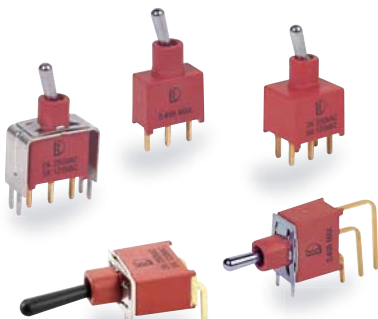




IP 67  
ACCORDING TO  
EN 60529:1991+A1:2001  
IEC 60029:2001

UL US  
E 187490

RoHS  
compliant



### SPECIFICATIONS

**CONTACT RATING:** Dependent upon contact material See page 17.

**MECHANICAL LIFE:** 30,000 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 & BUSHING:** Glass filled nylon 6/6, flame retardant, heat stabilized (UL94v-0).

**ACTUATOR:** Brass, chrome plated with internal, O-ring seal standard.

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

**SWITCH SUPPORT RETAINER:** Stainless steel.

**CONTACT / TERMINALS:** Copper alloy, with Silver or gold plated.  
(See Page 17)

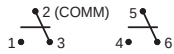
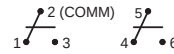
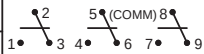
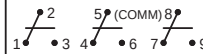
## HOW TO ORDER

| MODEL NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ACTUATOR                                                                                                                                                                                                                                                                                                                          | BUSHING                                                                                                                         | TERMINATIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | TERMINAL MATERIAL                                                                                                                                                                                                                                                                                                                           | SEAL                                                                                       | RoHS SOLDERING                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div> <div>Model NO.</div> <div> <div>1AS1</div> <div>1AS2</div> <div>1AS3</div> <div>1AS4</div> <div>1AS5</div> <div>1AD1</div> <div>1AD2</div> <div>1AD3</div> <div>1AD4</div> <div>1AD5</div> <div>1AD6</div> <div>1AD7</div> <div>1AD8</div> <div>1A31</div> <div>1A32</div> <div>1A33</div> <div>1A34</div> <div>1A35</div> </div> </div> <div> <div>SP On-None-On</div> <div>SP On-None-Mom.</div> <div>SP On-Off-On</div> <div>SP Mom.-Off-Mom.</div> <div>SP On-Off -Mom.</div> <div>DP On-None-On</div> <div>DP On-None-Mom.</div> <div>DP On-Off-On</div> <div>DP Mom.-Off-Mom.</div> <div>DP On-Off-Mom.</div> <div>DP On-On-On</div> <div>DP Mom.-On-Mom.</div> <div>DP On-On-Mom.</div> <div>3P On-None-On</div> <div>3P On-None-Mom.</div> <div>3P On-Off-On</div> <div>3P Mom.-Off-Mom.</div> <div>3P On-Off-Mom.</div> </div> | <div> <div>Actuator</div> <div> <div>T1</div> <div>T2</div> <div>TA</div> <div>TB</div> <div>TC</div> </div> </div> <div> <div>12.70 high</div> <div>7.62 high</div> <div>Plastic, anti-static, black 12.70 high</div> <div>Plastic, anti-static, black 7.62 high</div> <div>Plastic, anti-static, silver 12.70 high</div> </div> | <div> <div>Bushing</div> <div> <div>B1</div> <div>B4</div> </div> </div> <div> <div>8.89 high</div> <div>6.10 high</div> </div> | <div> <div>Terminations</div> <div> <div>M1</div> <div>M2</div> <div>M51</div> <div>M52</div> <div>M53</div> <div>M54</div> <div>M6</div> <div>M6N</div> <div>M7</div> <div>VS2</div> <div>V2N</div> <div>VS3</div> </div> </div> <div> <div>Solder Lug</div> <div>PC thru-hole</div> <div>18.70 high, wire wrap</div> <div>24.20 high, wire wrap</div> <div>10.55 high, wire wrap</div> <div>26.97 high, wire wrap</div> <div>Right angle, PC thru-hole</div> <div>Right angle, snap-in, PC thru-hole</div> <div>Vertical right angle, PC thru-hole</div> <div>11.68 high, V-bracket</div> <div>11.68 high, snap-in V-bracket</div> <div>16.00 high, V-bracket</div> </div> | <div> <div>Terminal material</div> <div> <div>Q</div> <div>R</div> <div>G</div> <div>S</div> <div>C</div> <div>K</div> </div> </div> <div> <div>Gold flash over silver</div> <div>Gold</div> <div>Gold, pure-tin</div> <div>Gold flash over silver, pure-tin</div> <div>Gold over silver</div> <div>Gold over silver, pure-tin</div> </div> | <div> <div>Seal</div> <div> <div>E</div> </div> </div> <div> <div>EPOXY (std)</div> </div> | <div> <div>RoHS soldering</div> <div> <div>□</div> <div>S</div> <div>F</div> </div> </div> <div> <div>RoHS Compliant</div> <div>RoHS &amp; Lead Free</div> <div>Halogen Free+RoHS</div> </div> |





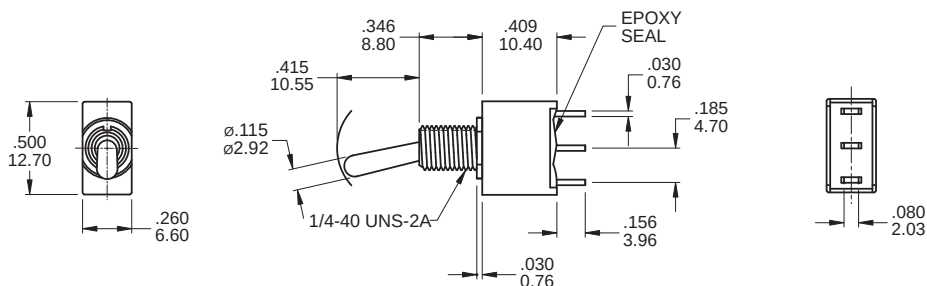
## SWITCH FUNCTION

| 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        | Q11A11           | 1AS1      | ON                                                                                | NONE                                                                              | ON                                                                                | <div>2-3</div>            | N/A                                                                                 | <div>2-1</div>            |
|           | Q11A12           | 1AS2      | ON                                                                                | NONE                                                                              | MOM                                                                               |                                                                                                            | OPEN                                                                                |                                                                                                              |
|           | Q11A13           | 1AS3      | ON                                                                                | OFF                                                                               | ON                                                                                |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A14           | 1AS4      | MOM                                                                               | OFF                                                                               | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A15           | 1AS5      | ON                                                                                | OFF                                                                               | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
| DP        | Q11A21           | 1AD1      | ON                                                                                | NONE                                                                              | ON                                                                                | <div>2-3,5-6</div>        | N/A                                                                                 | <div>2-1,5-4</div>        |
|           | Q11A22           | 1AD2      | ON                                                                                | NONE                                                                              | MOM                                                                               |                                                                                                            | OPEN                                                                                |                                                                                                              |
|           | Q11A23           | 1AD3      | ON                                                                                | OFF                                                                               | ON                                                                                |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A24           | 1AD4      | MOM                                                                               | OFF                                                                               | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A25           | 1AD5      | ON                                                                                | OFF                                                                               | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A26           | 1AD6      | ON                                                                                | ON                                                                                | ON                                                                                | 2-3,5-6                                                                                                    | 2-3,5-4                                                                             | 2-1,5-4                                                                                                      |
|           | ▲ Q11A27         | 1AD7      | MOM                                                                               | ON                                                                                | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
|           | ▲ Q11A28         | 1AD8      | ON                                                                                | ON                                                                                | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
| 3P        | Q11A31           | 1A31      | ON                                                                                | NONE                                                                              | ON                                                                                | <div>2-3,5-6,8-9</div>  | N/A                                                                                 | <div>2-1,5-4,8-7</div>  |
|           | Q11A32           | 1A32      | ON                                                                                | NONE                                                                              | MOM                                                                               |                                                                                                            | OPEN                                                                                |                                                                                                              |
|           | Q11A33           | 1A33      | ON                                                                                | OFF                                                                               | ON                                                                                |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A34           | 1A34      | MOM                                                                               | OFF                                                                               | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |
|           | Q11A35           | 1A35      | ON                                                                                | OFF                                                                               | MOM                                                                               |                                                                                                            |                                                                                     |                                                                                                              |

MOM=MOMENTARY

▲ Please check the availability in advance before order

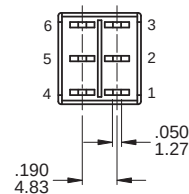
## POLE OPTIONS



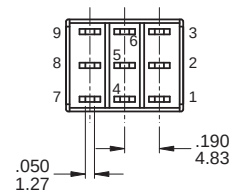
SPDT

Part No. Shown : 1AS1T1B1M1QE





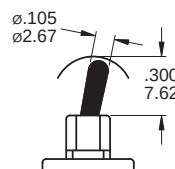
Part No. Shown : 1AD1T1B4M2QE



Part No. Shown : 1A31T1B4M2QE

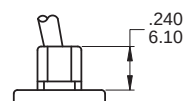
Actuator shown with standard B4 Bushing,  
Subtract .085 (2.15) for B1 bushing.

TB



ESD  
PLASTIC ACTUATOR  
(TC anti-static , silver)

B4

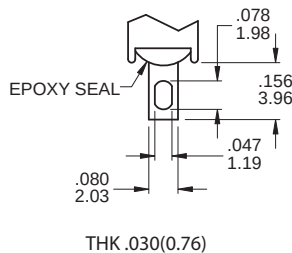


Std for M2, M6, M7, VS termination

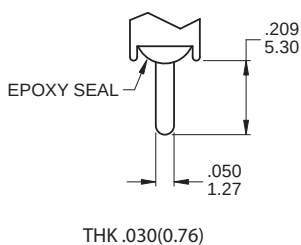


### TERMINATION OPTIONS

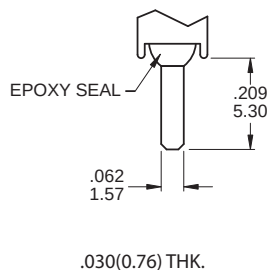
#### M1 Solder lug



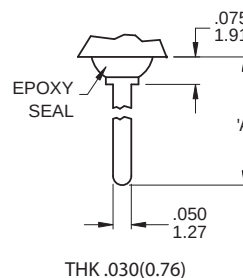
#### M2 PC Thru-hole



#### M3 Quick connect



#### M5 Wire Wrap



### OTHER TERMINATION OPTIONS

**M6** RIGHT ANGLE P.C. MOUNT

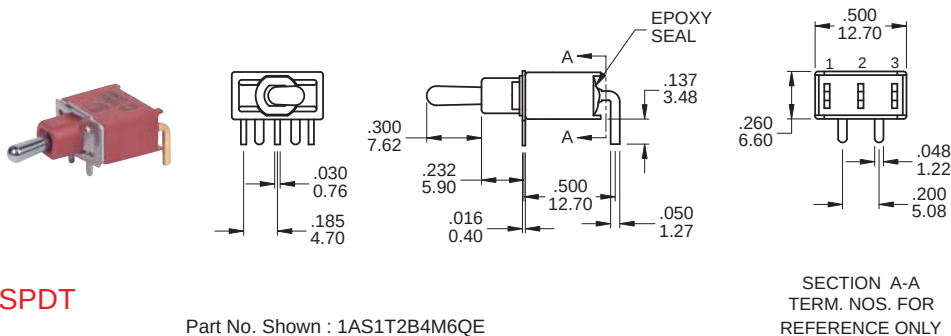
**M7** RIGHT ANGLE P.C. MOUNT

**VS2** VERTICAL BRACKET P.C. MOUNT

**VS3** VERTICAL BRACKET P.C. MOUNT

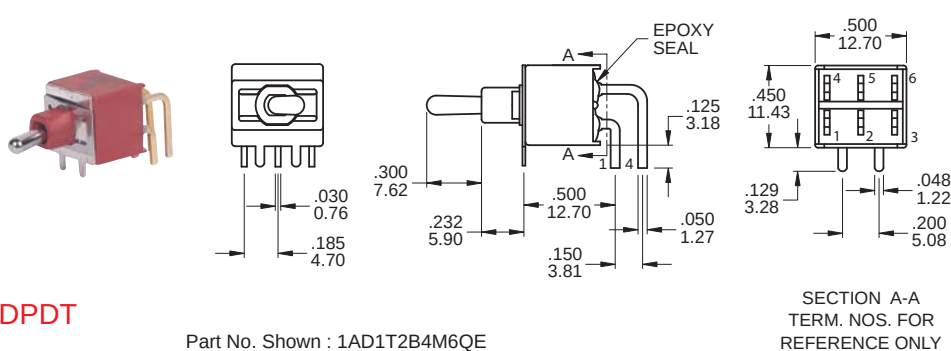
| OPTION CODE | DIM. 'A'        |
|-------------|-----------------|
| M5-1        | .736 ( 18.70 )  |
| M5-2        | .953 ( 24.20 )  |
| M5-3        | .415 ( 10.55 )  |
| M5-4        | 1.062 ( 26.97 ) |

#### M6



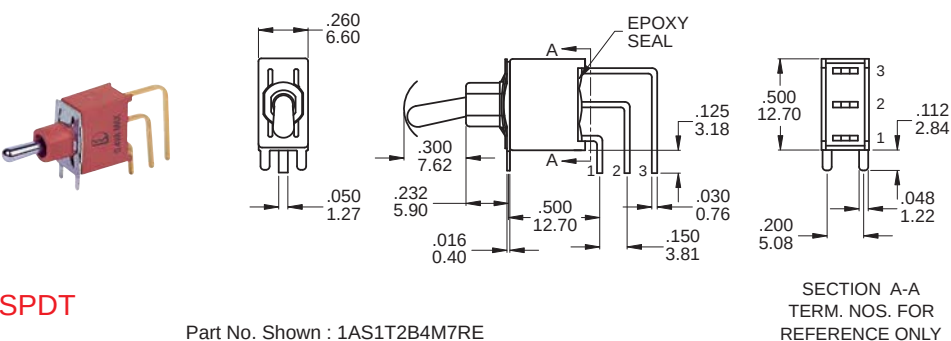
#### SPDT

#### M6



#### DPDT

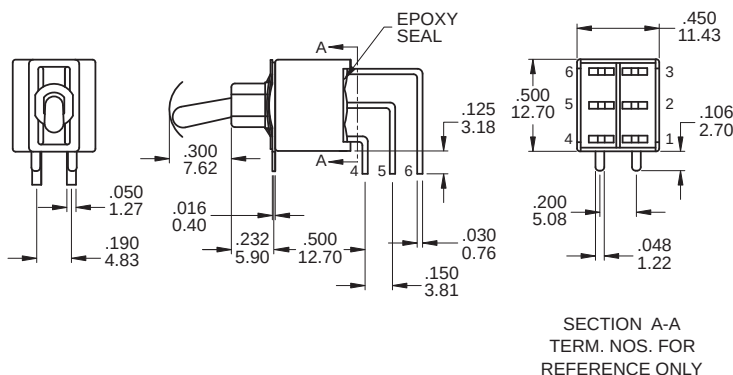
#### M7



#### SPDT



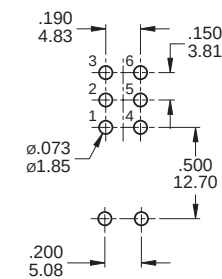
M7



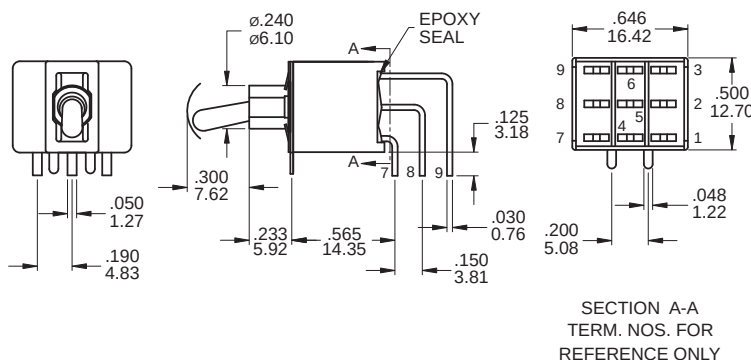
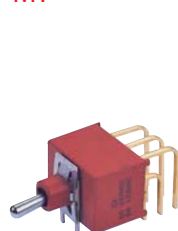
DPDT

Part No. Shown : 1AD1T2B4M7RE

P.C. MOUNTING



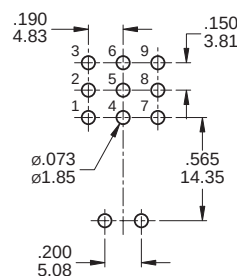
M7



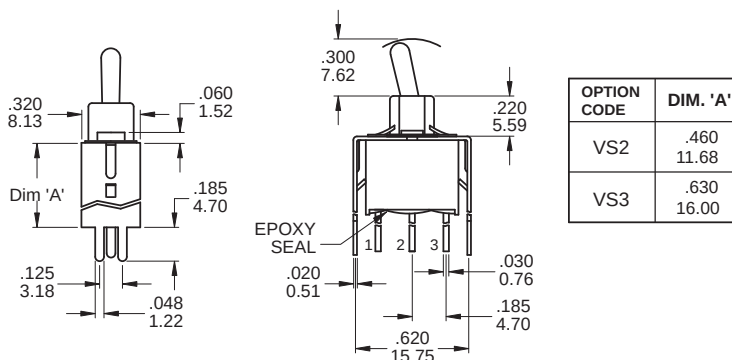
3PDT

Part No. Shown : 1A31T2B4M7QE

P.C. MOUNTING



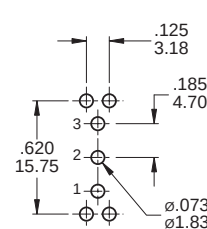
VS2 - VS3



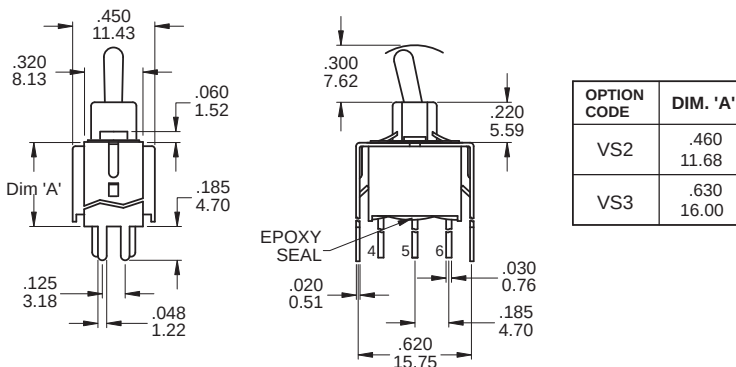
SPDT

Part No. Shown : 1AS1T2B4VS2QE

P.C. MOUNTING



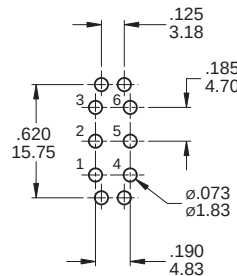
VS2 - VS3



DPDT

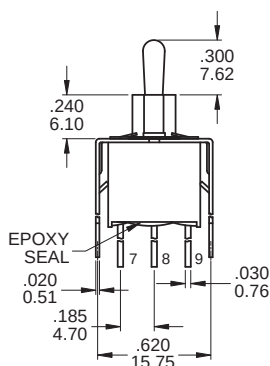
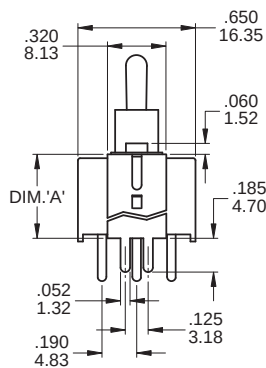
Part No. Shown : 1AD1T2B4VS2QE

P.C. MOUNTING

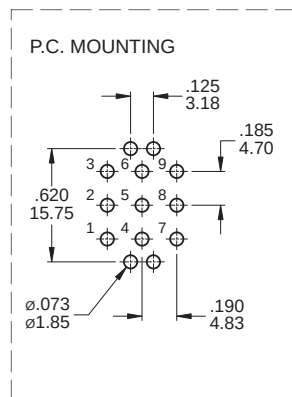




### VS2 - VS3



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

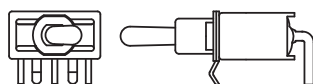


### 3PDT

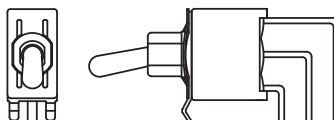
Part No. Shown : 1A31T2B4VS2QE

## SNAP-IN TERMINATION OPTIONS

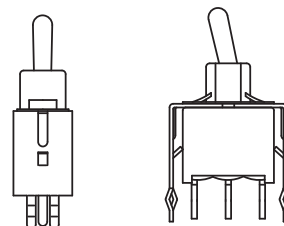
### M6N



### M7N

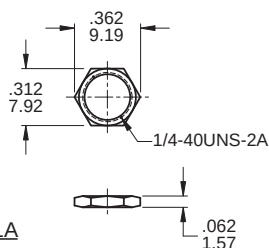


### V2N

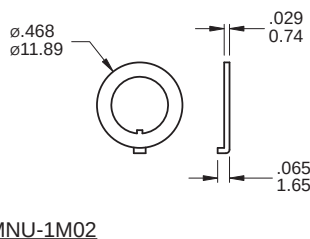


## HARDWARE

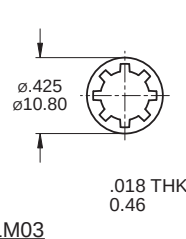
### 1/4 NUT



### LOCKING RING



### LOCK WASHER



## CONTACT MATERIAL OPTIONS

|   | CONTACT PLATING  | TERMINAL PLATING                       | RATINGS                                                                             |
|---|------------------|----------------------------------------|-------------------------------------------------------------------------------------|
| Q | Silver           | Q = Gold flash over silver             | 5 Amps with resistant load @ 120VAC or 28VDC<br>2 Amps with resistant load @ 250VAC |
| S |                  | S = Gold flash over 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 5 sec. (PCB is 1.6mm in thickness)





#### SPECIFICATIONS

**CONTACT RATING:** 0.4Volt-Amps(VA) max.@20V max(AC or DC)

**MECHANICAL LIFE:** 100,000 make-and-break cycles.

**ELECTRICAL LIFE:** 50,000 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 V RMS@sea level.

**OPERATING TEMPERATURE:** -30°C to 85°C.

#### GENERAL SPECIFICATIONS

**TORQUE:** 0.8Nm max. applied to unt.

**PANEL THICKNESS:** 6mm max. ,2mm min.



#### MATERIALS

**CASE & BUSHING:** Glass filled nylon 6/6,flame retardant.heat srabilized (UL94v-0).

**ACTUATOR:** Brass,chrome plated with internal,O-ring seal standard.

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

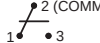
**CONTACT / TERMINALS:** Copper alloy,gold plated.

**SEALIND:** IP67.

IP 67  
ACCORDING TO  
EN 60529 1991+A1:2001  
IEC 60529:2001

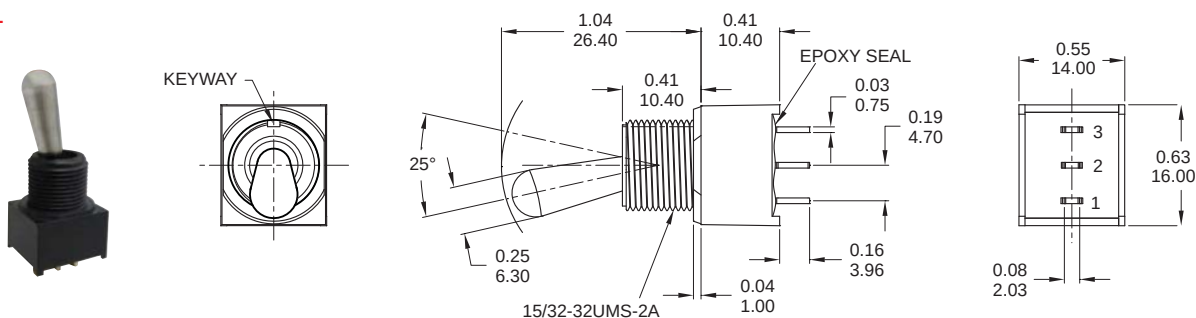


### SWITCH FUNCTION

| NO.<br>POLES | MODEL<br>NO. | SWITCH FUNCTION                                                                   |                                                                                   |                                                                                   | CONNECTED TERMINALS / SCHEMATIC                                                                  |                                                                                     |                                                                                         |
|--------------|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|              |              | POS.1                                                                             | POS.2                                                                             | POS.3                                                                             | POS.1                                                                                            | POS.2                                                                               | POS.3                                                                                   |
|              |              |  |  |  |                 |  |      |
| SP           | 1AS1         | ON                                                                                | NONE                                                                              | ON                                                                                | <div>2-3</div>  | N/A                                                                                 | 2-1  |
|              | 1AS2         | ON                                                                                | NONE                                                                              | MOM                                                                               |                                                                                                  |                                                                                     |                                                                                         |
|              | 1AS3         | ON                                                                                | OFF                                                                               | ON                                                                                |                                                                                                  |                                                                                     |                                                                                         |
|              | 1AS4         | MOM                                                                               | OFF                                                                               | MOM                                                                               |                                                                                                  |                                                                                     |                                                                                         |
|              | 1AS5         | ON                                                                                | OFF                                                                               | MOM                                                                               |                                                                                                  |                                                                                     |                                                                                         |
|              | 1AS9         | ON                                                                                | NONE                                                                              | OFF                                                                               | 2-3                                                                                              | N/A                                                                                 | OPEN                                                                                    |
|              | 1ASD         | MOM                                                                               | NONE                                                                              | OFF                                                                               |                                                                                                  |                                                                                     |                                                                                         |

MOM=MOMENTARY

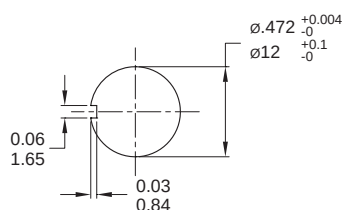
M1



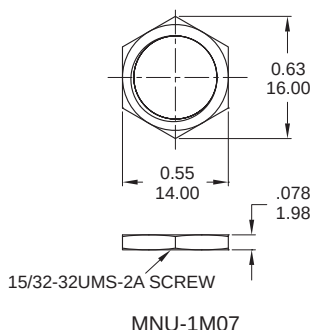
Part No. Shown : 1AS1T8B22M1RPES

### PANEL MOUNTING / HARDWARE

#### PANEL MOUNTING



#### NUT



#### SEALING BOOTS

