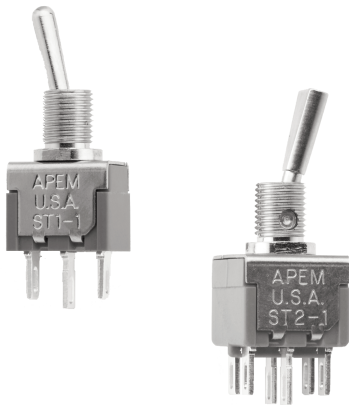


# ST series

## Miniature toggle switches

*Distinctive features and specifications*



- ☐ Dry circuit through power ratings.
- ☐ Ultra-rugged construction SPDT & DPDT models with numerous options.
- ☐ PC and panel mount models.

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - gold over nickel plated brass contacts : 0.4VA - 20V Max.
  - coin silver contacts: 6A 125VAC, 3A 250VAC, 7A 30VDC
- Initial contact resistance: 3 milliohms max. at 3VDC, 0.1 Amp.
- Insulation resistance: 2,000 MΩ min. between terminals & case ground.
- Dielectric strength: 2,000 VAC for 1 minute between terminals & case ground.
- Electrical life: 100,000 cycles at full load for ST1-1 and ST2-1, all other models 40,000 cycles

### MATERIALS

- Case : Diallylphthalate (DAP), color blue
- Actuator : Brass, bright nickel or chrome plated.
- Bushing: nickel plated brass
- Strap: stainless steel
- Contacts
  - B: Gold
  - Q: Coin silver
  - G: Gold over silver
- Terminal seal: epoxy

### GENERAL SPECIFICATIONS

- Operating temperature : -30°C to +85°C

### AGENCY APPROVAL

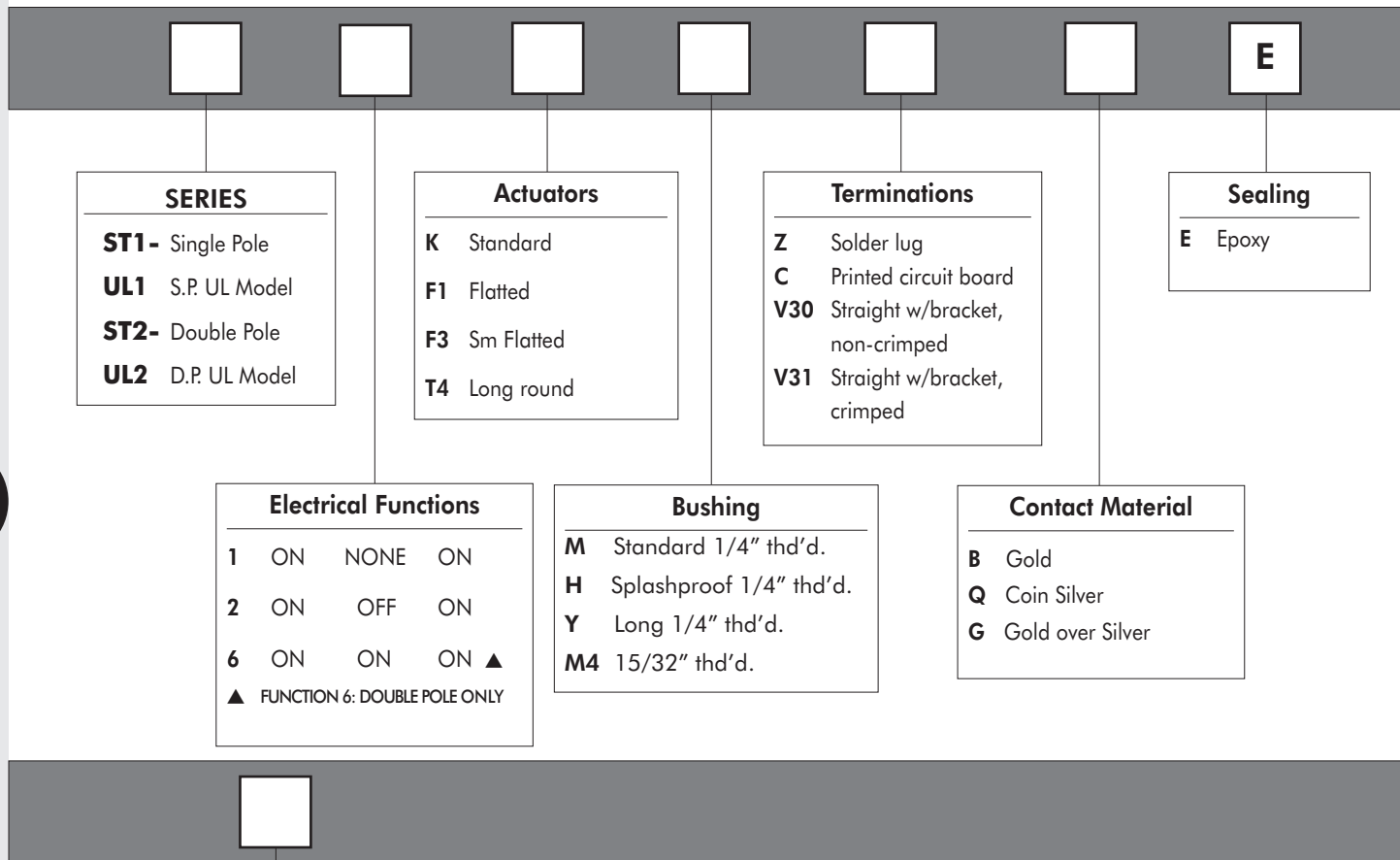


**Availability:** All models with coin silver contacts (Q) only.

**Marking:** To order switches marked UL use "UL" prefix for series designation. For CSA marking, complete appropriate box on ordering format.

# ST series

Miniature toggle switches



## SERIES

**ST1-** Single Pole  
**UL1** S.P. UL Model  
**ST2-** Double Pole  
**UL2** D.P. UL Model

## Actuators

**K** Standard  
**F1** Flatted  
**F3** Sm Flatted  
**T4** Long round

## Terminations

**Z** Solder lug  
**C** Printed circuit board  
**V30** Straight w/bracket, non-crimped  
**V31** Straight w/bracket, crimped

## Sealing

**E** Epoxy

## Electrical Functions

|   |    |      |      |
|---|----|------|------|
| 1 | ON | NONE | ON   |
| 2 | ON | OFF  | ON   |
| 6 | ON | ON   | ON ▲ |

▲ FUNCTION 6: DOUBLE POLE ONLY

## Bushing

**M** Standard 1/4" thd'd.  
**H** Splashproof 1/4" thd'd.  
**Y** Long 1/4" thd'd.  
**M4** 15/32" thd'd.

## Contact Material

**B** Gold  
**Q** Coin Silver  
**G** Gold over Silver

## Agency approval

**No approval**  
 /CSA CSA Approval  
 (Q contact material only)  
**Note: for UL, Select UL1 or UL2 series above**

## ABOUT THIS SERIES

On the following pages, you will find successively :  
 - model structure of switches  
 - options in the same order as in above chart

**Dimensions** : first dimensions are in mm while inches are shown as bracketed numbers.



**Sealing boots** are available to protect the switches against dust and water. They are presented in section H



**Mounting accessories** : standard hardware supplied with all models with Ø 6,35 (1/4) threaded bushing : 2 - 5/16" hex nuts , 1 locking ring and 1 lockwasher.  
 Standard and special hardware available are presented in section I.



**Packaging unit** : 25 pieces for double pole  
 50 pieces for single pole



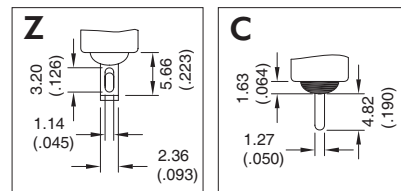
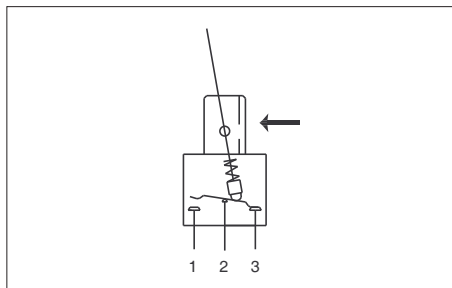
**NOTICE** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

# ST series

## Miniature toggle switches

### Terminations:

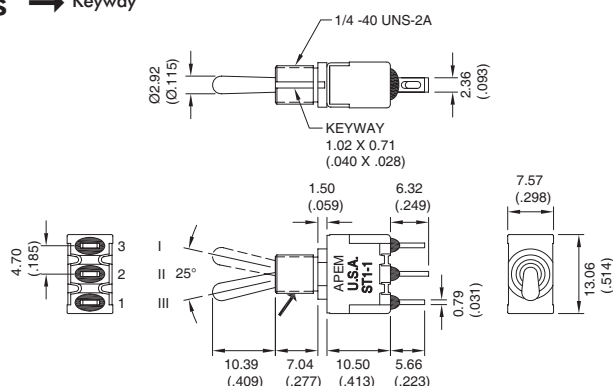
- Solder lug or straight PC terminals
- Epoxy sealed terminals standard



### Single pole panel mount with solder lug terminals → Keyway



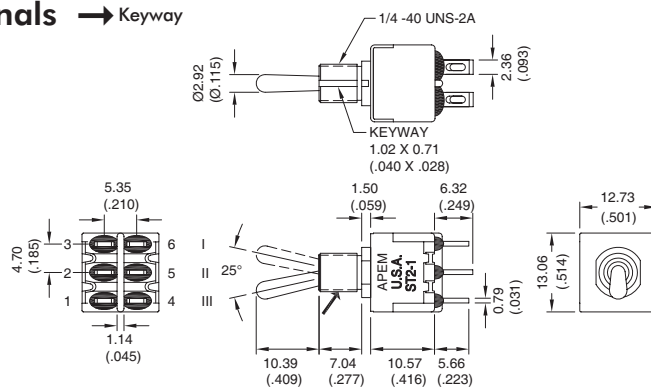
| MODEL NO.         | UL NO.           | I   | II  | III |
|-------------------|------------------|-----|-----|-----|
|                   |                  | 1-2 |     | 2-3 |
| <b>ST1-1KMZQE</b> | <b>UL11KMZQE</b> | ON  | -   | ON  |
| <b>ST1-2KMZQE</b> | <b>UL12KMZQE</b> | ON  | OFF | ON  |



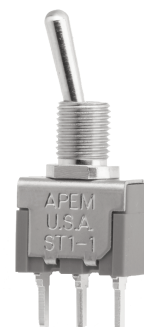
### Double pole panel mount with solder lug terminals → Keyway



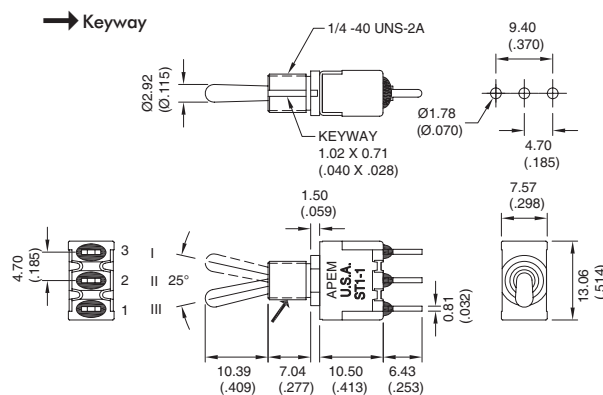
| MODEL NO.         | UL NO.           | I   | II  | III |
|-------------------|------------------|-----|-----|-----|
|                   |                  | 1-2 | 1-2 | 2-3 |
|                   |                  | 4-5 | 5-6 | 5-6 |
| <b>ST2-1KMZQE</b> | <b>UL21KMZQE</b> | ON  | -   | ON  |
| <b>ST2-2KMZQE</b> | <b>UL22KMZQE</b> | ON  | OFF | ON  |
| <b>ST2-6KMZQE</b> | <b>UL26KMZQE</b> | ON  | ON  | ON  |



### Single pole straight PC terminals



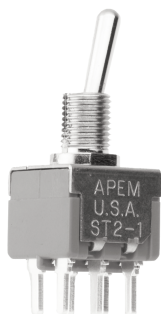
| MODEL NO.         | UL NO.           | I   | II  | III |
|-------------------|------------------|-----|-----|-----|
|                   |                  | 1-2 |     | 2-3 |
| <b>ST1-1KMCBE</b> | <b>UL11KMCQE</b> | ON  | -   | ON  |
| <b>ST1-2KMCBE</b> | <b>UL12KMCQE</b> | ON  | OFF | ON  |



# ST series

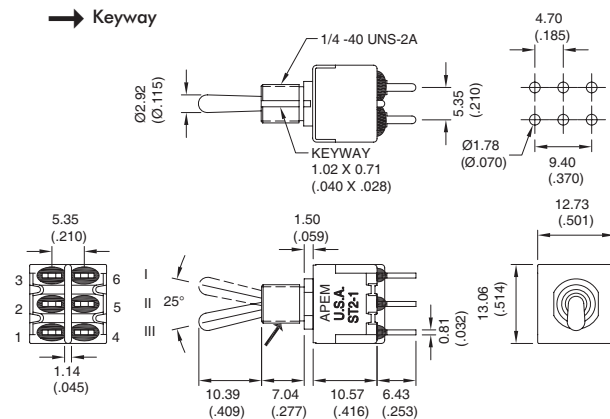
Miniature toggle switches

## Double pole straight PC terminals



| MODEL NO.         | UL NO.           | I   | II  | III |
|-------------------|------------------|-----|-----|-----|
|                   |                  | 1-2 | 1-2 | 2-3 |
|                   |                  | 4-5 | 5-6 | 5-6 |
| <b>ST2-1KMCBE</b> | <b>UL21KMCQE</b> | ON  | -   | ON  |
| <b>ST2-2KMCBE</b> | <b>UL22KMCQE</b> | ON  | OFF | ON  |
| <b>ST2-6KMCBE</b> | <b>UL26KMCQE</b> | ON  | ON  | ON  |

→ Keyway

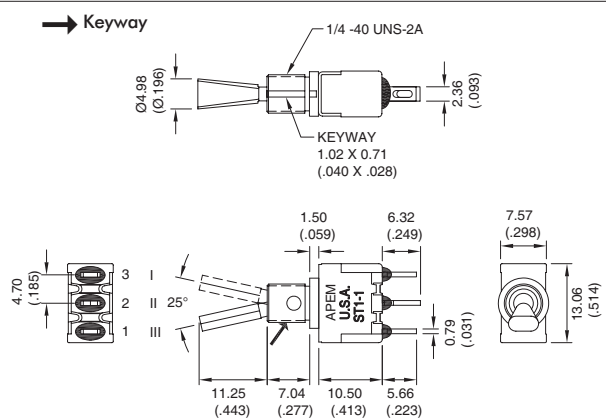


## Single pole panel mount flatted actuator

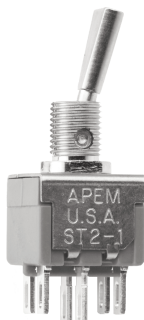


| MODEL NO.          | UL NO.            | I   | II  | III |
|--------------------|-------------------|-----|-----|-----|
|                    |                   | 1-2 | 1-2 | 2-3 |
| <b>ST1-1F1MZQE</b> | <b>UL11F1MZQE</b> | ON  | -   | ON  |
| <b>ST1-2F1MZQE</b> | <b>UL12F1MZQE</b> | ON  | OFF | ON  |

→ Keyway

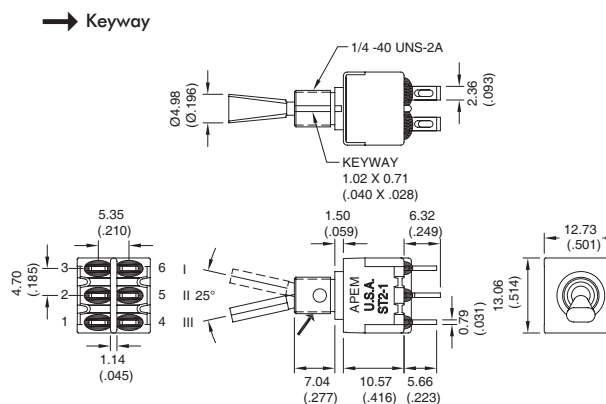


## Double pole panel mount flatted actuator



| MODEL NO.          | UL NO.            | I   | II  | III |
|--------------------|-------------------|-----|-----|-----|
|                    |                   | 1-2 | 1-2 | 2-3 |
|                    |                   | 4-5 | 5-6 | 5-6 |
| <b>ST2-1F1MZQE</b> | <b>UL21F1MZQE</b> | ON  | -   | ON  |
| <b>ST2-2F1MZQE</b> | <b>UL22F1MZQE</b> | ON  | OFF | ON  |
| <b>ST2-6F1MZQE</b> | <b>UL26F1MZQE</b> | ON  | ON  | ON  |

→ Keyway

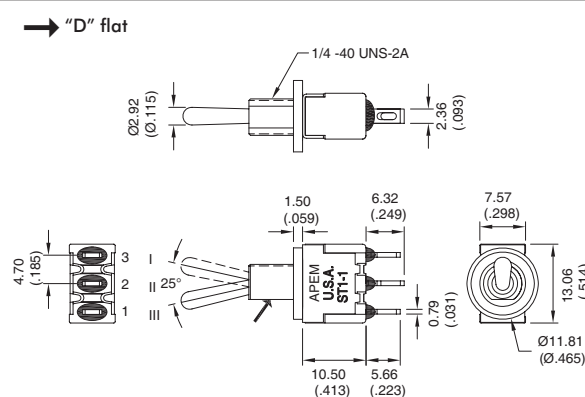


## Single pole panel mount with splashproof bushing → "D" flat



| MODEL NO.         | UL NO.           | I   | II  | III |
|-------------------|------------------|-----|-----|-----|
|                   |                  | 1-2 |     | 2-3 |
| <b>ST1-1KHZQE</b> | <b>UL11KHZQE</b> | ON  | -   | ON  |
| <b>ST1-2KHZQE</b> | <b>UL12KHZQE</b> | ON  | OFF | ON  |

→ "D" flat



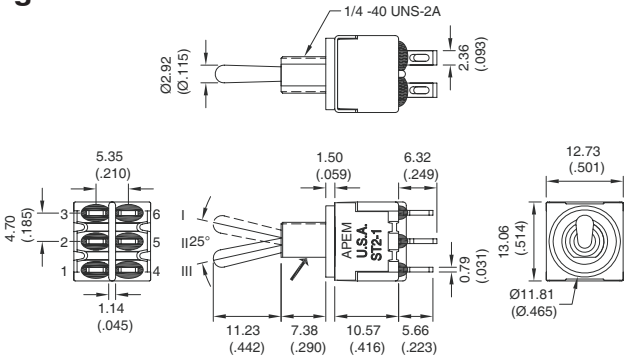
# ST series

## Miniature toggle switches

### Double pole panel mount with splashproof bushing → "D" flat

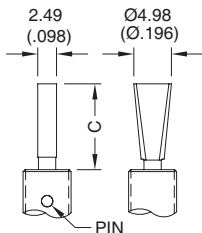


| MODEL NO.         | UL NO.           | I   | II  | III |
|-------------------|------------------|-----|-----|-----|
|                   |                  | 1-2 | 1-2 | 2-3 |
|                   |                  | 4-5 | 5-6 | 5-6 |
| <b>ST2-1KHZQE</b> | <b>UL21KHZQE</b> | ON  | -   | ON  |
| <b>ST2-2KHZQE</b> | <b>UL22KHZQE</b> | ON  | OFF | ON  |
| <b>ST2-6KHZQE</b> | <b>UL26KHZQE</b> | ON  | ON  | ON  |



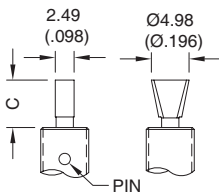
### Actuator

F1



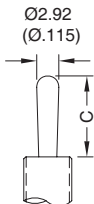
Flatted

F3



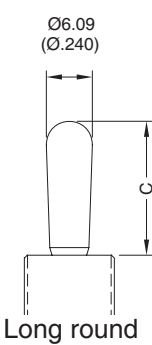
Short flatted

K



Round

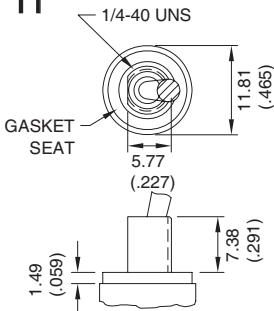
T4



Long round

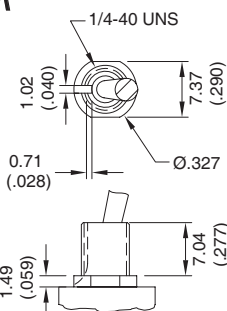
### Bushing options

H



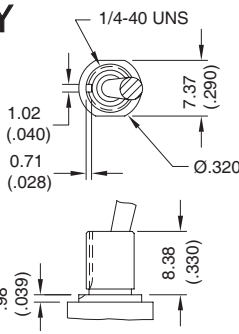
Splashproof

M



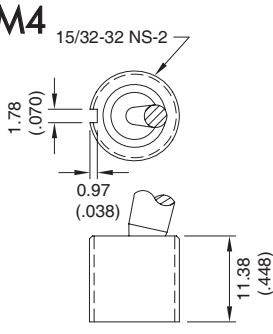
Threaded

Y

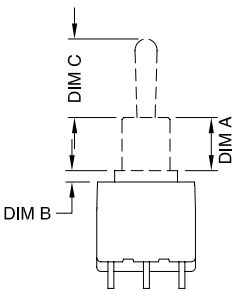


Long threaded

M4



15/32" threaded

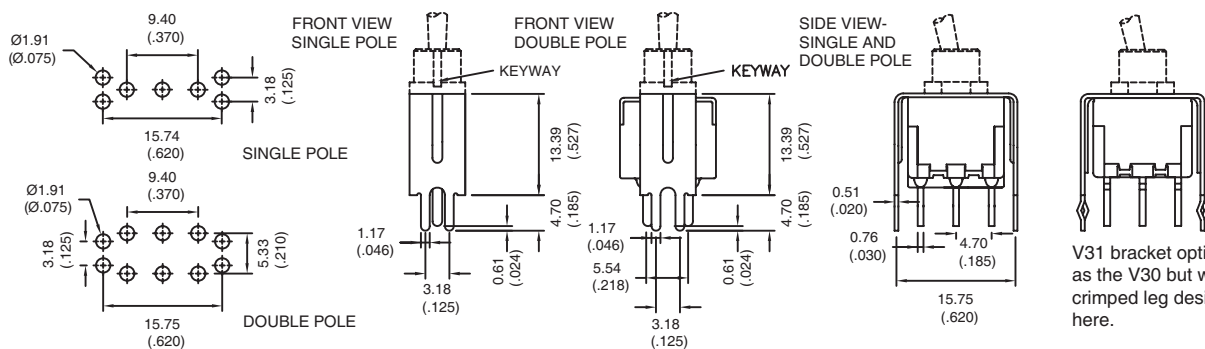


| Bushing Option | Bushing Dims. |             | Actuator length Dim C |             |              |              |
|----------------|---------------|-------------|-----------------------|-------------|--------------|--------------|
|                | Dim A         | Dim B       | F1                    | F3          | K            | T4           |
| H              | 7.37 (.290)   | 1.52 (.060) | N/A                   | N/A         | 10.41 (.410) | N/A          |
| M              | 7.04 (.277)   | 1.52 (.060) | 11.43 (.450)          | 6.35 (.250) | 10.41 (.410) | N/A          |
| Y              | 8.38 (.330)   | 1.02 (.040) | N/A                   | N/A         | 10.41 (.410) | N/A          |
| M4             | 11.38 (.448)  | -           | N/A                   | N/A         | N/A          | 17.45 (.687) |

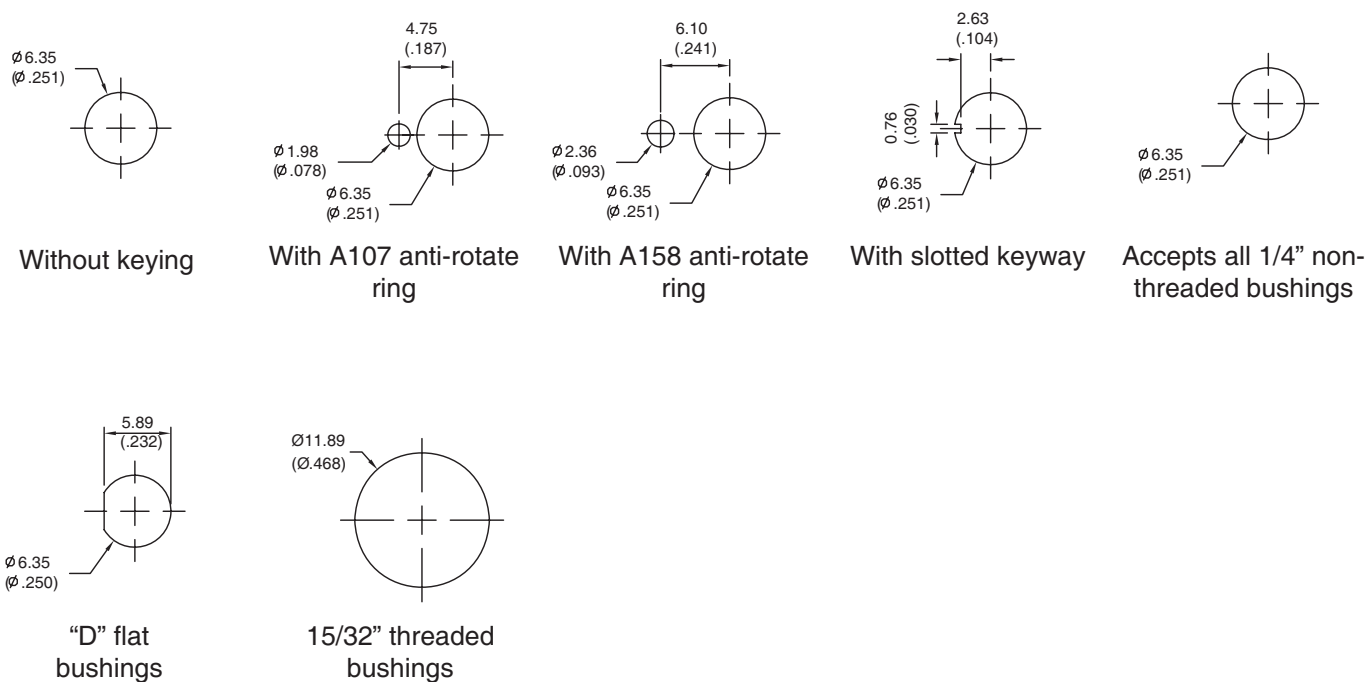
# ST series

## Miniature toggle switches

### V30 bracket option

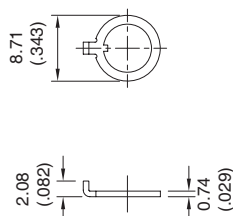


### Panel cut-outs

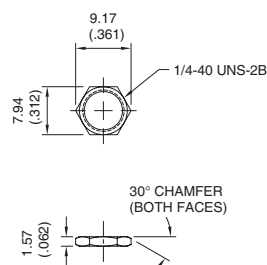


### Hardware

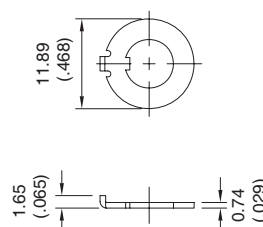
Anti-rotate ring A107  
Nickel plated brass



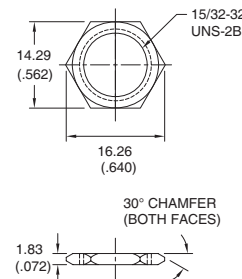
5/16" Hex nut A112  
Nickel plated brass 1/4-40



Anti-rotate ring A158  
Nickel plated brass



9/16" Hex nut A465  
Nickel plated brass 15/32-32



# ST series

## Miniature toggle switches

### Contact material specs.

- B** Dry circuit - gold over nickel over brass.  
RATING: 0.4 Volt-Amps (VA) max. at 20 V max.  
ELECTRIC LIFE: 100,000 cycles min. (ST1-1 & ST2-1 only - other models 40,000 cycles min.)
- Q** Power circuit - coin silver.  
RATING: 6 Amps at 125 VAC, 3 Amps at 250 VAC or 7 Amps at 30 VDC (resistive loads).  
ELECTRIC LIFE: 100,000 cycles min. (ST1-1 & ST2-1 only - other models 40,000 cycles min.)
- G** Dry circuit or power circuit - gold over nickel over coin silver.  
RATINGS & ELECTRIC LIFE: Same as B & Q above - i.e. - can be used in either dry circuit or power circuit, however once used in power circuit, switch cannot be re-used in dry circuit. This option satisfies those customers who have both dry circuit and power circuit requirements, but prefer to inventory only one switch for both.

A

### UL & CSA options

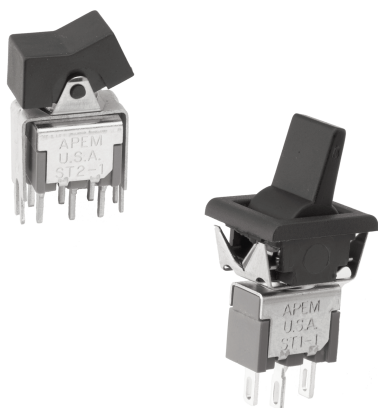


- UL** For power circuits - coin silver  
RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor).  
Underwriter Laboratories file no. E66367. Note - applicable only to terminations with coin silver contacts (Q option).
- CSA** For power circuits - coin silver  
RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor). Canadian Standards Association file no. LR54592-1. Note - applicable only to terminations with coin silver contacts (Q option) as CSA recognizes switches for power applications only.  
Note- Double pole switches with solder lug terminals are not CSA recognized .

# ST series

## Miniature rocker switches

*Distinctive features and specifications*



- ☐ Dry circuit through power ratings.
- ☐ Ultra-rugged construction SPDT & DPDT models with numerous options.
- ☐ Panel, panel & PC and PC mounting models.

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - gold over nickel plated brass contacts : 0.4VA - 20V Max.
  - coin silver contacts : 6A 125VAC, 3A 250VAC, 7A 30VDC
- Initial contact resistance : 3 milliohms max. at 3VDC, 0.1 Amp.
- Insulation resistance : 2,000 MΩ min. between terminals & case ground.
- Dielectric strength : 2,000 VAC for 1 minute between terminals & case ground.
- Electrical life : 40,000 cycles for function 6, all other models are 100,000 cycles at full load

### MATERIALS

- Case : Melamine Phenolic, color, blue
- Actuator :
  - J1 & J2: Glass filled polyester
  - J3 & J4: Nylon or acetal
- Bushing: nickel plated brass
- Strap: stainless steel
- Contacts
  - B: Gold
  - Q: Coin silver
  - G: Gold over silver
- Terminal seal: epoxy
- Spring Bracket: Stainless steel
- Bezel: Nylon

### GENERAL SPECIFICATIONS

- Operating temperature : -30°C to +85°C

### AGENCY APPROVAL

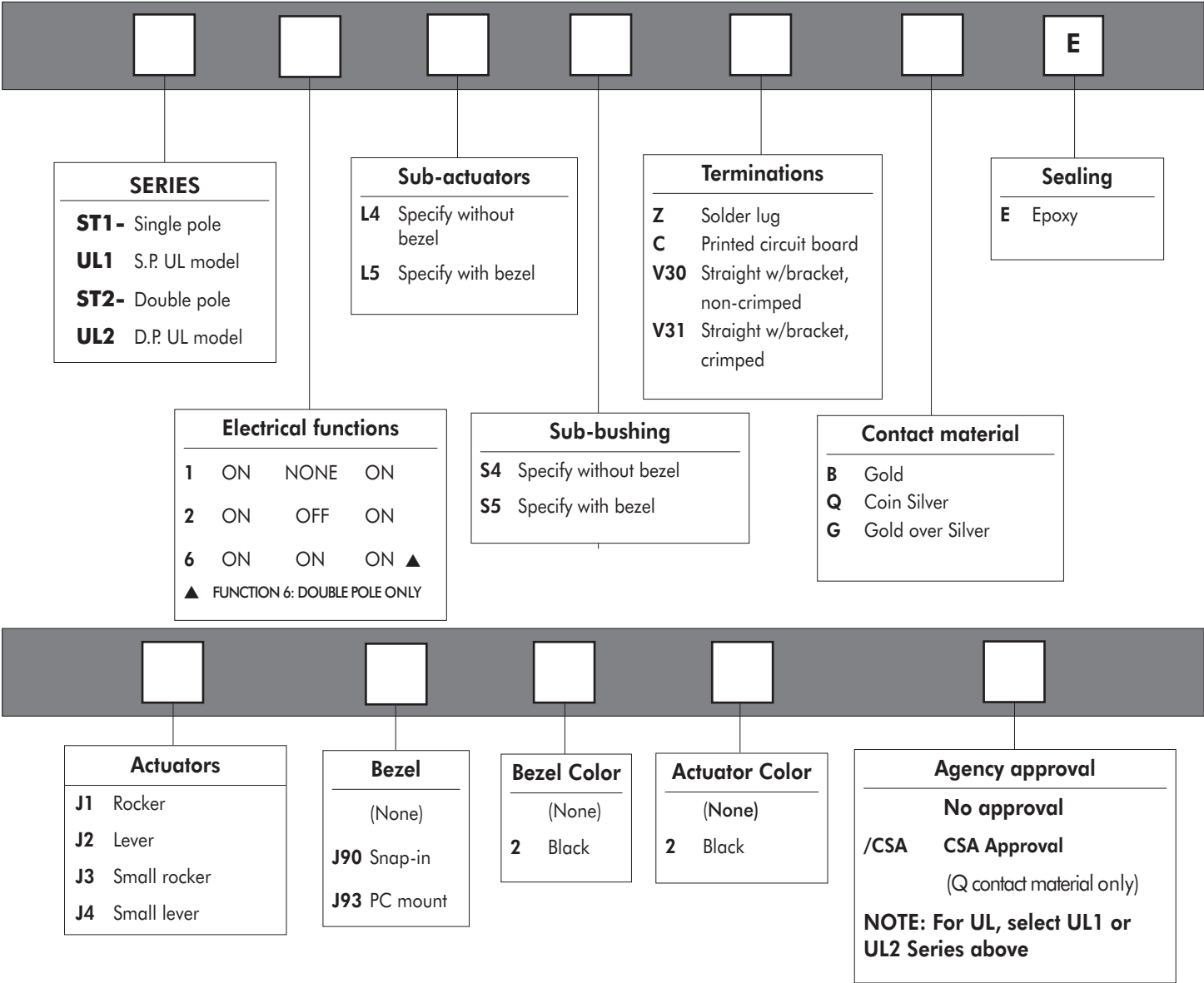


**Availability:** All models with coin silver contacts (Q) only.

**Marking:** To order switches marked UL use "UL" prefix for series designation. For CSA marking, complete appropriate box on ordering format.

# ST series

## Miniature rocker switches



### ABOUT THIS SERIES

On the following pages, you will find successively :

- model structure of switches
- options in the same order as in above chart

**Dimensions** : first dimensions are in mm while inches are shown as bracketed numbers.



**Sealing boots** are available to protect the switches against dust and water. They are presented in section H.



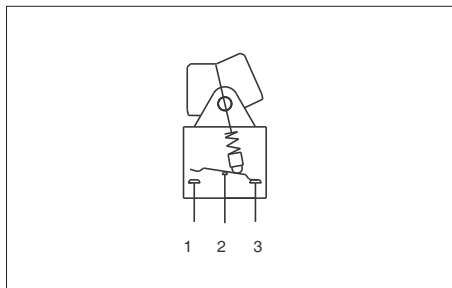
**Mounting accessories** : standard hardware supplied with all models with Ø 6,35 (1/4) threaded bushing : 2 - 5/16" hex nuts , 1 locking ring and 1 lockwasher.  
Standard and special hardware available are presented in section I.



**NOTICE** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

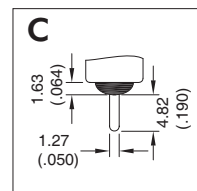
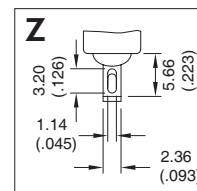
# ST series

## Miniature rocker switches



### Terminations

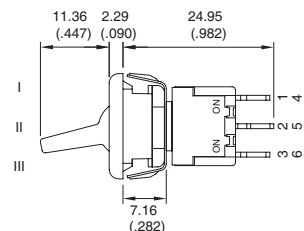
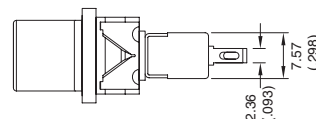
- Solder lug or straight PC terminals
- Epoxy sealed terminals standard



### Solder lug terminals with snap-in bezel



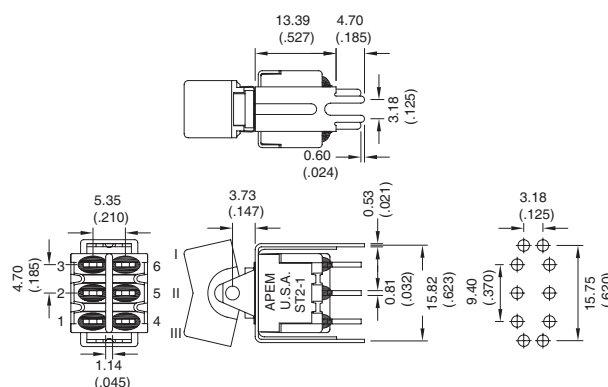
| MODEL NO.          | I   | II  | III |
|--------------------|-----|-----|-----|
| SINGLE POLE        | 1-2 |     | 2-3 |
| ST1-1L5S5ZQJ4J9022 | ON  | -   | ON  |
| ST1-2L5S5ZQJ4J9022 | ON  | OFF | ON  |
| DOUBLE POLE        | 1-2 | 1-2 | 2-3 |
|                    | 4-5 | 5-6 | 5-6 |
| ST2-1L5S5ZQJ4J9022 | ON  | -   | ON  |
| ST2-2L5S5ZQJ4J9022 | ON  | OFF | ON  |
| ST1-6L5S5ZQJ4J9022 | ON  | ON  | ON  |



### Double pole straight PC terminals with bracket



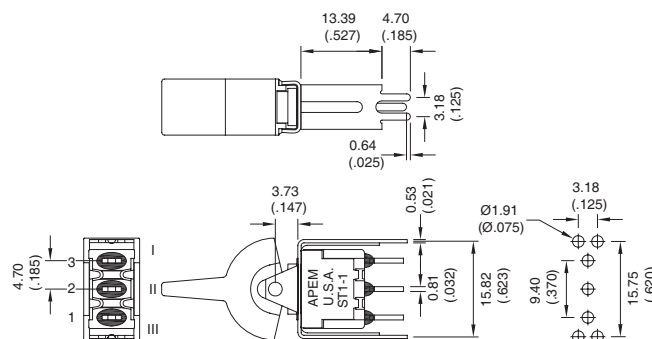
| MODEL NO.        | I   | II  | III |
|------------------|-----|-----|-----|
|                  | 1-2 | 1-2 | 2-3 |
|                  | 4-5 | 5-6 | 5-6 |
| ST2-1L4S4V30BJ12 | ON  | -   | ON  |
| ST2-2L4S4V30BJ12 | ON  | OFF | ON  |
| ST2-6L4S4V30BJ12 | ON  | ON  | ON  |



### Single pole straight PC terminals with bracket



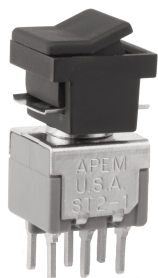
| MODEL NO.        | I   | II  | III |
|------------------|-----|-----|-----|
|                  | 1-2 |     | 2-3 |
| ST1-1L4S4V30BJ12 | ON  | -   | ON  |
| ST1-2L4S4V30BJ12 | ON  | OFF | ON  |



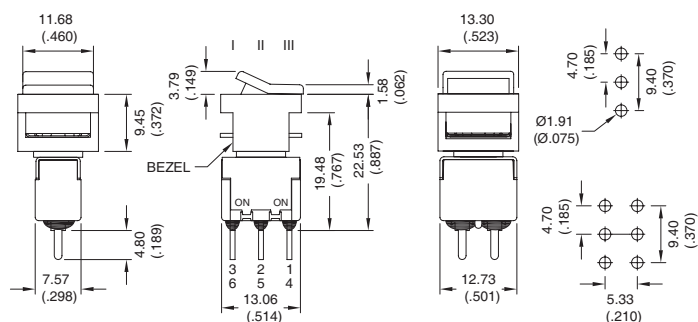
# ST series

## Miniature rocker switches

### Straight PC terminals with PC mounting bezel



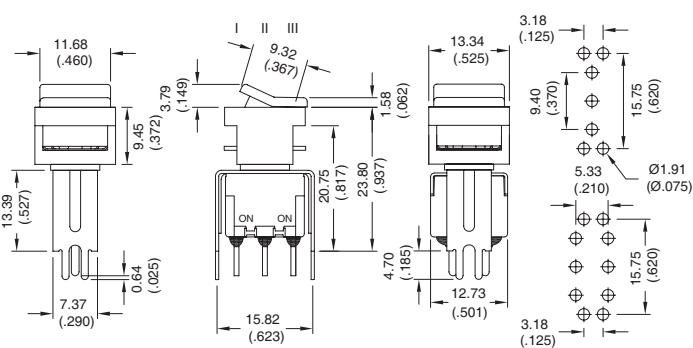
| MODEL NO.          | I   | II  | III |
|--------------------|-----|-----|-----|
| SINGLE POLE        | 1-2 |     | 2-3 |
| ST1-1L5S5CBJ3J9322 | ON  | -   | ON  |
| ST1-2L5S5CBJ3J9322 | ON  | OFF | ON  |
| DOUBLE POLE        | 1-2 | 1-2 | 2-3 |
| ST2-1L5S5CBJ3J9322 | ON  | -   | ON  |
| ST2-2L5S5CBJ3J9322 | ON  | OFF | ON  |
| ST2-6L5S5CBJ3J9322 | ON  | ON  | ON  |



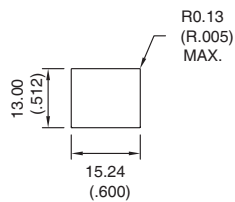
### Straight PC terminals with bracket & PC mounting bezel



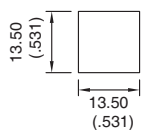
| MODEL NO.            | I          | II         | III        |
|----------------------|------------|------------|------------|
| SINGLE POLE          | 1-2        |            | 2-3        |
| ST1-1L5S5CV30J3J9322 | ON         | -          | ON         |
| ST1-2L5S5CV30J3J9322 | ON         | OFF        | ON         |
| DOUBLE POLE          | 1-2<br>4-5 | 1-2<br>5-6 | 2-3<br>5-6 |
| ST2-1L5S5CV30J3J9322 | ON         | -          | ON         |
| ST2-2L5S5CV30J3J9322 | ON         | OFF        | ON         |
| ST2-6L5S5CV30J3J9322 | ON         | ON         | ON         |



## Panel cut-out



With bezel J90

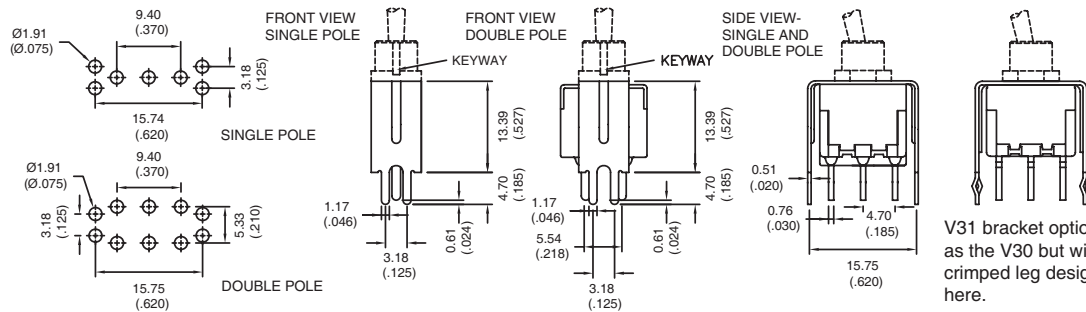


With bezel J93

# ST series

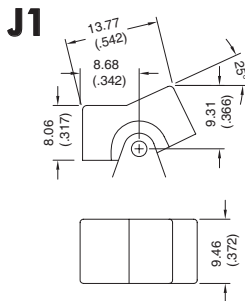
## Miniature rocker switches

### V30 & V31 bracket options

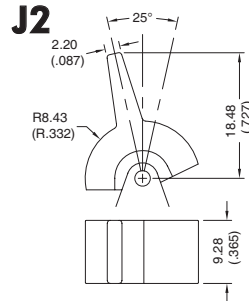


Printed circuit mounting

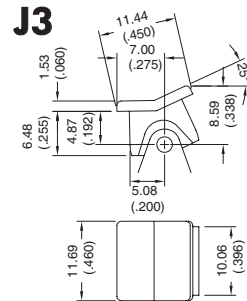
### Actuators



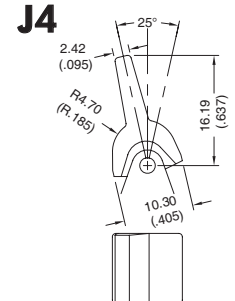
J1 Rocker



J2 Lever



J3 Rocker



J4 Lever

# ST series

## Miniature rocker switches

### Contact material specs.

- B** Dry circuit - gold over nickel over brass.  
RATING: 0.4 Volt-Amps (VA) max. at 20 V max.  
ELECTRIC LIFE: 100,000 cycles min. (ST1-1 & ST2-1 only - other models 40,000 cycles min.)
- Q** Power circuit - coin silver.  
RATING: 6 Amps at 125 VAC, 3 Amps at 250 VAC or 7 Amps at 30 VDC (resistive loads).  
ELECTRIC LIFE: 100,000 cycles min. (ST1-1 & ST2-1 only - other models 40,000 cycles min.)
- G** Dry circuit or power circuit - gold over nickel over coin silver.  
RATINGS & ELECTRIC LIFE: Same as B & Q above - i.e. - can be used in either dry circuit or power circuit, however once used in power circuit, switch cannot be re-used in dry circuit. This option satisfies those customers who have both dry circuit and power circuit requirements, but prefer to inventory only one switch for both.

### UL & CSA options



- UL** For power circuits - coin silver  
RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor).  
Underwriter Laboratories file no. E66367. Note - applicable only to terminations with coin silver contacts (Q option).
- CSA** For power circuits - coin silver  
RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor). Canadian Standards Association file no. LR54592-1. Note - applicable only to terminations with coin silver contacts (Q option) as CSA recognizes switches for power applications only.  
Note- Double pole switches with solder lug terminals are not CSA recognized .

# 300 & 400 series

## Miniature pushbutton switches

*Distinctive features and specifications*



- ☐ Dry circuit through power ratings .
- ☐ Compact size.
- ☐ Panel, panel & PC and PC mounting models.

C

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - gold over nickel plated brass contacts : 0.4VA - 20V Max.
  - coin silver contacts : 1A 125VAC or 28VDC, 0.5A 250VAC, 3A 125VAC or 28VDC,
- Initial contact resistance : 10 milliohms max. at 3VDC, 0.1 Amp.
- Insulation resistance : 10,000 MΩ min.
- Dielectric strength : 1,000 Vrms min at sea level.
- Electrical life :

| Model | Contacts        | Rating              | Number of cycles |
|-------|-----------------|---------------------|------------------|
| 300   | (Q) coin silver | 1A 125VAC or 28 VDC | 250,000          |
| 300   | (Q) coin silver | 3A 125VAC or 28VDC  | 10,000           |
| 300   | (B) gold        | 0.4VA max. at 20V   | 250,000          |
| 400   | (Q) coin silver | 1A 125VAC or 28 VDC | 40,000           |
| 400   | (Q) coin silver | 3A 125VAC or 28VDC  | 10,000           |
| 400   | (B) gold        | 0.4VA max. at 20V   | 40,000           |

### GENERAL SPECIFICATIONS

- Operating temperature : -30°C to +85°C

### MATERIALS

- Base: diallyphthalate (DAP)
- Actuator: nylon
- Bushing: nickel plated brass
- Contacts
  - B:** Gold
  - Q:** Coin silver
- Terminal seal: epoxy
- Spring bracket: stainless steel
- Support bracket: tin plated brass or steel
- Bezel and cap: nylon

### AGENCY APPROVAL

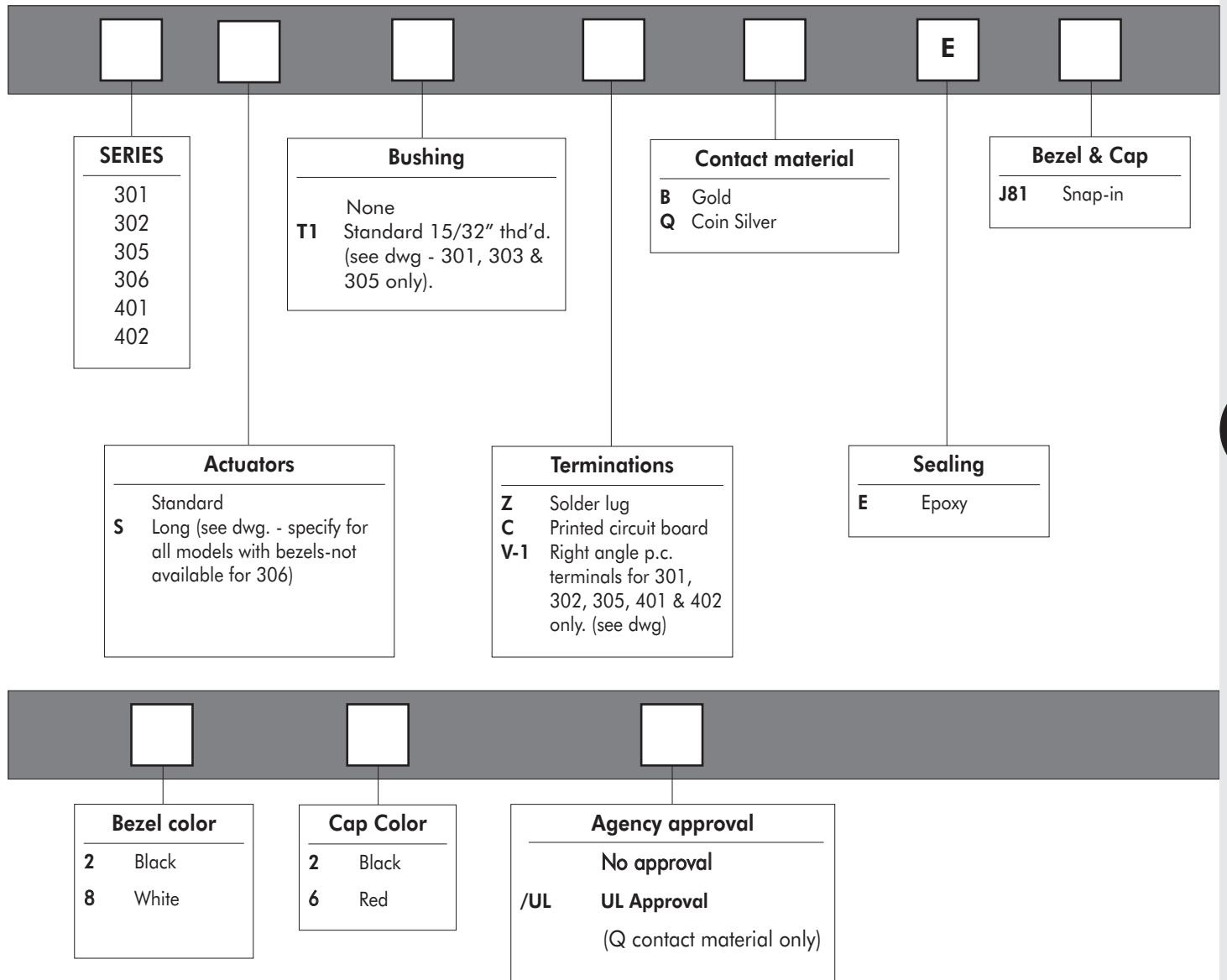


**Availability:** All models with coin silver contacts (Q) only.

**Marking:** To order switches marked UL, complete appropriate box on ordering format.

# 300 & 400 series

Miniature pushbutton switches



## ABOUT THIS SERIES

On the following pages, you will find successively :

- model structure of switches
- options in the same order as in above chart

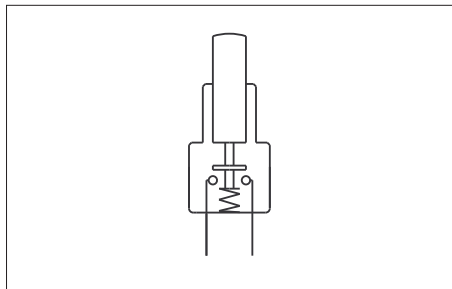
**Dimensions** : first dimensions are in mm while inches are shown as bracketed numbers.



**NOTICE** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

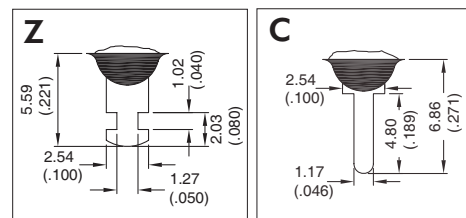
# 300 & 400 series

Miniature pushbutton switches



## Terminations

- Solder lug or straight PC terminals
- Epoxy sealed terminals standard



## Normally open with overtravel: 301



### Solder lug terminals

301ZQE  Normally Open

301ZBE  Normally Open

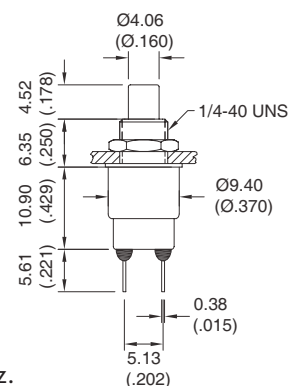
### PC terminals

301CQE  Normally Open

301CBE  Normally Open

Total travel: 2.7 (.110)  
Over travel: 0.51 (.020)

Actuation force: 8.5oz.  $\pm$  4oz.



## Normally open no overtravel: 302



### Solder lug terminals

302ZQE  Normally Open

302ZBE  Normally Open

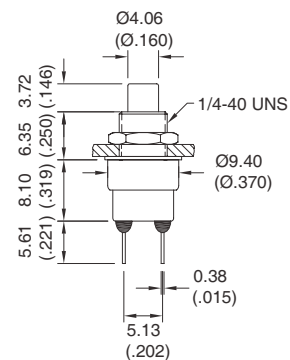
### PC terminals

302CQE  Normally Open

302CBE  Normally Open

Total travel: 1.52 (.060)

Actuation force: 10oz.  $\pm$  4oz.



## Normally open with greater overtravel: 305



### Solder lug terminals

305ZQE  Normally Open

305ZBE  Normally Open

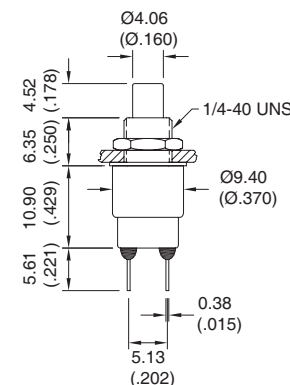
### PC terminals

305CQE  Normally Open

305CBE  Normally Open

Total travel: 2.7 (.110)  
Over travel: 1.20 (.075)

Actuation force: 8oz.  $\pm$  4oz.



# 300 & 400 series

Miniature pushbutton switches

## Normally open with sealed contact area: 306



### Solder lug terminals

306ZQE  Normally Open

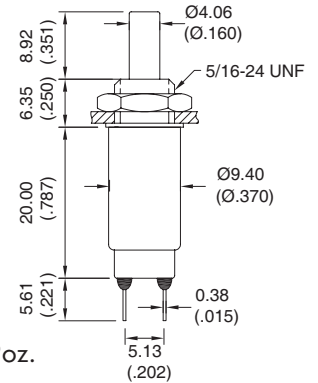
306ZBE  Normally Open

### PC terminals

306CQE  Normally Open

306CBE  Normally Open

Total travel: 8.74 (.310)  
Over travel: 6.35 (.250)  
Actuation force at full travel: 9oz.

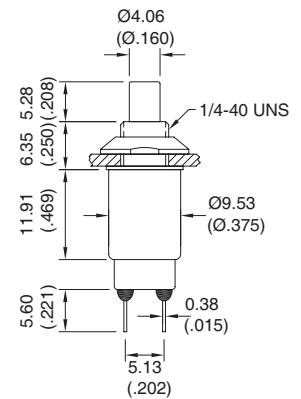


## Normally open snap-action mechanism: 400



401  Alternate Action

402  Normally Open  
Pretravel: 0.66 (.026)  
Actuation travel: 2.60 (.106)  
Total travel: 3.48 (.137)  
Over travel: 0.79 (.031)  
Actuation force: 22oz.

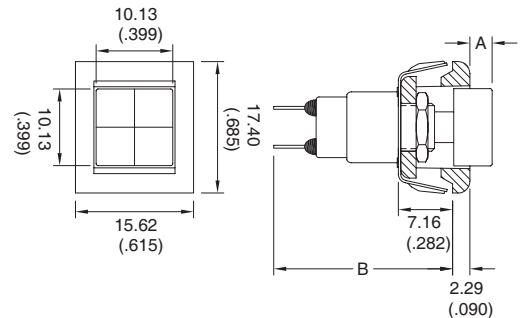


▲ For complete part number, and full list of options see part number breakdown at the beginning of this section

## Snap-in bezel



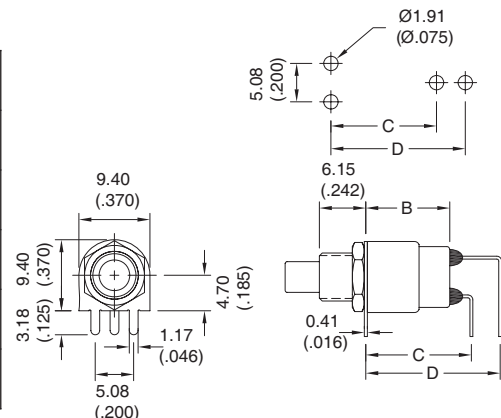
| Model no. | Dim A       | Dim B         |
|-----------|-------------|---------------|
| 301       | 2.74 (.108) | 23.60 (.929)  |
| 302       | 2.16 (.085) | 20.75 (.817)  |
| 305       | 2.74 (.108) | 23.60 (.929)  |
| 401       | 3.68 (.145) | 29.00 (1.142) |
| 402       | 3.68 (.145) | 29.00 (1.142) |



## Right angle terminal with bracket



| Model no. | Dim B        | Dim C        | Dim D        |
|-----------|--------------|--------------|--------------|
| 301       | 11.15 (.439) | 13.97(.550)  | 16.51 (.650) |
| 302       | 8.30 (.327)  | 11.43 (.450) | 13.97(.550)  |
| 305       | 11.15 (.439) | 13.97(.550)  | 16.51 (.650) |
| 401       | 16.59 (.653) | 19.05 (.750) | 21.59 (.850) |
| 402       | 16.59 (.653) | 19.05 (.750) | 21.59 (.850) |



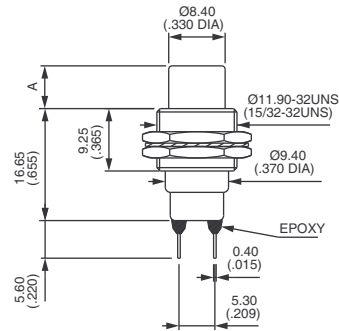
# 300 & 400 series

Miniature pushbutton switches

## T1 option with 15/32 bushing



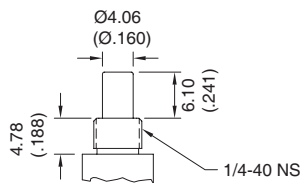
| Model no. | Dim A       |
|-----------|-------------|
| 301       | 6.35 (.250) |
| 305       | 6.35 (.250) |



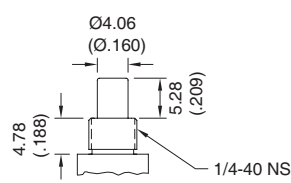
T1 option available only for 301 and 305 models

C

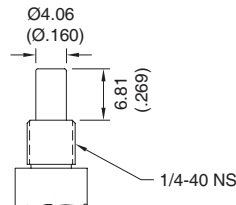
## Option S long actuator



301 & 305

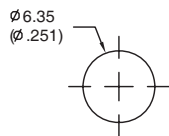


302

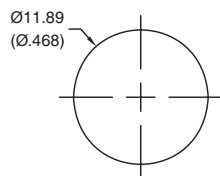


401 & 402

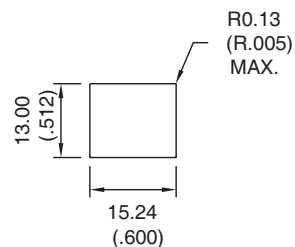
## Panel cut-outs



1/4" threaded  
bushings



15/32" threaded  
bushings



Snap-in bezel

## UL option

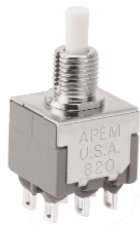
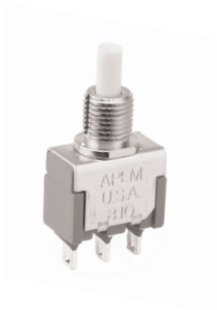


**UL** For power circuits - coin silver  
**RATING:** 0.5 Amps at 125 VAC (75% power factor).  
 Underwriter Laboratories file no. E66367. Note - applicable only to terminations with coin silver contacts (Q option).

# 800 series

## Snap-action momentary pushbutton switches

*Distinctive features and specifications*



☐ Panel and PC mount models

☐ Snap-in panel mounting version

☐ Tactile feedback

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - gold over nickel plated brass contacts : 0.4VA - 20V max.
  - coin silver contacts : 6A 125VAC, 3A 250VAC, 7A 30VDC
- Initial contact resistance : 20 mΩ max.
- Insulation resistance : 2,000 MΩ min. between terminals & case ground.
- Dielectric strength : 1,500 VAC for 1 minute between terminals & case ground.
- Electrical life : 60.000 cycles at full load

### MATERIALS

- Case : DAP
- Actuator : polyamide, glass filled
- Bushing : brass, nickel plated
- Strap : stainless steel
- Bracket : tin plated steel or brass
- Contacts
  - B: Gold
  - Q: Coin Silver
- Terminal seal : epoxy

### GENERAL SPECIFICATIONS

- Total travel : 0.9mm (.035)
- Actuation force:
  - Single pole: 290+/- 75g
  - Double pole: 550+/- 75g
- Operating temperature : -30°C to +85°C
- Soldering : 300°C, 3 sec. max.

### AGENCY APPROVAL



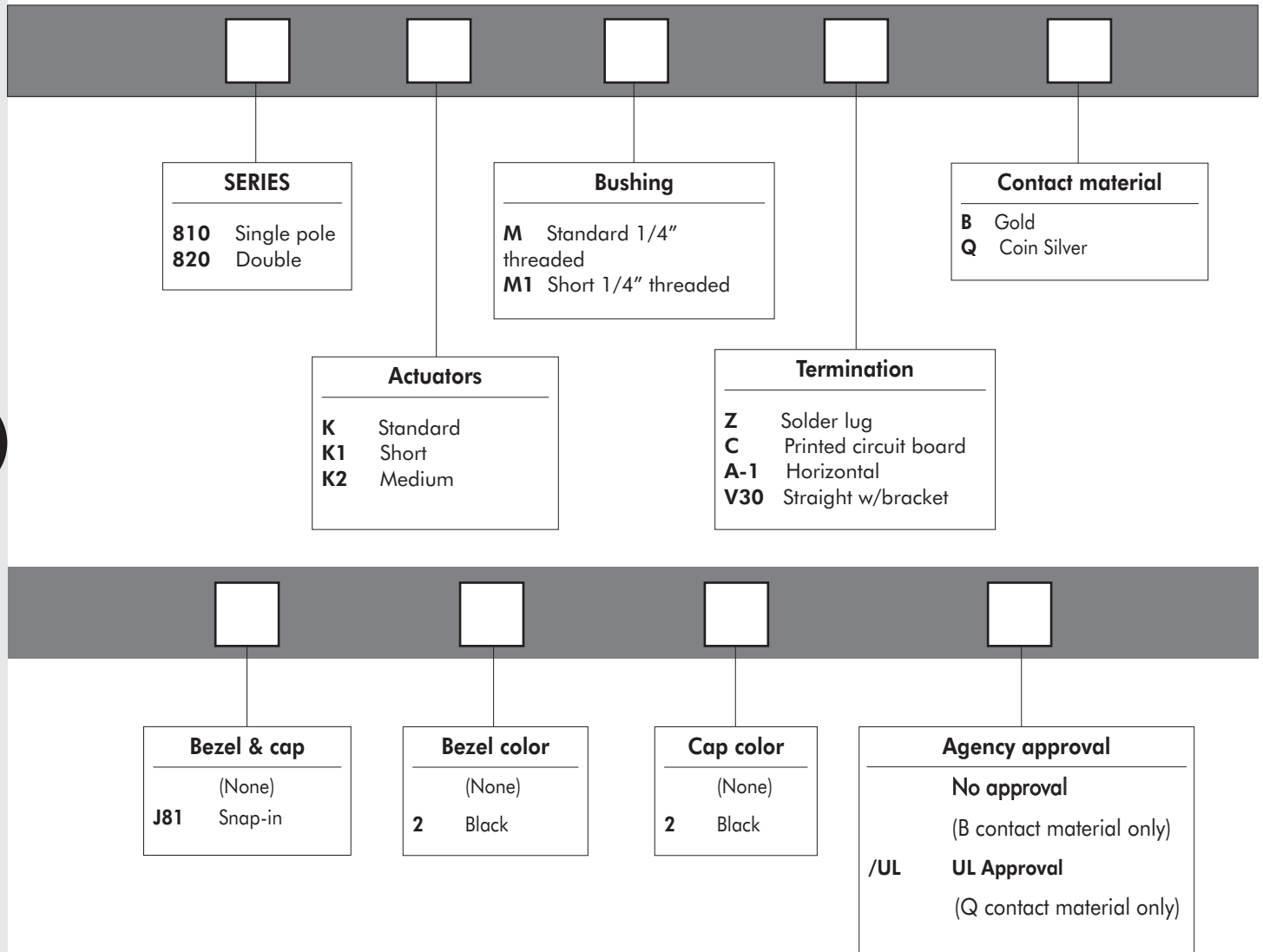
**Availability:** All models with coin silver contacts (Q) only.

**Marking:** To order switches marked UL, complete appropriate box on ordering format.

# 800 series

## Snap-action momentary pushbutton switches

D



### ABOUT THIS SERIES

On the following pages, you will find successively :

- model structure of switches
- options in the same order as in above chart

**Dimensions:** first dimensions are in mm while inches are shown as bracketed numbers.



**Sealing boots** are available to protect the switches against dust and water. They are presented in section H.



**Mounting accessories:** standard hardware supplied with all models with Ø 6,35 (1/4) threaded bushing :  
2 - 5/16" hex nuts , 1 locking ring and 1 lockwasher.  
Standard and special hardware available are presented in section I.



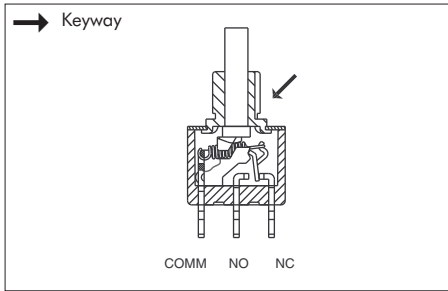
**Packaging unit:** 25 pieces for double pole  
50 pieces for single pole



**NOTICE:** please note that not all combinations of above numbers are available. Refer to the following pages for further information.

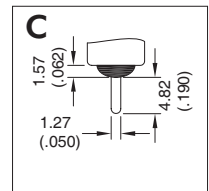
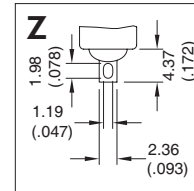
# 800 series

## Snap-action momentary pushbutton switches



### Terminations

- Solder lug or straight PC terminals
- Epoxy sealed terminals standard



Shown with standard plunger (K)

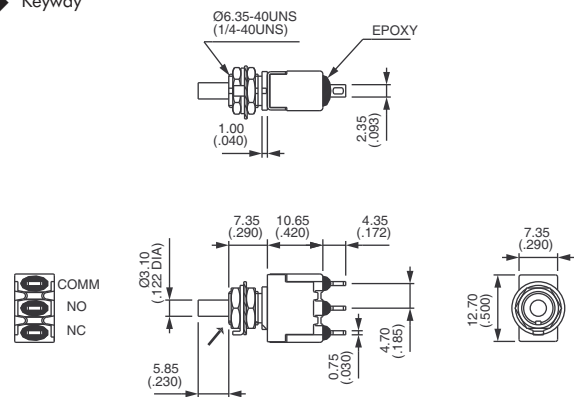
### Solder lug terminals



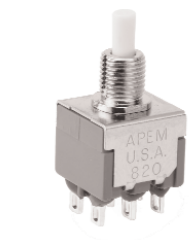
810KMZ



→ Keyway



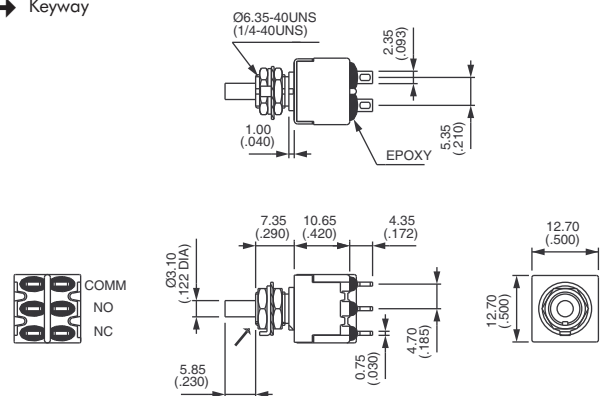
### Solder lug terminals



820KMZ



→ Keyway



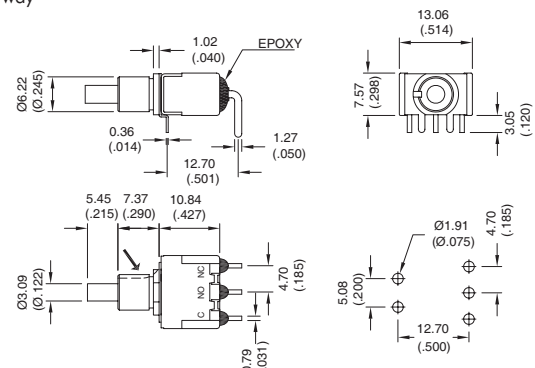
### Horizontal right angle



810KSA-1



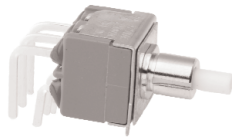
→ Keyway



# 800 series

Snap-action momentary pushbutton switches

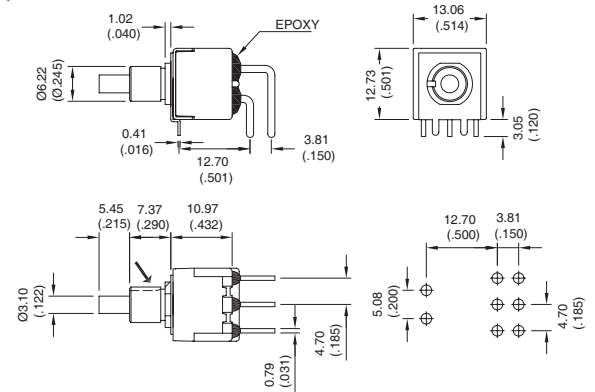
## Horizontal angle



820KSA-1



→ Keyway



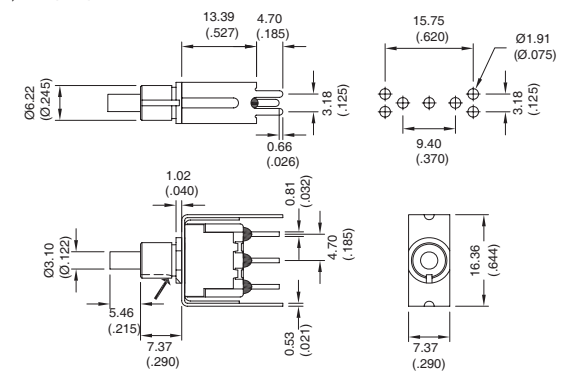
## Straight PC terminals with bracket



810KSV30



→ Keyway



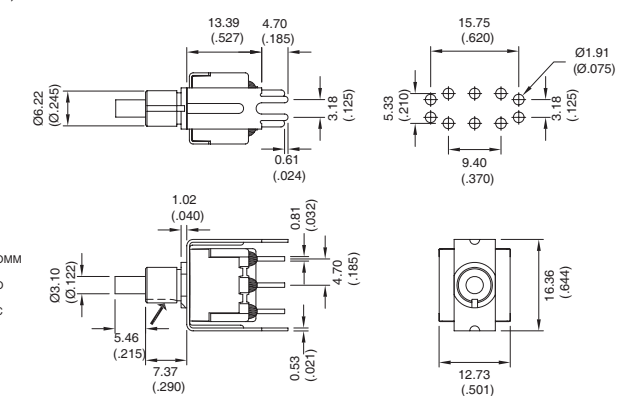
## Straight PC terminals with bracket



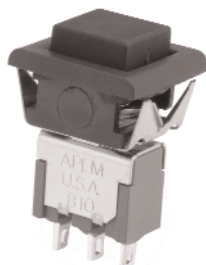
820KSV30



→ Keyway

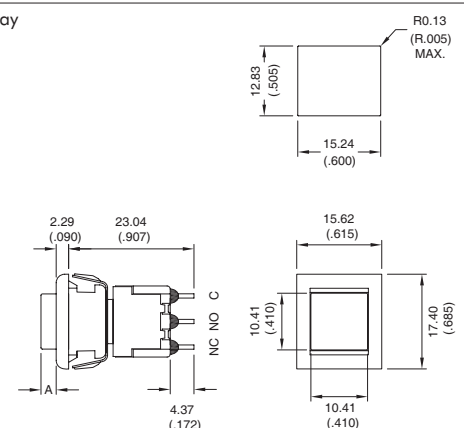


## Solder lug terminals with snap-in bezel



→ Keyway

| MODEL NUMBER   | DIM. A      |
|----------------|-------------|
| 810K2M1ZQJ8122 | 2.54 (.100) |
| 810K1M1ZQJ8122 | 0.25 (.010) |

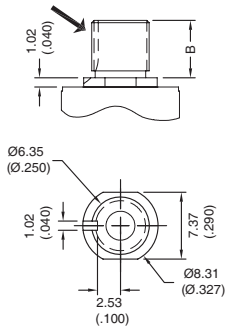


# 800 series

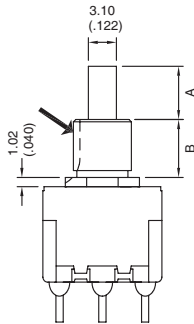
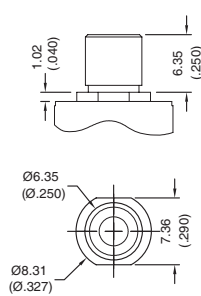
## Snap-action momentary pushbutton switches

### Actuator & bushing options

#### M & M1

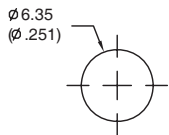


#### S

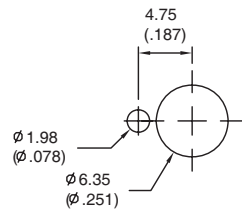


| BUSHING<br>OPTION | DIM.<br>B   | DIMENSION A<br>ACTUATOR OPTION |             |             |
|-------------------|-------------|--------------------------------|-------------|-------------|
|                   |             | K                              | K1          | K2          |
| M                 | 6.35 (.250) | 5.84 (.230)                    | .069 (1.75) | 4.27 (.168) |
| S                 | 6.35 (.250) | 5.84 (.230)                    | .069 (1.75) | 4.27 (.168) |
| M1                | 3.91 (.154) | 8.18 (.322)                    | 4.91 (.165) | 6.70 (.264) |

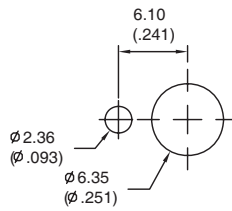
### Panel cut-outs



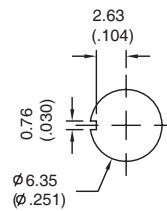
Without keying



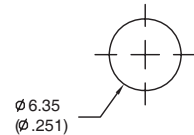
With A107 anti-rotate  
ring



With A158 anti-rotate  
ring



With slotted keyway



Accepts all 1/4" non-  
threaded bushings

### Contact materials

#### B

Dry circuit - gold over nickel over brass.

RATING: 0.4 Volt-Amps (VA) max. at 20 V max.

ELECTRIC LIFE: 60,000 cycles minimum. MECHANICAL LIFE: 500,000 cycles minimum.

#### Q

Power circuit - coin silver.

RATING: 6 Amps at 125 VAC, 3 Amps at 250 VAC or 7 Amps at 30 VDC (resistive loads).

ELECTRIC LIFE: 60,000 cycles minimum at full load.

### Approvals

#### /UL

For power circuits - coin silver

RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor).

Underwriter Laboratories file no. E66367. Note - applicable only to terminations with coin silver contacts (Q option).

# AV series

Anti-vandal and security pushbutton switches



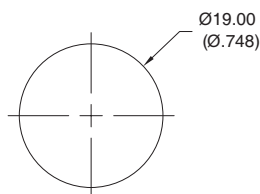
- ☐ 19mm bushing
- ☐ Single pole ON-OFF, Alternate Action, & Momentary functions
- ☐ Standard sealing IP54, IP65 models available
- ☐ Extremely rugged and durable

## Specifications

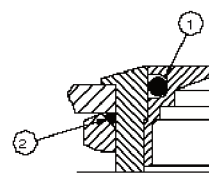
For all 400 series models, see section "C".

For all 800 series models, see section "D"

## Panel cut-out



## SEALING ( OPTION K )



Front panel sealing (IP65)

① internal gasket ② external gasket

AV

Z

## SERIES

## Switch Model

|              |                  |
|--------------|------------------|
| <b>401</b>   | Alternate Action |
| <b>402</b>   | Momentary        |
| <b>810KM</b> | Momentary (SPDT) |
| <b>820KM</b> | Momentary (DPDT) |

## Contact material

|          |             |
|----------|-------------|
| <b>B</b> | Gold        |
| <b>Q</b> | Coin Silver |

## Sealing

|          |      |
|----------|------|
|          | IP54 |
| <b>K</b> | IP65 |

## Mushroom cap color

|           |                   |
|-----------|-------------------|
| <b>0</b>  | Natural           |
| <b>6</b>  | Red               |
| <b>6P</b> | Powder coated red |

## Actuators/Bushing Configurations

|           |                        |
|-----------|------------------------|
| <b>09</b> | 19mm w/flat actuator   |
| <b>19</b> | 19mm w/curved actuator |
| <b>49</b> | 19mm w/mushroom cap    |

## Terminations

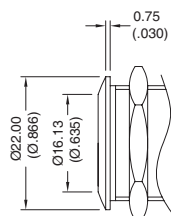
|          |            |
|----------|------------|
| <b>Z</b> | Solder lug |
|----------|------------|

## Terminal sealing

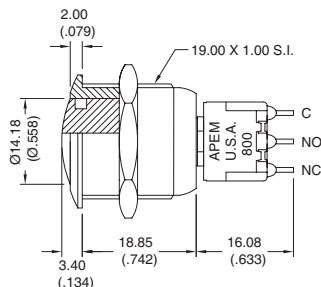
|                                                                                           |         |
|-------------------------------------------------------------------------------------------|---------|
| <b>E</b>                                                                                  | Epoxy ▲ |
| ▲ For 400 series models only, all 800 series models built with sealed terminals standard. |         |

## Agency approval

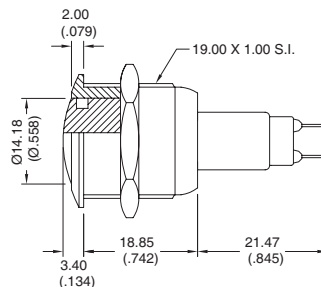
|            |             |
|------------|-------------|
|            | (None)      |
| <b>/UL</b> | UL approved |



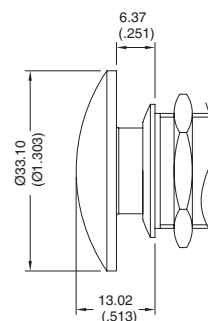
**09** flat actuator & curved bushing



**19** 800 series w/curved actuator & bushing



**19** 400 series w/ curved actuator & bushing



**49** Thd. actuator with mushroom cap & curved bushing