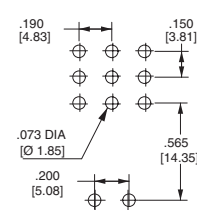
R8 and R9 are without frame. Actuators are as shown.

**1MS-Series Dimensional Specifications: in.[mm]**
**ACTUATOR**
**R1 REAR PANEL MOUNT**

**PC MOUNTING**

**R2 REAR PANEL MOUNT**

**PC MOUNTING**

**R3 REAR PANEL MOUNT**

**PC MOUNTING**

**R4 REAR PANEL MOUNT**

**PC MOUNTING**

**R5 REAR PANEL MOUNT**

**PC MOUNTING**

**R7 SNAP-IN**


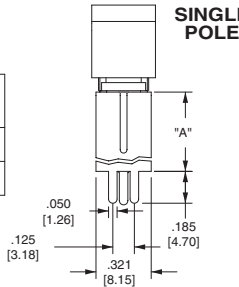
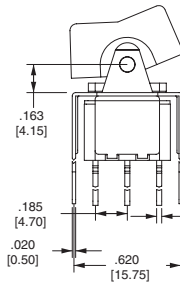
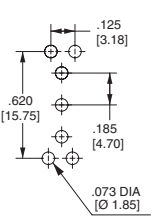
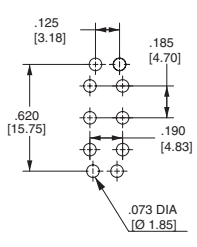
**1M-Series Dimensional Specifications: in.[mm]**
**TERMINATION**
**1M1-Series**

**1MS-Series**


| OPTION CODE | DIM. "A"      |
|-------------|---------------|
| <b>M5-1</b> | .750 [19.05]  |
| <b>M5-2</b> | .964 [24.48]  |
| <b>M5-3</b> | .425 [10.80]  |
| <b>M5-4</b> | 1.062 [26.97] |

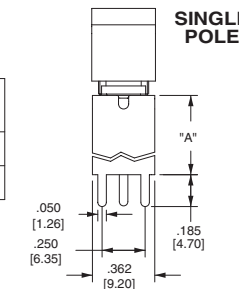
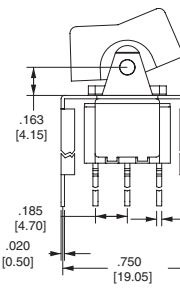
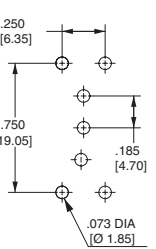
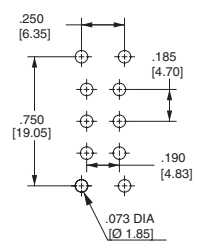
**1M-Series**
**SINGLE POLE**
**M6**

**PC MOUNTING**

**DOUBLE POLE**

**PC MOUNTING**

**THREE POLE**

**PC MOUNTING**


**1M-Series Dimensional Specifications: in.[mm]**
**TERMINATION**
**M7**

**SINGLE POLE**

**PC MOUNTING**

**DOUBLE POLE**

**PC MOUNTING**

**THREE POLE**

**PC MOUNTING**

**VS2 & VS3**

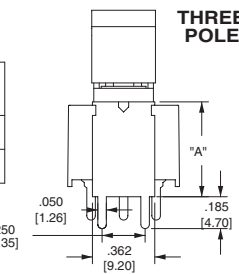
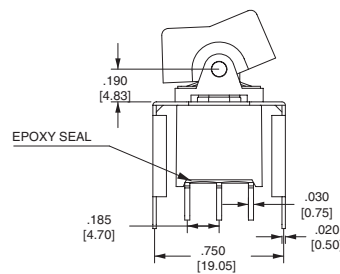
| OPTION CODE | DIM. "A"     |
|-------------|--------------|
| VS2         | .460 [11.68] |
| VS3         | .630 [16.00] |


**SINGLE POLE**
**PC MOUNTING**

**DOUBLE POLE**
**PC MOUNTING**

**VS4 & VS5**

| OPTION CODE | DIM. "A"     |
|-------------|--------------|
| VS4         | .460 [11.68] |
| VS5         | .630 [16.00] |


**SINGLE POLE**
**PC MOUNTING**

**DOUBLE POLE**
**PC MOUNTING**

**U4 & VS5**

| OPTION CODE | DIM. "A"     |
|-------------|--------------|
| U4          | .551 [14.00] |
| VS5         | .630 [16.00] |


**THREE POLE**

**PC MOUNTING**
