# ST SERIES - MINIATURE TOGGLE SWITCHES

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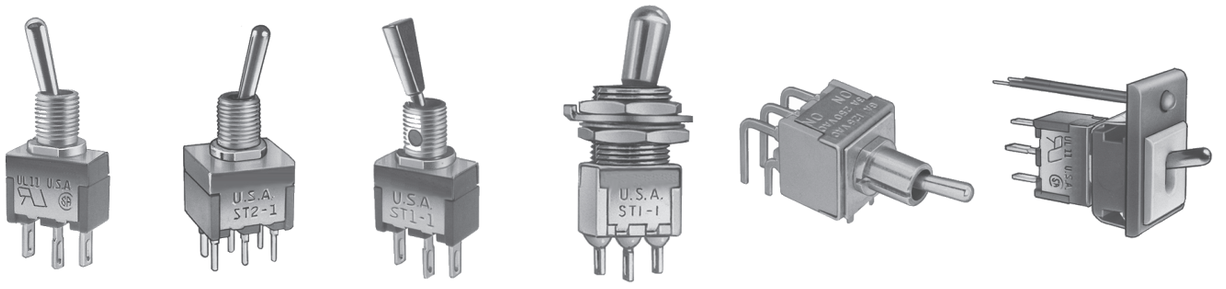



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## FEATURES

- **Dry circuit through power ratings .**
- **Ultra-rugged construction SPDT & DPDT models with numerous options.**
- **Panel, panel & p.c. and p.c. mounting models, lighted and unlighted.**

## SPECIFICATIONS

| | |
|---|---|
| **Contact ratings (resistive loads):** | (Q) power models - coin silver: 6 Amps at 125 VAC, 3 Amps at 250 VAC or 7 Amps at 30 VDC. (B) dry circuit models - gold over nickel over brass: 0.4 VA max. at 20 V max. UL models - coin silver: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor). UL file no. E66367. CSA models - coin silver: same ratings as UL models. CSA file no. LR54592-1. |
| **Initial contact resistance:** | 3 milliohms max. at 3 VDC, 0.1 Amp. |
| **Insulation resistance:** | Greater than 200,000 megohms between terminals & case ground. |
| **Dielectric strength:** | Greater than 2000 VAC for 1 minute between terminals & case ground. |
| **Electrical life (resistive loads):** | 100,000 cycles min.for ST1-1 & ST2-1. Other models, 40,000 cycles min. |
| **Operating temperature range:** | -30°C to +85°C |

## MATERIALS

| | |
|---|---|
| **Contacts:** | Coin silver for power,UL & CSA models. Gold over nickel over brass for dry circuit models. |
| **Actuator:** | Brass, bright nickel or chrome plated. |
| **Bushing:** | Nickel plated brass |
| **Strap:** | Stainless steel |
| **Case:** | Melamine Phenolic, color red |
| **Terminal seal:** | Epoxy (optional) |
| **Support bracket:** | Brass or steel, tin plated |
| **Spring mounting bracket:** | Stainless steel |
| **Bezel & bezel insert:** | Nylon. Available in black, red & white. Consult factory for other colors. |
| **Hardware:** | See 'Miscellaneous' section. |
| **LED:** | Intensity: 2.0 mcd at 10 mA. Forward voltage: 2.0V (3.0V max.). Max. continuous forward current: 15 mA for red, 30 mA for green & 20 mA for yellow. Red is standard. Yellow & green are optional. Specifications are subject to change without notice - consult factory. |

## AGENCY RECOGNITION

UL, & CSA. Marking: Switches ordered by UL model number are supplied with recognition marking. Switches ordered by UL model no. and with '/CSA' added at end of model no. are supplied with both recognitions marked.

## ABOUT THIS SERIES

The material in this series is organized in the following sequence:

a. Completely specified switch models b. Miscellaneous c. 'build your own switch' order format
d. Option drawings & information e. Panel cut-outs

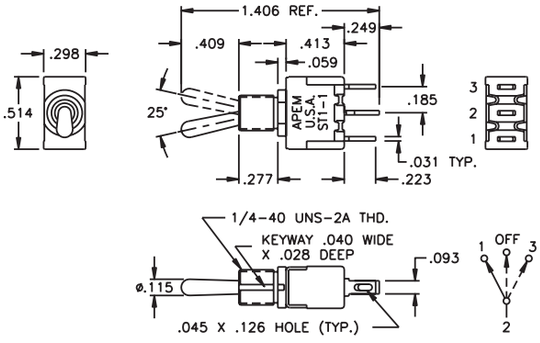
# ST SERIES - MINIATURE TOGGLE SWITCHES

## Solder lug terminals - panel mounting

SINGLE POLE

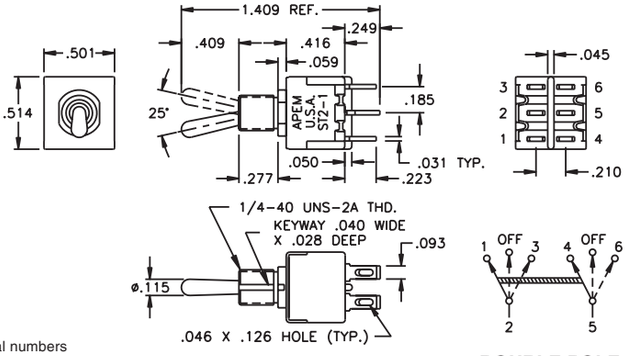
DOUBLE POLE

| | POWER CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1KMZQ | UL11KMZQ | ON | NONE | ON |
| | ST1-2KMZQ | UL12KMZQ | ON | OFF | ON |
| | ST1-3KMZQ | UL13KMZQ | MOM | OFF | MOM |
| | ST1-4KMZQ | UL14KMZQ | ON | OFF | MOM |
| | ST1-5KMZQ | UL15KMZQ | ON | NONE | MOM |
| Double pole | ST2-1KMZQ | UL21KMZQ | ON | NONE | ON |
| | ST2-2KMZQ | UL22KMZQ | ON | OFF | ON |
| | ST2-3KMZQ | UL23KMZQ | MOM | OFF | MOM |
| | ST2-4KMZQ | UL24KMZQ | ON | OFF | MOM |
| | ST2-5KMZQ | UL25KMZQ | ON | NONE | MOM |
| | ST2-6KMZQ | UL26KMZQ | ON | ON | ON |
| | ST2-7KMZQ | UL27KMZQ | ON | ON | MOM |
| | ST2-8KMZQ | UL28KMZQ | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |




SINGLE POLE

Terminal numbers for reference only

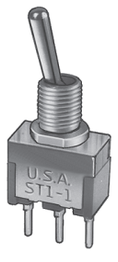



DOUBLE POLE

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

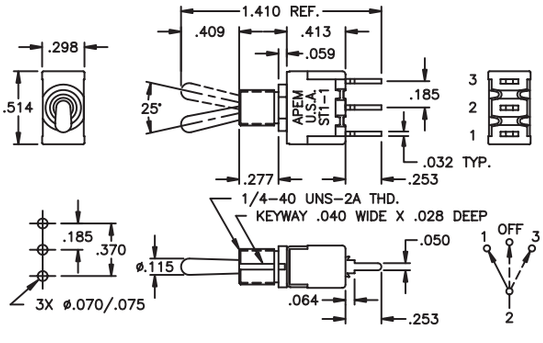
## Straight p.c. terminals - panel mounting

SINGLE POLE



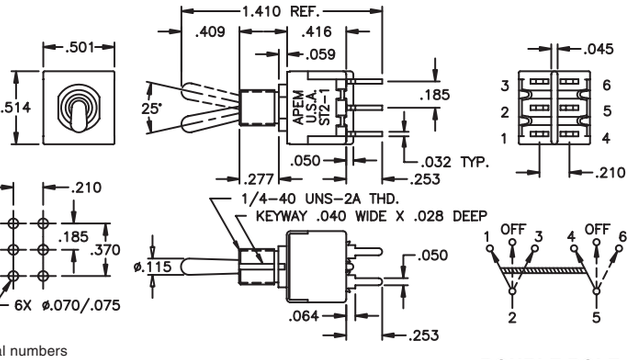

DOUBLE POLE

| | DRY CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1KMCB | UL11KMCQ | ON | NONE | ON |
| | ST1-2KMCB | UL12KMCQ | ON | OFF | ON |
| | ST1-3KMCB | UL13KMCQ | MOM | OFF | MOM |
| | ST1-4KMCB | UL14KMCQ | ON | OFF | MOM |
| | ST1-5KMCB | UL15KMCQ | ON | NONE | MOM |
| Double pole | ST2-1KMCB | UL21KMCQ | ON | NONE | ON |
| | ST2-2KMCB | UL22KMCQ | ON | OFF | ON |
| | ST2-3KMCB | UL23KMCQ | MOM | OFF | MOM |
| | ST2-4KMCB | UL24KMCQ | ON | OFF | MOM |
| | ST2-5KMCB | UL25KMCQ | ON | NONE | MOM |
| | ST2-6KMCB | UL26KMCQ | ON | ON | ON |
| | ST2-7KMCB | UL27KMCQ | ON | ON | MOM |
| | ST2-8KMCB | UL28KMCQ | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |




SINGLE POLE

Terminal numbers for reference only




DOUBLE POLE

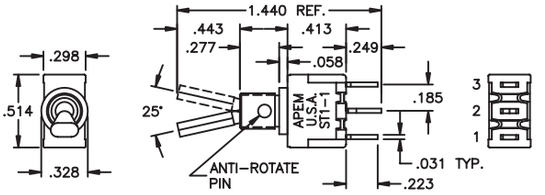
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## Flatted actuator - panel mounting

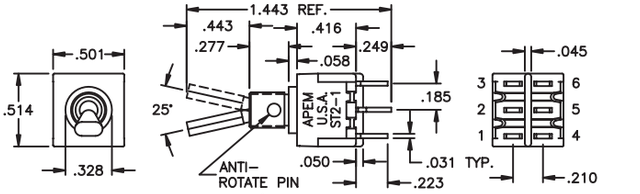
**SINGLE POLE**

**DOUBLE POLE**

| | POWER CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1F1MZQ | UL11F1MZQ | ON | NONE | ON |
| | ST1-2F1MZQ | UL12F1MZQ | ON | OFF | ON |
| | ST1-3F1MZQ | UL13F1MZQ | MOM | OFF | MOM |
| | ST1-4F1MZQ | UL14F1MZQ | ON | OFF | MOM |
| | ST1-5F1MZQ | UL15F1MZQ | ON | NONE | MOM |
| Double pole | ST2-1F1MZQ | UL21F1MZQ | ON | NONE | ON |
| | ST2-2F1MZQ | UL22F1MZQ | ON | OFF | ON |
| | ST2-3F1MZQ | UL23F1MZQ | MOM | OFF | MOM |
| | ST2-4F1MZQ | UL24F1MZQ | ON | OFF | MOM |
| | ST2-5F1MZQ | UL25F1MZQ | ON | NONE | MOM |
| | ST2-6F1MZQ | UL26F1MZQ | ON | ON | ON |
| | ST2-7F1MZQ | UL27F1MZQ | ON | ON | MOM |
| | ST2-8F1MZQ | UL28F1MZQ | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |




**SINGLE POLE**




**DOUBLE POLE**

Terminal numbers for reference only

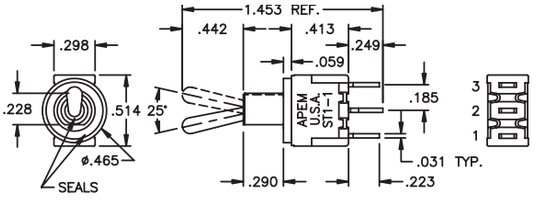
## Splashproof bushing - panel mounting

An 'o'-ring placed internally between the actuator and the bushing, and a gasket placed externally between the bushing flange and mounting panel provides static protection from 3.3 ft. (1 meter) of water for 30 minutes.

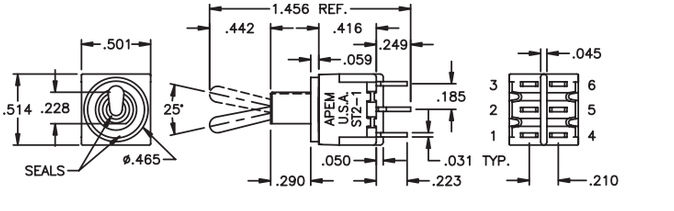
**SINGLE POLE**

**DOUBLE POLE**

| | POWER CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1KHZQ | UL11KHZQ | ON | NONE | ON |
| | ST1-2KHZQ | UL12KHZQ | ON | OFF | ON |
| | ST1-3KHZQ | UL13KHZQ | MOM | OFF | MOM |
| | ST1-4KHZQ | UL14KHZQ | ON | OFF | MOM |
| | ST1-5KHZQ | UL15KHZQ | ON | NONE | MOM |
| Double pole | ST2-1KHZQ | UL21KHZQ | ON | NONE | ON |
| | ST2-2KHZQ | UL22KHZQ | ON | OFF | ON |
| | ST2-3KHZQ | UL23KHZQ | MOM | OFF | MOM |
| | ST2-4KHZQ | UL24KHZQ | ON | OFF | MOM |
| | ST2-5KHZQ | UL25KHZQ | ON | NONE | MOM |
| | ST2-6KHZQ | UL26KHZQ | ON | ON | ON |
| | ST2-7KHZQ | UL27KHZQ | ON | ON | MOM |
| | ST2-8KHZQ | UL28KHZQ | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |




**SINGLE POLE**




**DOUBLE POLE**

Terminal numbers for reference only

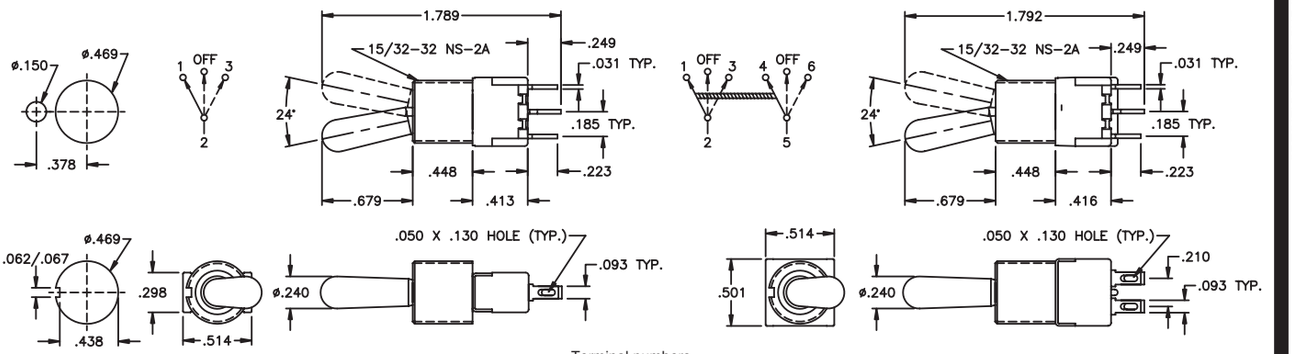
# ST SERIES - MINIATURE TOGGLE SWITCHES

## 15/32" threaded bushing - panel mounting

SINGLE POLE WITH T1 ACTUATOR

DOUBLE POLE WITH T2 ACTUATOR

| | POWER CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1T1M4ZQ | UL11T1M4ZQ | ON | NONE | ON |
| | ST1-2T1M4ZQ | UL12T1M4ZQ | ON | OFF | ON |
| | ST1-3T1M4ZQ | UL13T1M4ZQ | MOM | OFF | MOM |
| | ST1-4T1M4ZQ | UL14T1M4ZQ | ON | OFF | MOM |
| | ST1-5T1M4ZQ | UL15T1M4ZQ | ON | NONE | MOM |
| Double pole | ST2-1T1M4ZQ | UL21T1M4ZQ | ON | NONE | ON |
| | ST2-2T1M4ZQ | UL22T1M4ZQ | ON | OFF | ON |
| | ST2-3T1M4ZQ | UL23T1M4ZQ | MOM | OFF | MOM |
| | ST2-4T1M4ZQ | UL24T1M4ZQ | ON | OFF | MOM |
| | ST2-5T1M4ZQ | UL25T1M4ZQ | ON | NONE | MOM |
| | ST2-6T1M4ZQ | UL26T1M4ZQ | ON | ON | ON |
| | ST2-7T1M4ZQ | UL27T1M4ZQ | ON | ON | MOM |
| | ST2-8T1M4ZQ | UL28T1M4ZQ | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |



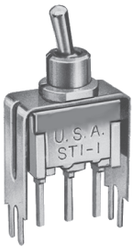

SINGLE POLE

Terminal numbers for reference only

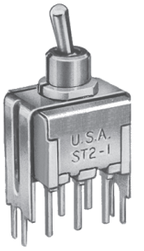
DOUBLE POLE

## Straight p.c. terminals with bracket - p.c. mounting

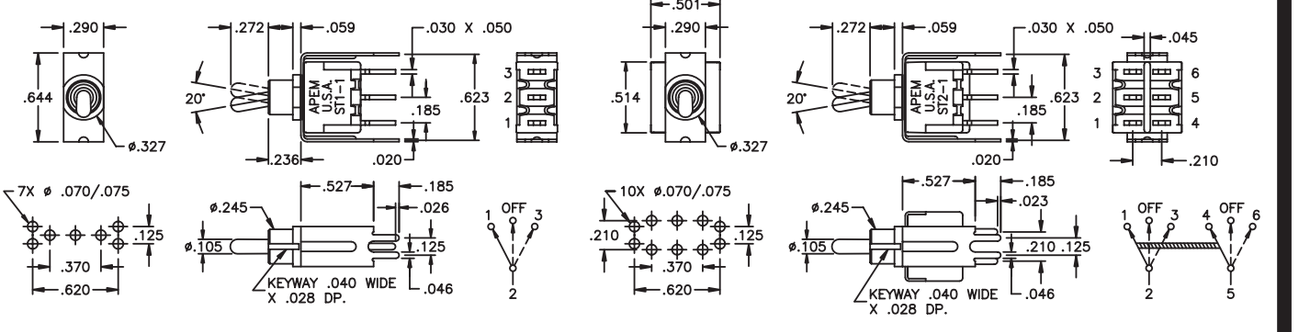
SINGLE POLE




DOUBLE POLE




| | DRY CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1L3S3V30B | UL11L3S3V30Q | ON | NONE | ON |
| | ST1-2L3S3V30B | UL12L3S3V30Q | ON | OFF | ON |
| | ST1-3L3S3V30B | UL13L3S3V30Q | MOM | OFF | MOM |
| | ST1-4L3S3V30B | UL14L3S3V30Q | ON | OFF | MOM |
| | ST1-5L3S3V30B | UL15L3S3V30Q | ON | NONE | MOM |
| Double pole | ST2-1L3S3V30B | UL21L3S3V30Q | ON | NONE | ON |
| | ST2-2L3S3V30B | UL22L3S3V30Q | ON | OFF | ON |
| | ST2-3L3S3V30B | UL23L3S3V30Q | MOM | OFF | MOM |
| | ST2-4L3S3V30B | UL24L3S3V30Q | ON | OFF | MOM |
| | ST2-5L3S3V30B | UL25L3S3V30Q | ON | NONE | MOM |
| | ST2-6L3S3V30B | UL26L3S3V30Q | ON | ON | ON |
| | ST2-7L3S3V30B | UL27L3S3V30Q | ON | ON | MOM |
| | ST2-8L3S3V30B | UL28L3S3V30Q | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |




SINGLE POLE

Terminal numbers for reference only

DOUBLE POLE

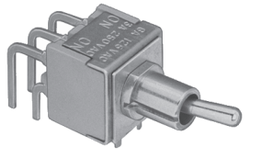
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

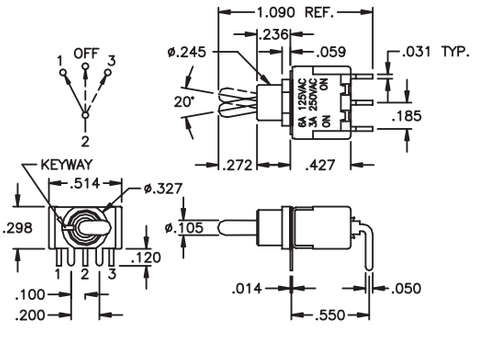
## Horizontal right angle p.c. terminals - p.c. mounting

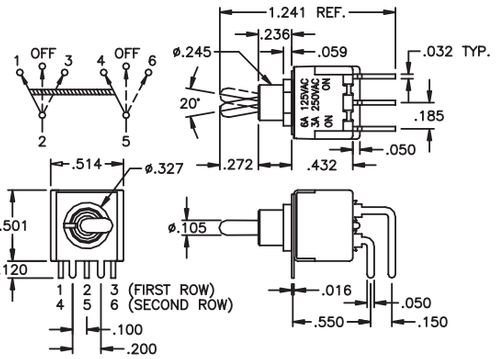
SINGLE POLE

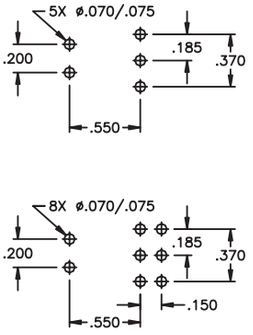
DOUBLE POLE



| | DRY CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1L3S3AB | UL11L3S3AQ | ON | NONE | ON |
| | ST1-2L3S3AB | UL12L3S3AQ | ON | OFF | ON |
| | ST1-3L3S3AB | UL13L3S3AQ | MOM | OFF | MOM |
| | ST1-4L3S3AB | UL14L3S3AQ | ON | OFF | MOM |
| | ST1-5L3S3AB | UL15L3S3AQ | ON | NONE | MOM |
| Double pole | ST2-1L3S3AB | UL21L3S3AQ | ON | NONE | ON |
| | ST2-2L3S3AB | UL22L3S3AQ | ON | OFF | ON |
| | ST2-3L3S3AB | UL23L3S3AQ | MOM | OFF | MOM |
| | ST2-4L3S3AB | UL24L3S3AQ | ON | OFF | MOM |
| | ST2-5L3S3AB | UL25L3S3AQ | ON | NONE | MOM |
| | ST2-6L3S3AB | UL26L3S3AQ | ON | ON | ON |
| | ST2-7L3S3AB | UL27L3S3AQ | ON | ON | MOM |
| | ST2-8L3S3AB | UL28L3S3AQ | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |



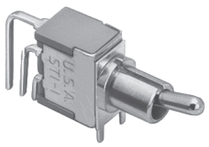

SINGLE POLE

Terminal numbers for reference only

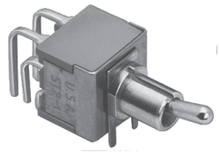
DOUBLE POLE

## Vertical right angle p.c. terminals - p.c. mounting

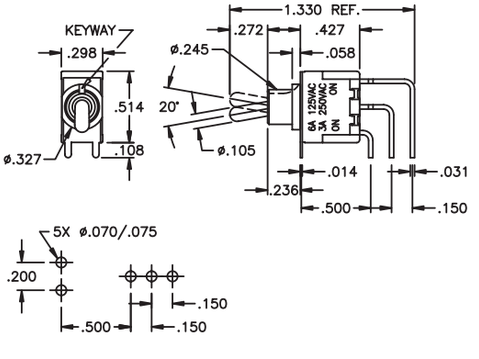
SINGLE POLE

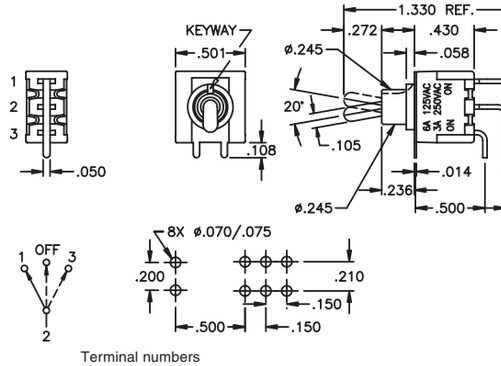


DOUBLE POLE



| | DRY CKT. MODEL NO. | UL MODEL NO. | | | Key way |
|---|---|---|---|---|---|
| Single pole | ST1-1L3S3V-1B | UL11L3S3V-1Q | ON | NONE | ON |
| | ST1-2L3S3V-1B | UL12L3S3V-1Q | ON | OFF | ON |
| | ST1-3L3S3V-1B | UL13L3S3V-1Q | MOM | OFF | MOM |
| | ST1-4L3S3V-1B | UL14L3S3V-1Q | ON | OFF | MOM |
| | ST1-5L3S3V-1B | UL15L3S3V-1Q | ON | NONE | MOM |
| Double pole | ST2-1L3S3V-1B | UL21L3S3V-1Q | ON | NONE | ON |
| | ST2-2L3S3V-1B | UL22L3S3V-1Q | ON | OFF | ON |
| | ST2-3L3S3V-1B | UL23L3S3V-1Q | MOM | OFF | MOM |
| | ST2-4L3S3V-1B | UL24L3S3V-1Q | ON | OFF | MOM |
| | ST2-5L3S3V-1B | UL25L3S3V-1Q | ON | NONE | MOM |
| | ST2-6L3S3V-1B | UL26L3S3V-1Q | ON | ON | ON |
| | ST2-7L3S3V-1B | UL27L3S3V-1Q | ON | ON | MOM |
| | ST2-8L3S3V-1B | UL28L3S3V-1Q | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

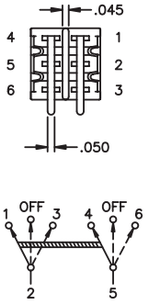









SINGLE POLE

Terminal numbers for reference only

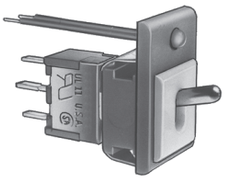
DOUBLE POLE

# ST SERIES - MINIATURE TOGGLE SWITCHES

## Snap-in bezel with outboard LED

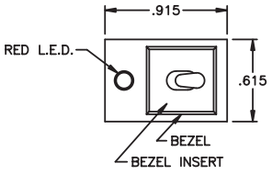
**PATENT NO.**
**Des. 282,524**

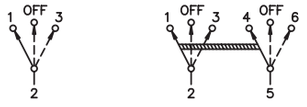
**UL11KMZQJ6128**



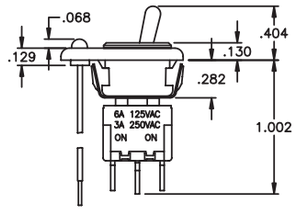
| | POWER CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMZQJ6122 | UL11KMZQJ6122 | ON | NONE | ON |
| | ST1-2KMZQJ6122 | UL12KMZQJ6122 | ON | OFF | ON |
| | ST1-3KMZQJ6122 | UL13KMZQJ6122 | MOM | OFF | MOM |
| | ST1-4KMZQJ6122 | UL14KMZQJ6122 | ON | OFF | MOM |
| | ST1-5KMZQJ6122 | UL15KMZQJ6122 | ON | NONE | MOM |
| Double pole | ST2-1KMZQJ6122 | UL21KMZQJ6122 | ON | NONE | ON |
| | ST2-2KMZQJ6122 | UL22KMZQJ6122 | ON | OFF | ON |
| | ST2-3KMZQJ6122 | UL23KMZQJ6122 | MOM | OFF | MOM |
| | ST2-4KMZQJ6122 | UL24KMZQJ6122 | ON | OFF | MOM |
| | ST2-5KMZQJ6122 | UL25KMZQJ6122 | ON | NONE | MOM |
| | ST2-6KMZQJ6122 | UL26KMZQJ6122 | ON | ON | ON |
| | ST2-7KMZQJ6122 | UL27KMZQJ6122 | ON | ON | MOM |
| | ST2-8KMZQJ6122 | UL28KMZQJ6122 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

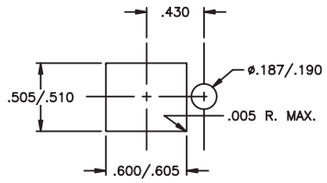
Above models have black bezel and insert.




Terminal numbers for reference only



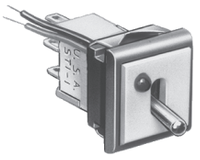




Panel thickness range .047" to .125".

## Snap-in bezel with 0, 1 or 2 inboard LEDs

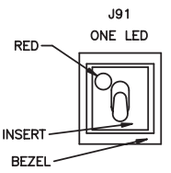
**PATENT NO.**
**Des. 282,524**

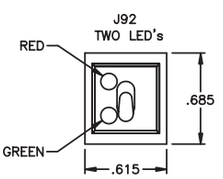
**ST1-1KMZQJ9128**

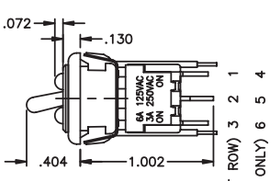


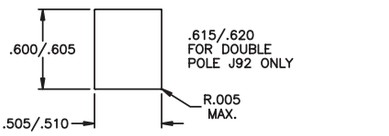
| | POWER CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMZQJ9122 | UL11KMZQJ9122 | ON | NONE | ON |
| | ST1-2KMZQJ9122 | UL12KMZQJ9122 | ON | OFF | ON |
| | ST1-3KMZQJ9122 | UL13KMZQJ9122 | MOM | OFF | MOM |
| | ST1-4KMZQJ9122 | UL14KMZQJ9122 | ON | OFF | MOM |
| | ST1-5KMZQJ9122 | UL15KMZQJ9122 | ON | NONE | MOM |
| Double pole | ST2-1KMZQJ9122 | UL21KMZQJ9122 | ON | NONE | ON |
| | ST2-2KMZQJ9122 | UL22KMZQJ9122 | ON | OFF | ON |
| | ST2-3KMZQJ9122 | UL23KMZQJ9122 | MOM | OFF | MOM |
| | ST2-4KMZQJ9122 | UL24KMZQJ9122 | ON | OFF | MOM |
| | ST2-5KMZQJ9122 | UL25KMZQJ9122 | ON | NONE | MOM |
| | ST2-6KMZQJ9122 | UL26KMZQJ9122 | ON | ON | ON |
| | ST2-7KMZQJ9122 | UL27KMZQJ9122 | ON | ON | MOM |
| | ST2-8KMZQJ9122 | UL28KMZQJ9122 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

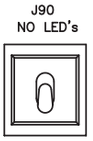
Above models have black bezel and insert.

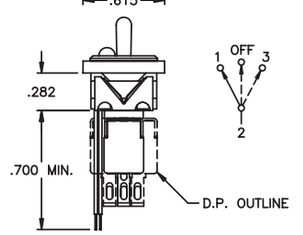


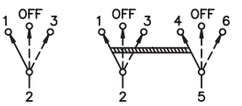




Terminal numbers for reference only

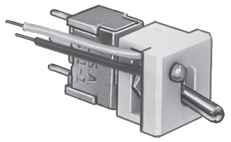
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## Bezel for p.c. mounted switches with 0, 1 or 2 LEDs

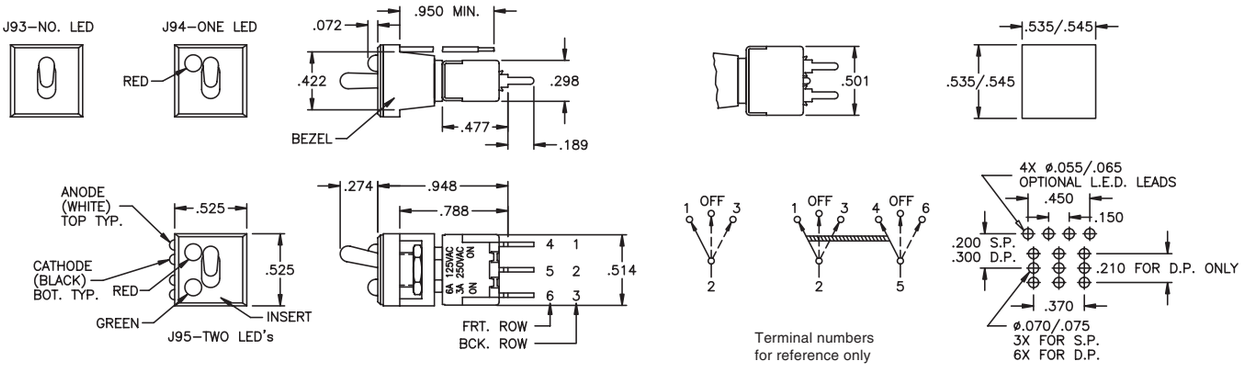
**PATENT NO.**
**Des. 282,524**

**ST1-1KMCBJ9488**



| | DRY CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMCBJ9422 | UL11KMCQJ9422 | ON | NONE | ON |
| | ST1-2KMCBJ9422 | UL12KMCQJ9422 | ON | OFF | ON |
| | ST1-3KMCBJ9422 | UL13KMCQJ9422 | MOM | OFF | MOM |
| | ST1-4KMCBJ9422 | UL14KMCQJ9422 | ON | OFF | MOM |
| | ST1-5KMCBJ9422 | UL15KMCQJ9422 | ON | NONE | MOM |
| Double pole | ST2-1KMCBJ9422 | UL21KMCQJ9422 | ON | NONE | ON |
| | ST2-2KMCBJ9422 | UL22KMCQJ9422 | ON | OFF | ON |
| | ST2-3KMCBJ9422 | UL23KMCQJ9422 | MOM | OFF | MOM |
| | ST2-4KMCBJ9422 | UL24KMCQJ9422 | ON | OFF | MOM |
| | ST2-5KMCBJ9422 | UL25KMCQJ9422 | ON | NONE | MOM |
| | ST2-6KMCBJ9422 | UL26KMCQJ9422 | ON | ON | ON |
| | ST2-7KMCBJ9422 | UL27KMCQJ9422 | ON | ON | MOM |
| | ST2-8KMCBJ9422 | UL28KMCQJ9422 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

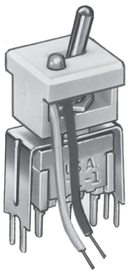
Above models have black bezel and insert.




## Bezel for p.c. mounted switches with 0, 1 or 2 LEDs

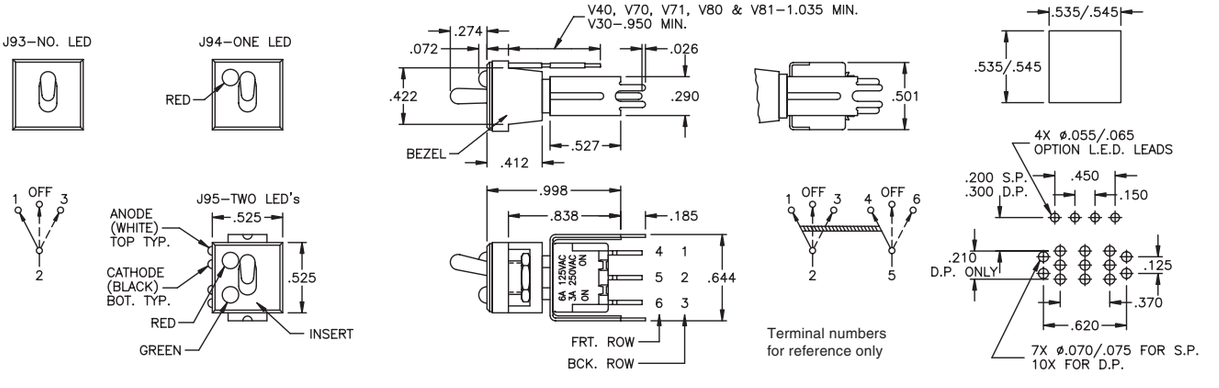
**PATENT NO.**
**Des. 282,524**

**ST1-1KMV30QJ9488**



| | DRY CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMV30BJ9422 | UL11KMV30QJ9422 | ON | NONE | ON |
| | ST1-2KMV30BJ9422 | UL12KMV30QJ9422 | ON | OFF | ON |
| | ST1-3KMV30BJ9422 | UL13KMV30QJ9422 | MOM | OFF | MOM |
| | ST1-4KMV30BJ9422 | UL14KMV30QJ9422 | ON | OFF | MOM |
| | ST1-5KMV30BJ9422 | UL15KMV30QJ9422 | ON | NONE | MOM |
| Double pole | ST2-1KMV30BJ9422 | UL21KMV30QJ9422 | ON | NONE | ON |
| | ST2-2KMV30BJ9422 | UL22KMV30QJ9422 | ON | OFF | ON |
| | ST2-3KMV30BJ9422 | UL23KMV30QJ9422 | MOM | OFF | MOM |
| | ST2-4KMV30BJ9422 | UL24KMV30QJ9422 | ON | OFF | MOM |
| | ST2-5KMV30BJ9422 | UL25KMV30QJ9422 | ON | NONE | MOM |
| | ST2-6KMV30BJ9422 | UL26KMV30QJ9422 | ON | ON | ON |
| | ST2-7KMV30BJ9422 | UL27KMV30QJ9422 | ON | ON | MOM |
| | ST2-8KMV30BJ9422 | UL28KMV30QJ9422 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

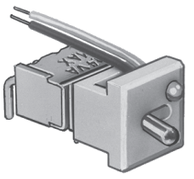
Above models have black bezel and insert.



# ST SERIES - MINIATURE TOGGLE SWITCHES

## Bezel for right angle p.c. mtd. switches with 0, 1 or 2 LEDs

**PATENT NO.**
**Des. 282,524**

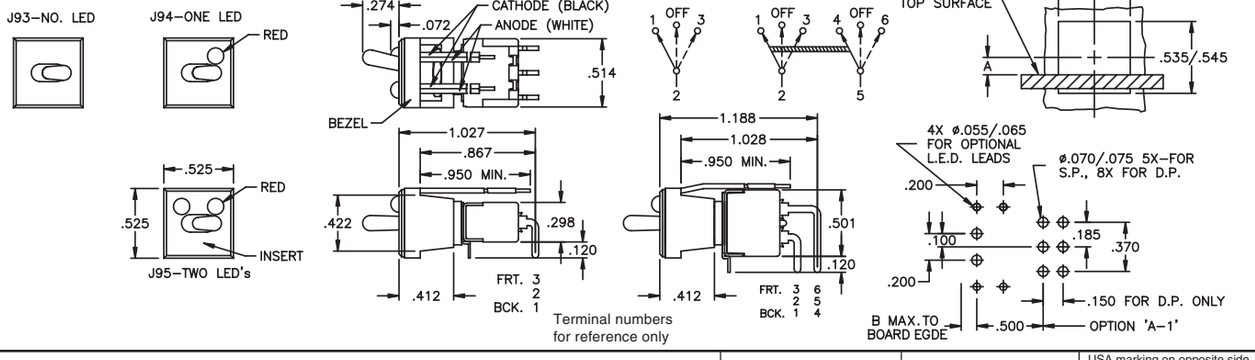


**ST1-1KMA-1BJ9488**

| Poles | Option | Dim. A | Dim. B |
|---|---|---|---|
| SP | A | .148 | .045 max. |
| SP | A-1 | .164 | .095 max. |
| DP | A | .250 | .300 max. |
| DP | A-1 | .266 | .350 max. |

| | DRY CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMA-1BJ9422 | UL11KMA-1QJ9422 | ON | NONE | ON |
| | ST1-2KMA-1BJ9422 | UL12KMA-1QJ9422 | ON | OFF | ON |
| | ST1-3KMA-1BJ9422 | UL13KMA-1QJ9422 | MOM | OFF | MOM |
| | ST1-4KMA-1BJ9422 | UL14KMA-1QJ9422 | ON | OFF | MOM |
| | ST1-5KMA-1BJ9422 | UL15KMA-1QJ9422 | ON | NONE | MOM |
| Double pole | ST2-1KMA-1BJ9422 | UL21KMA-1QJ9422 | ON | NONE | ON |
| | ST2-2KMA-1BJ9422 | UL22KMA-1QJ9422 | ON | OFF | ON |
| | ST2-3KMA-1BJ9422 | UL23KMA-1QJ9422 | MOM | OFF | MOM |
| | ST2-4KMA-1BJ9422 | UL24KMA-1QJ9422 | ON | OFF | MOM |
| | ST2-5KMA-1BJ9422 | UL25KMA-1QJ9422 | ON | NONE | MOM |
| | ST2-6KMA-1BJ9422 | UL26KMA-1QJ9422 | ON | ON | ON |
| | ST2-7KMA-1BJ9422 | UL27KMA-1QJ9422 | ON | ON | MOM |
| | ST2-8KMA-1BJ9422 | UL28KMA-1QJ9422 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

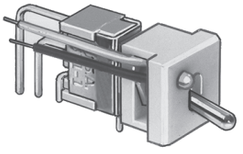
Above models have black bezel and insert.




Terminal numbers for reference only

## Bezel for right angle p.c. mtd. switches with 0, 1 or 2 LEDs

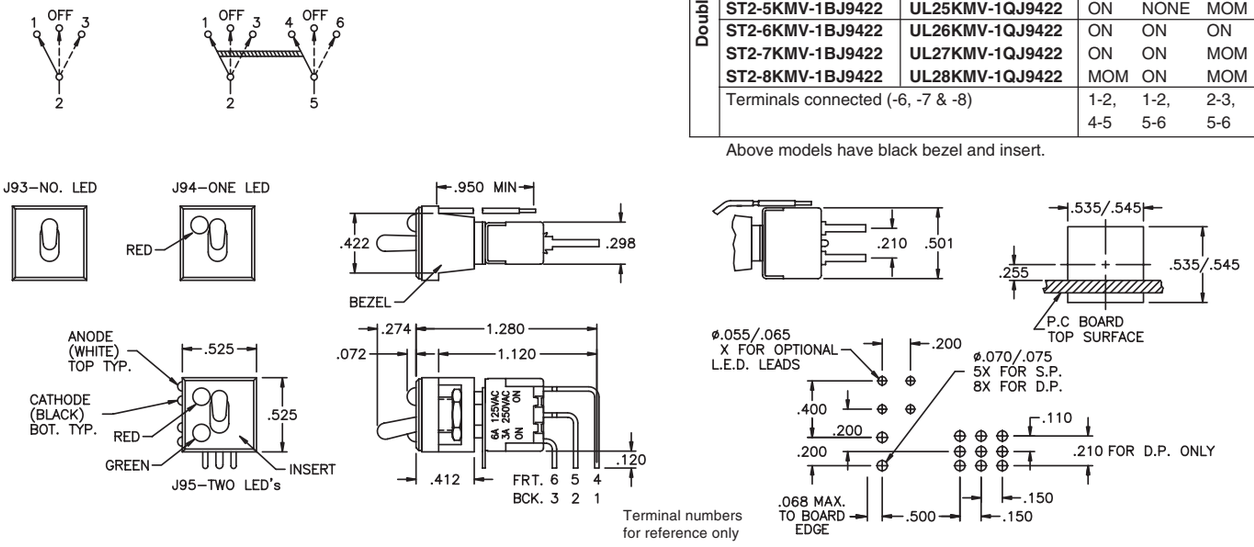
**PATENT NO.**
**Des. 282,524**



**ST1-1KMV-1BJ9488**

| | DRY CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMV-1BJ9422 | UL11KMV-1QJ9422 | ON | NONE | ON |
| | ST1-2KMV-1BJ9422 | UL12KMV-1QJ9422 | ON | OFF | ON |
| | ST1-3KMV-1BJ9422 | UL13KMV-1QJ9422 | MOM | OFF | MOM |
| | ST1-4KMV-1BJ9422 | UL14KMV-1QJ9422 | ON | OFF | MOM |
| | ST1-5KMV-1BJ9422 | UL15KMV-1QJ9422 | ON | NONE | MOM |
| Double pole | ST2-1KMV-1BJ9422 | UL21KMV-1QJ9422 | ON | NONE | ON |
| | ST2-2KMV-1BJ9422 | UL22KMV-1QJ9422 | ON | OFF | ON |
| | ST2-3KMV-1BJ9422 | UL23KMV-1QJ9422 | MOM | OFF | MOM |
| | ST2-4KMV-1BJ9422 | UL24KMV-1QJ9422 | ON | OFF | MOM |
| | ST2-5KMV-1BJ9422 | UL25KMV-1QJ9422 | ON | NONE | MOM |
| | ST2-6KMV-1BJ9422 | UL26KMV-1QJ9422 | ON | ON | ON |
| | ST2-7KMV-1BJ9422 | UL27KMV-1QJ9422 | ON | ON | MOM |
| | ST2-8KMV-1BJ9422 | UL28KMV-1QJ9422 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

Above models have black bezel and insert.




Terminal numbers for reference only

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# ST SERIES - MINIATURE TOGGLE SWITCHES

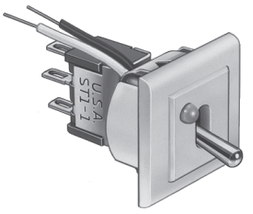
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## Snap-in bezel for round hole mounting with 0, 1 or 2 LEDs

Self keying against rotation

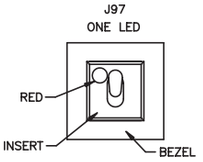
**PATENT NO.**
**Des. 282,524**

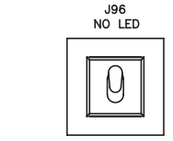
**ST1-1KMZQJ9788**

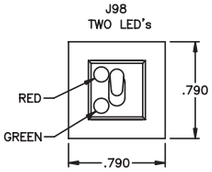


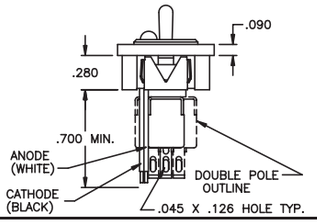

| | POWER CKT. MODEL NO. | UL MODEL NO. | USA marking on opposite side | | |
|---|---|---|---|---|---|
| Single pole | ST1-1KMZQJ9722 | UL11KMZQJ9722 | ON | NONE | ON |
| | ST1-2KMZQJ9722 | UL12KMZQJ9722 | ON | OFF | ON |
| | ST1-3KMZQJ9722 | UL13KMZQJ9722 | MOM | OFF | MOM |
| | ST1-4KMZQJ9722 | UL14KMZQJ9722 | ON | OFF | MOM |
| | ST1-5KMZQJ9722 | UL15KMZQJ9722 | ON | NONE | MOM |
| Double pole | ST2-1KMZQJ9722 | UL21KMZQJ9722 | ON | NONE | ON |
| | ST2-2KMZQJ9722 | UL22KMZQJ9722 | ON | OFF | ON |
| | ST2-3KMZQJ9722 | UL23KMZQJ9722 | MOM | OFF | MOM |
| | ST2-4KMZQJ9722 | UL24KMZQJ9722 | ON | OFF | MOM |
| | ST2-5KMZQJ9722 | UL25KMZQJ9722 | ON | NONE | MOM |
| | ST2-6KMZQJ9722 | UL26KMZQJ9722 | ON | ON | ON |
| | ST2-7KMZQJ9722 | UL27KMZQJ9722 | ON | ON | MOM |
| | ST2-8KMZQJ9722 | UL28KMZQJ9722 | MOM | ON | MOM |
| | Terminals connected (-6, -7 & -8) | | 1-2, 4-5 | 1-2, 5-6 | 2-3, 5-6 |

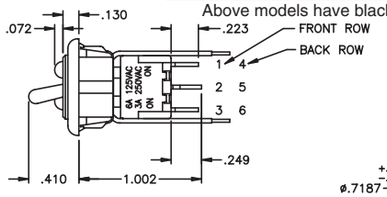
Above models have black bezel and insert.

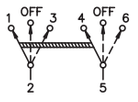


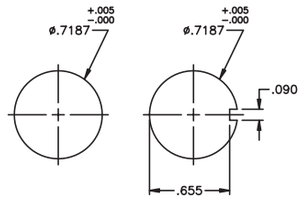






Terminal numbers for reference only



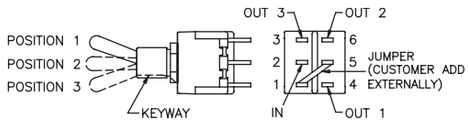

Panel thickness range .047" to .125".

## MISCELLANEOUS

### ST2-6, -7 & -8 SWITCHES

May be wired as a single pole 3 position switch; add external jumper between terminals 1 & 5, then -

Common terminal is 2
Output 1 - terminal 4
Output 2 - terminal 6
Output 3 - terminal 3




**QUICK-CONNECT RECEPTACLES** that are compatible with solder lug or p.c. terminals are commercially available - consult factory.

**FRONT PANEL SEAL:** Silicone rubber boots for front panel sealing of the switch against high pressure water or other contaminants are available - see Waterproof switch sealing boots section of catalog.

### HARDWARE SUPPLIED

(See Hardware section of catalog)

Switches with M and Y option bushings are supplied with (2) A112 Hex Nuts, (1) A115 Lockwasher and (1) A107 Anti-rotate Ring.

Switches with D bushings are supplied with (2) A112 Hex Nuts and (1) A115 Lockwasher.

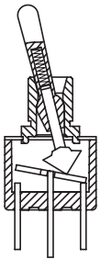
Switches with H option bushing are supplied with (1) A112 Hex Nut, (1) A115 Lockwasher and (1) A257 Gasket.

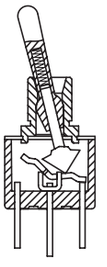
Switches with M4 and M5 bushings are supplied with (2) A465 Hex Nuts, (1) A466 Lockwasher and (1) A482 Anti-rotateRing.

Note: Switches with non-threaded bushings or bezels supplied without hardware.

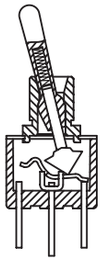
## TYPICAL SWITCH CROSS SECTIONS

Note: Contacts make opposite actuator direction.


ON NONE ON


ON OFF ON

MOM OFF MOM


ON OFF MOM

ON NONE MOM

# ST SERIES - MINIATURE TOGGLE SWITCHES

**Additional ordering information:** Commonly ordered models are shown on prior pages with complete model numbers and specifications. Below is an order format that enables you to 'build your own switch' and specify the correct switch model number by simply selecting from all available options shown and filling in the boxes.

## 'BUILD YOUR OWN SWITCH' ORDER FORMAT

Fill in boxes with selections shown for **Model Structure**, then add **Options** selections for complete model number. Allowable options are shown below each respective box with brief description - see option dwgs. & info. following. Note: 'NONE' indicates box may be left empty.

### Model Structure:

**Series**

Single pole:
**S T 1 -**
S.P. UL model:
**U L 1**
Double pole:
**S T 2 -**
D.P. UL model:
**U L 2**

**Electrical functions**

| | | | |
|---|---|---|---|
| **1** | 0N | N0NE | 0N |
| **2** | 0N | 0FF | 0N |
| **3** | M0M | 0FF | M0M |
| **4** | 0N | 0FF | M0M |
| **5** | 0N | - | M0M |

Following for DP only

| | | | |
|---|---|---|---|
| **6** | 0N | 0N | 0N |
| **7** | 0N | 0N | M0M |
| **8** | M0M | 0N | M0M |

**Actuators**

**K** Standard bat
**F 1** Flatted
**F 2** Long flatted
**F 3** Short flatted
**L** Long round
**L 1** Medium rnd.
**L 2** Short round
**L 3** Short round
Following for M4 & M5 bushings only
**T 1** Large bat
**T 2** Long large bat
**T 3** T1 with keying
**T 4** T2 with keying

**Bushings**

**M** Standard 1/4" thd'd.
**D** 'D' flat 1/4" thd'd.
**H** Splashproof 1/4" thd'd.
**Y** Long 1/4" thd'd.
**S 2** Non-threaded
**S 3** Short non-thd'd.
**M 4** 15/32" thd'd.
**M 5** M4 with 'o'-ring

**Terminations**

**Z** Solder lug
**C** Printed circuit
**W** Wirewrap
**W 1** Lg. wirewrap
**W 3** Sht. wirewrap
**X** Extra lg. wirewrap
Horiz. right angle p.c. terminals:
**A**
**A - 1**
Vertical right angle p.c. terminals:
**V**
**V - 1**
**V - 2**
Straight p.c. terminals w/brkt.:
**V 3 0**
**V 3 1**
**V 4 0**
**V 4 1**
**V 7 0**
**V 8 0**
**V 7 1**
**V 8 1**

**Contact material**

**B** Gold
**Q** Coin silver
**G** Gold/coin silver
**N** Economy gold
**T** Economy silver

Note: When switch is ordered with a bezel, actuator selection may be **K, L, L1, or L2** and bushing must be **M** only.

### Options:

**Sealing**

**(NONE)**
**E** Epoxy

**Colored actuator***

**(NONE)**
**2** Black

**Colored bushing***

**(NONE)**
**2** Black

* colored actuator and bushing applicable to non-bezel models only

**Bezel& Insert**

**(NONE)**
**J 6 1** Snap-in w/LED
**J 9 0** Snap-in no LED
**J 9 1** Snap-in w/LED
**J 9 2** Snap-in w/2 LEDs
**J 9 3** p.c. no LED
**J 9 4** p.c. w/LED
**J 9 5** p.c. w/2 LEDs
Self-keying round hole mt.:
**J 9 6** Snap-in no LED
**J 9 7** Snap-in w/LED
**J 9 8** Snap-in w/2 LEDs

**Bezel color**

**(NONE)**
**2** Black
**6** Red
**8** White

**Insert color**

**(NONE)**
**2** Black
**6** Red
**8** White

**Approvals**

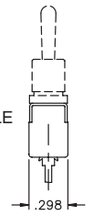
**(NONE)**
**/ C S A**

Although most combinations of options are available, some may result in incompatibilities. Consult factory if there is any question.

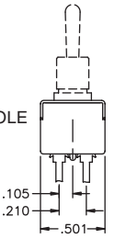
Example of completely specified model number:
**UL15KMZQEJ9726/CSA**

## SWITCH BODY SIZES WITH TERMINAL LOCATION DIMENSIONS

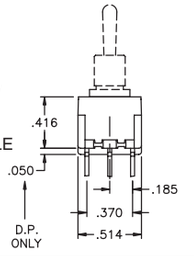
SIDE VIEW
SINGLE POLE




SIDE VIEW
DOUBLE POLE




FRONT VIEW
SINGLE AND
DOUBLE POLE

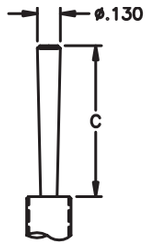



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

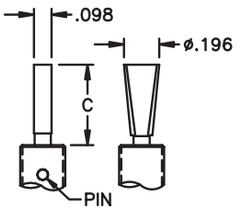
# ST SERIES - MINIATURE TOGGLE SWITCHES

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

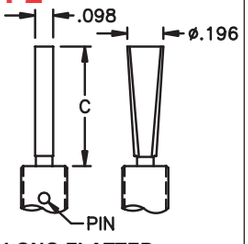
## ACTUATOR OPTIONS

### L


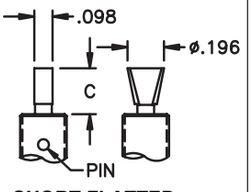
LONG ROUND

### F1


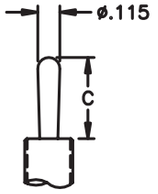
FLATTED

### F2


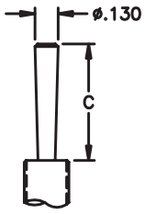
LONG FLATTED

### F3


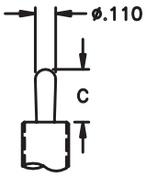
SHORT FLATTED

### K (STANDARD)


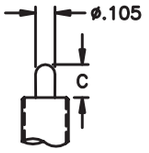
ROUND

### L1


MEDIUM ROUND

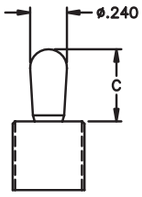
### L2


SHORT ROUND

### L3


SHORT ROUND

### T1 & T2
(FOR M4 & M5 BUSHINGS ONLY)



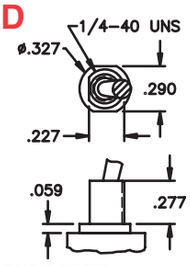
LONG & SHORT ROUND

### T3 & T4

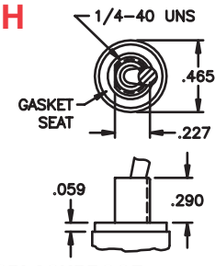
**Same as T1 & T2 respectively except with positive internal keying and sideways support to provide more ruggedness in harsh applications.**

**Available only with M4 bushing**

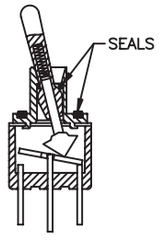
## BUSHING OPTIONS

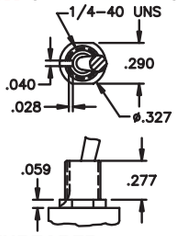
### D


THREADED

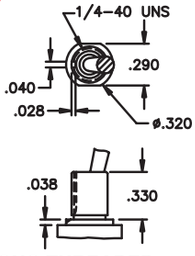
### H


SPLASHPROOF

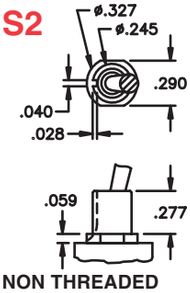



### M (STANDARD)


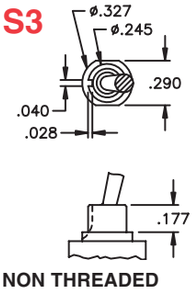
THREADED

### Y


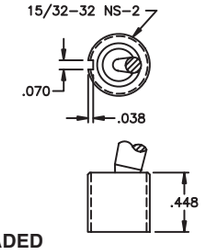
LONG THREADED

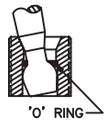
### S2


NON THREADED

### S3


NON THREADED

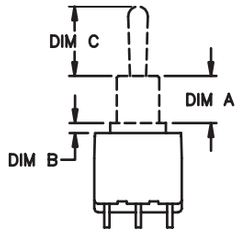
### M4 & M5



**M5 FEATURES 'O'-RING FOR SPLASHPROOF APPLICATIONS**

THREADED

## ACTUATOR & BUSHING COMPATIBILITY TABLE WITH DIMENSIONS FOR SELECTIONS



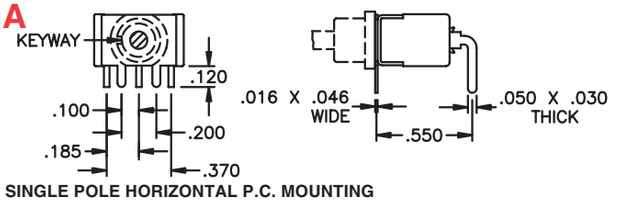

| Bushing Option | Bushing Dims. Dim A | Dim B | Actuator length dimension C F1 | F2 | F3 | K | L | L1 | L2 | L3 | T1 | T2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | .277 | .060 | N/A | N/A | N/A | .410 | .840 | .640 | .270 | .170 | N/A | N/A |
| H | .290 | .060 | N/A | N/A | N/A | .410 | .840 | .640 | .270 | .170 | N/A | N/A |
| M | .277 | .060 | .450 | .650 | .250 | .410 | .840 | .640 | .270 | .170 | N/A | N/A |
| Y | .330 | .040 | N/A | N/A | N/A | .410 | .840 | .640 | .270 | .170 | N/A | N/A |
| S2 | .277 | .060 | .450 | .650 | .250 | .410 | .840 | .640 | .270 | .170 | N/A | N/A |
| S3 | .177 | .060 | N/A | N/A | N/A | .510 | .940 | .740 | .370 | .270 | N/A | N/A |
| M4 | .448 | - | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | .460 | .687 |
| M5 | .448 | - | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | .460 | .687 |

N/A - NOT AVAILABLE CONSULT FACTORY FOR SPECIAL REQUIREMENTS

# ST SERIES - MINIATURE TOGGLE SWITCHES

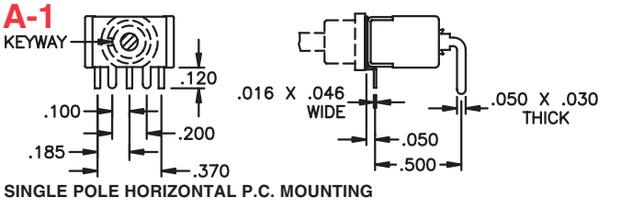
## TERMINATION OPTIONS

### A



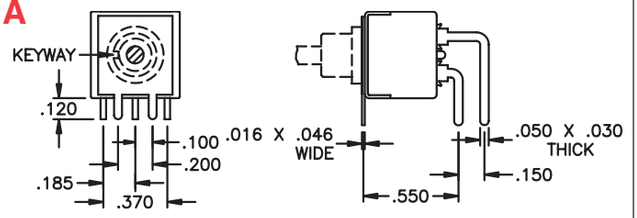

SINGLE POLE HORIZONTAL P.C. MOUNTING

### A-1



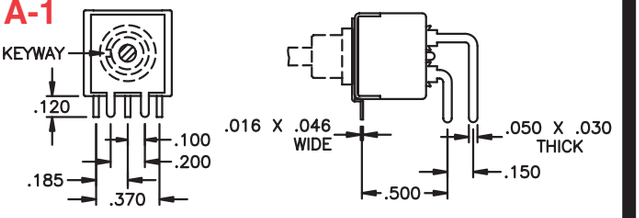

SINGLE POLE HORIZONTAL P.C. MOUNTING

### A




DOUBLE POLE HORIZONTAL P.C. MOUNTING

### A-1



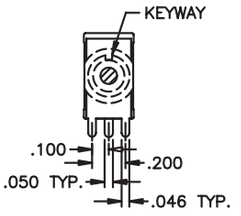

DOUBLE POLE HORIZONTAL P.C. MOUNTING

### V, V-1 & V-2

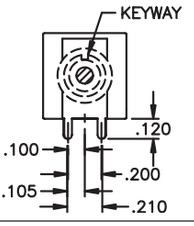
| Option | Dim. A | Dim. B |
|---|---|---|
| V | .550 | .150 |
| V-1 | .500 | .150 |
| V-2 | .500 | .100 |

VERTICAL P.C. MOUNTING

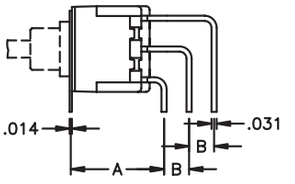
FRONT VIEW SINGLE POLE




FRONT VIEW DOUBLE POLE

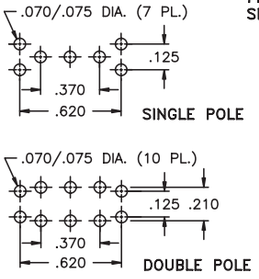



SIDE VIEW - SINGLE & DOUBLE POLE



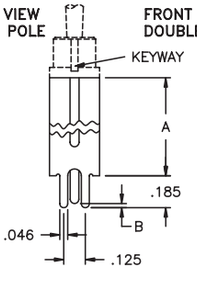

### V30, V40, V70, V80, V31, V41, V71 & V81

PANEL LAYOUT
V30, V31, V40 & V41

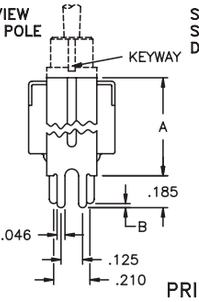



| Option | Dim. A | Dim. B |
|---|---|---|
| V30-V31 | .527 | .024 |
| V40-V41 | .647 | .048 |

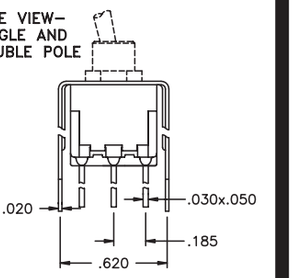
FRONT VIEW SINGLE POLE




FRONT VIEW DOUBLE POLE

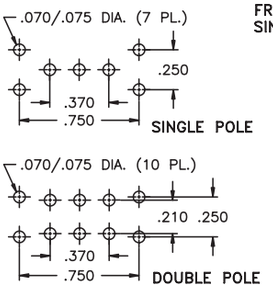



SIDE VIEW– SINGLE AND DOUBLE POLE



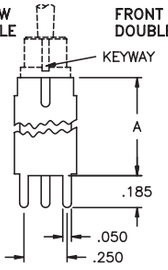

PRINTED CIRCUIT MOUNTING

PANEL LAYOUT
V70, V71,
V80 & V81

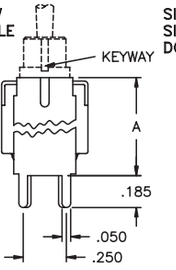



| Option | Dim. A |
|---|---|
| V70-V71 | .630 |
| V80-V81 | .953 |

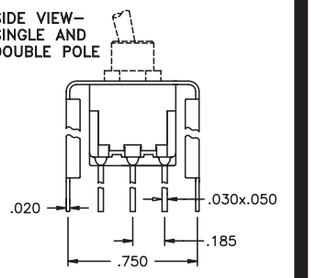
FRONT VIEW SINGLE POLE




FRONT VIEW DOUBLE POLE

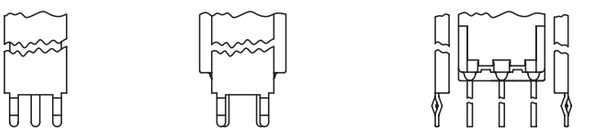



SIDE VIEW– SINGLE AND DOUBLE POLE




PRINTED CIRCUIT MOUNTING

V31, V41, V71 & V81 ARE THE SAME AS V30, V40, V70 & V80 RESPECTIVELY, EXCEPT WITH CRIMPED LEG DESIGN FOR P.C. BOARD RETENTION, AS SHOWN TO RIGHT.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



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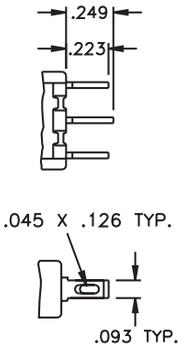
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

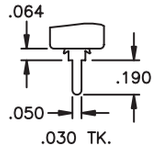
## TERMINATION OPTIONS (CONT'D.)

### Z



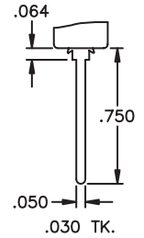

**SOLDER LUG**

### C



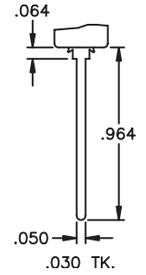

**PRINTED CIRCUIT**

### W



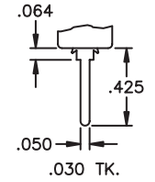

**WIREWRAP**

### W1



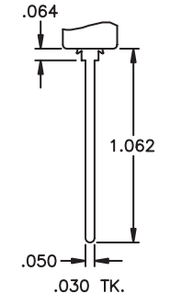

**LONG WIREWRAP**

### W3




**SHORT WIREWRAP**

### X




**EXTRA LG. WIREWRAP**

## CONTACT MATERIAL OPTIONS

**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.

**N**
Dry circuit - gold over nickel over brass. Note- less gold than B option.
RATING: 0.4 Volt-Amps (VA) max. at 20 V max.
ELECTRIC LIFE: 10,000 cycles min. at 13 cycles per minute.

**T**
Power circuit - Silver plate over brass.
RATING: 3 Amps at 125 VAC or 1.5 Amps at 250 VAC (resistive loads).
ELECTRIC LIFE: 10,000 cycles min. at 13 cycles per minute.

Solder dipped terminals and custom contact plating available - contact factory.

## 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. To specify, order UL model no. Note - applicable only to terminations with coin silver contacts (Q or G options).

**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. To specify, UL model number, then add '/CSA' to complete switch number. Note - applicable only to terminations with coin silver contacts (Q or G options) as CSA recognizes switches for power applications only.

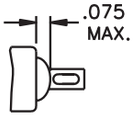
## SEALING & MISCELLANEOUS OPTIONS

**E**

Epoxy terminal sealing: Available with all terminal configurations.

The space between terminal & case hole is sealed with epoxy all around terminal.

Provides maximum protection from entry of flux or contaminants into the switch case.




**/R**

To specify reverse switch action on non-symmetrical models with bushing keyway, add '/R' to switch model no.

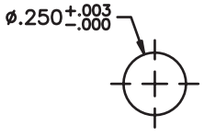
**22**

Black finish is available on actuator, bushing & hardware. To specify, add '-22' to switch model no.

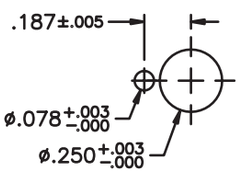
# ST SERIES - MINIATURE TOGGLE SWITCHES

## PANEL CUT-OUTS

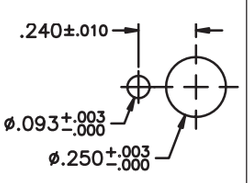
### Cut-outs that accept all 1/4-40 threaded bushings:



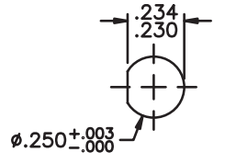

Without keying



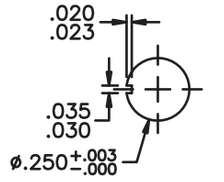

With A107 anti-rotate ring




With A158 anti-rotate ring

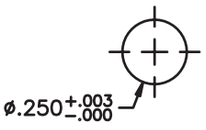



With D bushing




With slotted keyway bushings

### Cut-outs that accept non-threaded 1/4"bushings and 15/32" threaded bushings:




Accepts all non-threaded 1/4" bushings

15/32" threaded bushings

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