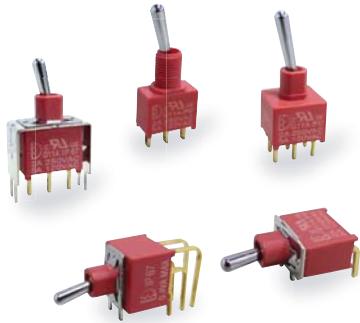


1A Series

Sealed Miniature Toggle Switches

1A
Toggle Switches



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

UL US
E 187490

RoHS
compliant

Pb
lead-free

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: -40°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 PLATING | SEAL | RoHS SOLDERING |
|--|--|--|---|---|----------------------------------|---|
| <p>Model NO.</p> <p>1AS1 SP On-None-On</p> <p>1AS2 SP On-None-Mom.</p> <p>1AS3 SP On-Off-On</p> <p>1AS4 SP Mom.-Off-Mom.</p> <p>1AS5 SP On-Off -Mom.</p> <p>1AD1 DP On-None-On</p> <p>1AD2 DP On-None-Mom.</p> <p>1AD3 DP On-Off-On</p> <p>1AD4 DP Mom.-Off-Mom.</p> <p>1AD5 DP On-Off-Mom.</p> <p>1AD6 DP On-On-On</p> <p>1AD7 DP Mom.-On-Mom.</p> <p>1AD8 DP On-On-Mom.</p> <p>1A31 3P On-None-On</p> <p>1A32 3P On-None-Mom.</p> <p>1A33 3P On-Off-On</p> <p>1A34 3P Mom.-Off-Mom.</p> <p>1A35 3P On-Off-Mom.</p> | <p>Actuator</p> <p>T1 12.70 high</p> <p>T2 7.62 high</p> <p>TA Plastic, black 12.70 high</p> <p>TB Plastic, black 7.62 high</p> <p>TC Plastic, silver 12.70 high</p> | <p>Bushing</p> <p>B1 8.89 high</p> <p>B2 6.10 high</p> | <p>Terminations</p> <p>M1 Solder Lug</p> <p>M2 PC thru-hole</p> <p>M51 18.70 high, wire wrap</p> <p>M52 24.20 high, wire wrap</p> <p>M53 10.55 high, wire wrap</p> <p>M54 26.97 high, wire wrap</p> <p>M6 Right angle, PC thru-hole</p> <p>M6N Right angle, snap-in, PC thru-hole</p> <p>M7 Vertical right angle, PC thru-hole</p> <p>VS2 11.68 high, V-bracket</p> <p>V2N 11.68 high, snap-in V-bracket</p> <p>VS3 16.00 high, V-bracket</p> | <p>Terminal plating</p> <p>Q Gold flash over silver</p> <p>R Gold</p> <p>C Gold over silver</p> | <p>Seal</p> <p>E EPOXY (std)</p> | <p>RoHS soldering</p> <p>□ RoHS Compliant</p> <p>S RoHS & Lead Free</p> |

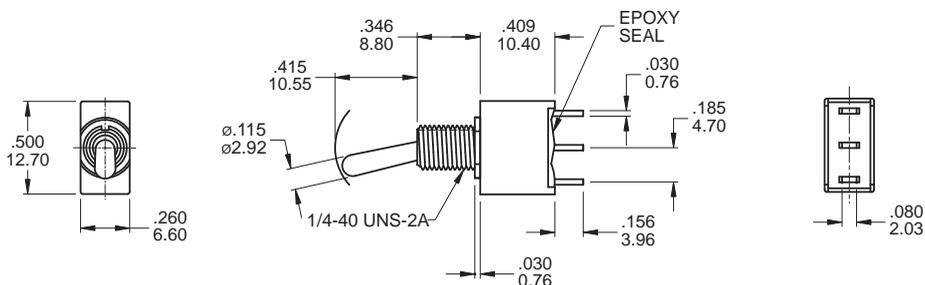
SWITCH FUNCTION

| 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 | | N/A | |
| | Q11A12 | 1AS2 | ON | NONE | MOM | | | |
| | Q11A13 | 1AS3 | ON | OFF | ON | | | |
| | Q11A14 | 1AS4 | MOM | OFF | MOM | | | |
| | Q11A15 | 1AS5 | ON | OFF | MOM | | | |
| DP | Q11A21 | 1AD1 | ON | NONE | ON | | N/A | |
| | Q11A22 | 1AD2 | ON | NONE | MOM | | | |
| | Q11A23 | 1AD3 | ON | OFF | ON | | | |
| | Q11A24 | 1AD4 | MOM | OFF | MOM | | | |
| | Q11A25 | 1AD5 | ON | OFF | MOM | | | |
| | Q11A26 | 1AD6 | ON | ON | ON | | | |
| | ▲ Q11A27 | 1AD7 | MOM | ON | MOM | | | |
| | ▲ Q11A28 | 1AD8 | ON | ON | MOM | | | |
| 3P | Q11A31 | 1A31 | ON | NONE | ON | | N/A | |
| | Q11A32 | 1A32 | ON | NONE | MOM | | | |
| | 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

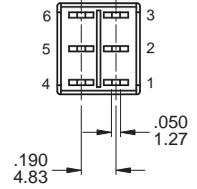
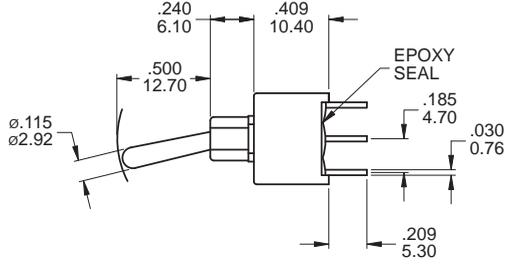
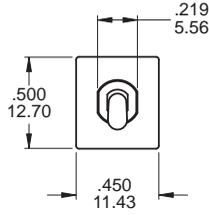


1A
Toggle Switches

1A Series

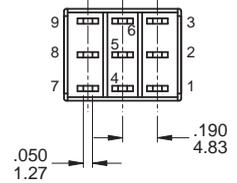
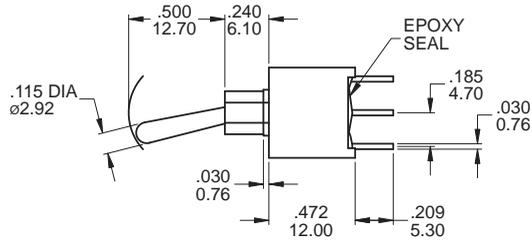
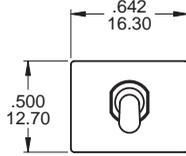
Sealed Miniature Toggle Switches

1A
Toggle Switches



DPDT

Part No. Shown : 1AD1T1B4M2QE



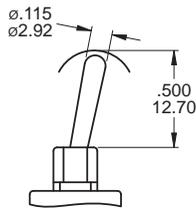
3PDT

Part No. Shown : 1A31T1B4M2QE

ACTUATOR OPTIONS

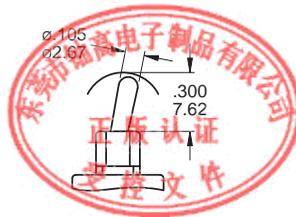
Actuator shown with standard B4 Bushing,
Subtract .085 (2.15) for B1 bushing.

T1



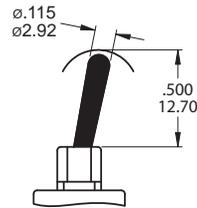
Standard with
M1, M2 terminations.

T2



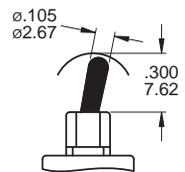
Standard with
M6, M7, VS2-3 terminations.

TA



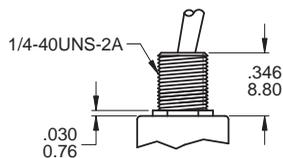
PLASTIC ACTUATOR
(TC, Silver)

TB



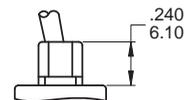
BUSHING OPTIONS

B1



Std for M1

B4

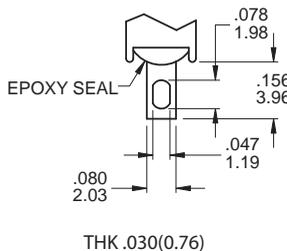


Std for M2, M6, M7, VS termination

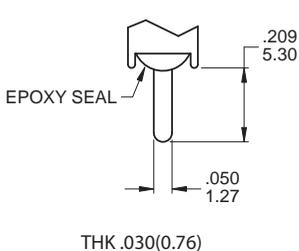


TERMINATION OPTIONS

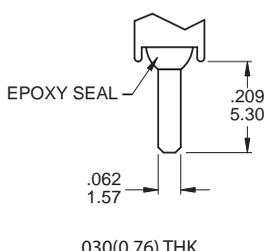
M1 Solder lug



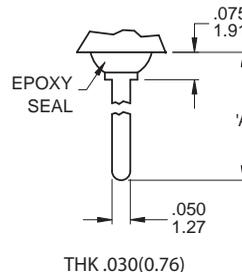
M2 PC Thru-hole



M3 Quick connect



M5 Wire Wrap



OTHER TERMINATION OPTIONS

M6 Right angle P.C. Mount

M7 Vertical right angle P.C. Mount

VS2 Vertical bracket P.C. Mount

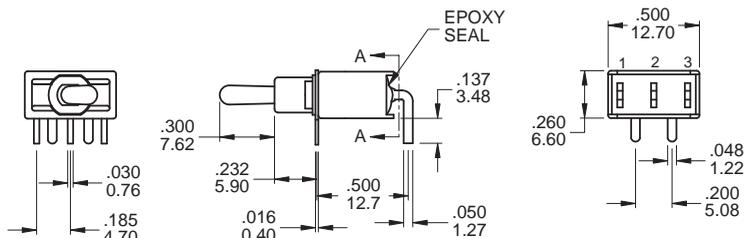
VS3 Vertical bracket P.C. Mount

M6N Right angle P.C. Mount with snap-in bracket

V2N Vertical bracket P.C. Mount with snap-in bracket

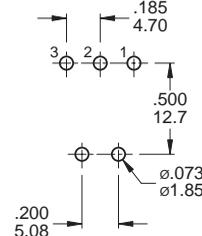
| OPTION CODE | DIM. 'A' |
|-------------|-----------------|
| M51 | .736 (18.70) |
| M52 | .953 (24.20) |
| M53 | .415 (10.55) |
| M54 | 1.062 (26.97) |

M6



Part No. Shown : 1AS1T2B4M6QE

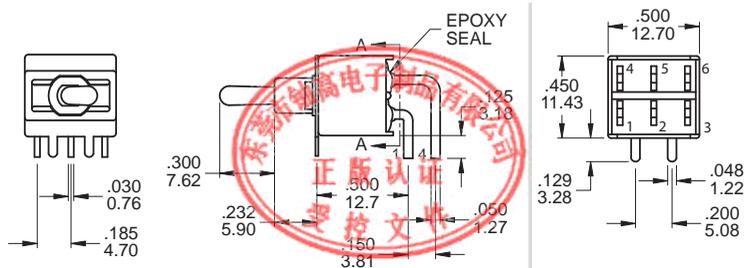
P.C. MOUNTING



SPDT

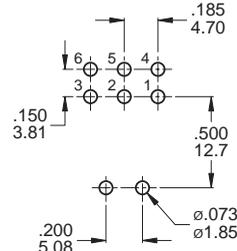
SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

M6



Part No. Shown : 1AD1T2B4M6QE

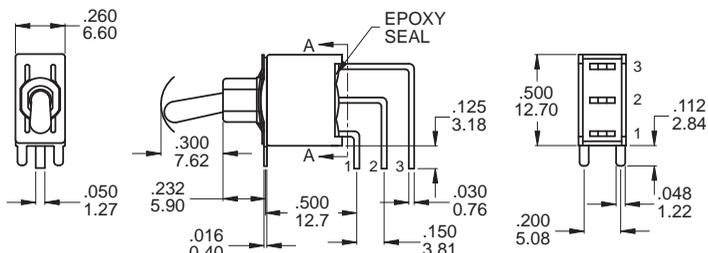
P.C. MOUNTING



DPDT

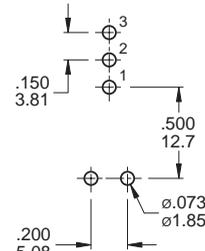
SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

M7



Part No. Shown : 1AS1T2B4M7RE

P.C. MOUNTING



SPDT

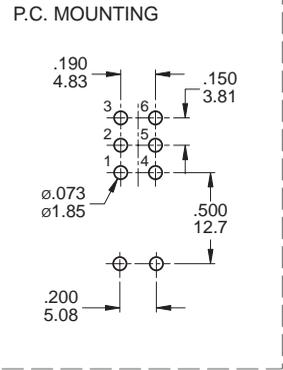
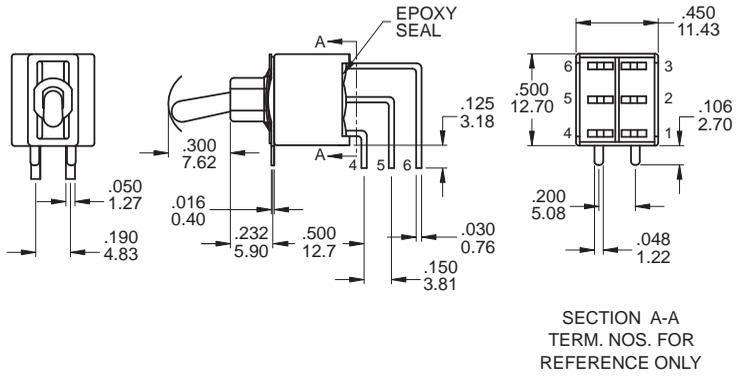
SECTION A-A
TERM. NOS. FOR
REFERENCE ONLY

1A Series

Sealed Miniature Toggle Switches

1A
Toggle Switches

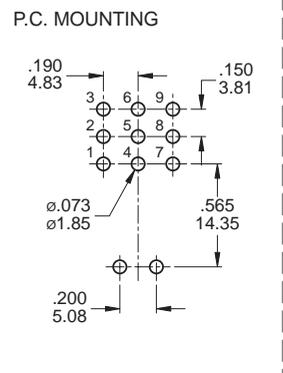
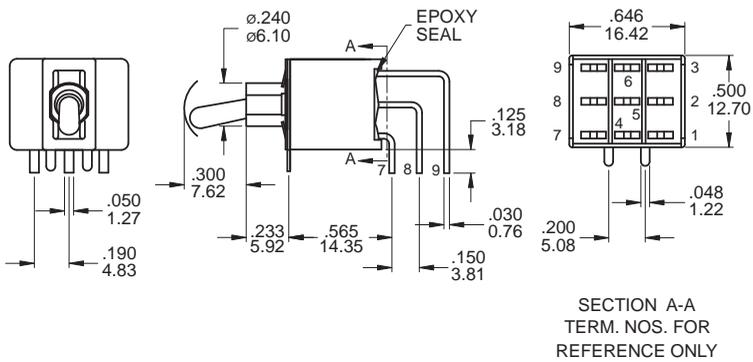
M7



DPDT

Part No. Shown : 1AD1T2B4M7RE

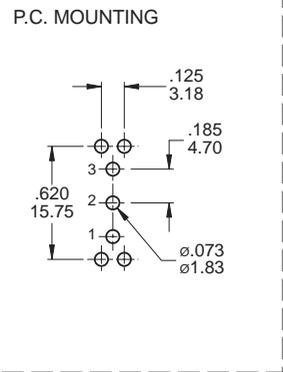
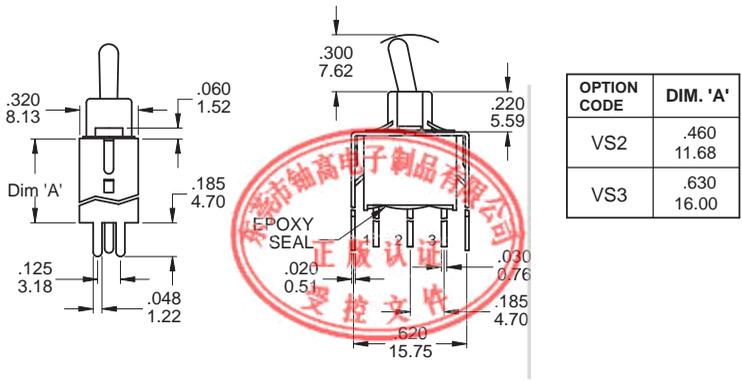
M7



3PDT

Part No. Shown : 1A31T2B4M7QE

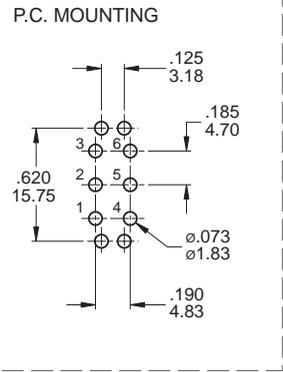
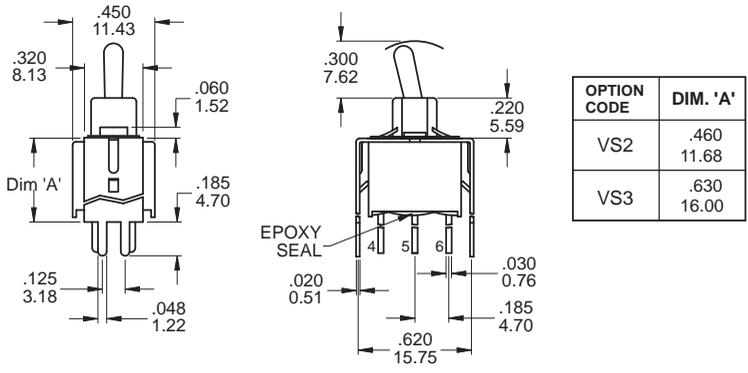
VS2 - VS3



SPDT

Part No. Shown : 1AS1T2B4VS2QE

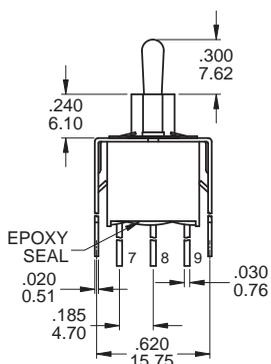
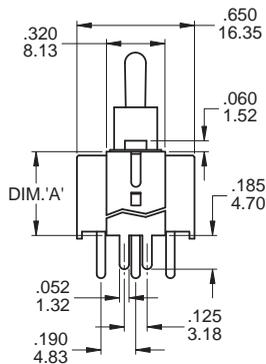
VS2 - VS3



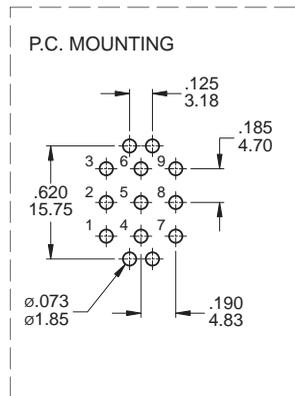
DPDT

Part No. Shown : 1AD1T2B4VS2QE

VS2 - VS3



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

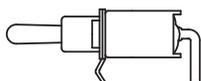


3PDT

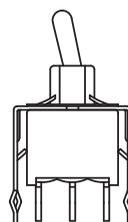
Part No. Shown : 1A31T2B4VS2QE

SNAP-IN TERMINATION OPTIONS

M6N

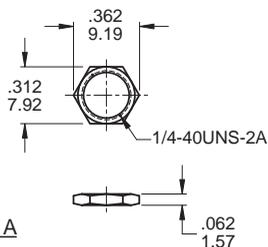


V2N

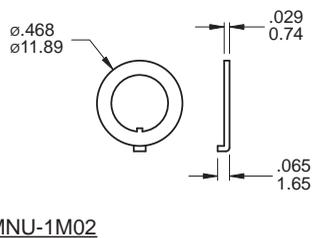


HARDWARE

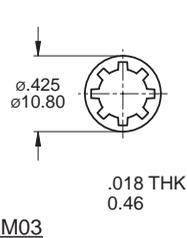
1/4 NUT



LOCKING RING



LOCKWASHER



CONTACT MATERIAL OPTIONS

| | CONTACT PLATING | TERMINAL PLATING | RATINGS |
|---|------------------|----------------------------|---|
| Q | Silver | Q = Gold flash over silver | 5 Amps with resistant load @ 120VAC or 28VDC |
| C | Gold over Silver | C = Gold over silver | 2 Amps with resistant load @ 250VAC |
| 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)



1A
Toggle Switches

1A Series

Sealed Toggle Switches

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 stabilized (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

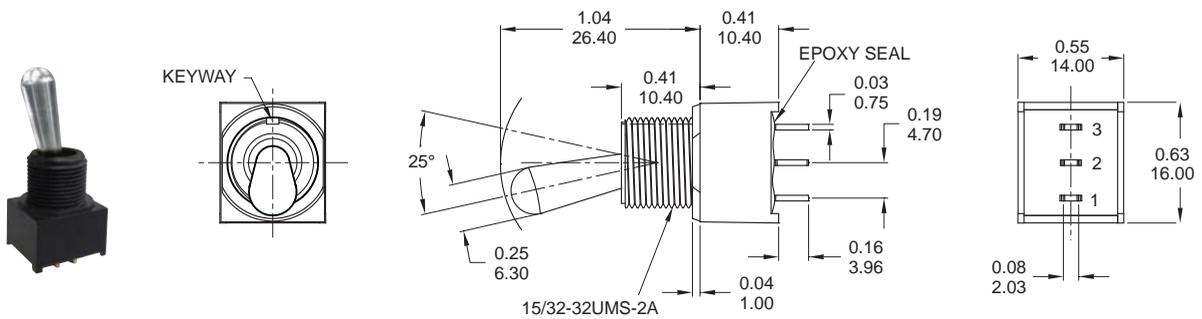


SWITCH FUNCTION

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

MOM=MOMENTARY

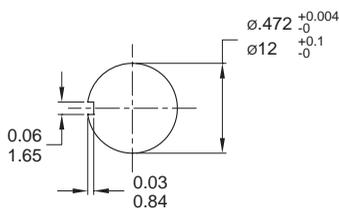
M1



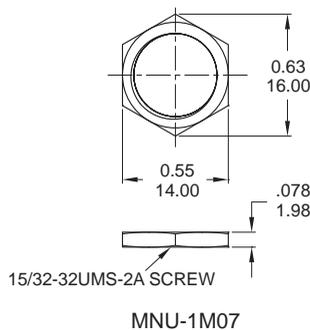
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PANEL MOUNTING / HARDWARE

PANEL MOUNTING



NUT



SEALING BOOTS

