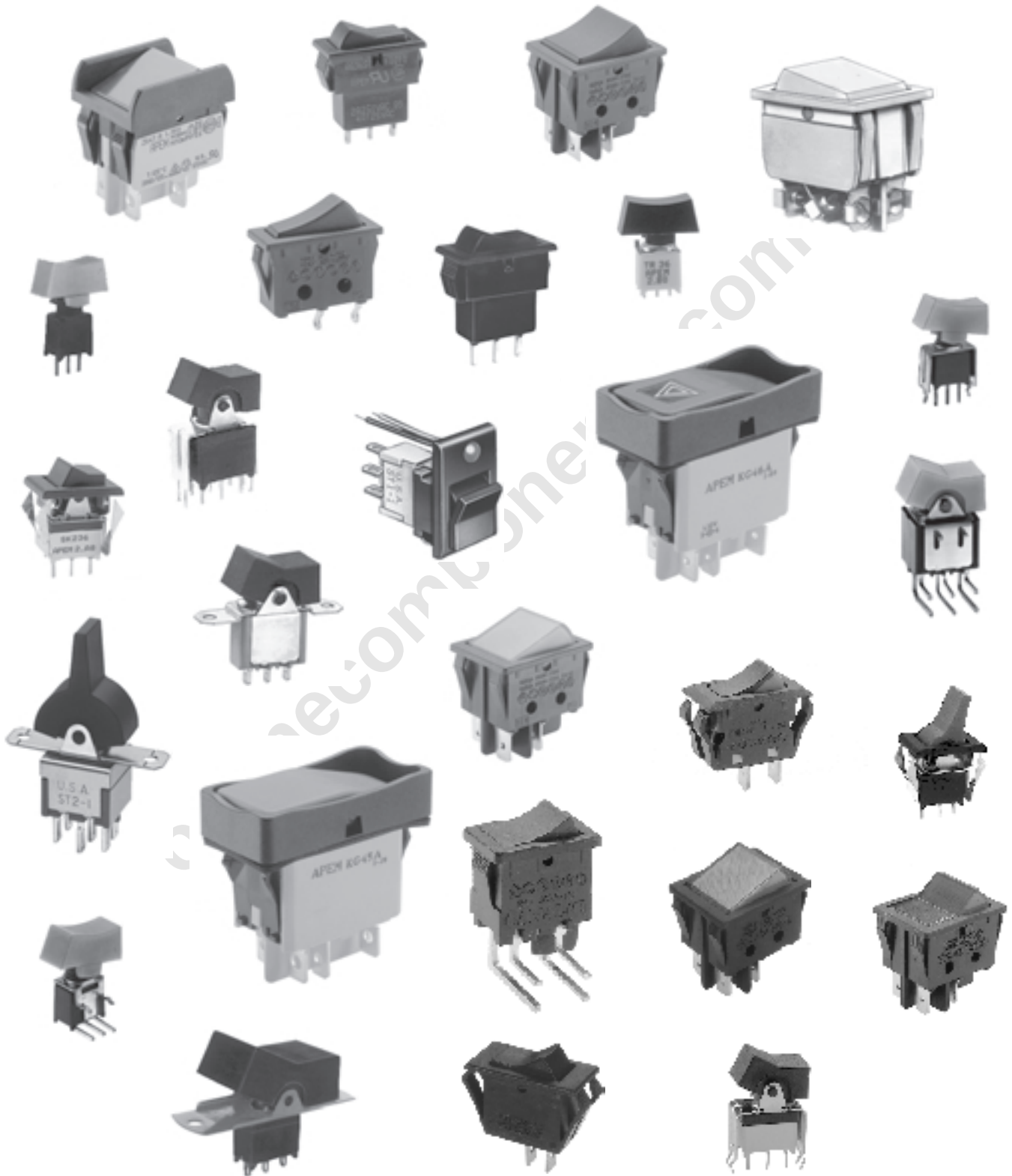


# ROCKER & LEVER SWITCHES

SEE ROCKER & LEVER SWITCH SELECTION GUIDE ON NEXT PAGE

B

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



# ROCKER & LEVER SWITCHES

ROCKER & LEVER SWITCH SELECTION GUIDE: This catalog contains an extensive variety of rocker and lever switches with numerous options and accessories. To facilitate easy selection of the desired switch for your application, this guide lists the various Series with some key selection parameters.

B

| SERIES                | SIZE      | RATINGS (Max. in bold)                                                              | POLES | ILLUMINATED | SURFACE MOUNT | PANEL MOUNT | P. C. MOUNT | UL | CSA | VDE | WASHABLE | ESD PROTECTION | PAGE(S) |
|-----------------------|-----------|-------------------------------------------------------------------------------------|-------|-------------|---------------|-------------|-------------|----|-----|-----|----------|----------------|---------|
| <b>TR</b> <i>New!</i> | TINY      | <b>0.4VA 20V</b>                                                                    | SP    |             | X             |             |             |    |     |     | X        | X              | B3-B6   |
| <b>TR</b>             | TINY      | <b>1/2A 48V</b> 0.4VA 20V                                                           | SP,DP |             |               |             | X           |    |     |     | X        | X              | B7-B10  |
| <b>S</b>              | MINIATURE | 0.4VA 20V 2A 250VAC<br><b>5A 125VAC</b> 4A 30VDC                                    | SP,DP |             |               |             | X           | X  |     |     | X        | X              | B11-B15 |
| <b>7000</b>           | MINIATURE | 0.4VA 20V 3A 250VAC<br><b>6A 125VAC</b> 4A 30VDC                                    | SP,DP |             |               | X           | X           | X  | X   |     |          |                | B16-B19 |
| <b>ST &amp; UL</b>    | MINIATURE | <b>6A 125VAC</b> 3A 250VAC<br>0.4VA 20V                                             | SP,DP | X           |               | X           | X           | X  | X   |     |          |                | B20-B30 |
| <b>2600</b>           | STANDARD  | <b>16A 125/250VAC</b><br>1/3 HP 250VAC<br><b>PEAK CURRENT 150A</b><br><b>250VAC</b> | SP,DP | X           |               | X           |             | X  | X   | X   |          |                | B31-B35 |
| <b>AS</b>             | STANDARD  | <b>4A 125VAC</b> 2A 250VAC<br>0.4VA 20V                                             | SP    |             |               | X           |             | X  | X   |     |          |                | B36-B37 |
| <b>R</b> <i>New!</i>  | STANDARD  | <b>16A 125/250VAC 1/4 HP</b><br>20A 125VAC                                          | SP,DP | X           |               | X           |             | X  | X   | X   |          |                | B38-B39 |
| <b>RH</b> <i>New!</i> | STANDARD  | <b>16A 125/250VAC 1/4 HP</b><br>20A 125 VAC                                         | SP    | X           |               | X           |             | X  | X   | X   |          |                | B40-B41 |
| <b>FM</b> <i>New!</i> | STANDARD  | <b>10A 125VAC</b> 6A 250 VAC<br>6A 125/250VAC 1/8 HP                                | SP,DP | X           |               | X           |             | X  | X   | X   |          |                | B42-B43 |
| <b>MR</b> <i>New!</i> | STANDARD  | <b>10A 125VAC</b><br>8A 250VAC 1/4 HP                                               | DP    | X           |               | X           |             | X  | X   | X   |          |                | B44-B45 |
| <b>B</b> <i>New!</i>  | STANDARD  | <b>15A 125VAC</b> 10A 250VAC                                                        | SP,DP |             | X             |             | X           |    | X   | X   |          |                | B46-B47 |
| <b>HB</b> <i>New!</i> | STANDARD  | <b>20A 125VAC</b> 16A 250VAC<br>125/250 VAC 3/4 HP                                  | SP    | X           |               | X           |             | X  | X   | X   |          |                | B48-B49 |
| <b>KG</b> <i>New!</i> | STANDARD  | <b>15A 12VDC/250VAC</b><br>10A 24VDC                                                | SP    | X           |               | X           |             |    |     |     |          |                | B50-B53 |
| <b>H</b> <i>New!</i>  | STANDARD  | <b>16A 250VAC</b><br><b>4A INDUCTIVE 250 VAC</b>                                    | SP,DP | X           |               | X           |             |    |     |     |          |                | B54-B55 |

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## New! TR SERIES - SMT WASHABLE TINY ROCKER SWITCHES

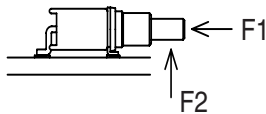
B

### DESIGNED EXCLUSIVELY FOR SURFACE MOUNTING

SMT TR Series switches incorporate many desirable features that include:

- **Higher protection against p.c. board tear-offs**

The switch operating force is approx. .56 lbs. while forces required to tear switch off p.c. board are approx. 38 lbs. (F1) and 14 lbs. (F2).



- **Tape & reel packaging**

Recommended for:

- economy
- suitability for automated placement
- handling of large quantities of components per packaging unit
- positive component positioning
- protection of terminals against damage during handling
- high static resistance

- **Reflow solderable**

- High temperature plastic materials
- Tin plated grounding brackets
- Tin-lead alloy over nickel terminal plating
- Terminals turned outward to prevent the shadow effect in infrared soldering and to permit visual inspection of the solder joints
- .021" (0.55mm) air gap between p.c. board and switch case
- End stackable pitch .400" (10.16mm)
- Available with positioning pins to assure correct switch orientation during the reflow process and provide additional mechanical integrity

- **Protected against electrostatic discharges (ESD) up to 10 KV.**

- **Washable**

Switches are designed to withstand cleaning processes, including hot water under pressure.

Surface mount devices (SMD) are subject to more stringent constraints of temperature, solderability, sealing and space savings than through-hole components.

To meet these requirements, APEM has designed a family of tiny surface mount switches that include TL Series toggle switches, TP Series pushbutton switches, TR Series rocker switches & TG Series slide switches. See toggle, pushbutton & slide switch sections of catalog for TL, TP & TG Series respectively.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# New! TR SERIES - SMT WASHABLE TINY ROCKER SWITCHES

B

## ELECTRICAL SPECIFICATIONS

|                                          |                                                                          |
|------------------------------------------|--------------------------------------------------------------------------|
| <b>Contact ratings (resistive lds.):</b> | 0.4 VA at 20 V max. (AC or DC)                                           |
| <b>Minimum load:</b>                     | 10 mA at 50 mV or 10 $\mu$ A at 5 VD                                     |
| <b>Initial contact resistance:</b>       | 20 milliohms maximum                                                     |
| <b>Insulation resistance:</b>            | 1000 M $\Omega$ min. at 500 VDC                                          |
| <b>Dielectric strength:</b>              | 1000 V rms between terminals & frame. 500 V rms between terminals        |
| <b>Electrical life (at full load):</b>   | 2 position switches: 60,000 cycles<br>3 position switches: 30,000 cycles |
| <b>Static resistance:</b>                | 10 KV (Schaffner equipment)                                              |

## GENERAL SPECIFICATIONS

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| <b>Operating temperature range:</b> | -40°C to +85°C                      |
| <b>Moisture resistance:</b>         | 21 days per IEC 512-6 test 11c      |
| <b>Vibration resistance:</b>        | 10-500 Hz/10g per IEC 512-4 test 6d |
| <b>Shock resistance:</b>            | 50 g per IEC 512-4 test 6c          |

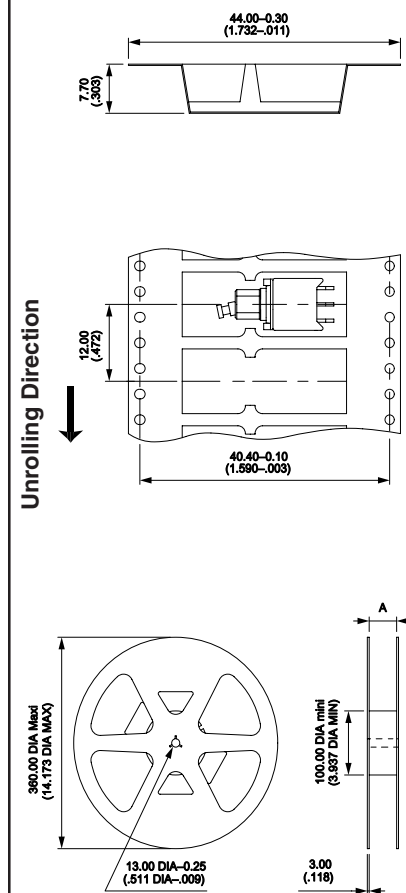
## MATERIALS

|                            |                                              |
|----------------------------|----------------------------------------------|
| <b>Case:</b>               | High temperature plastic UL94V-0             |
| <b>Actuator:</b>           | High temperature plastic UL94V-0             |
| <b>Grounding brackets:</b> | Tin plated steel (includes positioning pins) |
| <b>Contacts:</b>           | Gold plated brass                            |
| <b>Terminals:</b>          | Brass with tin-lead alloy over nickel plate  |
| <b>Terminal seal:</b>      | Epoxy                                        |

## SOLDERING AND CLEANING

|                          |                                                           |
|--------------------------|-----------------------------------------------------------|
| <b>Reflow soldering:</b> | Infrared, vapor phase and infrared convection             |
| <b>Washable:</b>         | Per IEA-RS448-2: water and detergent preferred. Solvents. |

## PACKAGING



### Standard packaging unit:

700 pieces  
Tape meeting international standard IEC Publication 286-3 (EIA481A)  
Start leader: 15.7" (400mm) min.  
Dimension 'A': 1.732" (44.00mm)

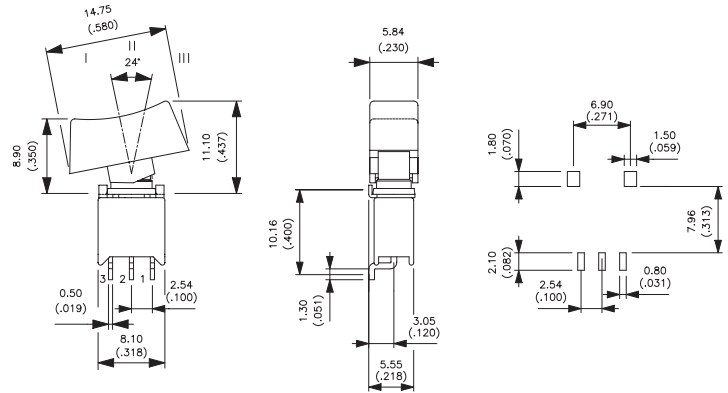
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# New! TR SERIES - SMT WASHABLE TINY ROCKER SWITCHES

## Single pole rocker switches



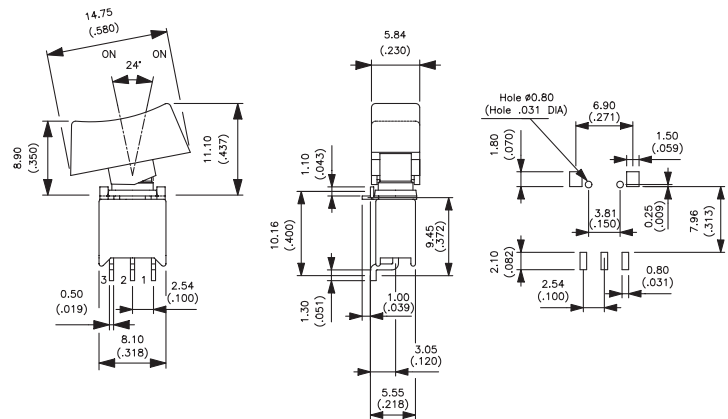
| MODEL NO.        | CIRCUIT |     |     |
|------------------|---------|-----|-----|
| TR36WS80000      | ON      | -   | ON  |
| TR39WS80000      | ON      | OFF | ON  |
| TR37WS80000      | MOM     | OFF | MOM |
| TR38WS80000      | ON      | OFF | MOM |
| TR32WS80000      | ON      | -   | MOM |
| Handle position: | III     | II  | I   |



## Single pole rocker switches with positioning pins

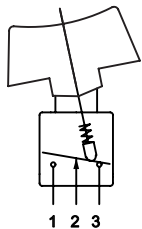


| MODEL NO.        | CIRCUIT |     |     |
|------------------|---------|-----|-----|
| TR36WS80065      | ON      | -   | ON  |
| TR39WS80065      | ON      | OFF | ON  |
| TR37WS80065      | MOM     | OFF | MOM |
| TR38WS80065      | ON      | OFF | MOM |
| TR32WS80065      | ON      | -   | MOM |
| Handle position: | III     | II  | I   |

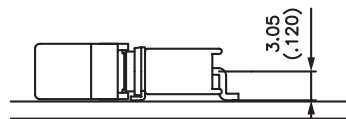


### SWITCH ACTION

ON - ON Model shown



### P.C. BOARD DIMENSIONS



### LED INDICATOR IN TINY ROCKER PACKAGE

#### ELECTRICAL SPECIFICATIONS

**Forward voltage:** Red; 3.0 volts at 10 milliamps (2V typical)  
Green; 3.0 volts at 20 milliamps (2.2V typical)  
Yellow; 3.0 volts at 10 milliamps (2.1V typical)

**Reverse voltage:** 5.0 volts minimum

**Viewing angle (total):** 90°

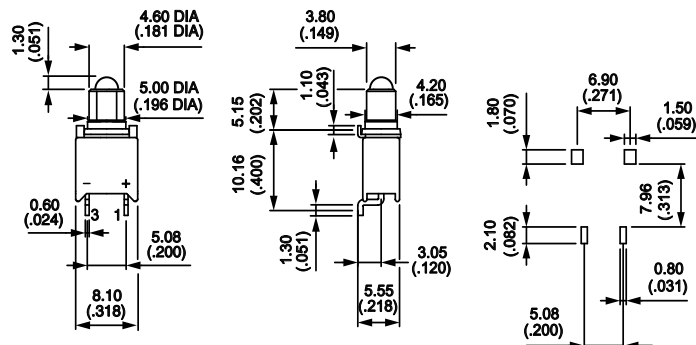
**Wavelength:** Red; 635 nm  
Green; 565 nm  
Yellow; 585 nm

#### PACKAGING

Tape & reel



| MODEL NO.   | COLOR  |
|-------------|--------|
| TV01WS00100 | Red    |
| TV02WS00100 | Green  |
| TV03WS00100 | Yellow |



# New! TR SERIES - SMT WASHABLE TINY ROCKER SWITCHES

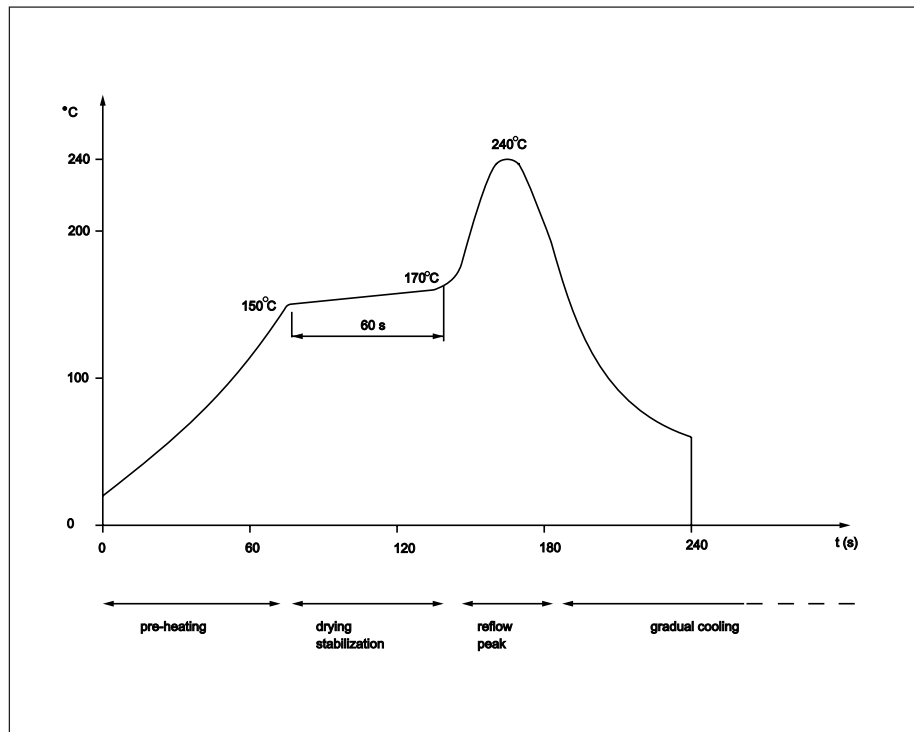
B

## REFLOW SOLDERING - STANDARD PROFILE

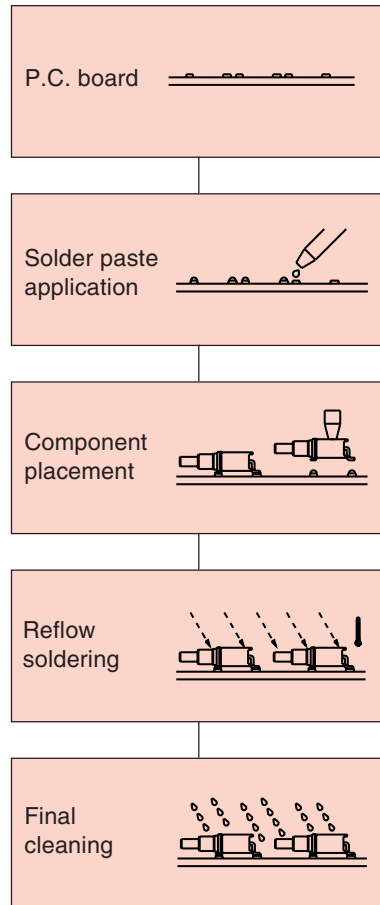
The printed circuit board, carried by a conveyor belt, travels through the reflow soldering oven and experiences the following programmed cycles:

- pre-heat to a maximum of 200°C for 30 seconds
- reflow at a maximum of 245°C for 10 seconds
- final cleaning

### TEMPERATURE/TIME PROFILE (typical)

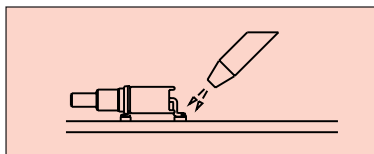


### PROCESSING STEPS



### P.C. BOARD REWORK RECOMMENDATIONS

Hot air reflow technique is preferred. Avoid the use of a soldering iron.



**Caution:** Excessive and/or repeated high temperature exposure may affect switch performance & reliability.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## TR SERIES - WASHABLE TINY ROCKER SWITCHES, P.C. MOUNTING



### FEATURES

- Wave solderable.
- Fully sealed for process compatibility.
- Ultra-compact case size.
- SPDT & DPDT models.
- Narrow & wide actuators in 9 colors.

### SPECIFICATIONS

|                                           |                                                                                                  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Contact ratings (resistive loads):</b> | Gold plated brass; 0.4 Volt-Amps max. at 20 V max.<br>Silver plated brass; 0.5 Amps at 48 V max. |
| <b>Minimum load:</b>                      | 10 mA at 50 mV - 10µA at 5 VDC                                                                   |
| <b>Initial contact resistance:</b>        | 20 milliohms maximum                                                                             |
| <b>Insulation resistance:</b>             | 1000 megohms minimum at 500 VDC                                                                  |
| <b>Dielectric strength:</b>               | 1000 V rms minimum between terminals and frame. 500 V rms between terminals..                    |
| <b>Electrical life:</b>                   | 2 position switches - 60,000 cycles minimum.<br>3 position switches - 30,000 cycles minimum.     |
| <b>Operating temperature range:</b>       | -30°C to +85°C                                                                                   |
| <b>Washing:</b>                           | Permissible with water, detergents and freons.                                                   |

### MATERIALS

|                                  |                                     |
|----------------------------------|-------------------------------------|
| <b>Contacts &amp; Terminals:</b> | Gold or silver plated brass         |
| <b>Actuator:</b>                 | Polyamide                           |
| <b>Bracket:</b>                  | Tin plated steel or stainless steel |
| <b>Case:</b>                     | PBT                                 |
| <b>Terminal seal:</b>            | Epoxy                               |

### ABOUT THIS SERIES

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

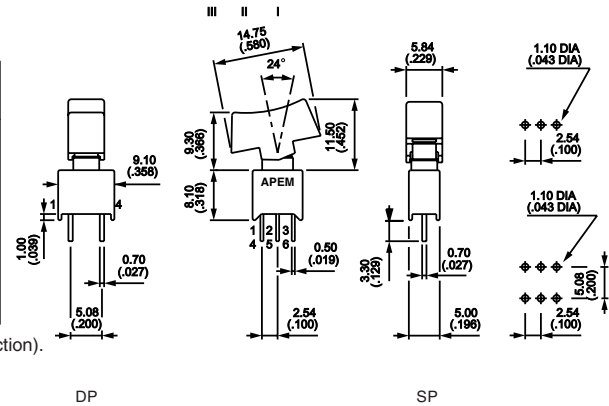
- Completely specified switch models
- 'build your own switch' order format
- Option drawings & special options
- Miscellaneous

# TR SERIES - WASHABLE TINY ROCKER SWITCHES, P.C. MOUNTING

## Straight p.c. terminals - gold plated brass contacts

| SINGLE POLE<br>MODEL NO.     | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|------------------------------|--------------------------|---------|-----|-----|
| TR36P00000012                | TR46P00000012            | ON      | -   | ON  |
| TR39P00000012                | TR49P00000012            | ON      | OFF | ON  |
| TR37P00000012                | TR47P00000012            | MOM     | OFF | MOM |
| TR38P00000012                | TR48P00000012            | ON      | OFF | MOM |
| TR32P00000012                | TR42P00000012            | ON      | -   | MOM |
| Handle position (see dwg.) : |                          | III     | II  | I   |
| Terminals connected: SP & DP |                          | 2-3     | 2-1 |     |
| DP                           |                          | 5-6     | 4-5 |     |

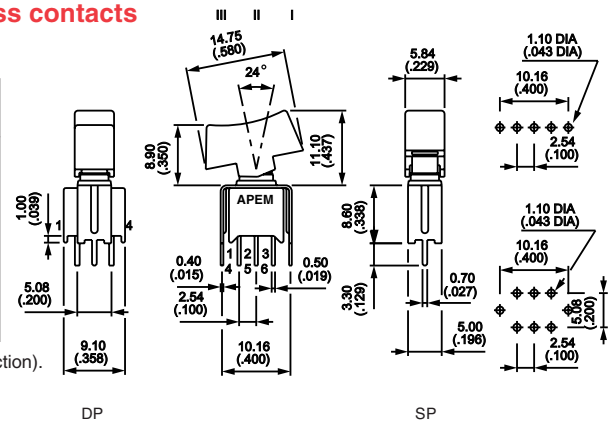
Above models have black 10 actuator (see color codes at end of section).



## Straight p.c. terminals - mounting bracket - gold plated brass contacts

| SINGLE POLE<br>MODEL NO.     | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|------------------------------|--------------------------|---------|-----|-----|
| TR36Y00005012                | TR46Y00005012            | ON      | -   | ON  |
| TR39Y00005012                | TR49Y00005012            | ON      | OFF | ON  |
| TR37Y00005012                | TR47Y00005012            | MOM     | OFF | MOM |
| TR38Y00005012                | TR48Y00005012            | ON      | OFF | MOM |
| TR32Y00005012                | TR42Y00005012            | ON      | -   | MOM |
| Handle position (see dwg.) : |                          | III     | II  | I   |
| Terminals connected: SP & DP |                          | 2-3     | 2-1 |     |
| DP                           |                          | 5-6     | 4-5 |     |

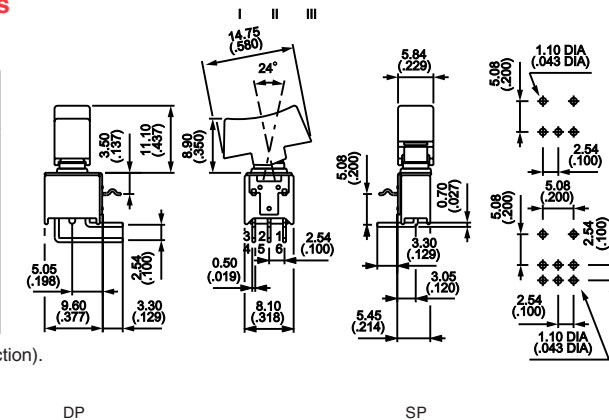
Above models have black 10 actuator (see color codes at end of section).



## Horizontal right angle terminals - gold plated brass contacts

| SINGLE POLE<br>MODEL NO.     | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|------------------------------|--------------------------|---------|-----|-----|
| TR36W00005012                | TR46W00005012            | ON      | -   | ON  |
| TR39W00005012                | TR49W00005012            | ON      | OFF | ON  |
| TR37W00005012                | TR47W00005012            | MOM     | OFF | MOM |
| TR38W00005012                | TR48W00005012            | ON      | OFF | MOM |
| TR32W00005012                | TR42W00005012            | ON      | -   | MOM |
| Handle position (see dwg.) : |                          | III     | II  | I   |
| Terminals connected: SP & DP |                          | 2-3     | 2-1 |     |
| DP                           |                          | 5-6     | 4-5 |     |

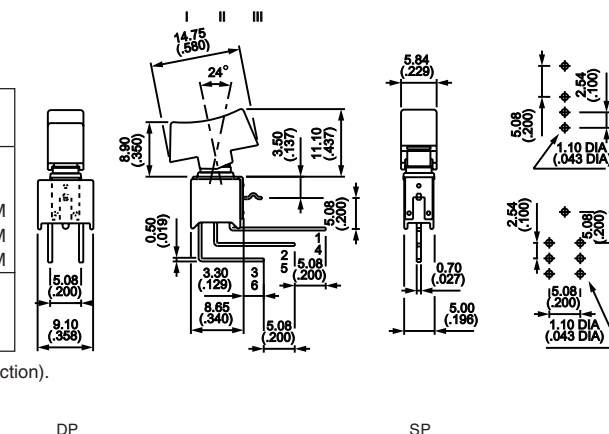
Above models have black 10 actuator (see color codes at end of section).



## Vertical right angle terminals - gold plated brass contacts

| SINGLE POLE<br>MODEL NO.     | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|------------------------------|--------------------------|---------|-----|-----|
| TR36WW00005012               | TR46WW00005012           | ON      | -   | ON  |
| TR39WW00005012               | TR49WW00005012           | ON      | OFF | ON  |
| TR37WW00005012               | TR47WW00005012           | MOM     | OFF | MOM |
| TR38WW00005012               | TR48WW00005012           | ON      | OFF | MOM |
| TR32WW00005012               | TR42WW00005012           | ON      | -   | MOM |
| Handle position (see dwg.) : |                          | III     | II  | I   |
| Terminals connected: SP & DP |                          | 2-3     | 2-1 |     |
| DP                           |                          | 5-6     | 4-5 |     |

Above models have black 10 actuator (see color codes at end of section).



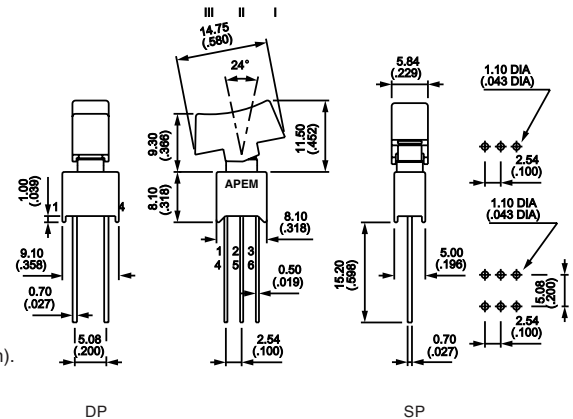
# TR SERIES - WASHABLE TINY ROCKER SWITCHES, P.C. MOUNTING

## Wire-wrap terminals - gold plated brass contacts



| SINGLE POLE<br>MODEL NO.     | DOUBLE POLE<br>MODEL NO. | CIRCUIT     |
|------------------------------|--------------------------|-------------|
| TR36MW0000012                | TR46MW0000012            | ON - ON     |
| TR39MW0000012                | TR49MW0000012            | ON OFF ON   |
| TR37MW0000012                | TR47MW0000012            | MOM OFF MOM |
| TR38MW0000012                | TR48MW0000012            | ON OFF MOM  |
| TR32MW0000012                | TR42MW0000012            | ON - MOM    |
| Handle position (see dwg.) : |                          | III II I    |
| Terminals connected: SP & DP |                          | 2-3 2-1     |
| DP                           |                          | 5-6 4-5     |

Above models have black 10 actuator (see color codes at end of section).



**Additional ordering information:** Commonly ordered models are shown above 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 for are shown under each respective box).

### Model Structure:

| Series                                                        | Number of poles                | Electrical functions           | Terminals                                                     |
|---------------------------------------------------------------|--------------------------------|--------------------------------|---------------------------------------------------------------|
| <input type="text" value="T"/> <input type="text" value="R"/> | <input type="text" value="3"/> | <input type="text" value="6"/> | <input type="text" value="P"/> <input type="text" value="0"/> |
|                                                               | 3 Single pole                  | 6 ON - ON                      | P 0 Straight p.c.                                             |
|                                                               | 4 Double pole                  | 9 ON OFF ON                    | Y 0 Straight p.c.with bracket                                 |
|                                                               |                                | 7 MOM OFF MOM                  | W 0 Horizontal right angle                                    |
|                                                               |                                | 8 ON OFF MOM                   | W W Vertical right angle                                      |
|                                                               |                                | 2 ON - MOM                     | M W Wire-wrap                                                 |

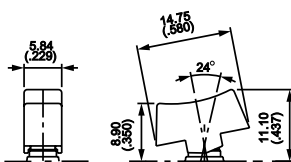
### Options:

| Contact & terminal mat'ls.                                                 | Case color                                                    | Special options                                                   | Actuators                                                     |
|----------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="text" value="0"/>                                             | <input type="text" value="0"/> <input type="text" value="0"/> | <input type="text" value="0"/> <input type="text" value="0"/>     | <input type="text" value="1"/> <input type="text" value="0"/> |
| 0 Brass, gold plated                                                       | Blue                                                          | 0 0 No special requirement                                        | 1 0 Narrow rocker                                             |
| 1 Brass, silver plated                                                     |                                                               | 5 0 Crimped bracket terminals - specify for models with brackets. | 2 0 Wide rocker                                               |
| 3 Brass, gold plated - (1.27 microns gold)                                 |                                                               | See additional listings on following page.                        | (Note: replace '0' above with color code from table below).   |
| 8 Brass, gold plated contacts with tin plated terminals                    |                                                               |                                                                   |                                                               |
| 9 Contacts brass, gold plated (1.27 microns gold) and tin plated terminals |                                                               |                                                                   |                                                               |

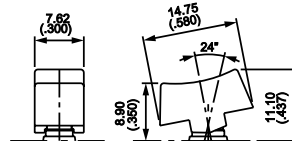
Example of completely specified model number: **TR36Y03005023**

## OPTION DRAWINGS

### ACTUATORS (replace '0' in part numbers with color code)



10 Narrow



20 Wide

|     |        |
|-----|--------|
| 1   | blue   |
| 2   | black  |
| 3   | green  |
| 4   | grey   |
| 5   | yellow |
| 6   | red    |
| 7/1 | white  |
| 9   | orange |

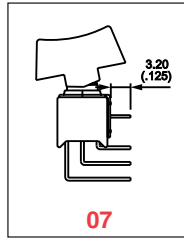
# TR SERIES - WASHABLE TINY ROCKER SWITCHES, P.C. MOUNTING

B

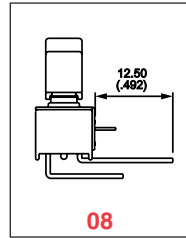
## SPECIAL OPTIONS & MISCELLANEOUS

### SPECIAL OPTIONS

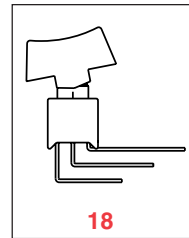
- 00** No special requirement.
- 07** Trimmed terminals for **WW** models only - .125" (3.2mm).
- 08** Extended terminals for **WO** models only.
- 18** **WW** models without mounting bracket.
- 20** **WW** models with Mounting bracket and p.c. board spacer tab.
- 25** Trimmed terminals for all models except **WW** - .196" (5mm).
- 30** Wire-wrap terminals on models with **Y** bracket.
- 50** Crimped bracket terminals (retains switch on p.c. board during assembly and soldering). For models with **WO**, **WW** & **YO** terminals.



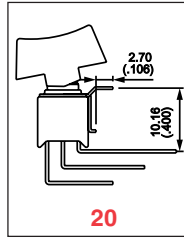
07



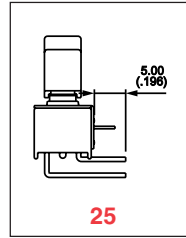
08



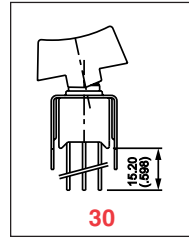
18



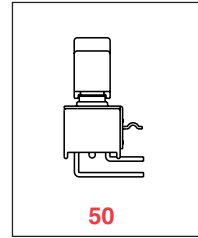
20



25

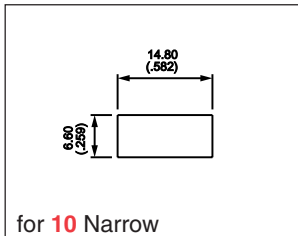


30

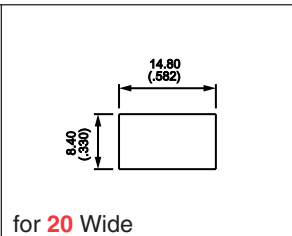


50

### PANEL CUT-OUTS

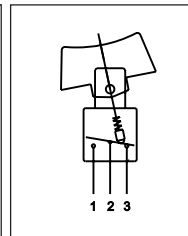


for **10** Narrow

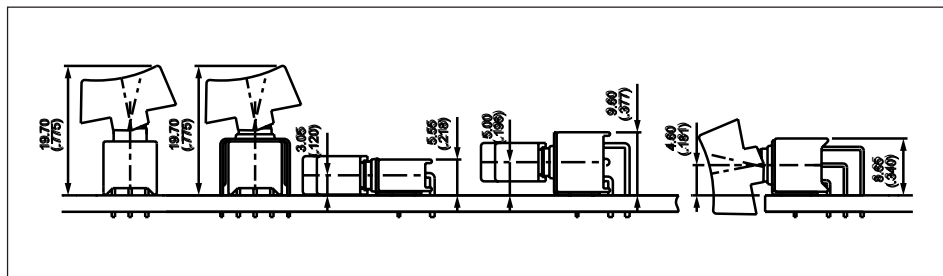


for **20** Wide

### SWITCH ACTION



### PCB MOUNTING



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## S SERIES - WASHABLE MINIATURE ROCKER & LEVER SWITCHES, P.C. MOUNTING



### FEATURES

- Wave solderable.
- Compact case size & fully sealed for process compatibility.
- SPDT & DPDT models.
- Models available with ESD protection up to 12 KV.
- Agency recognition (see below).

### SPECIFICATIONS

|                                           |                                                                                                                                                                                                                                                           |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings (resistive loads):</b> | Gold plated brass; 0.4 Volt-Amps max. at 20 V max.<br>Silver; 2 Amps at 250 VAC, 5 Amps at 125 VAC or 4 Amps at 30 VDC.<br>Gold plated silver; 2 Amps at 250 VAC, 5 Amps at 125 VAC or 4 Amps at 30 VDC (gold plating withstands up to 300 mA at 30 VDC). |
| <b>Initial contact resistance:</b>        | 10 milliohms maximum                                                                                                                                                                                                                                      |
| <b>Insulation resistance:</b>             | 1000 megohms minimum                                                                                                                                                                                                                                      |
| <b>Dielectric strength:</b>               | 1000 V rms minimum                                                                                                                                                                                                                                        |
| <b>Electrical life:</b>                   | Gold: 2 positions - 100,000 cycles min. 3 positions - 50,000 cycles min.<br>Silver: 40,000 cycles minimum                                                                                                                                                 |
| <b>Operating temperature range:</b>       | -20°C to +85°C                                                                                                                                                                                                                                            |
| <b>Moisture resistance:</b>               | 56 days per IEC 68-2-3                                                                                                                                                                                                                                    |
| <b>Washing:</b>                           | Permissible with water, detergents and freons                                                                                                                                                                                                             |

### MATERIALS

|                                  |                                                 |
|----------------------------------|-------------------------------------------------|
| <b>Contacts &amp; Terminals:</b> | Gold plated brass, silver or gold plated silver |
| <b>Actuator:</b>                 | Polyamide                                       |
| <b>Bracket:</b>                  | Tin plated steel or stainless steel             |
| <b>Case:</b>                     | UL94V-0 - Polyamide, glass filled or PES        |
| <b>Terminal seal:</b>            | Epoxy                                           |

### AGENCY RECOGNITION



UL

Availability: consult factory for details of recognized models.

Marking: to order switches with UL mark, complete the appropriate box of the ordering format.

### ABOUT THIS SERIES

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

- Completely specified switch models
- 'build your own switch' order format
- Option drawings, special options & miscellaneous.

# S SERIES - WASHABLE MINIATURE ROCKER & LEVER SWITCHES, P.C. MOUNTING

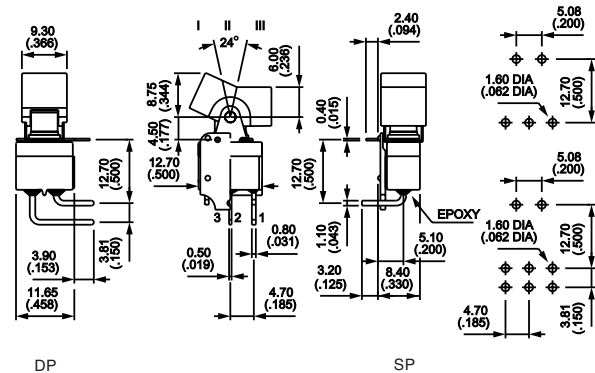
B

## Horizontal right angle terminals - .185" spacing - gold plated brass contacts Only single pole has stand-off plate



| SINGLE POLE<br>MODEL NO.    | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|-----------------------------|--------------------------|---------|-----|-----|
| SW236CD6+U622               | SW246CD6+U622            | ON      | -   | ON  |
| SW239CD6+U622               | SW249CD6+U622            | ON      | OFF | ON  |
| SW237CD6+U622               | SW247CD6+U622            | MOM     | OFF | MOM |
| SW238CD6+U622               | SW248CD6+U622            | ON      | OFF | MOM |
| SW232CD6+U622               | SW242CD6+U622            | ON      | -   | MOM |
| -                           | SW244THCD6+U622*         | ON      | ON  | ON  |
| Handle position (see dwg.): |                          | III     | II  | I   |
| Terminals connected:        |                          | SP & DP | 2-3 | 2-1 |
|                             |                          | DP      | 5-6 | 4-5 |

\* Function 4: SP in DP case - see diagram at end of section.  
Above models have black **U620** actuator.

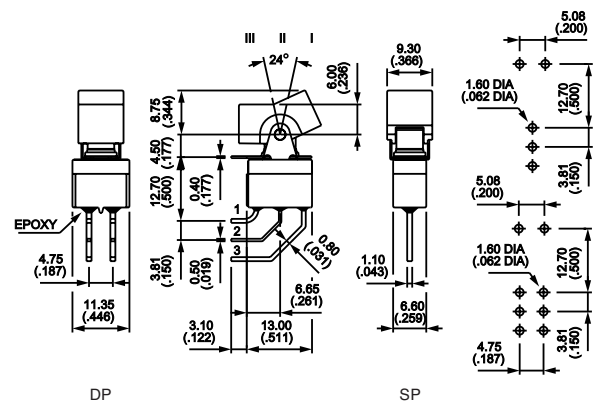


## Vertical right angle terminals - gold plated brass contacts



| SINGLE POLE<br>MODEL NO.    | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|-----------------------------|--------------------------|---------|-----|-----|
| SWW236CD6+U622              | SWW246CD6+U622           | ON      | -   | ON  |
| SWW239CD6+U622              | SWW249CD6+U622           | ON      | OFF | ON  |
| SWW237CD6+U622              | SWW247CD6+U622           | MOM     | OFF | MOM |
| SWW238CD6+U622              | SWW248CD6+U622           | ON      | OFF | MOM |
| SWW232CD6+U622              | SWW242CD6+U622           | ON      | -   | MOM |
| -                           | SWW244THCD6+U622*        | ON      | ON  | ON  |
| Handle position (see dwg.): |                          | III     | II  | I   |
| Terminals connected:        |                          | SP & DP | 2-3 | 2-1 |
|                             |                          | DP      | 5-6 | 4-5 |

\* Function 4: SP in DP case - see diagram at end of section.  
\*\* reversed connection available - consult factory.  
Above models have black **U620** actuator.

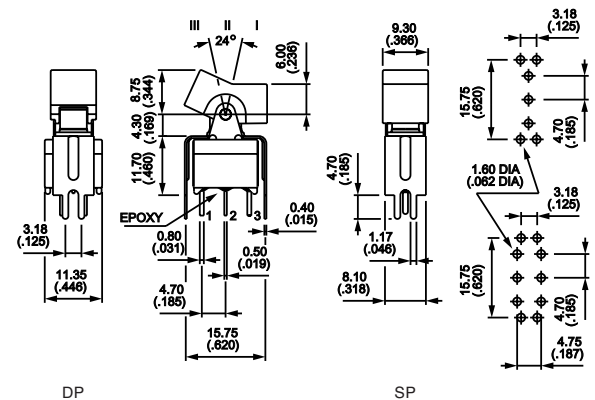


## Straight p.c. terminals - mounting bracket - gold plated brass contacts



| SINGLE POLE<br>MODEL NO.    | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|-----------------------------|--------------------------|---------|-----|-----|
| SY236CD6+U622               | SY246CD6+U622            | ON      | -   | ON  |
| SY239CD6+U622               | SY249CD6+U622            | ON      | OFF | ON  |
| SY237CD6+U622               | SY247CD6+U622            | MOM     | OFF | MOM |
| SY238CD6+U622               | SY248CD6+U622            | ON      | OFF | MOM |
| SY232CD6+U622               | SY242CD6+U622            | ON      | -   | MOM |
| -                           | SY244THCD6+U622*         | ON      | ON  | ON  |
| Handle position (see dwg.): |                          | III     | II  | I   |
| Terminals connected:        |                          | SP & DP | 2-3 | 2-1 |
|                             |                          | DP      | 5-6 | 4-5 |

\* Function 4: SP in DP case - see diagram at end of section.  
Above models have black **U620** actuator.

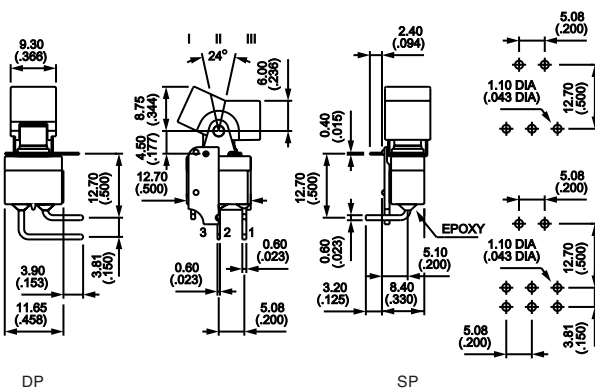


## Horizontal right angle terminals - .200" spacing - gold plated brass contacts Only single pole has stand-off plate



| SINGLE POLE<br>MODEL NO.    | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|-----------------------------|--------------------------|---------|-----|-----|
| SW036CD6+U622               | SW046CD6+U622            | ON      | -   | ON  |
| SW039CD6+U622               | SW049CD6+U622            | ON      | OFF | ON  |
| SW037CD6+U622               | SW047CD6+U622            | MOM     | OFF | MOM |
| SW038CD6+U622               | SW048CD6+U622            | ON      | OFF | MOM |
| SW032CD6+U622               | SW042CD6+U622            | ON      | -   | MOM |
| -                           | SW044THCD6+U622*         | ON      | ON  | ON  |
| Handle position (see dwg.): |                          | III     | II  | I   |
| Terminals connected:        |                          | SP & DP | 2-3 | 2-1 |
|                             |                          | DP      | 5-6 | 4-5 |

\* Function 4: SP in DP case - see diagram at end of section.  
Above models have black **U620** actuator.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# S SERIES - WASHABLE MINIATURE ROCKER & LEVER SWITCHES, P.C. MOUNTING

## Vertical right angle terminals with stand-off bracket - gold plated brass contacts



| SINGLE POLE<br>MODEL NO. | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|--------------------------|--------------------------|---------|-----|-----|
| SWW236CD6X653+U622       | SWW246CD6X653+U622       | ON      | -   | ON  |
| SWW239CD6X653+U622       | SWW249CD6X653+U622       | ON      | OFF | ON  |
| SWW237CD6X653+U622       | SWW247CD6X653+U622       | MOM     | OFF | MOM |
| SWW238CD6X653+U622       | SWW248CD6X653+U622**     | ON      | OFF | MOM |
| SWW232CD6X653+U622       | SWW242CD6X653+U622**     | ON      | -   | MOM |
| -                        | SWW244THCD6X653+U622*    | ON      | ON  | ON  |

Handle position (see dwg.):

Terminals connected:

SP & DP

2-3

2-1

DP

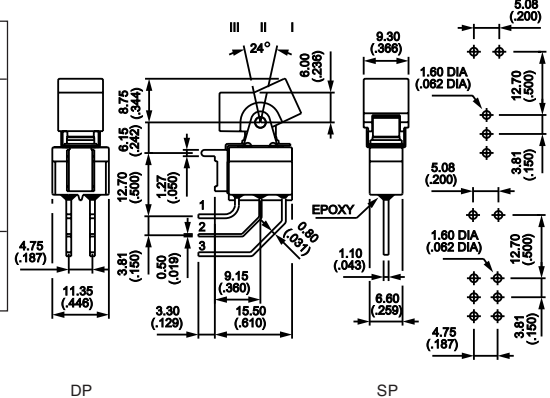
5-6

4-5

\* Function 4: SP in DP case - see diagram at end of section.

\*\* reversed connection available - consult factory.

Above models have black U620 actuator.



DP

SP

## Straight p.c. terminals - gold plated brass contacts - snap-in mounting



| SINGLE POLE<br>MODEL NO. | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|--------------------------|--------------------------|---------|-----|-----|
| SK236CD6+U732+U1202      | SK246CD6+U732+U1202      | ON      | -   | ON  |
| SK239CD6+U732+U1202      | SK249CD6+U732+U1202      | ON      | OFF | ON  |
| SK237CD6+U732+U1202      | SK247CD6+U732+U1202      | MOM     | OFF | MOM |
| SK238CD6+U732+U1202      | SK248CD6+U732+U1202      | ON      | OFF | MOM |
| SK232CD6+U732+U1202      | SK242CD6+U732+U1202      | ON      | -   | MOM |
| -                        | SK244THCD6+U732+U1202*   | ON      | ON  | ON  |

Handle position (see dwg.):

Terminals connected:

SP & DP

2-3

2-1

DP

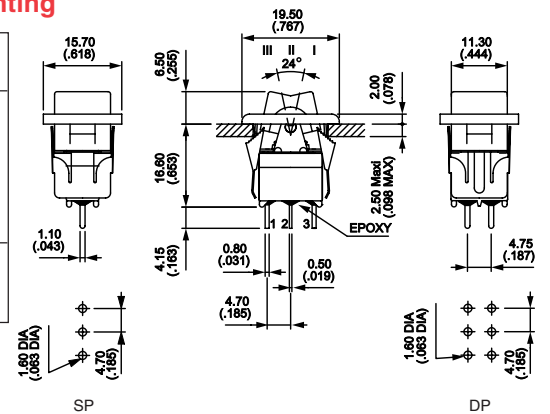
5-6

4-5

\* Function 4: SP in DP case - see diagram at end of section.

Above models have black U730 actuator and black U1200 bezel.

See panel cut-out at end of section.



SP

DP

## Horizontal right angle models with E.S.D. protection up to 12 KV



| SINGLE POLE<br>MODEL NO. | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|--------------------------|--------------------------|---------|-----|-----|
| SW236CD6X1159+U4602      | SW246CD6X1159+U4602      | ON      | -   | ON  |
| SW239CD6X1159+U4602      | SW249CD6X1159+U4602      | ON      | OFF | ON  |
| SW237CD6X1159+U4602      | SW247CD6X1159+U4602      | MOM     | OFF | MOM |
| SW238CD6X1159+U4602      | SW248CD6X1159+U4602      | ON      | OFF | MOM |
| SW232CD6X1159+U4602      | SW242CD6X1159+U4602      | ON      | -   | MOM |
| -                        | SW244THCD6X1159+U4602*   | ON      | ON  | ON  |

Handle position (see dwg.):

Terminals connected:

SP & DP

2-3

2-1

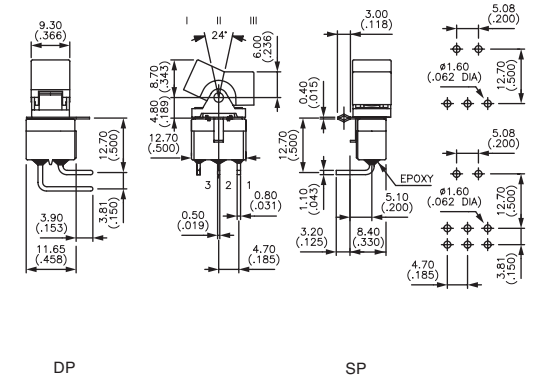
DP

5-6

4-5

\* Function 4: SP in DP case - see diagram at end of section.

Above models have black U620 actuator.



DP

SP

## Vertical right angle models with E.S.D. protection up to 12 KV



| SINGLE POLE<br>MODEL NO. | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|--------------------------|--------------------------|---------|-----|-----|
| SWW236CD6X1159+U4602     | SWW246CD6X1159+U4602     | ON      | -   | ON  |
| SWW239CD6X1159+U4602     | SWW249CD6X1159+U4602     | ON      | OFF | ON  |
| SWW237CD6X1159+U4602     | SWW247CD6X1159+U4602     | MOM     | OFF | MOM |
| SWW238CD6X1159+U4602     | SWW248CD6X1159+U4602**   | ON      | OFF | MOM |
| SWW232CD6X1159+U4602     | SWW242CD6X1159+U4602**   | ON      | -   | MOM |
| -                        | SWW244THCD6X1159+U4602*  | ON      | ON  | ON  |

Handle position (see dwg.):

Terminals connected:

SP & DP

2-3

2-1

DP

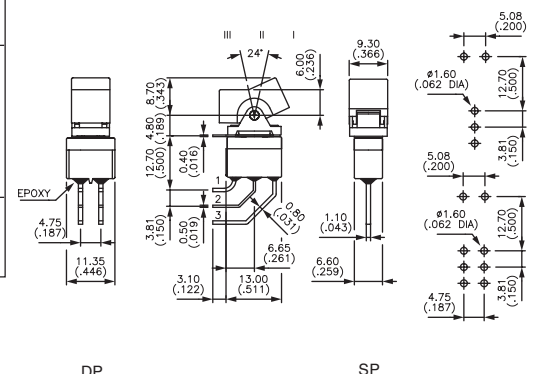
5-6

4-5

\* Function 4: SP in DP case - see diagram at end of section.

\*\* reversed connection available - consult factory.

Above models have black U620 actuator.



DP

SP

# S SERIES - WASHABLE MINIATURE ROCKER & LEVER SWITCHES, P.C. MOUNTING

## Straight p.c. models with bracket & E.S.D. protection up to 12 KV

B

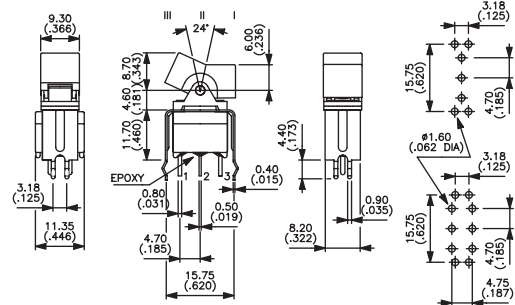


| SINGLE POLE<br>MODEL NO.     | DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|------------------------------|--------------------------|---------|-----|-----|
| SY236CD6X1159+U4602          | SY246CD6X1159+U4602      | ON      | -   | ON  |
| SY239CD6X1159+U4602          | SY249CD6X1159+U4602      | ON      | OFF | ON  |
| SY237CD6X1159+U4602          | SY247CD6X1159+U4602      | MOM     | OFF | MOM |
| SY238CD6X1159+U4602          | SY248CD6X1159+U4602      | ON      | OFF | MOM |
| SY232CD6X1159+U4602          | SY242CD6X1159+U4602      | ON      | -   | MOM |
| -                            | SY244THCD6X1159+U4602*   | ON      | ON  | ON  |
| Handle position (see dwg.) : |                          | III     | II  | I   |
| Terminals connected:         |                          | SP & DP | 2-3 | 2-1 |
|                              |                          | DP      | 5-6 | 4-5 |

\* Function 4: SP in DP case - see diagram at end of section.

\*\* reversed connection available - consult factory.

Above models have black **U620** actuator.



DP

SP

**Additional ordering information:** Commonly ordered models are shown above 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 under each respective box).

Note: 'NONE' indicates box may be left empty.

### Model Structure:

| Series                         | Terminals                                                                                                                | Bushing & terminals                                                                                             | Number of poles                                               | Electrical functions                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="text" value="S"/> | <input type="text" value="W"/> <input type="text" value="W"/>                                                            | <input type="text" value="2"/> <input type="text" value="0"/>                                                   | <input type="text" value="3"/> <input type="text" value="4"/> | <input type="text" value="6"/> <input type="text" value="9"/> <input type="text" value="7"/> <input type="text" value="8"/> <input type="text" value="2"/> <input type="text" value="4"/> |
|                                | W horizontal rt. angle mtg.<br>W W vertical rt. angle mtg.<br>Y straight pc, bracket mtg.<br>K straight pc, snap-in mtg. | 2 Terminal spacing<br>.185" (4,7mm) or<br>.150" (3,81mm)<br>0 Terminal spacing<br>.200" (5,08mm)<br>(SW models) | 3 Single pole<br>4 Double pole                                | 6 ON - ON<br>9 ON OFF ON<br>7 MOM OFF MOM<br>8 ON OFF MOM<br>2 ON - MOM<br>4 T H ON ON ON                                                                                                 |

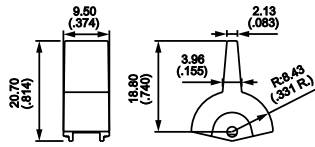
### Options:

| Contact materials                                                                            | Lever                          | Special options                                                                                                                                                                                                                                                                        | Agency recognition                                            | Actuators & bezels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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value="W"/> <input type="text" value="S"/> <input type="text" value="Y"/> <input type="text" value="M"/> <input type="text" value="O"/> <input type="text" value="D"/> <input type="text" value="E"/> <input type="text" value="L"/> <input type="text" value="S"/> <input type="text" value="S"/> <input type="text" value="W"/> <input type="text" value="W"/> <input type="text" value="S"/> <input type="text" value="Y"/> <input type="text" value="M"/> <input type="text" value="O"/> <input type="text" value="D"/> <input type="text" value="E"/> <input type="text" value="L"/> <input type="text" value="S"/> <input type="text" value="S"/> <input type="text" value="W"/> <input type="text" value="W"/> <input type="text" value="S"/> <input type="text" value="Y"/> <input type="text" value="M"/> <input type="text" value="O"/> <input type="text" value="D"/> <input type="text" value="E"/> <input type="text" value="L"/> <input type="text" value="S"/> <input type="text" value="S"/> <input type="text" 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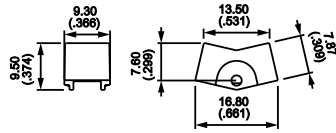
# S SERIES - WASHABLE MINIATURE ROCKER & LEVER SWITCHES, P.C. MOUNTING

## OPTION DRAWINGS, SPECIAL OPTIONS & MISCELLANEOUS

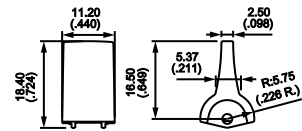
**ACTUATORS** (replace last '0' in part numbers with color code from table below) Note: U610 & U620 not available on SK models



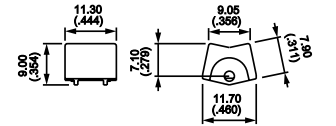
**U610** Narrow lever



**U620** Large rocker



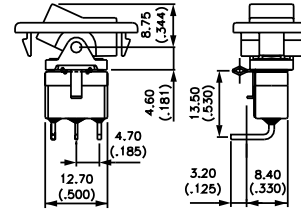
**U700** Wide lever



**U730** Small rocker

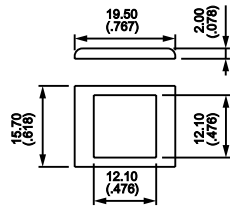
### E.S.D. MODELS

Protected against electrostatic discharges (ESD) up to 12 KV.

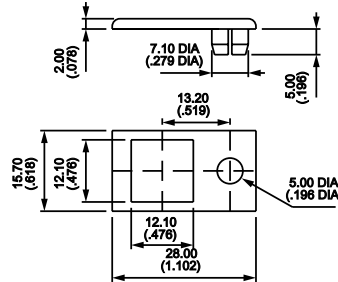


**X1159**

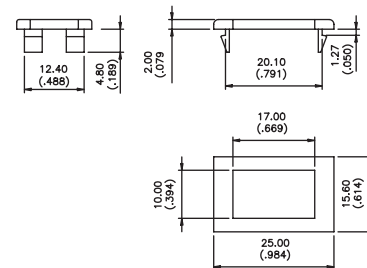
**BEZELS** (replace last '0' in part numbers with color code from table below)



**U1200** for actuators U700 & U730



**U1210** for actuators U700 & U730  
(.196" (5mm) dia. LED not supplied)



**U4602** for SW, SWW & SY models  
(Black standard - consult factory for others)

### COLOR CODES

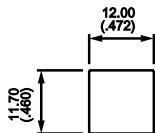
|     |        |
|-----|--------|
| 1   | blue   |
| 2   | black  |
| 3   | green  |
| 4   | grey   |
| 5   | yellow |
| 6   | red    |
| 7/1 | white  |
| 9   | orange |

### SPECIAL OPTIONS

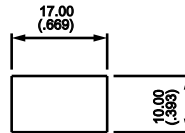
**X601** Silver plated brass contacts. 0.4 Amps at 125 VAC, 0.2 Amps at 250 VAC or 0.5 Amps at 30 VDC.  
Electrical life - 20,000 cycles minimum. Minimum quantity: 5000 pcs.

**X653** Vertical right angle with p.c. stand-off bracket.

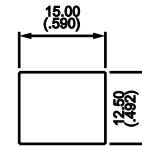
### PANEL CUT-OUTS



With rocker **U730** or lever **U700**



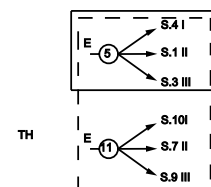
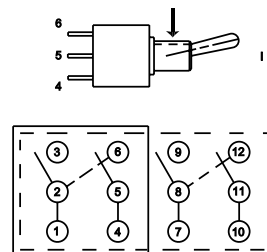
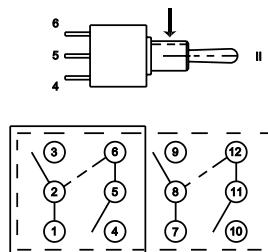
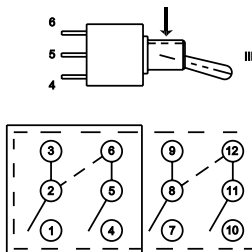
With rocker **U620** or lever **U610**



For **SK** (snap-in mtg.) models only

### WIRING for function 4 switch

Below diagrams are viewed from bottom of switch.



Equivalent to single pole 3 throw switch. Dotted lines between terminals 2 & 6 and 8 & 12 indicate jumpers to be added by customer

## 7000 SERIES - MINIATURE ROCKER & LEVER SWITCHES

B



### FEATURES

- Broad selection of models and options.
- SPDT & DPDT models. Consult factory for 3 & 4 pole models.
- Numerous configurations for panel, panel & p.c. and p.c. mounting.
- Extensive agency recognition (see below).
- Optional mounting screws, nuts & spacers for panel mounting models.

### SPECIFICATIONS

|                                           |                                                                                                                                                                                                                                                         |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings (resistive loads):</b> | Gold plated brass; 0.4 Volt-Amps max. at 20 V max.<br>Silver; 3 Amps at 250 VAC, 6 Amps at 125 VAC or 4 Amps at 30 VDC<br>Gold plated silver; 3 Amps at 250 VAC, 6 Amps at 125 VAC or 4 Amps at 30 VDC. Gold plating withstands up to 100 mA at 30 VDC. |
| <b>Initial contact resistance:</b>        | 10 milliohms maximum                                                                                                                                                                                                                                    |
| <b>Insulation resistance:</b>             | 1000 megohms min. at 500 VDC                                                                                                                                                                                                                            |
| <b>Dielectric strength:</b>               | 1000 V rms min. - between terminals<br>1500 V rms min. - between poles and terminals and frame                                                                                                                                                          |
| <b>Electrical life:</b>                   | Gold: 100,000 cycles min.<br>Silver (at full load): 50,000 cycles minimum.                                                                                                                                                                              |
| <b>Operating temperature range:</b>       | -40°C to +85°C                                                                                                                                                                                                                                          |

### MATERIALS

|                                  |                                                 |
|----------------------------------|-------------------------------------------------|
| <b>Contacts &amp; Terminals:</b> | Gold plated brass, silver or gold plated silver |
| <b>Actuator:</b>                 | Polyamide                                       |
| <b>Housing:</b>                  | Stainless steel or tin plated steel             |
| <b>Case:</b>                     | Diallyl phthalate (DAP)                         |
| <b>Terminal seal:</b>            | Epoxy                                           |

### AGENCY RECOGNITION



UL and CSA



Marking: On request only. Add desired recognition as indicated in the following example:  
7636ABULCSA+U732+U1202

### ABOUT THIS SERIES

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

- Completely specified switch models
- Actuators & bezels
- Panel cut-outs & terminals
- 'Build your own switch' order format

### ALSO -

VDE approved 7000 Series models - see 57000 Series following.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



# 7000 SERIES - MINIATURE ROCKER & LEVER SWITCHES

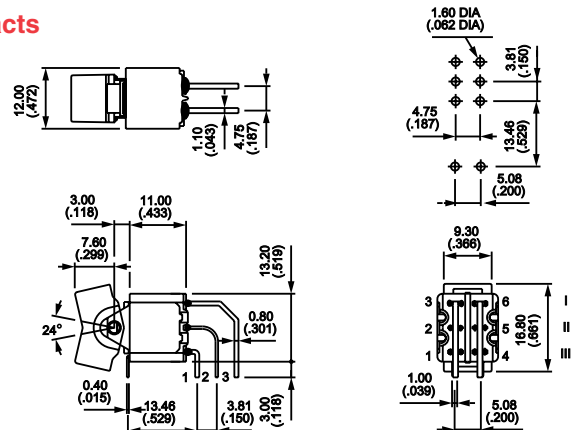
B

## Double pole - vertical right angle p.c. terminals - silver contacts



| DOUBLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|--------------------------|---------|-----|-----|
| 7046WWAB+U832            | ON      | -   | ON  |
| 7049WWAB+U832            | ON      | OFF | ON  |
| 7047WWAB+U832            | MOM     | OFF | MOM |
| 7048WWAB+U832            | ON      | OFF | MOM |
| 7042WWAB+U832            | ON      | -   | MOM |
| Handle position:         | III     | II  | I   |
| Terminals connected:     | 2-3     | 1-2 |     |
|                          | 5-6     | 4-5 |     |

Above models have black actuator.

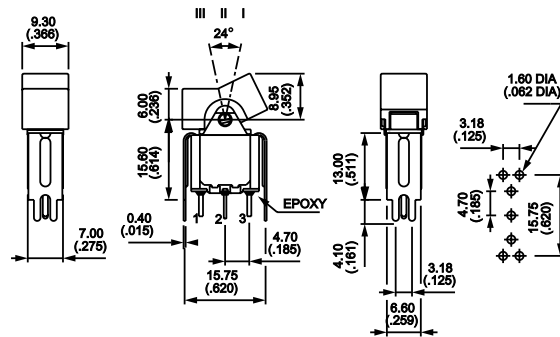


## Single pole - straight p.c. terminals - bracket mounting - silver contacts



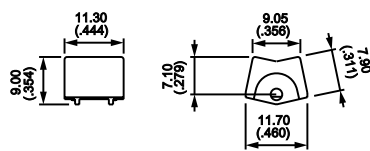
| SINGLE POLE<br>MODEL NO. | CIRCUIT |     |     |
|--------------------------|---------|-----|-----|
| 7036YAB+U622             | ON      | -   | ON  |
| 7039YAB+U622             | ON      | OFF | ON  |
| 7037YAB+U622             | MOM     | OFF | MOM |
| 7038YAB+U622             | ON      | OFF | MOM |
| 7032YAB+U622             | ON      | -   | MOM |
| Handle position:         | III     | II  | I   |
| Terminals connected:     | 2-3     | 1-2 |     |
|                          | 5-6     | 4-5 |     |

Above models have black actuator.



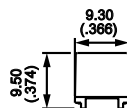
## ACTUATORS & BEZELS

**COLORS:** The above switch model numbers include black rocker U732, U622 or U832 and bezel U1202. For other colors, replace the last digit (2) with one of the following codes: blue 1, green 3, gray 4, yellow 5, red 6, ivory 7, white 7/1 or orange 9.



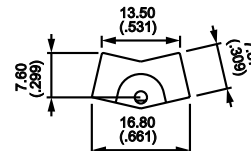
**U732**

Small black rocker



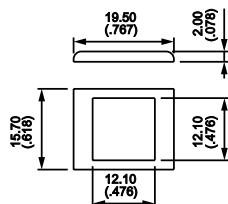
**U622**

Medium black rocker



**U832**

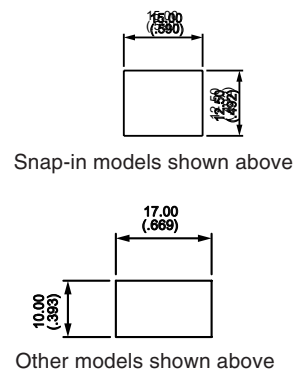
Medium black rocker



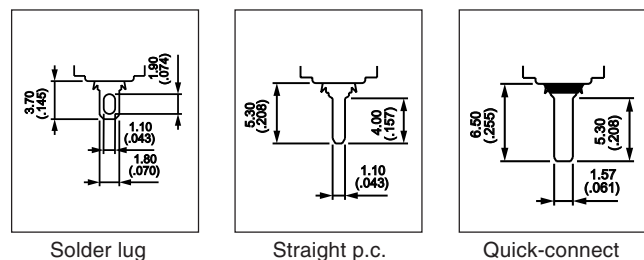
**U1202**

Black bezel

## PANEL CUT-OUTS



## TERMINALS



Solder lug

Straight p.c.

Quick-connect

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# 7000 SERIES - MINIATURE ROCKER & LEVER 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.

Note 'NONE' indicates box may be left empty.

### Model Structure:

| Series | Terminals - mounting | Number of poles                                                                                                                                                                                                                                                                                                                                                                                                                                           | Electrical functions                                                                                                                                                                                                                           | Terminals/ mounting brkt.                                                                                                                                                                                                          | (For function 4 models only) connections /functions                                           | Contact materials                                                                  |
|--------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 7      |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                    |                                                                                               |                                                                                    |
|        |                      | <b>3</b> Single pole<br><b>4</b> Double pole<br>Consult factory for 3 & 4 pole models.<br><br><b>0</b> Right angle terminals or straight p.c. terminals with bracket.<br><b>2</b> Straight p.c. or quick-connect terminals, snap-in mounting.<br><b>6</b> Solder lug terminals, snap-in mounting.<br><b>7</b> Solder lug terminals, panel mounting.<br><b>9</b> Straight p.c. or quick-connect terminals, panel mounting.<br>Also, right angle terminals. | <b>6</b> ON - ON<br><b>9</b> ON OFF ON<br><b>7</b> MOM OFF MOM<br><b>8</b> ON OFF MOM<br><b>2</b> ON - MOM<br><b>4*</b> ON ON ON<br><b>4*</b> ON ON MOM<br><b>4*</b> MOM ON MOM<br>* specify selection from 'connections/ functions' box also. | <b>(NONE)</b><br><b>W</b> Horizontal right angle p.c.<br><b>W</b> Vertical right angle p.c.<br><b>Y</b> Straight p.c. w/mounting brkt.<br><b>Z</b> Quick connect (epoxy terminal seal standard)<br><b>N</b> Small mounting bracket | <b>(NONE)</b><br><b>T H</b> ON ON ON<br><b>T H 1 R</b> ON ON MOM<br><b>T H 2 R</b> MOM ON MOM | <b>A</b> Silver<br><b>A D</b> Silver, gold plated<br><b>C D</b> Brass, gold plated |

### Options:

| Sealing                                                                                  | Special options                                                                                                                       | Agency Recognition                                                                            | Actuators                                                                                                                                                                                                                                                               | Bezels & mounting accessories                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                          |                                                                                                                                       |                                                                                               | +                                                                                                                                                                                                                                                                       | +                                                                                                                                                                                                                                                |
| <b>(NONE)</b> Unless standard - (see Terminals above)<br><b>B</b> Epoxy sealed terminals | <b>(NONE)</b><br><b>X 6 5 3</b> (vertical right angle with stand-off bracket)<br><b>F</b> tin plated terminals (for p.c. terms. only) | <b>(NONE)</b><br><b>U L</b><br><b>C S A</b> (consult factory for details of approved models). | <b>Rockers</b><br><b>U 5 3 0</b> Large<br><b>U 6 2 0</b> Medium<br><b>U 7 3 0</b> Small<br><b>U 8 3 0</b> Medium<br><b>U 1 0 1 0</b> Large<br><b>Levers</b><br><b>U 4 9 0</b> Large<br><b>U 6 1 0</b> Medium<br><b>U 7 0 0</b> Small<br>(see drawings and color codes). | <b>(NONE)</b><br><b>Bezels</b> (for U730 or U700)<br><b>U 1 2 0 0</b><br><b>U 1 2 1 0</b> (for LED)<br><b>Accessories for panel mounting models</b><br><b>U 5 4 3</b> Spacers, nuts & screws<br><b>U 1 0 2 2</b> Spacers, nuts, screws & washers |

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:

**7044YTH2RADBUL+U612**

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

B

## ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

B



### 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

|                                           |                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings (resistive loads):</b> | (Q) power models - coin silver: 6 Amps at 125 VAC, 3 Amps at 250 VAC or 7 Amps at 30 VDC.<br>(B) dry circuit models - gold over nickel over brass: 0.4 VA max. at 20 V max.<br>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. |
| <b>Initial contact resistance:</b>        | 3 milliohms max. at 3 VDC, 0.1 Amp.                                                                                                                                                                                                                                                                                                                                 |
| <b>Insulation resistance:</b>             | Greater than 200,000 megohms between terminals & case ground.                                                                                                                                                                                                                                                                                                       |
| <b>Dielectric strength:</b>               | Greater than 2000 VAC for 1 minute between terminals & case ground.                                                                                                                                                                                                                                                                                                 |
| <b>Electrical life (resistive loads):</b> | 100,000 cycles min. for ST1-1 & ST2-1. Other models, 40,000 cycles min.                                                                                                                                                                                                                                                                                             |
| <b>Operating temperature range:</b>       | -30°C to +85°C                                                                                                                                                                                                                                                                                                                                                      |

### MATERIALS

|                                 |                                                                                                                                                                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contacts:</b>                | Coin silver for power, UL & CSA models. Gold over nickel over brass for dry circuit models.                                                                                                                                                                              |
| <b>Actuator:</b>                | J1 & J2 - Glass filled polyester. J3 & J4 - Nylon or acetal                                                                                                                                                                                                              |
| <b>Bushing:</b>                 | Nickel plated brass                                                                                                                                                                                                                                                      |
| <b>Strap:</b>                   | Stainless steel                                                                                                                                                                                                                                                          |
| <b>Case:</b>                    | Melamine phenolic, color red                                                                                                                                                                                                                                             |
| <b>Terminal seal:</b>           | Epoxy (optional)                                                                                                                                                                                                                                                         |
| <b>Support bracket:</b>         | Brass or steel, tin plated                                                                                                                                                                                                                                               |
| <b>Spring mounting bracket:</b> | Stainless steel                                                                                                                                                                                                                                                          |
| <b>Bezel:</b>                   | Nylon. Available in black, red & white. Consult factory for other colors.                                                                                                                                                                                                |
| <b>Hardware:</b>                | See 'Miscellaneous' section.                                                                                                                                                                                                                                             |
| <b>LED:</b>                     | 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 recognized marks.

### ABOUT THIS SERIES

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

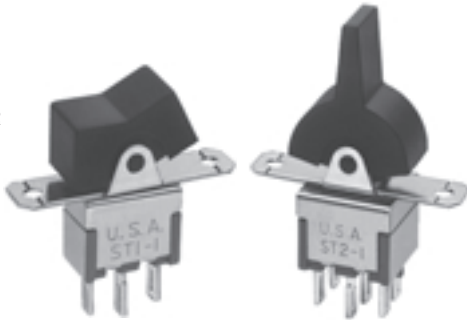
- Completely specified switch models
- Miscellaneous
- 'build your own switch' order format
- Option drawings & information
- Mounting information and panel cut-outs

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

## Solder lug terminals - panel mounting

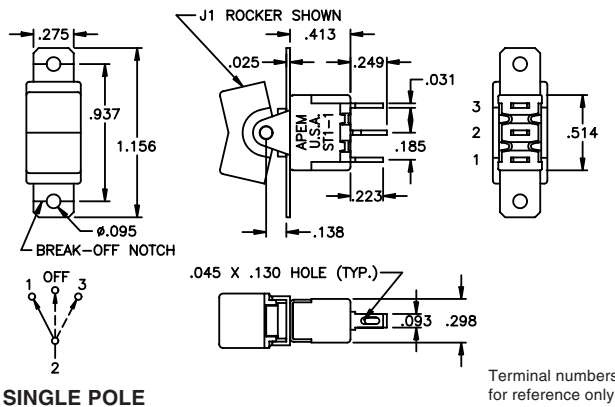
**SINGLE POLE WITH J1 ROCKER**



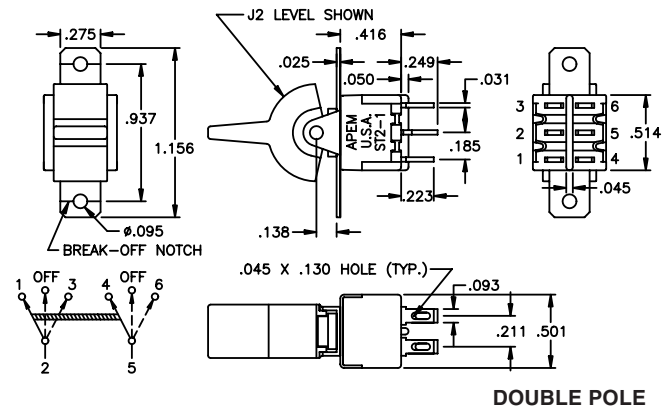
**DOUBLE POLE WITH J2 LEVER**

|                                   | POWER CKT. MODEL NO. | UL MODEL NO.  | USA marking on other side |          |          |
|-----------------------------------|----------------------|---------------|---------------------------|----------|----------|
| Single pole                       | ST1-1L4S4ZQJ12       | UL11L4S4ZQJ12 | ON                        | NONE     | ON       |
|                                   | ST1-2L4S4ZQJ12       | UL12L4S4ZQJ12 | ON                        | OFF      | ON       |
|                                   | ST1-3L4S4ZQJ12       | UL13L4S4ZQJ12 | MOM                       | OFF      | MOM      |
|                                   | ST1-4L4S4ZQJ12       | UL14L4S4ZQJ12 | ON                        | OFF      | MOM      |
|                                   | ST1-5L4S4ZQJ12       | UL15L4S4ZQJ12 | ON                        | NONE     | MOM      |
| Double pole                       | ST2-1L4S4ZQJ12       | UL21L4S4ZQJ12 | ON                        | NONE     | ON       |
|                                   | ST2-2L4S4ZQJ12       | UL22L4S4ZQJ12 | ON                        | OFF      | ON       |
|                                   | ST2-3L4S4ZQJ12       | UL23L4S4ZQJ12 | MOM                       | OFF      | MOM      |
|                                   | ST2-4L4S4ZQJ12       | UL24L4S4ZQJ12 | ON                        | OFF      | MOM      |
|                                   | ST2-5L4S4ZQJ12       | UL25L4S4ZQJ12 | ON                        | NONE     | MOM      |
|                                   | ST2-6L4S4ZQJ12       | UL26L4S4ZQJ12 | ON                        | ON       | ON       |
|                                   | ST2-7L4S4ZQJ12       | UL27L4S4ZQJ12 | ON                        | ON       | MOM      |
|                                   | ST2-8L4S4ZQJ12       | UL28L4S4ZQJ12 | MOM                       | ON       | MOM      |
| Terminals connected (-6, -7 & -8) |                      |               | 1-2, 4-5                  | 1-2, 5-6 | 2-3, 5-6 |

Above models have black actuator.



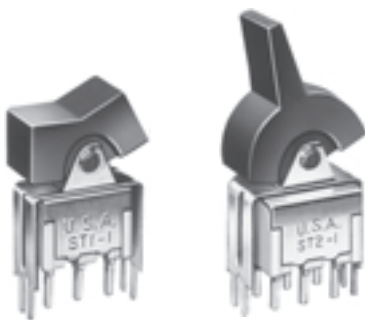
**SINGLE POLE**



**DOUBLE POLE**

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

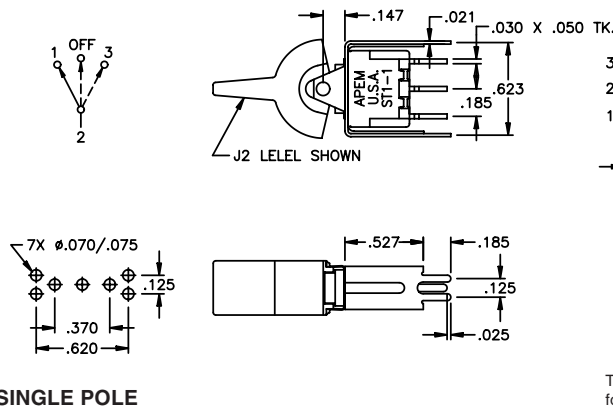
**SINGLE POLE WITH J1 ROCKER**



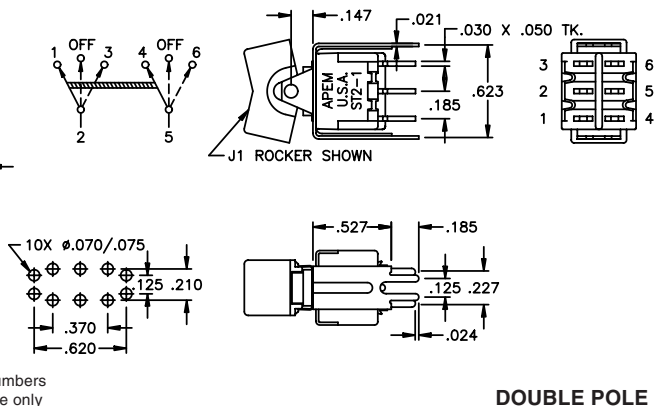
**DOUBLE POLE WITH J2 LEVER**

|                                   | DRY CKT. MODEL NO. | UL MODEL NO.    | USA marking on other side |          |          |
|-----------------------------------|--------------------|-----------------|---------------------------|----------|----------|
| Single pole                       | ST1-1L4S4V30BJ12   | UL11L4S4V30QJ12 | ON                        | NONE     | ON       |
|                                   | ST1-2L4S4V30BJ12   | UL12L4S4V30QJ12 | ON                        | OFF      | ON       |
|                                   | ST1-3L4S4V30BJ12   | UL13L4S4V30QJ12 | MOM                       | OFF      | MOM      |
|                                   | ST1-4L4S4V30BJ12   | UL14L4S4V30QJ12 | ON                        | OFF      | MOM      |
|                                   | ST1-5L4S4V30BJ12   | UL15L4S4V30QJ12 | ON                        | NONE     | MOM      |
| Double pole                       | ST2-1L4S4V30BJ12   | UL21L4S4V30QJ12 | ON                        | NONE     | ON       |
|                                   | ST2-2L4S4V30BJ12   | UL22L4S4V30QJ12 | ON                        | OFF      | ON       |
|                                   | ST2-3L4S4V30BJ12   | UL23L4S4V30QJ12 | MOM                       | OFF      | MOM      |
|                                   | ST2-4L4S4V30BJ12   | UL24L4S4V30QJ12 | ON                        | OFF      | MOM      |
|                                   | ST2-5L4S4V30BJ12   | UL25L4S4V30QJ12 | ON                        | NONE     | MOM      |
|                                   | ST2-6L4S4V30BJ12   | UL26L4S4V30QJ12 | ON                        | ON       | ON       |
|                                   | ST2-7L4S4V30BJ12   | UL27L4S4V30QJ12 | ON                        | ON       | MOM      |
|                                   | ST2-8L4S4V30BJ12   | UL28L4S4V30QJ12 | MOM                       | ON       | MOM      |
| Terminals connected (-6, -7 & -8) |                    |                 | 1-2, 4-5                  | 1-2, 5-6 | 2-3, 5-6 |

Above models have black actuator.



**SINGLE POLE**



**DOUBLE POLE**

# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

B

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

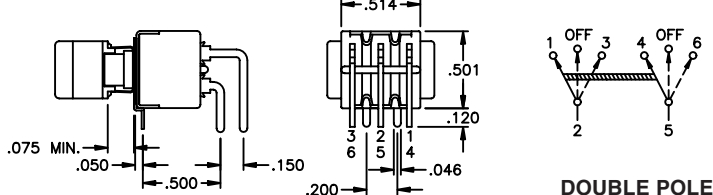
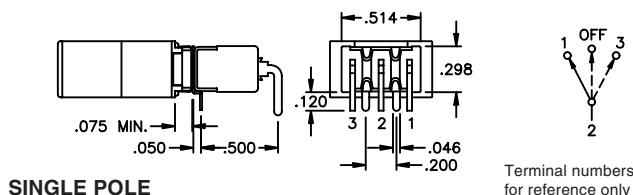
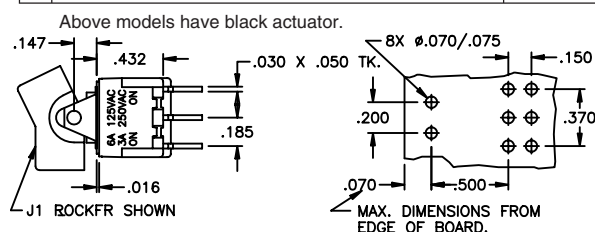
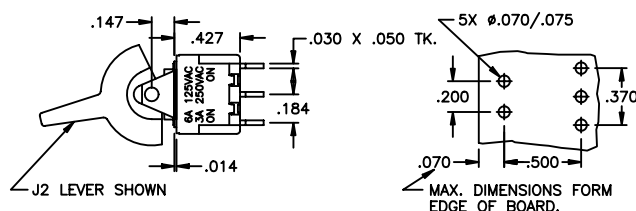


**SINGLE  
POLE  
WITH J1  
ROCKER**



**DOUBLE  
POLE  
WITH J2  
LEVER**

|                                   | DRY CKT.<br>MODEL NO. | UL MODEL NO.    | USA marking on other side |             |             |
|-----------------------------------|-----------------------|-----------------|---------------------------|-------------|-------------|
| Single pole                       | ST1-1L4S4A-1BJ12      | UL11L4S4A-1QJ12 | ON                        | NONE        | ON          |
|                                   | ST1-2L4S4A-1BJ12      | UL12L4S4A-1QJ12 | ON                        | OFF         | ON          |
|                                   | ST1-3L4S4A-1BJ12      | UL13L4S4A-1QJ12 | MOM                       | OFF         | MOM         |
|                                   | ST1-4L4S4A-1BJ12      | UL14L4S4A-1QJ12 | ON                        | OFF         | MOM         |
|                                   | ST1-5L4S4A-1BJ12      | UL15L4S4A-1QJ12 | ON                        | NONE        | MOM         |
| Double pole                       | ST2-1L4S4A-1BJ12      | UL21L4S4A-1QJ12 | ON                        | NONE        | ON          |
|                                   | ST2-2L4S4A-1BJ12      | UL22L4S4A-1QJ12 | ON                        | OFF         | ON          |
|                                   | ST2-3L4S4A-1BJ12      | UL23L4S4A-1QJ12 | MOM                       | OFF         | MOM         |
|                                   | ST2-4L4S4A-1BJ12      | UL24L4S4A-1QJ12 | ON                        | OFF         | MOM         |
|                                   | ST2-5L4S4A-1BJ12      | UL25L4S4A-1QJ12 | ON                        | NONE        | MOM         |
|                                   | ST2-6L4S4A-1BJ12      | UL26L4S4A-1QJ12 | ON                        | ON          | ON          |
|                                   | ST2-7L4S4A-1BJ12      | UL27L4S4A-1QJ12 | ON                        | ON          | MOM         |
|                                   | ST2-8L4S4A-1BJ12      | UL28L4S4A-1QJ12 | MOM                       | ON          | MOM         |
| Terminals connected (-6, -7 & -8) |                       |                 | 1-2,<br>4-5               | 1-2,<br>5-6 | 2-3,<br>5-6 |



**SINGLE POLE**

**DOUBLE POLE**

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

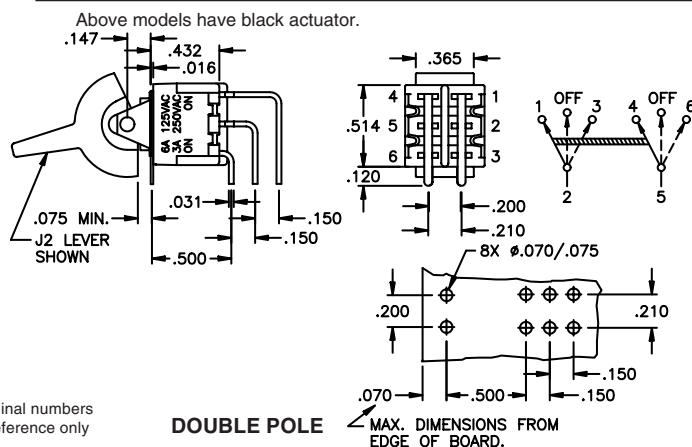
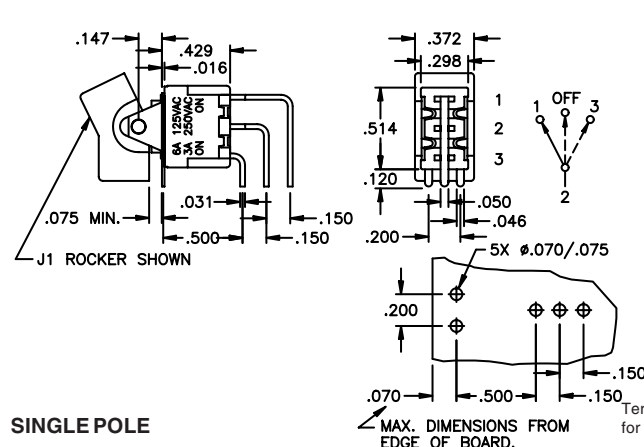


**SINGLE  
POLE  
WITH J1  
ROCKER**



**DOUBLE  
POLE  
WITH J2  
LEVER**

|                                   | DRY CKT.<br>MODEL NO. | UL MODEL NO.    | USA marking on other side |             |             |
|-----------------------------------|-----------------------|-----------------|---------------------------|-------------|-------------|
| Single pole                       | ST1-1L4S4V-1BJ12      | UL11L4S4V-1QJ12 | ON                        | NONE        | ON          |
|                                   | ST1-2L4S4V-1BJ12      | UL12L4S4V-1QJ12 | ON                        | OFF         | ON          |
|                                   | ST1-3L4S4V-1BJ12      | UL13L4S4V-1QJ12 | MOM                       | OFF         | MOM         |
|                                   | ST1-4L4S4V-1BJ12      | UL14L4S4V-1QJ12 | ON                        | OFF         | MOM         |
|                                   | ST1-5L4S4V-1BJ12      | UL15L4S4V-1QJ12 | ON                        | NONE        | MOM         |
| Double pole                       | ST2-1L4S4V-1BJ12      | UL21L4S4V-1QJ12 | ON                        | NONE        | ON          |
|                                   | ST2-2L4S4V-1BJ12      | UL22L4S4V-1QJ12 | ON                        | OFF         | ON          |
|                                   | ST2-3L4S4V-1BJ12      | UL23L4S4V-1QJ12 | MOM                       | OFF         | MOM         |
|                                   | ST2-4L4S4V-1BJ12      | UL24L4S4V-1QJ12 | ON                        | OFF         | MOM         |
|                                   | ST2-5L4S4V-1BJ12      | UL25L4S4V-1QJ12 | ON                        | NONE        | MOM         |
|                                   | ST2-6L4S4V-1BJ12      | UL26L4S4V-1QJ12 | ON                        | ON          | ON          |
|                                   | ST2-7L4S4V-1BJ12      | UL27L4S4V-1QJ12 | ON                        | ON          | MOM         |
|                                   | ST2-8L4S4V-1BJ12      | UL28L4S4V-1QJ12 | MOM                       | ON          | MOM         |
| Terminals connected (-6, -7 & -8) |                       |                 | 1-2,<br>4-5               | 1-2,<br>5-6 | 2-3,<br>5-6 |



**SINGLE POLE**

**DOUBLE POLE**

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

## Solder lug terminals - snap-in bezel with outboard LED

**SINGLE  
POLE  
WITH J3  
ROCKER**

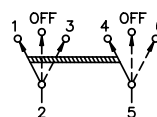
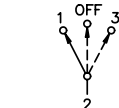
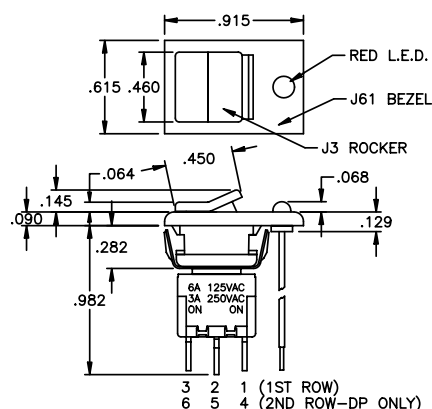


**DOUBLE  
POLE  
WITH J4  
LEVER**

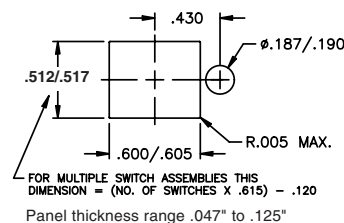


|                                   | POWER CKT.<br>MODEL NO. | UL MODEL NO.      | USA marking on other side |             |             |
|-----------------------------------|-------------------------|-------------------|---------------------------|-------------|-------------|
| Single pole                       | ST1-1L5S5ZQJ3J6122      | UL11L5S5ZQJ3J6122 | ON                        | NONE        | ON          |
|                                   | ST1-2L5S5ZQJ3J6122      | UL12L5S5ZQJ3J6122 | ON                        | OFF         | ON          |
|                                   | ST1-3L5S5ZQJ3J6122      | UL13L5S5ZQJ3J6122 | MOM                       | OFF         | MOM         |
|                                   | ST1-4L5S5ZQJ3J6122      | UL14L5S5ZQJ3J6122 | ON                        | OFF         | MOM         |
|                                   | ST1-5L5S5ZQJ3J6122      | UL15L5S5ZQJ3J6122 | ON                        | NONE        | MOM         |
| Double pole                       | ST2-1L5S5ZQJ3J6122      | UL21L5S5ZQJ3J6122 | ON                        | NONE        | ON          |
|                                   | ST2-2L5S5ZQJ3J6122      | UL22L5S5ZQJ3J6122 | ON                        | OFF         | ON          |
|                                   | ST2-3L5S5ZQJ3J6122      | UL23L5S5ZQJ3J6122 | MOM                       | OFF         | MOM         |
|                                   | ST2-4L5S5ZQJ3J6122      | UL24L5S5ZQJ3J6122 | ON                        | OFF         | MOM         |
|                                   | ST2-5L5S5ZQJ3J6122      | UL25L5S5ZQJ3J6122 | ON                        | NONE        | MOM         |
|                                   | ST2-6L5S5ZQJ3J6122      | UL26L5S5ZQJ3J6122 | ON                        | ON          | ON          |
|                                   | ST2-7L5S5ZQJ3J6122      | UL27L5S5ZQJ3J6122 | ON                        | ON          | MOM         |
|                                   | ST2-8L5S5ZQJ3J6122      | UL28L5S5ZQJ3J6122 | MOM                       | ON          | MOM         |
| Terminals connected (-6, -7 & -8) |                         |                   | 1-2,<br>4-5               | 1-2,<br>5-6 | 2-3,<br>5-6 |

Above models have black bezel & actuator.



Terminal numbers  
for reference only



## Solder lug terminals - snap-in bezel

**SINGLE  
POLE  
WITH J3  
ROCKER**

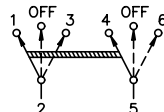
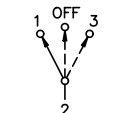
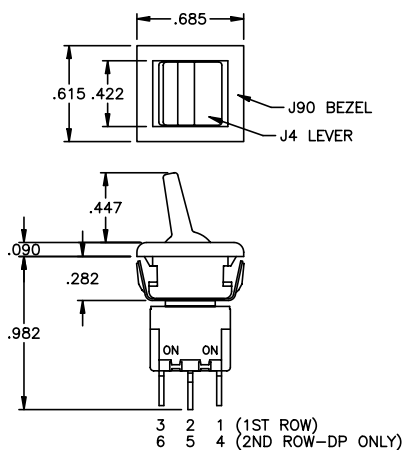


**DOUBLE  
POLE  
WITH J4  
LEVER**

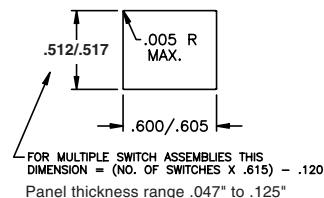


|                                   | POWER CKT.<br>MODEL NO. | UL MODEL NO.      | USA marking on other side |             |             |
|-----------------------------------|-------------------------|-------------------|---------------------------|-------------|-------------|
| Single pole                       | ST1-1L5S5ZQJ4J9022      | UL11L5S5ZQJ4J9022 | ON                        | NONE        | ON          |
|                                   | ST1-2L5S5ZQJ4J9022      | UL12L5S5ZQJ4J9022 | ON                        | OFF         | ON          |
|                                   | ST1-3L5S5ZQJ4J9022      | UL13L5S5ZQJ4J9022 | MOM                       | OFF         | MOM         |
|                                   | ST1-4L5S5ZQJ4J9022      | UL14L5S5ZQJ4J9022 | ON                        | OFF         | MOM         |
|                                   | ST1-5L5S5ZQJ4J9022      | UL15L5S5ZQJ4J9022 | ON                        | NONE        | MOM         |
| Double pole                       | ST2-1L5S5ZQJ4J9022      | UL21L5S5ZQJ4J9022 | ON                        | NONE        | ON          |
|                                   | ST2-2L5S5ZQJ4J9022      | UL22L5S5ZQJ4J9022 | ON                        | OFF         | ON          |
|                                   | ST2-3L5S5ZQJ4J9022      | UL23L5S5ZQJ4J9022 | MOM                       | OFF         | MOM         |
|                                   | ST2-4L5S5ZQJ4J9022      | UL24L5S5ZQJ4J9022 | ON                        | OFF         | MOM         |
|                                   | ST2-5L5S5ZQJ4J9022      | UL25L5S5ZQJ4J9022 | ON                        | NONE        | MOM         |
|                                   | ST2-6L5S5ZQJ4J9022      | UL26L5S5ZQJ4J9022 | ON                        | ON          | ON          |
|                                   | ST2-7L5S5ZQJ4J9022      | UL27L5S5ZQJ4J9022 | ON                        | ON          | MOM         |
|                                   | ST2-8L5S5ZQJ4J9022      | UL28L5S5ZQJ4J9022 | MOM                       | ON          | MOM         |
| Terminals connected (-6, -7 & -8) |                         |                   | 1-2,<br>4-5               | 1-2,<br>5-6 | 2-3,<br>5-6 |

Above models have black bezel & actuator.



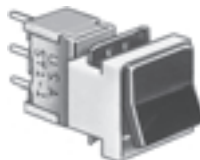
Terminal numbers  
for reference only



# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

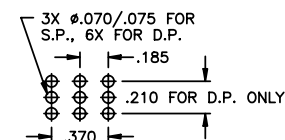
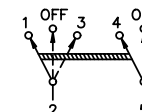
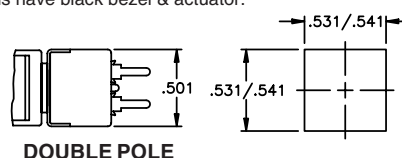
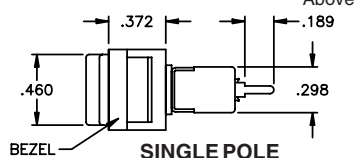
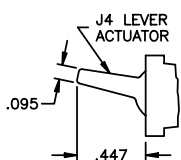
## Straight p.c. terminals - p.c. mounting bezel

**SINGLE  
POLE  
WITH J3  
ROCKER**



|                                   | DRY CKT.<br>MODEL NO. | UL MODEL NO.      | USA marking on other side |             |             |
|-----------------------------------|-----------------------|-------------------|---------------------------|-------------|-------------|
| Single pole                       | ST1-1L5S5CBJ3J9322    | UL11L5S5CQJ3J9322 | ON                        | NONE        | ON          |
|                                   | ST1-2L5S5CBJ3J9322    | UL12L5S5CQJ3J9322 | ON                        | OFF         | ON          |
|                                   | ST1-3L5S5CBJ3J9322    | UL13L5S5CQJ3J9322 | MOM                       | OFF         | MOM         |
|                                   | ST1-4L5S5CBJ3J9322    | UL14L5S5CQJ3J9322 | ON                        | OFF         | MOM         |
|                                   | ST1-5L5S5CBJ3J9322    | UL15L5S5CQJ3J9322 | ON                        | NONE        | MOM         |
| Double pole                       | ST2-1L5S5CBJ3J9322    | UL21L5S5CQJ3J9322 | ON                        | NONE        | ON          |
|                                   | ST2-2L5S5CBJ3J9322    | UL22L5S5CQJ3J9322 | ON                        | OFF         | ON          |
|                                   | ST2-3L5S5CBJ3J9322    | UL23L5S5CQJ3J9322 | MOM                       | OFF         | MOM         |
|                                   | ST2-4L5S5CBJ3J9322    | UL24L5S5CQJ3J9322 | ON                        | OFF         | MOM         |
|                                   | ST2-5L5S5CBJ3J9322    | UL25L5S5CQJ3J9322 | ON                        | NONE        | MOM         |
|                                   | ST2-6L5S5CBJ3J9322    | UL26L5S5CQJ3J9322 | ON                        | ON          | ON          |
|                                   | ST2-7L5S5CBJ3J9322    | UL27L5S5CQJ3J9322 | ON                        | ON          | MOM         |
|                                   | ST2-8L5S5CBJ3J9322    | UL28L5S5CQJ3J9322 | MOM                       | ON          | MOM         |
| Terminals connected (-6, -7 & -8) |                       |                   | 1-2,<br>4-5               | 1-2,<br>5-6 | 2-3,<br>5-6 |

Above models have black bezel & actuator.



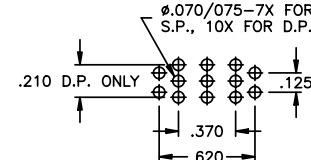
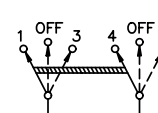
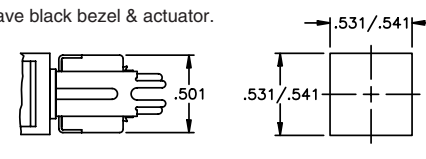
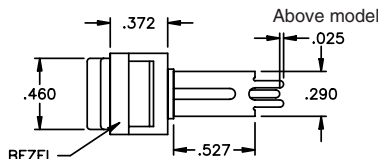
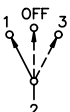
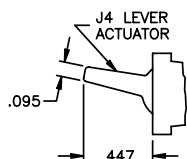
## Straight p.c. terminals w/bracket - p.c. mounting bezel

**SINGLE  
POLE  
WITH J4  
LEVER**



|                                   | DRY CKT.<br>MODEL NO. | UL MODEL NO.        | USA marking on other side |             |             |
|-----------------------------------|-----------------------|---------------------|---------------------------|-------------|-------------|
| Single pole                       | ST1-1L5S5V30BJ3J9322  | UL11L5S5V30QJ3J9322 | ON                        | NONE        | ON          |
|                                   | ST1-2L5S5V30BJ3J9322  | UL12L5S5V30QJ3J9322 | ON                        | OFF         | ON          |
|                                   | ST1-3L5S5V30BJ3J9322  | UL13L5S5V30QJ3J9322 | MOM                       | OFF         | MOM         |
|                                   | ST1-4L5S5V30BJ3J9322  | UL14L5S5V30QJ3J9322 | ON                        | OFF         | MOM         |
|                                   | ST1-5L5S5V30BJ3J9322  | UL15L5S5V30QJ3J9322 | ON                        | NONE        | MOM         |
| Double pole                       | ST2-1L5S5V30BJ3J9322  | UL21L5S5V30QJ3J9322 | ON                        | NONE        | ON          |
|                                   | ST2-2L5S5V30BJ3J9322  | UL22L5S5V30QJ3J9322 | ON                        | OFF         | ON          |
|                                   | ST2-3L5S5V30BJ3J9322  | UL23L5S5V30QJ3J9322 | MOM                       | OFF         | MOM         |
|                                   | ST2-4L5S5V30BJ3J9322  | UL24L5S5V30QJ3J9322 | ON                        | OFF         | MOM         |
|                                   | ST2-5L5S5V30BJ3J9322  | UL25L5S5V30QJ3J9322 | ON                        | NONE        | MOM         |
|                                   | ST2-6L5S5V30BJ3J9322  | UL26L5S5V30QJ3J9322 | ON                        | ON          | ON          |
|                                   | ST2-7L5S5V30BJ3J9322  | UL27L5S5V30QJ3J9322 | ON                        | ON          | MOM         |
|                                   | ST2-8L5S5V30BJ3J9322  | UL28L5S5V30QJ3J9322 | MOM                       | ON          | MOM         |
| Terminals connected (-6, -7 & -8) |                       |                     | 1-2,<br>4-5               | 1-2,<br>5-6 | 2-3,<br>5-6 |

Above models have black bezel & actuator.



**SINGLE POLE**

**DOUBLE POLE**

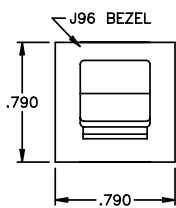


# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

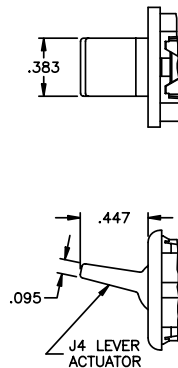
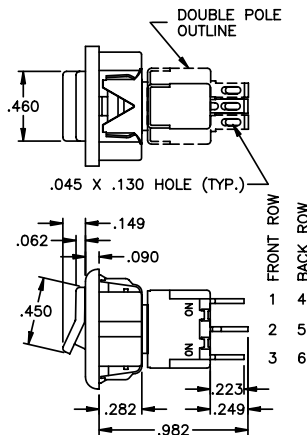
B

**Snap-in bezel for round hole mounting**  
Self-keying against rotation

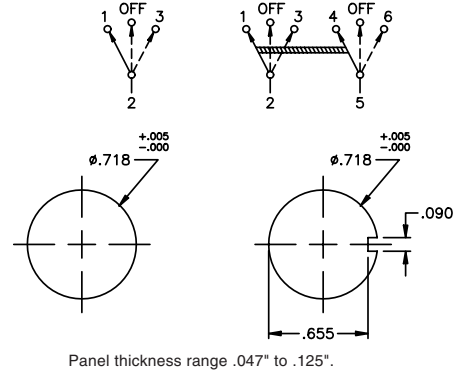
ST1-1L5S5ZQJ4J9682



Terminal numbers for reference only



Above models have black bezel & actuator.



Panel thickness range .047" to .125".

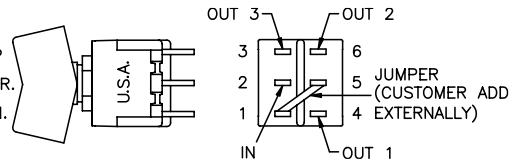
## MISCELLANEOUS

### 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

POSITION 1 UP  
POSITION 2 CTR.  
POSITION 3 DN.



## SWITCH BODY

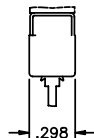
## SIZES WITH

## TERMINAL

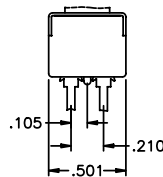
## LOCATION

## DIMENSIONS

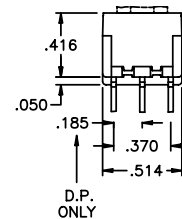
SIDE VIEW  
SINGLE POLE



SIDE VIEW  
DOUBLE POLE

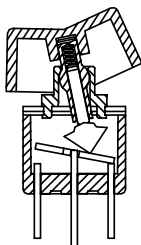


FRONT VIEW  
SINGLE AND  
DOUBLE POLE

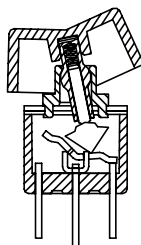


## TYPICAL SWITCH CROSS SECTIONS

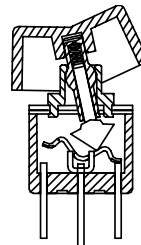
Note:  
Contacts  
make  
opposite  
actuator  
direction.



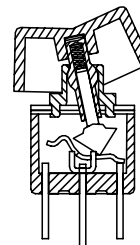
ON NONE ON



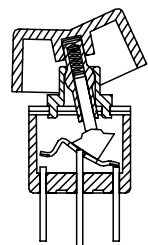
ON OFF ON



MOM OFF MOM



ON OFF MOM



ON NONE MOM

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# ST SERIES - MINIATURE ROCKER & LEVER 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                         | Electrical functions                      | Sub-actuators                    | Sub-Bushings                     | Terminations                                                                                                                          | Contact materials                                |
|--------------------------------|-------------------------------------------|----------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <input type="text"/>           | <input type="text"/>                      | <input type="text"/>             | <input type="text"/>             | <input type="text"/>                                                                                                                  | <input type="text"/>                             |
| Single pole:<br><b>S T 1 -</b> | 1 ON NONE ON<br>2 ON OFF ON               | <b>L 4</b> Specify without bezel | <b>S 4</b> Specify without bezel | <b>Z</b> Solder lug<br><b>C</b> Printed circuit                                                                                       | <b>B</b> Gold<br><b>Q</b> Coin silver            |
| S.P. UL model:<br><b>U L 1</b> | 3 MOM OFF MOM<br>4 ON OFF MOM             | <b>L 5</b> Specify with bezel    | <b>S 5</b> Specify with bezel    | <b>W</b> Wirewrap<br><b>W 1</b> Lg. wirewrap<br><b>W 3</b> Sht. wirewrap                                                              | <b>G</b> Gold over coin silver                   |
| Double pole:<br><b>S T 2 -</b> | 5 ON - MOM<br>Following for DP only       |                                  |                                  | <b>X</b> Extra lg. wirewrap<br>Horiz. right angle p.c.:<br><b>A - 1</b><br>Vertical right angle p.c.:<br><b>V - 1</b><br><b>V - 2</b> | <b>N</b> Economy gold<br><b>T</b> Economy silver |
| D.P. UL model:<br><b>U L 2</b> | 6 ON ON ON<br>7 ON ON MOM<br>8 MOM ON MOM |                                  |                                  | Straight p.c. terms. w/brkt.:<br><b>V 3 0 or V 3 1</b><br><b>V 4 0 or V 4 1</b><br><b>V 7 0 or V 7 1</b><br><b>V 8 0 or V 8 1</b>     |                                                  |

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

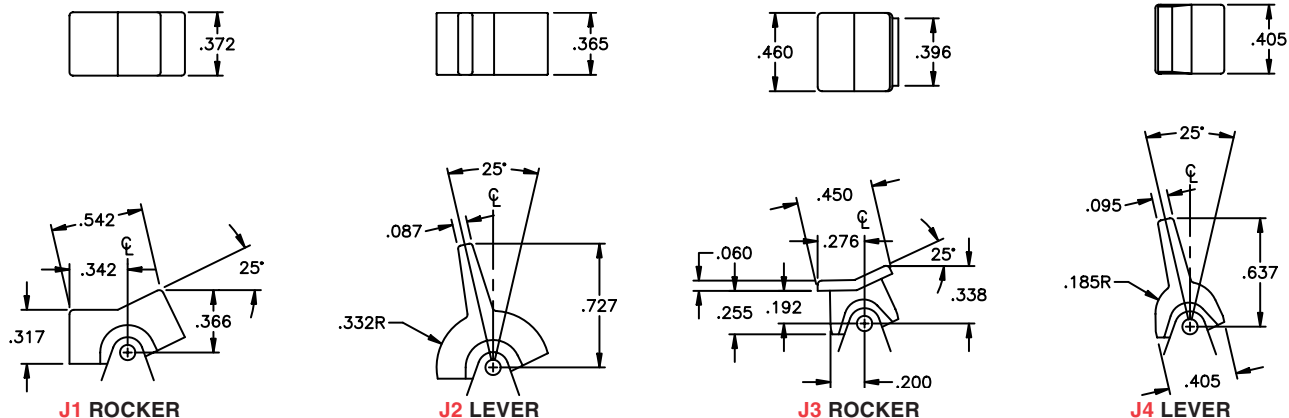
Example of completely specified model number:  
**ST2-3L5S5ZQEJ4J9622**

### Options:

| Sealing              | Actuator                                                                                   | Bezel                                                                                                                                                                                                              | Bezel color                                                | Actuator color                                                                                       | Recognition                             |
|----------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <input type="text"/> | <input type="text"/>                                                                       | <input type="text"/>                                                                                                                                                                                               | <input type="text"/>                                       | <input type="text"/>                                                                                 | <input type="text"/>                    |
| (NONE)<br>E Epoxy    | <b>J 1</b> Rocker<br><b>J 2</b> Lever<br><b>J 3</b> Small rocker<br><b>J 4</b> Small lever | (NONE)<br><b>J 6 1</b> Snap-in w/LED<br><b>J 9 0</b> Snap-in no LED<br><b>J 9 3</b> P.C. style<br>Self-keying round hole mt.:<br><b>J 9 6</b> Snap-in no LED<br>Note: specify J3 or J4 actuators only with bezels. | (NONE)<br><b>2</b> Black<br><b>6</b> Red<br><b>8</b> White | <b>2</b> Black<br><b>6</b> Red<br><b>8</b> White<br>Note: J3 & J4 actuators available in black only. | (NONE)<br><b>/ C S A</b><br>CSA listing |

## ACTUATOR OPTIONS

Colors available: J1 & J2: Black, red or white. J3 & J4: Black.

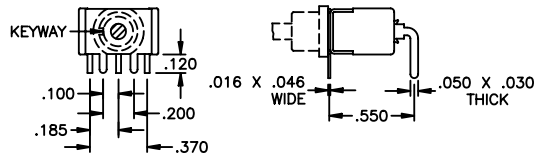


# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

## TERMINATION OPTIONS

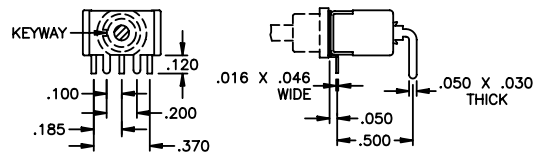
B

A



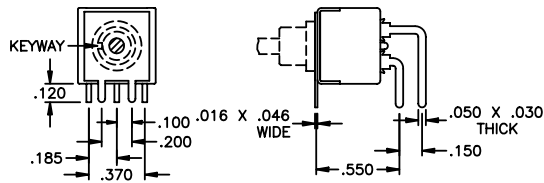
SINGLE POLE HORIZONTAL P.C. MOUNTING

A-1



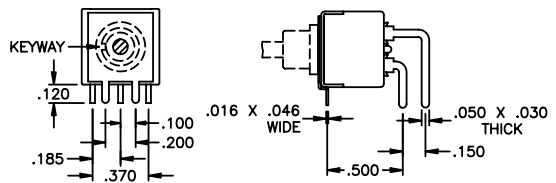
SINGLE POLE HORIZONTAL P.C. MOUNTING

A



DOUBLE POLE HORIZONTAL P.C. MOUNTING

A-1

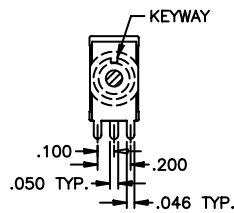


DOUBLE POLE HORIZONTAL P.C. MOUNTING

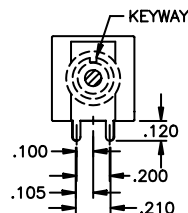
## V, V-1 & V-2

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

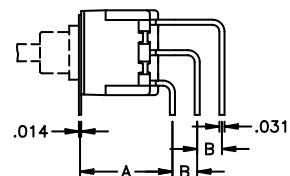
FRONT VIEW  
SINGLE POLE



FRONT VIEW  
DOUBLE POLE



SIDE VIEW - SINGLE & DOUBLE POLE

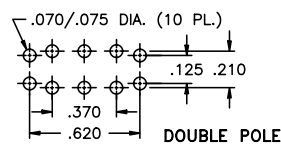
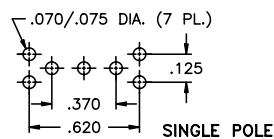


VERTICAL P.C. MOUNTING

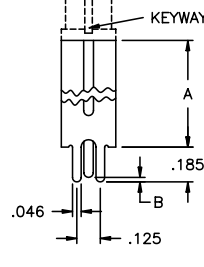
## V30, V40, V70, V80, V31, V41, V71 & V81

PANEL LAYOUT  
V30, V31, V40 & V41

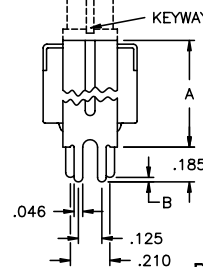
| Option  | Dim. A | Dim. B |
|---------|--------|--------|
| V30-V31 | .527   | .024   |
| V40-V41 | .647   | .048   |



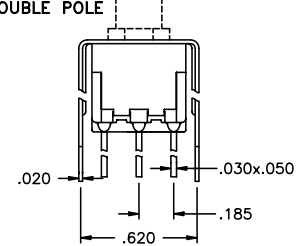
FRONT VIEW  
SINGLE POLE



FRONT VIEW  
DOUBLE POLE



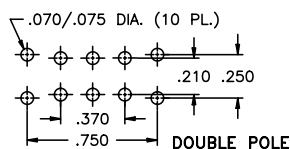
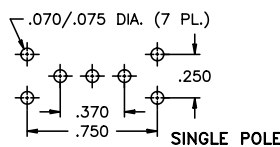
SIDE VIEW -  
SINGLE AND  
DOUBLE POLE



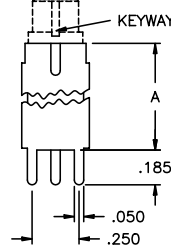
PRINTED CIRCUIT MOUNTING

PANEL LAYOUT  
V70, V71,  
V80 & V81

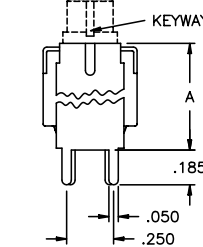
| Option  | Dim. A |
|---------|--------|
| V70-V71 | .630   |
| V80-V81 | .953   |



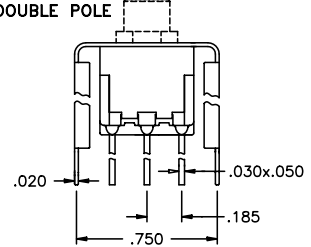
FRONT VIEW  
SINGLE POLE



FRONT VIEW  
DOUBLE POLE

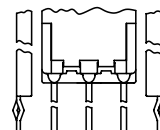
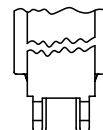
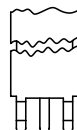


SIDE VIEW -  
SINGLE AND  
DOUBLE POLE



PRINTED CIRCUIT MOUNTING

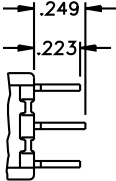
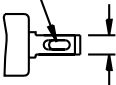
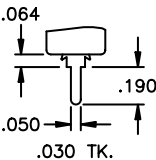
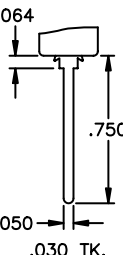
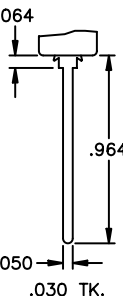
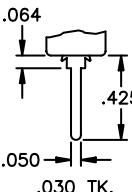
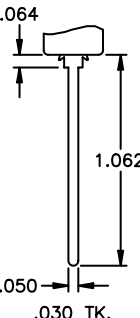
V31, V41, V71 & V81 ARE THE SAME AS V30, V40, V70 & V80 RESPECTIVELY, EXCEPT WITH CRIMPED LEG DESIGN FOR P.C. BOARD RETENTION, AS SHOWN TO RIGHT.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

## TERMINATION OPTIONS (CONT'D.)

| Z                                                                                                                                                                                           | C                                                                                                           | W                                                                                                    | W1                                                                                                        | W3                                                                                                           | X                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <br><br><b>SOLDER LUG</b> | <br><b>PRINTED CIRCUIT</b> | <br><b>WIREWRAP</b> | <br><b>LONG WIREWRAP</b> | <br><b>SHORT WIREWRAP</b> | <br><b>EXTRA LG. WIREWRAP</b> |

## CONTACT MATERIAL OPTIONS

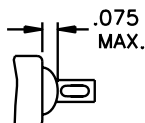
|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>B</b> Dry circuit - gold over nickel over brass.<br>RATING: 0.4 Volt-Amps (VA) max. at 20 V max.<br>ELECTRIC LIFE: 100,000 cycles min. (ST1-1 & ST2-1 only - other models 40,000 cycles min.)                                                                                                                                                                                                                       |                                                                                 |
| <b>Q</b> Power circuit - coin silver.<br>RATING: 6 Amps at 125 VAC, 3 Amps at 250 VAC or 7 Amps at 30 VDC (resistive loads).<br>ELECTRIC LIFE: 100,000 cycles min. (ST1-1 & ST2-1 only - other models 40,000 cycles min.)                                                                                                                                                                                              |                                                                                 |
| <b>G</b> Dry circuit or power circuit - gold over nickel over coin silver.<br>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. |                                                                                 |
| <b>N</b> Dry circuit - gold over nickel over brass. Note- less gold than B option.<br>RATING: 0.4 Volt-Amps (VA) max. at 20 V max.<br>ELECTRIC LIFE: 10,000 cycles min. at 13 cycles per minute.                                                                                                                                                                                                                       |                                                                                 |
| <b>T</b> Power circuit - Silver plate over brass.<br>RATING: 3 Amps at 125 VAC or 1.5 Amps at 250 VAC (resistive loads).<br>ELECTRIC LIFE: 10,000 cycles min. at 13 cycles per minute.                                                                                                                                                                                                                                 | Solder dipped terminals and custom contact plating available - contact factory. |

## UL & CSA OPTIONS

|                                                                                                                                                                                                                                                                                                                                                                                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>UL</b> For power circuits - coin silver<br>RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor).<br>Underwriter Laboratories file no. E66367. To specify, order UL model no. Note - applicable only to terminations with coin silver contacts (Q or G options).                                                                                                             |  |
| <b>CSA</b> For power circuits - coin silver<br>RATING: 6 Amps at 125 VAC or 3 Amps at 250 VAC (75% power factor). Canadian Standards Association file no. LR54592-1. To specify, order 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

|                                                                                                                                                                                                                                                                  |                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>E</b> Epoxy terminal sealing: Available with all terminal configurations.<br><br>The space between terminal & case hole is sealed with epoxy all around terminal.<br><br>Provides maximum protection from entry of flux or contaminants into the switch case. | <b>/R</b> To specify reverse switch action on non-symmetrical models with bushing keyway, add 'R' to switch model no. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|



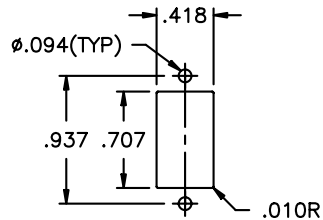
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

B

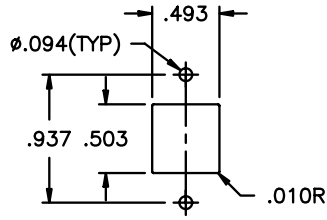
# ST SERIES - MINIATURE ROCKER & LEVER SWITCHES

## MOUNTING INFORMATION & PANEL CUT-OUTS

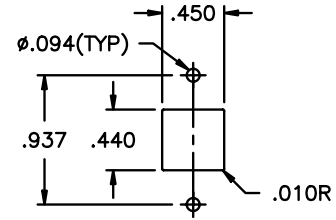
B



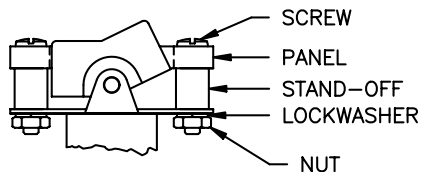
| J1 OR J2       |                 |                  |
|----------------|-----------------|------------------|
| Panel tk'ness. | Hardware number | Stand-off length |
| 1/16"          | <b>A322-3</b>   | .295             |
| 3/32"          | <b>A322-2</b>   | .264             |
| 1/8"           | <b>A322-1</b>   | .233             |



| J3             |                 |                  |
|----------------|-----------------|------------------|
| Panel tk'ness. | Hardware number | Stand-off length |
| 1/16"          | <b>A322-2</b>   | .264             |
| 3/32"          | <b>A322-1</b>   | .233             |
| 1/8"           | <b>A322-4</b>   | .202             |



| J4             |                 |                  |
|----------------|-----------------|------------------|
| Panel tk'ness. | Hardware number | Stand-off length |
| 1/16"          | <b>A322-1</b>   | .233             |
| 3/32"          | <b>A322-4</b>   | .202             |
| 1/8"           | <b>A322-5</b>   | .171             |



**TYPICAL ASSEMBLY**

Mounting hardware consists of 2 each:  
Hex Nut, stainless steel  
Screw, stainless steel  
Lockwasher, stainless steel  
Stand-off, aluminum

**1/8" panel hardware supplied if not specified separately by hardware number shown in tables.**

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## 2600 SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES



### FEATURES

- Broad selection of lamp types and/or rocker colors.
- SPDT & DPDT models with plain, 'V' shaped or concave rocker.
- Illuminated rocker or rocker with illuminated window.
- Screw terminals with clamp or solder lug/quick-connect terminals.

### SPECIFICATIONS

|                                           |                                                                                                                                                                                                     |                                        |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Contact ratings (resistive loads):</b> | Silver contacts; ON-OFF and ON-ON: 10(4)A 380VAC -16(6)A 250VAC or 20(6)A 125VAC. Other functions: 10A 250VAC or 15A 125VAC<br>Silver plated copper contacts; All functions: 4A 250VAC or 5A 125VAC |                                        |
| <b>Agency recognized ratings:</b>         | See table below                                                                                                                                                                                     |                                        |
| <b>Initial contact resistance:</b>        | 10 milliohms max. at 1A 2VDC                                                                                                                                                                        |                                        |
| <b>Insulation resistance:</b>             | 1000 megohms min. at 500 VDC                                                                                                                                                                        |                                        |
| <b>Dielectric strength:</b>               | 2500 V rms min. - between terminals<br>3000 V rms min. - between terminals and metal panel                                                                                                          |                                        |
| <b>Electrical life:</b>                   | 10,000 cycles min. at full load                                                                                                                                                                     |                                        |
| <b>Operating temperature range:</b>       | Silver contacts: -20°C to +125°C                                                                                                                                                                    | Silver plated contacts: -10°C to +55°C |
| <b>Panel thickness:</b>                   | 0.8-4mm (.031"-.157")                                                                                                                                                                               |                                        |

| AGENCY RECOGNIZED RATINGS                                 |                                               |                                |
|-----------------------------------------------------------|-----------------------------------------------|--------------------------------|
| FUNCTIONS                                                 | UL & CSA                                      | VDE                            |
| ON-OFF                                                    | 1/6 HP 125VAC, 16A 125VAC                     | 10(4)A 380VAC, 16(6)A 250VAC & |
| ON-ON                                                     | 16A 250VAC & 1/3 HP 250VAC                    | 20(6)A 125VAC                  |
| ON-OFF-ON                                                 | 10A 125VAC, 10A 250VAC &<br>1/6 HP 125/250VAC | 10(4)A 380VAC                  |
| OTHERS, CSA ONLY : 10A 125VAC, 10A 250VAC & 1/6 HP 250VAC |                                               |                                |

### MATERIALS

|                                  |                                |
|----------------------------------|--------------------------------|
| <b>Contacts &amp; Terminals:</b> | Silver or silver plated copper |
| <b>Actuator:</b>                 | Polyamide                      |
| <b>Frame:</b>                    | Polyamide                      |
| <b>Case:</b>                     | Melamine/polyester             |

### AGENCY RECOGNITION



UL, CSA & VDE. Recognized models are supplied with agency markings.

### ABOUT THIS SERIES

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

- Completely specified switch models
- 'build your own switch' order format
- Option drawings
- Mounting & miscellaneous

### ALSO IN THIS SERIES

2600 Series switches for peak currents - for switching power supplies, DC-DC converters, motors, etc. See specifications on last page of completely specified models.

## 2600 SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

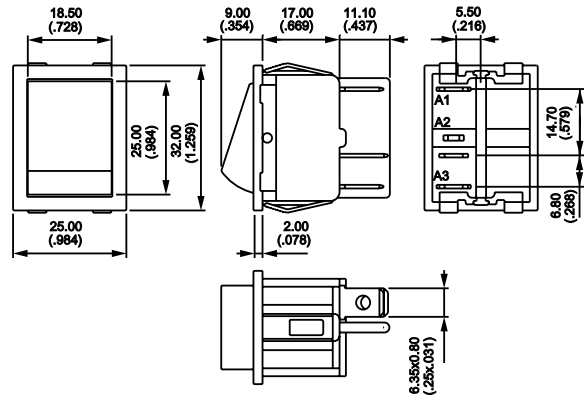
B

### Single pole - non-illuminated - black rocker - silver contacts



| Screw terminals and clamp | Solder lug/quick-connect terminals | CIRCUIT |       |     |
|---------------------------|------------------------------------|---------|-------|-----|
| 2631LHA212000L0           | 2631LH/2A212000L0                  | ON      | -     | OFF |
| 2636LHA212000L0           | 2636LH/2A212000L0                  | ON      | -     | ON  |
| 2639LHA212000L0           | 2639LH/2A212000L0                  | ON      | OFF   | ON  |
| Terminals connected:      |                                    | A2-A1   | A2-A3 |     |

Above models have black frame.

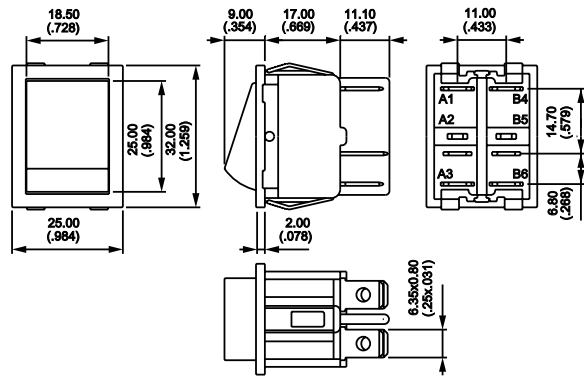


### Double pole - non-illuminated - black rocker - silver contacts



| Screw terminals and clamp | Solder lug/quick-connect terminals | CIRCUIT |       |     |
|---------------------------|------------------------------------|---------|-------|-----|
| 2641LHA212000L0           | 2641LH/2A212000L0                  | ON      | -     | OFF |
| 2645LHA212000L0           | 2645LH/2A212000L0                  | MOM     | -     | ON  |
| 2646LHA212000L0           | 2646LH/2A212000L0                  | ON      | -     | ON  |
| 2647LHA212000L0           | 2647LH/2A212000L0                  | MOM     | OFF   | MOM |
| 2648LHA212000L0           | 2648LH/2A212000L0                  | ON      | OFF   | MOM |
| 2649LHA212000L0           | 2649LH/2A212000L0                  | ON      | OFF   | ON  |
| Terminals connected:      |                                    | A2-A1   | A2-A3 |     |
|                           |                                    | B5-B4   | B5-B6 |     |

Above models have black frame.

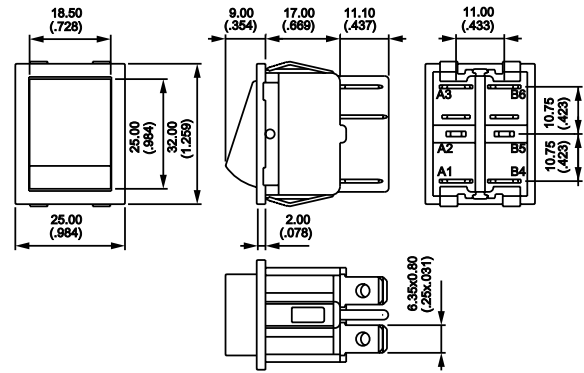


### Double pole - illuminated - green rocker - silver contacts



| Screw terminals and clamp          | CIRCUIT |       |       |
|------------------------------------|---------|-------|-------|
| 2641LHA21300L110V3                 | ON      | -     | OFF   |
| 2646LHA21300L110V3                 | ON      | -     | ON    |
| 2649LHA21300L110V3                 | ON      | OFF   | ON    |
| Solder lug/quick-connect terminals | CIRCUIT |       |       |
| 2641LH/2A21300L110V3               | ON      | -     | OFF   |
| 2646LH/2A21300L110V3               | ON      | -     | ON    |
| 2649LH/2A21300L110V3               | ON      | OFF   | ON    |
| Terminals connected:               |         | A2-A1 | A2-A3 |
|                                    |         | B5-B4 | B5-B6 |

Above models have black frame.

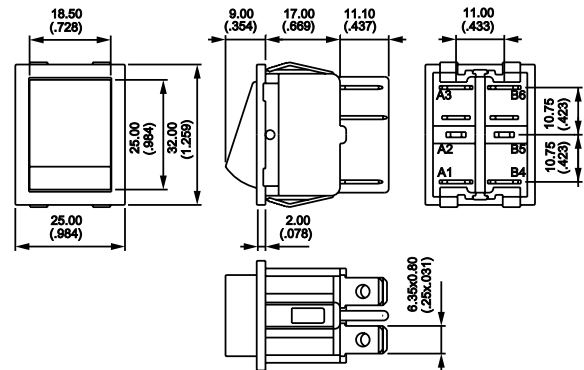


### Double pole - illuminated - red rocker - silver contacts



| Screw terminals and clamp          | CIRCUIT |       |       |
|------------------------------------|---------|-------|-------|
| 2641LHA21600L110V                  | ON      | -     | OFF   |
| 2646LHA21600L110V                  | ON      | -     | ON    |
| 2649LHA21600L110V                  | ON      | OFF   | ON    |
| Solder lug/quick-connect terminals | CIRCUIT |       |       |
| 2641LH/2A21600L110V                | ON      | -     | OFF   |
| 2646LH/2A21600L110V                | ON      | -     | ON    |
| 2649LH/2A21600L110V                | ON      | OFF   | ON    |
| Terminals connected:               |         | A2-A1 | A2-A3 |
|                                    |         | B5-B4 | B5-B6 |

Above models have black frame.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

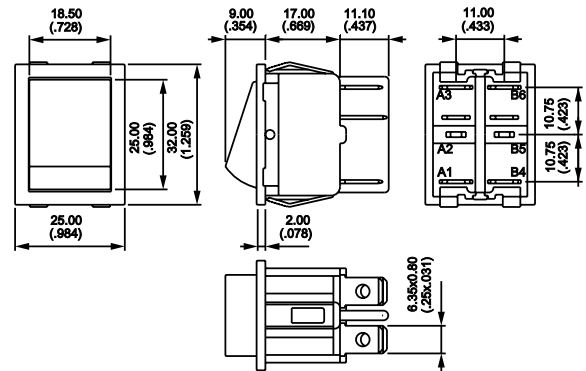
## 2600 SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

### Double pole - illuminated - amber rocker - silver contacts



| Screw terminals and clamp          | CIRCUIT        |                |     |
|------------------------------------|----------------|----------------|-----|
| 2641LHA21900L110V                  | ON             | -              | OFF |
| 2646LHA21900L110V                  | ON             | -              | ON  |
| 2649LHA21900L110V                  | ON             | OFF            | ON  |
| Solder lug/quick-connect terminals | CIRCUIT        |                |     |
| 2641LH/2A21900L110V                | ON             | -              | OFF |
| 2646LH/2A21900L110V                | ON             | -              | ON  |
| 2649LH/2A21900L110V                | ON             | OFF            | ON  |
| Terminals connected:               | A2-A1<br>B5-B4 | A2-A3<br>B5-B6 |     |

Above models have black frame.

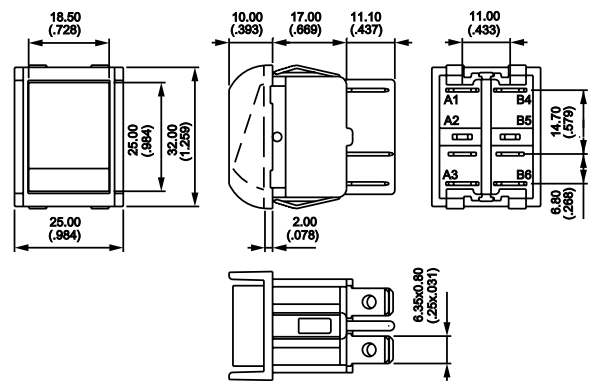


### Double pole - illuminated - red rocker - protection guard - silver contacts



| Screw terminals and clamp          | CIRCUIT        |                |     |
|------------------------------------|----------------|----------------|-----|
| 2641LPA21600L110V                  | ON             | -              | OFF |
| 2646LPA21600L110V                  | ON             | -              | ON  |
| 2649LPA21600L110V                  | ON             | OFF            | ON  |
| Solder lug/quick-connect terminals | CIRCUIT        |                |     |
| 2641LP/2A21600L110V                | ON             | -              | OFF |
| 2646LP/2A21600L110V                | ON             | -              | ON  |
| 2649LP/2A21600L110V                | ON             | OFF            | ON  |
| Terminals connected:               | A2-A1<br>B5-B4 | A2-A3<br>B5-B6 |     |

Above models have black frame.



### 2600 Series double pole switches for peak currents up to 150 Amps at 250 VAC

Also see 'Switches for Peak Currents' technical page in rear of catalog.

**Contacts:** Silver cadmium oxide

#### Maximum ratings:

Capacitive load:

15/150A 125VAC and 250VAC - 5000 cycles  
10/150A 125VAC and 250VAC - 10,000 cycles  
4/90A (10 ms) 60VDC - 10,000 cycles

Motor load:

15(6)A 250VAC - 10,000 cycles. 10(4)A 380VAC - 10,000 cycles  
17(6)A 125VAC - 6,000 cycles. 1 HP 250VAC - 10,000 cycles  
2 HP 250VAC - 6,000 cycles. 1/2 HP 125VAC - 6,000 cycles  
Note - 6(3 A 125VAC means 6A resistive and 3A motor

Lamp Load:

10A 125VAC and 250VAC - 10,000 cycles

Other specifications and dimensions same as previous 2600 Series models - see first page of Series.

To specify models with protection guard, replace **LH** with **LP** in model numbers shown in table.



16A 250VAC - 1/3 HP 250VAC  
16A 125VAC - 1/6 HP 125VAC

| NON-ILLUMINATED - BLACK ROCKER                     |                  |          |
|----------------------------------------------------|------------------|----------|
| Solder lug/quick-connect terminals                 | Screw terminals  | CIRCUIT  |
| 2641SLH/2A212000L0                                 | 2641SLHA212000L0 | ON - OFF |
| 2646SLH/2A212000L0                                 | 2646SLHA212000L0 | ON - ON  |
| ILLUMINATED 220 VAC (without window)               |                  |          |
| Solder lug/quick- connect terminals - green rocker |                  |          |
| 2641SLH/2A21300L220V3                              |                  | ON - OFF |
| 2646SLH/2A21300L220V3                              |                  | ON - ON  |
| Solder lug/quick- connect terminals - red rocker   |                  |          |
| 2641SLH/2A21600L220V3                              |                  | ON - OFF |
| 2646SLH/2A21600L220V3                              |                  | ON - ON  |
| ILLUMINATED 220 VAC (with window)                  |                  |          |
| Solder lug/quick- connect terminals - green rocker |                  |          |
| 2641SLH/2A21300L220V3/3                            |                  | ON - OFF |
| 2646SLH/2A21300L220V3/3                            |                  | ON - ON  |
| Solder lug/quick- connect terminals - red rocker   |                  |          |
| 2641SLH/2A21600L220V3/3                            |                  | ON - OFF |
| 2646SLH/2A21600L220V3/3                            |                  | ON - ON  |

**New!**

## 2600 SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

B

**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 & Options** for complete model number.

Allowable options are shown below each respective box.

Note 'NONE' indicates box may be left empty.

#### Model Structure & options:

| Series | Number of poles                | Electrical functions                                                                                                            | Frame type                             | Terminals                                                                             | Contact materials                  | Frame color                                                                                                                             |
|--------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 2 6    |                                |                                                                                                                                 |                                        |                                                                                       |                                    |                                                                                                                                         |
|        | 3 Single pole<br>4 Double pole | 1 ON - OFF<br>4 ON ON ON*<br>5 MOM - ON*<br>6 ON - ON<br>7 MOM OFF MOM*<br>8 ON OFF MOM*<br>9 ON OFF ON<br>* - double pole only | L H Plain<br>L P With protection guard | (NONE) Screw & clamp<br>/ 2 Solder lugs/quick-connect<br>/ 3 Normalized quick-connect | A Silver<br>C Silver plated copper | 2 Black (Standard)<br>4 Gray<br>7 / 1 White<br>8 Chrome plated<br>This option has UL approval only<br><br>B Light brown<br>E Dark brown |

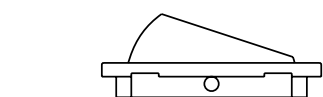
| Rocker shape                         | Rocker color (or no rocker)                                | Rocker marking (or no marking)                                       | Lamp (or no lamp)                                     | Illuminated window                                                                                                          |
|--------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|                                      |                                                            |                                                                      |                                                       |                                                                                                                             |
| 1 Plain<br>2 'V' shaped<br>3 Concave | Select rocker color or 'no rocker' from option table below | Select rocker marking or 'no rocker marking' from option table below | L 0 (NONE)<br>Or, select lamp from option table below | (NONE)<br>/ 3 Green<br>/ 6 Red<br>This option for black, green and red rockers only. With green, use fluorescent lamp only. |

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

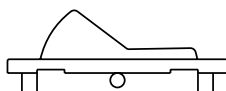
Example of completely specified model number:

**2644LH/2AB1300L110V3**

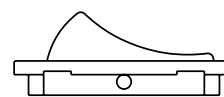
#### ROCKER SHAPE OPTIONS



1 Plain



2 'V' shaped



3 Concave

#### ROCKER COLOR OPTIONS

**For illuminated rocker (without window):**

| Rocker color option no. | Without rocker | Blue* | Green* | Yellow | Red | White | Orange |
|-------------------------|----------------|-------|--------|--------|-----|-------|--------|
|                         | 0              | 1     | 3      | 5      | 6   | 7/1   | 9      |

\* With green or blue rocker, use fluorescent lamp only.

**For non-illuminated rocker or rocker with illuminated window\*\*:**

\*\* - specify only options 20, 30 or 60 with illuminated window rockers.

| Rocker color option no. | Without rocker | Light brown | Dark brown | Beige | Blue | Black |
|-------------------------|----------------|-------------|------------|-------|------|-------|
|                         | 0              | 02          | 04         | 03    | 10   | 20    |

| Rocker color option no. | Green | Gray | Yellow | Red | White | Orange |
|-------------------------|-------|------|--------|-----|-------|--------|
|                         | 30    | 40   | 50     | 60  | 70    | 90     |

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# 2600 SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

## ROCKER MARKING OPTIONS

Marking option numbers (for markings and colors shown - consult factory for special marking)

| Marking | Marking color | (Below options indicate no marking) | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 |
|---------|---------------|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|         |               |                                     |                   |                   |                   |                   |                   |                   |
| Black   | 00            | 01                                  | 02                | 06                | 07                | 08                |                   |                   |
| Red     | 00            | 11                                  | 12                | 16                | 17                | 18                |                   |                   |
| White   | 00            | 21                                  | 22                | 26                | 27                | 28                |                   |                   |

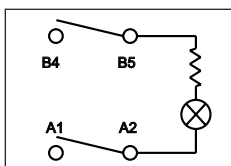
  

| Marking | Marking color | 4 1<br>5 2<br>6 3 | 3 6<br>2 5<br>1 4 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 | 4 1<br>5 2<br>6 3 |
|---------|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|         |               |                   |                   |                   |                   |                   |                   |
| Black   | -             | -                 | -                 | 40                | 43*               | 46                |                   |
| Red     | 13            | 14                | 15*               | 41                | 44*               | 47                |                   |
| White   | 23            | 24                | 25*               | 42                | 45*               | 48                |                   |

\* not available on 'V' shaped rockers

## LAMP OPTIONS

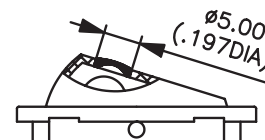
- LO** Non-illuminated switch
- L6V** Filament 6V
- L12V** Filament 12V
- L24V** Filament 24V
- L110V** Neon 110 VAC
- L110V3** Fluorescent green 110 VAC
- L220V** Neon 220 VAC
- L220V3** Fluorescent green 220 VAC
- L380V** Neon 380 VAC
- L380V3** Fluorescent green 380 VAC



For illuminated models, lamp is always connected between center terminals 2 and 5. Lamps L380V and L380V3 are not UL/CSA approved.

## ROCKER SWITCH W/ILLUMINATED WINDOW

**New!**



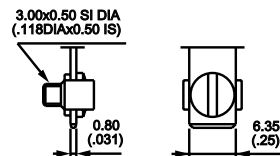
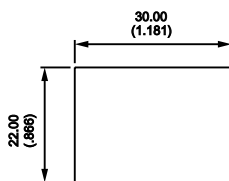
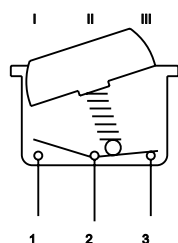
Window colors: red or green

Available with plain, 'V' shaped, or concave rockers

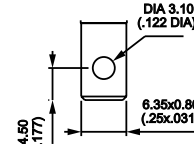
## SWITCH ACTION

## PANEL CUT-OUT

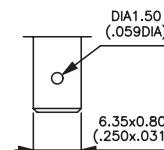
## TERMINALS



**Standard:** Screw & clamp



**/2** Solder lug/  
quick-connect



**/3** Normalized  
quick-connect

## AS SERIES SNAP-IN ROCKER SWITCHES

B



### FEATURES

- Double insulation.
- SPDT models with actuator color selections.
- Epoxy terminal seal standard.
- Agency recognition (see below).

### SPECIFICATIONS

|                                           |                                                                                                                                                            |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings (resistive loads):</b> | Silver contacts (1) and gold plated silver contacts (2); 4A 125VAC max. or 2A 250VAC max.<br>Gold plated brass contacts (0): 0.4 VA max. at 20 VAC or VDC. |
| <b>Initial contact resistance:</b>        | 10 milliohms max.                                                                                                                                          |
| <b>Insulation resistance:</b>             | 10,000 megohms min.                                                                                                                                        |
| <b>Dielectric strength:</b>               | 1000 V rms min. - between terminals<br>4000 V rms min. - between terminals and metal panel                                                                 |
| <b>Electrical life:</b>                   | 50,000 cycles min. at full load                                                                                                                            |
| <b>Operating temperature range:</b>       | -40°C to +85°C                                                                                                                                             |

### MATERIALS

|                                  |                                                 |
|----------------------------------|-------------------------------------------------|
| <b>Contacts &amp; Terminals:</b> | Silver, gold plated silver or gold plated brass |
| <b>Actuator:</b>                 | Polyamide                                       |
| <b>Case:</b>                     | PES, color black                                |

### AGENCY RECOGNITION



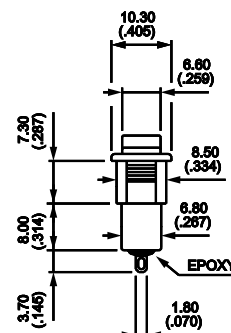
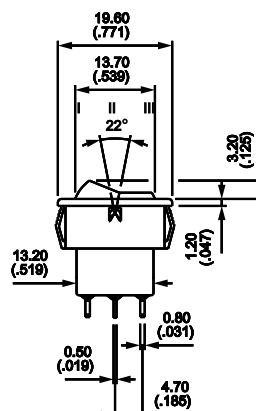
UL & CSA . Recognized models are available with agency markings.

### Solder lug terminals - silver contacts



| MODEL NO.      | CIRCUIT     |
|----------------|-------------|
| AS36S010010    | ON - ON     |
| AS39S010010    | ON OFF ON   |
| AS37S010010    | MOM OFF MOM |
| AS38S010010    | ON OFF MOM  |
| AS32S010010    | ON - MOM    |
| Act. position: | III II I    |

Above models have black actuator.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

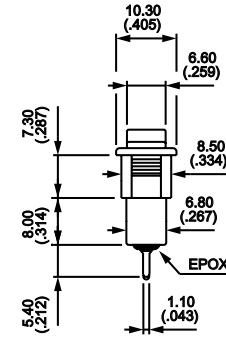
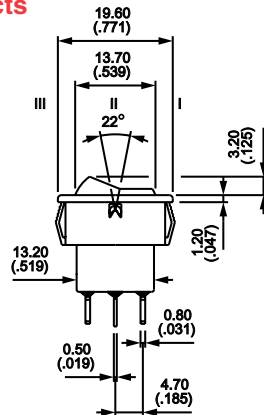
## AS SERIES SNAP-IN ROCKER SWITCHES

### Printed circuit terminals - gold plated brass contacts



| MODEL NO.      | CIRCUIT |     |     |
|----------------|---------|-----|-----|
| AS36P0000      | ON      | -   | ON  |
| AS39P0000      | ON      | OFF | ON  |
| AS37P0000      | MOM     | OFF | MOM |
| AS38P0000      | ON      | OFF | MOM |
| AS32P0000      | ON      | -   | MOM |
| Act. position: | III     | II  | I   |

Above models have black actuator.



**Additional ordering information:** Commonly ordered models are shown above 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 complete model number.

Allowable options are shown below each respective box.

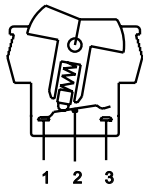
Note 'NONE' indicates box may be left empty.

| Series     | Number of poles         | Electrical functions                                                                                       | Terminals                                           | Contact materials                                                            | Actuator color                                                           | Recognition/Misc.                                                                                                    |
|------------|-------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>A S</b> | <b>3</b><br>Single pole | <b>6</b> ON - ON<br><b>9</b> ON OFF ON<br><b>7</b> MOM OFF MOM<br><b>8</b> ON OFF MOM<br><b>2</b> ON - MOM | <b>S 0</b> Solder lug<br><b>P 0</b> Printed circuit | <b>0</b> Gold plated brass<br><b>1</b> Silver<br><b>2</b> Gold plated silver | <b>0 0</b> Black<br><b>0 1</b> Red<br><b>0 2</b> Gray<br><b>0 3</b> Blue | <b>(NONE)</b><br><b>1 0</b> with UL/CSA marking - (for 1 & 2 contacts only)<br><b>2 0</b> .393"(10mm) p.c. terminals |

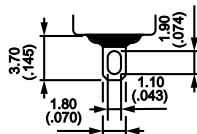
Example of completely specified model number:

**AS36P01011020**

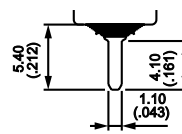
#### CROSS SECTION



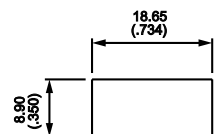
#### SOLDER LUG TERMINAL



#### PRINTED CIRCUIT TERMINAL



#### PANEL CUT-OUT



# New! R SERIES SNAP-IN ROCKER SWITCHES

B

## FEATURES

- Cost effective illuminated or non-illuminated models.
- Single pole & double pole maintained or momentary action models.
- Actuator and case color selections.
- Standard actuator marking options.

## SPECIFICATIONS

|                                     |                                                                                                                                                                              |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings:</b>             | 16A 125VAC 1/4 HP (UL/CSA). 16A 250VAC 1/4 HP (UL/CSA).<br>20A 125VAC 3/4 HP 250VAC (UL) 16(4)A 250V ~ T125 1E4<br>10(2)A 250V ~ 5E4 (VDE, SEMCO, NEMCO, DEMCO, FIMCO, SEV). |
| <b>Initial contact resistance:</b>  | 20 milliohms max.                                                                                                                                                            |
| <b>Insulation resistance:</b>       | 100 megohms min. at 500 V                                                                                                                                                    |
| <b>Dielectric strength:</b>         | 1000 VAC for 1 minute                                                                                                                                                        |
| <b>Electrical life:</b>             | 16(4)A 250VAC: 10,000 cycles 10(2)A 250VAC: 50,000 cycles                                                                                                                    |
| <b>Operating temperature range:</b> | -20°C to 125°C                                                                                                                                                               |

## MATERIALS

|                   |                              |               |                                |
|-------------------|------------------------------|---------------|--------------------------------|
| <b>Contacts:</b>  | Silver cadmium alloy         | <b>Lamps:</b> | Neon or fluorescent.           |
| <b>Terminals:</b> | Silver plated copper         |               | Illumination available         |
| <b>Actuator:</b>  | Nylon type 66 (UL94V-2 min.) |               | only with function 1 (ON OFF). |
| <b>Case:</b>      | Nylon type 66 (UL94V-2 min.) |               |                                |

## AGENCY RECOGNITION



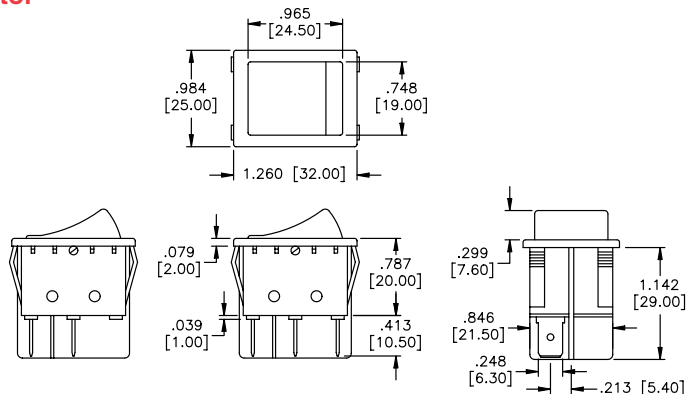
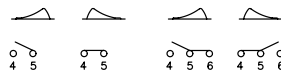
UL, CSA, VDE, SEMKO, NEMKO, DEMKO, FEMKO, & SEV. Models are supplied with agency markings.

### Single pole - quick connect terminals - curved actuator



| MODEL NO.  | CIRCUIT       |
|------------|---------------|
| R1101C2NBB | ON OFF        |
| R1201C2NBB | ON OFF        |
| R1301C2NBB | ON OFF ON     |
| R1401C2NBB | (ON) OFF      |
| R1501C2NBB | (ON) ON       |
| R1601C2NBB | (ON) OFF (ON) |
| R1701C2NBB | (ON) OFF ON   |

Parenthesis indicates momentary action. Models in table have black actuator and black case.

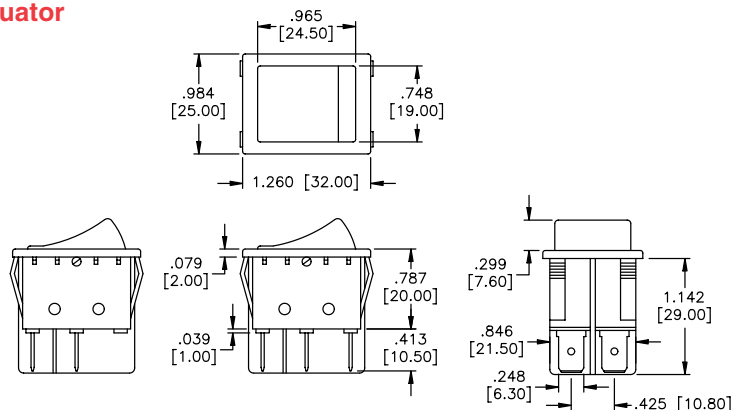
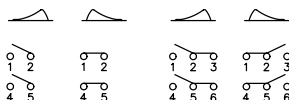


### Double pole - quick connect terminals - curved actuator



| MODEL NO.  | CIRCUIT       |
|------------|---------------|
| R2101C2NBB | ON OFF        |
| R2201C2NBB | ON OFF        |
| R2301C2NBB | ON OFF ON     |
| R2401C2NBB | (ON) OFF      |
| R2501C2NBB | (ON) ON       |
| R2601C2NBB | (ON) OFF (ON) |
| R2701C2NBB | (ON) OFF ON   |

Parenthesis indicates momentary action. Models in table have black actuator and black case.



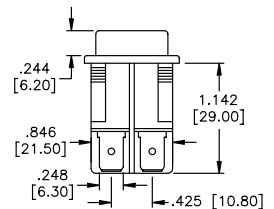
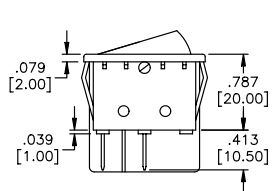
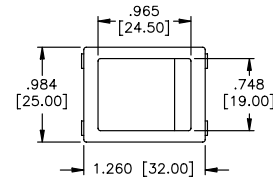
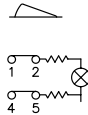
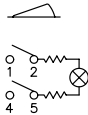
# New! R SERIES SNAP-IN ROCKER SWITCHES

## Double pole - illuminated - quick connect terminals - flat actuator



| MODEL NO.  | CIRCUIT |     |      |
|------------|---------|-----|------|
| R2101F2LB0 | ON      | OFF |      |
| R2201F2LB0 | ON      | OFF |      |
| R2301F2LB0 | ON      | OFF | ON   |
| R2401F2LB0 | (ON)    | OFF |      |
| R2501F2LB0 | (ON)    | ON  |      |
| R2601F2LB0 | (ON)    | OFF | (ON) |
| R2701F2LB0 | (ON)    | OFF | ON   |

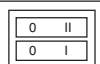
Parenthesis indicates momentary action. Models in table have orange actuator and black case.



**Additional ordering information:** Commonly ordered models are shown above 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

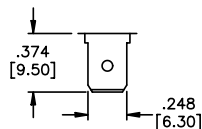
Fill in boxes with selections shown for complete model number.  
Allowable selections are shown below each respective box.  
Note 'NONE' indicates box may be left empty.

| Series                                                                                                                                                                                                                                 | Number of poles                | Electrical functions                                                                                                                        | Terminals                                       | Actuator shape                 | Actuator type                                                                                   | Marking/ lens color                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="text" value="R"/>                                                                                                                                                                                                         | <input type="text" value="2"/> | <input type="text" value="3"/>                                                                                                              | <input type="text" value="0"/>                  | <input type="text" value="1"/> | <input type="text" value="C"/>                                                                  | <input type="text" value="1"/>                                                                                                                                                       |
|                                                                                                                                                                                                                                        | 1 Single pole<br>2 Double pole | 1 ON OFF<br>2 ON ON<br>3 ON OFF ON<br>4 (ON) OFF<br>5 (ON) ON<br>6 (ON) OFF (ON)<br>7 (ON) OFF ON<br><small>parenthesis = momentary</small> | 0 Quick-connect<br>1 Solder lug<br>3 Screw type | 1 Single<br>2 Twin             | C Curved<br>F Flat<br>Note: only flat actuator is available with full illumination-i.e.-no lens | 1 HI LO<br>2 No marking<br>3 ON OFF<br>4 O I<br>5 O —<br>6 O II<br><b>TWIN ACTUATORS:</b><br>7  |
| Illuminated type                                                                                                                                                                                                                       | Case color                     | Actuator color                                                                                                                              | Waterproof cover                                |                                |                                                                                                 |                                                                                                                                                                                      |
| <input type="text" value="L"/>                                                                                                                                                                                                         | <input type="text" value="A"/> | <input type="text" value="A"/>                                                                                                              | <input type="text" value="NONE"/>               |                                |                                                                                                 |                                                                                                                                                                                      |
| L Illuminated<br>N non-illum.<br>C round lens <br>R square lens  | A Gray<br>B Black<br>W White   | A Gray<br>B Black<br>G Green<br>O Orange<br>R Red<br>W White                                                                                | (NONE)<br>W Waterproof                          |                                |                                                                                                 |                                                                                                                                                                                      |

Example of completely specified model number:  
**R2301C6NBRW**

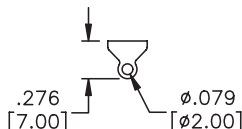
## TERMINALS

### QUICK-CONNECT



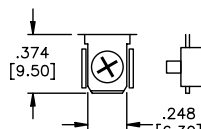
0

### SOLDER LUG



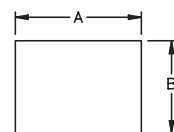
1

### SCREW



3

## PANEL CUT-OUTS



| pnl. tk'ness. | A +0, -.004 | B +.006, -.0 |
|---------------|-------------|--------------|
| .029-.049"    | 1.181"      | .866"        |
| .050-.078"    | 1.189"      | .866"        |
| .079-.118"    | 1.200"      | .866"        |

# New! RH SERIES SNAP-IN ROCKER SWITCHES

B

## FEATURES

- Cost effective illuminated or non-illuminated models.
- Single pole maintained action models.
- Actuator and case color selections.
- Standard actuator marking options.

## SPECIFICATIONS

|                                     |                                                                                                                                                                             |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings:</b>             | 16A 125VAC 1/4 HP (UL/CSA). 16A 250VAC 1/4 HP (UL/CSA).<br>20A 125VAC 3/4 HP 250VAC (UL) 16(4)A 250V ~ T85 1E4<br>10(2)A 250V ~ 5E4 (VDE, SEMCO, NEMCO, DEMCO, FIMCO, SEV). |
| <b>Initial contact resistance:</b>  | 20 milliohms max.                                                                                                                                                           |
| <b>Insulation resistance:</b>       | 100 megohms min. at 500 V                                                                                                                                                   |
| <b>Dielectric strength:</b>         | 1000 VAC for 1 minute                                                                                                                                                       |
| <b>Electrical life:</b>             | 16(4)A 250VAC: 10,000 cycles 10(2)A 250VAC: 50,000 cycles                                                                                                                   |
| <b>Operating temperature range:</b> | -20°C to 85°C                                                                                                                                                               |

## MATERIALS

|                   |                                    |               |                                |
|-------------------|------------------------------------|---------------|--------------------------------|
| <b>Contacts:</b>  | Silver cadmium alloy               | <b>Lamps:</b> | Neon or fluorescent.           |
| <b>Terminals:</b> | Silver plated copper               |               | Illumination available         |
| <b>Actuator:</b>  | Nylon type 66 or PC (UL94V-2 min.) |               | only with function 1 (ON OFF). |
| <b>Case:</b>      | Nylon type 66 (UL94V-2 min.)       |               |                                |

## AGENCY RECOGNITION



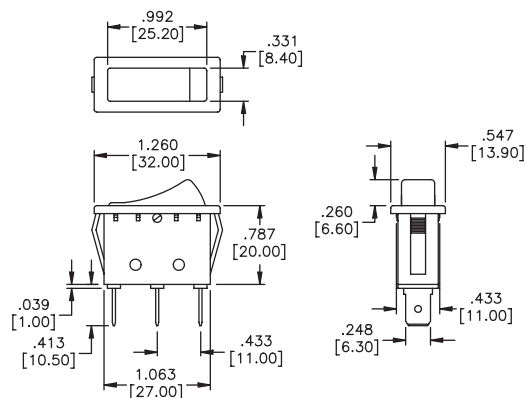
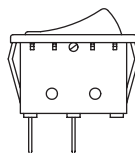
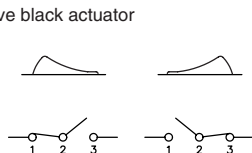
UL, CSA, VDE, SEMKO, NEMKO, DEMKO, FEMKO, & SEV. Models are supplied with agency markings.

## Quick connect terminals - curved actuator



| MODEL NO.  | CIRCUIT   |
|------------|-----------|
| RH110C2NBB | ON OFF    |
| RH120C2NBB | ON OFF    |
| RH130C2NBB | ON OFF ON |

Above models have black actuator and black case.

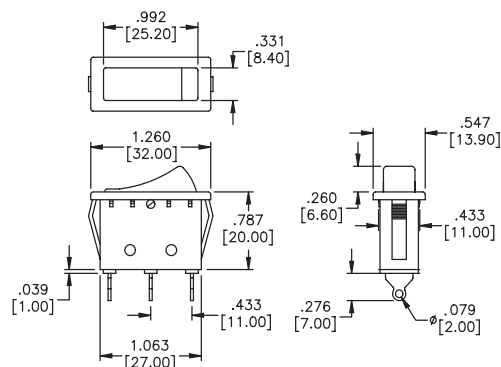
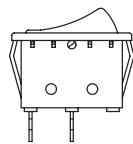
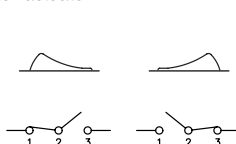


## Solder lug terminals - curved actuator



| MODEL NO.  | CIRCUIT   |
|------------|-----------|
| RH111C2NBB | ON OFF    |
| RH121C2NBB | ON OFF    |
| RH131C2NBB | ON OFF ON |

Above models have black actuator and black case.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

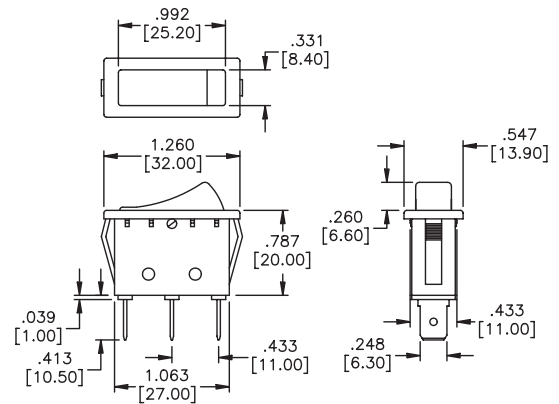
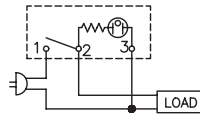
# New! RH SERIES SNAP-IN ROCKER SWITCHES

## Illuminated - quick connect terminals - flat actuator



| MODEL NO.  | CIRCUIT |     |    |
|------------|---------|-----|----|
| RH110C2LBR | ON      | OFF |    |
| RH120C2LBR | ON      | OFF |    |
| RH130C2LBR | ON      | OFF | ON |

Above models have red actuator and black case.



**Additional ordering information:** Commonly ordered models are shown above 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

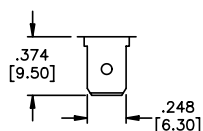
Fill in boxes with selections shown for complete model number.  
Allowable selections are shown below each respective box.

|                                                                                                                                          |                                                      |                                                                                                  |                                                         |                                                                                                                                                                                                                         |                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Series</b>                                                                                                                            | <b>Number of poles</b>                               | <b>Electrical functions</b>                                                                      | <b>Terminals</b>                                        | <b>Actuator type</b>                                                                                                                                                                                                    | <b>Marking/ lens color</b>                                                                                                             |
| <input type="text" value="R"/> <input type="text" value="H"/>                                                                            | <input type="text" value="1"/><br>Single pole        | <input type="text"/><br>1 ON OFF<br>2 ON ON<br>3 ON OFF ON                                       | <input type="text"/><br>0 Quick-connect<br>1 Solder lug | <input type="text"/><br>C Curved<br>F Flat<br>S Ergonomic<br>Notes: only flat actuator is available with full illumination-i.e.-no lens.<br>Ergonomic actuator available only with functions 1 & 2 and no illumination. | <input type="text"/><br>1 HI LO<br>2 No marking<br>3 ON OFF<br>4 O I<br>5 O —<br>6 O II<br>G Green lens<br>R Red lens<br>O Orange lens |
| <b>Illuminated type</b>                                                                                                                  | <b>Case color</b>                                    | <b>Actuator color</b>                                                                            |                                                         |                                                                                                                                                                                                                         |                                                                                                                                        |
| <input type="text"/><br>L Illuminated<br>N non-illum.<br>C round lens <input type="checkbox"/><br>R square lens <input type="checkbox"/> | <input type="text"/><br>A Gray<br>B Black<br>W White | <input type="text"/><br>A Gray<br>B Black<br>G Green<br>O Orange<br>R Red<br>W White<br>Y Yellow |                                                         |                                                                                                                                                                                                                         |                                                                                                                                        |

Example of completely specified model number:  
**RH130C6GLBR**

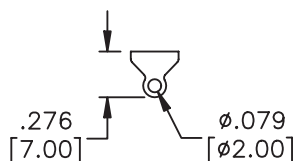
### TERMINALS

#### QUICK-CONNECT



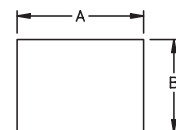
0

#### SOLDER LUG



1

### PANEL CUT-OUTS



| pnl. tk'ness. | A +0, -.004 | B +.006, -.0 |
|---------------|-------------|--------------|
| .029-.049"    | 1.181"      | .433"        |
| .050-.078"    | 1.189"      | .433"        |
| .079-.118"    | 1.200"      | .433"        |

# New! FM SERIES ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

B



## FEATURES

- SPST & SPDT ergonomically designed models for class II appliances.
- Double shell case provides sealing protection from dust and moisture.
- International standard panel cut-out.
- Horsepower rated.
- Standard actuator markings optional.

## SPECIFICATIONS

|                                     |                                                                                                                                                                                                                                                 |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings:</b>             | ON OFF & ON - ON models; 10(4)A 250VAC T85°C - 10A 125VAC, 6A 250VAC T65°C.<br>OFF MOM models; 4(2)A 250VAC T85°C <sub>μ</sub> - 4A 1/10HP 125-250VAC T65°C.<br>ON OFF ON models; 6(2)A 250VAC T85°C <sub>μ</sub> - 6A 1/8 HP 125-250VAC T65°C. |
| <b>Initial contact resistance:</b>  | 20 milliohms max.                                                                                                                                                                                                                               |
| <b>Insulation resistance:</b>       | 1000 megohms min.                                                                                                                                                                                                                               |
| <b>Dielectric strength:</b>         | functions 1 and 6; 2500 V rms between terminals<br>Function 9; 1500 V rms between terminals                                                                                                                                                     |
| <b>Electrical life:</b>             | 10,000 cycles min. at full load                                                                                                                                                                                                                 |
| <b>Mechanical life:</b>             | 50,000 cycles min.                                                                                                                                                                                                                              |
| <b>Operating temperature range:</b> | - 20°C to + 85°C                                                                                                                                                                                                                                |

## MATERIALS

|                                    |                                              |
|------------------------------------|----------------------------------------------|
| <b>Contacts &amp; Terminals:</b>   | Silver contacts with silver plated terminals |
| <b>Actuator, Case &amp; Frame:</b> | PA6/6                                        |

## AGENCY RECOGNITION



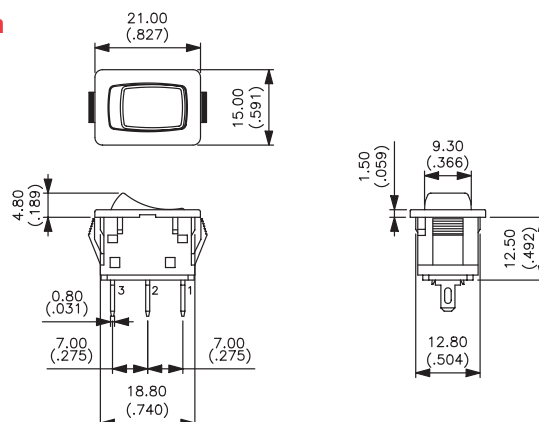
UL & VDE (CSA pending).

## Solder lug terminals & silver contacts without illumination



| MODEL NO.     | CIRCUIT   |
|---------------|-----------|
| FMC12A2200000 | ON - OFF  |
| FMC32A2200000 | OFF - MOM |
| FMC62A2200000 | ON - ON   |
| FMC92A2200000 | ON OFF ON |

Above models have black bezel & actuator.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

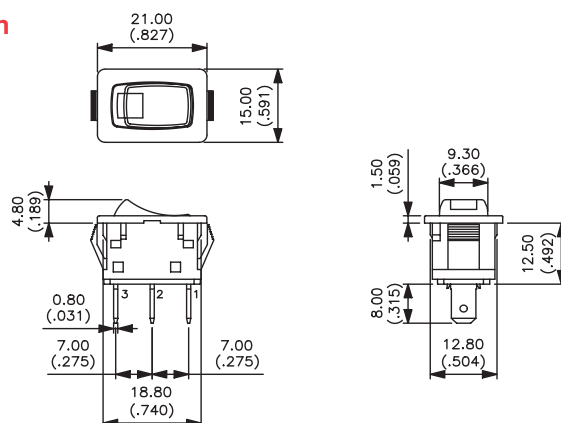
# New! FM SERIES ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

## Quick-connect terminals & silver contacts with illumination



| MODEL NO.     | CIRCUIT  |
|---------------|----------|
| FML18A276A000 | ON - OFF |

Above models have white actuator, black case and frame, red lens and 220 volt neon lamp.



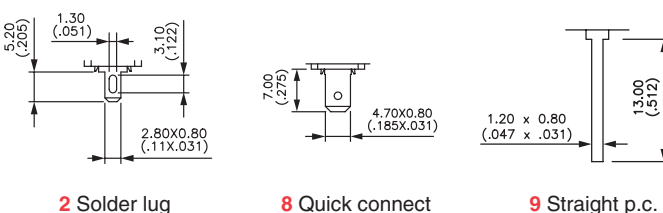
**Additional ordering information:** Commonly ordered models are shown above with complete model numbers and specifications. Below is an order format that enables you to 'build your own switch' and specify the correct switch model number by simply selecting from all available options shown and filling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

## 'BUILD YOUR OWN SWITCH' ORDER FORMAT

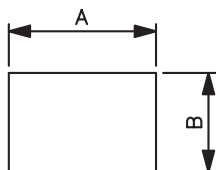
Fill in boxes with selections shown for complete model number.  
Allowable options are shown below each respective box.

| Series                                                                                                                                                                                                                                            | Rocker shape                                   | Electrical functions                                                                                                                         | Terminals                                                                                                      | Contact material                                                                                                                                                                                                                                                                                             | Bezel color                       | Rocker color                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------|
| F M                                                                                                                                                                                                                                               | <input type="checkbox"/>                       | <input type="checkbox"/>                                                                                                                     | <input type="checkbox"/>                                                                                       | A                                                                                                                                                                                                                                                                                                            | 2                                 | <input type="checkbox"/>                                                                         |
|                                                                                                                                                                                                                                                   | C Concave (non-lighted)<br>L Concave (lighted) | *1 ON - OFF<br>3 OFF - MOM<br>6 ON - ON<br>9 ON OFF ON<br>*- available for lighted models only.                                              | 2 Solder lug<br>*8 Quick-connect<br>9 Straight p.c. (functions 1 & 6)<br>*- available for lighted models only. | Silver                                                                                                                                                                                                                                                                                                       | Black<br>Other colors on request. | 1 Blue<br>2 Black (std.)<br>3 Green<br>4 Gray<br>5 Yellow<br>6 Red (std.)<br>7 White<br>9 Orange |
| <p>Example of completely specified model number:</p> <p><b>FML18A226A001</b></p>                                                                                                                                                                  |                                                |                                                                                                                                              |                                                                                                                |                                                                                                                                                                                                                                                                                                              |                                   |                                                                                                  |
| <p>Lens color</p> <p><input type="checkbox"/></p> <p>0 No lens (for non-illuminated models)<br/>*1 Blue<br/>*3 Green<br/>5 Yellow<br/>6 Red<br/>8 Translucent<br/>9 Orange<br/>*- With fluorescent lamp - for other colors, specify neon lamp</p> |                                                | <p>Lamp</p> <p><input type="checkbox"/></p> <p>0 No lamp<br/>A 220V neon<br/>B 220V fluorescent<br/>Note: limiting resistor is supplied.</p> |                                                                                                                | <p>Marking</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> No mkg.<br/>*0 0 1 <input type="checkbox"/> 0<br/>0 0 2 <input type="checkbox"/> -<br/>0 0 3 <input type="checkbox"/> I<br/>0 0 4 <input type="checkbox"/> I 0 II<br/>*- available for lighted models only.</p> |                                   |                                                                                                  |

## TERMINALS

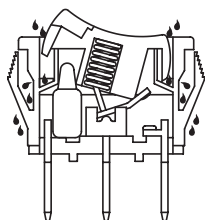


## PANEL CUT-OUTS



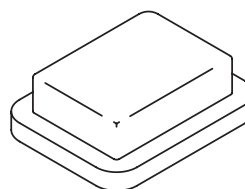
| pnl. tk'ness. | A +0, -.004 | B +.006, -.0 |
|---------------|-------------|--------------|
| .029-.049"    | .756"       | .508"        |
| .050-.078"    | .764"       | .508"        |
| .079-.118"    | .780"       | .508"        |

## CROSS SECTION



The double shell case is designed to conduct moisture drops outside the switch case and away from the contact mechanism.

## SEALING BOOT (Order separately)



U5720

This translucent PVC Sealing Boot provides the best protection against entry of sand, ice or splashing water into the switch.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

B

# New! MR SERIES SNAP-IN ROCKER SWITCHES

## FEATURES

- Cost effective illuminated or non-illuminated models.
- Double pole maintained action models.
- Actuator and case color selections.
- Standard actuator marking options.

## SPECIFICATIONS

|                                     |                                                                                                                                              |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings:</b>             | 10A 125VAC (UL), 8A 250VAC 1/4HP (UL), 12A 125VAC (CSA)<br>10A 250VAC 1/4HP (CSA), 8(4)A 250V~ μ T86 (VDE, SEMCO, NEMCO, DEMCO, FIMCO, SEV). |
| <b>Initial contact resistance:</b>  | 20 milliohms max.                                                                                                                            |
| <b>Insulation resistance:</b>       | 100 megohms min. at 500 V                                                                                                                    |
| <b>Dielectric strength:</b>         | 1000 VAC for 1 minute                                                                                                                        |
| <b>Electrical life:</b>             | 10,000 cycles at full load                                                                                                                   |
| <b>Operating temperature range:</b> | -20°C to 80°C                                                                                                                                |

## MATERIALS

|                   |                              |               |                      |
|-------------------|------------------------------|---------------|----------------------|
| <b>Contacts:</b>  | Silver cadmium alloy         | <b>Lamps:</b> | Neon or fluorescent. |
| <b>Terminals:</b> | Silver plated copper alloy   |               |                      |
| <b>Actuator:</b>  | Nylon type 66 (UL94V-2 min.) |               |                      |
| <b>Case:</b>      | Nylon type 66 (UL94V-2 min.) |               |                      |

## AGENCY RECOGNITION



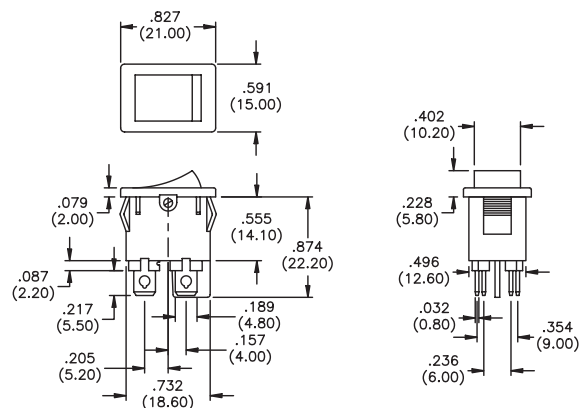
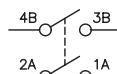
UL, CSA, VDE, SEMKO, NEMKO, DEMKO, FEMKO, & SEV. Models are supplied with agency markings.

## Quick connect terminals - non-illuminated

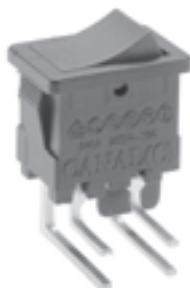


| MODEL NO.  | CIRCUIT |
|------------|---------|
| MR210C2NBB | ON OFF  |

Above model has black actuator & case.

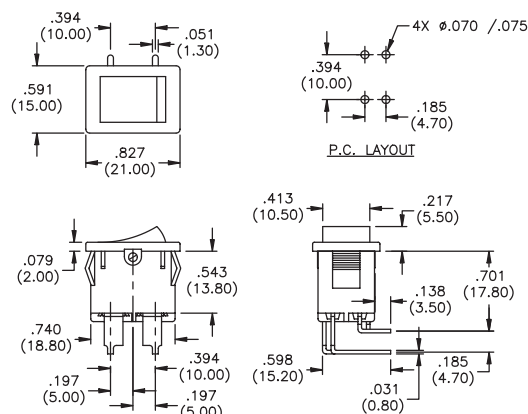
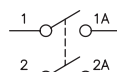


## Right angle p.c. terminals - non-illuminated



| MODEL NO.  | CIRCUIT |
|------------|---------|
| MR212C2NBB | ON OFF  |

Above model has black actuator & case.



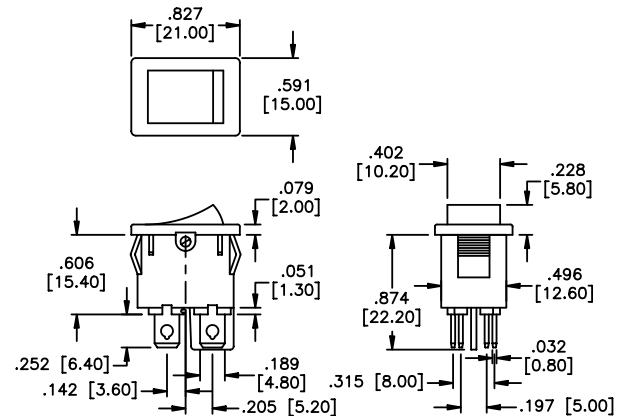
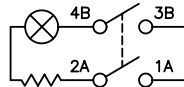
# New! MR SERIES SNAP-IN ROCKER SWITCHES

## Quick connect terminals - illuminated



| MODEL NO.  | CIRCUIT |
|------------|---------|
| MR210C2LB0 | ON OFF  |

Above model has black actuator & case.



**Additional ordering information:** Commonly ordered models are shown above 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.

### Model Structure:

| Series     | Number of poles | Electrical functions | Terminals                                                                                          | Actuator shape |
|------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------|----------------|
| <b>M R</b> | <b>2</b>        | <b>1</b>             | <b>0</b>                                                                                           | <b>C</b>       |
|            | Double pole     | ON OFF               | <b>0</b> Quick connect<br><b>1</b> Solder lug<br><b>2</b> Rt. angle p.c.<br><b>3</b> Straight p.c. | Curved         |

### Options:

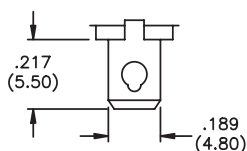
| Actuator marking                                                                         | Illumination                                                                                                              | Case color                                        | Actuator color                                                                                         |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>1</b> HI LO<br><b>2</b> No marking<br><b>3</b> ON OFF<br><b>4</b> O I<br><b>5</b> O — | <b>N</b> No illum.<br><b>L</b> Illuminated<br>Note: illumination available with Green, Orange or Red Actuator color only. | <b>B</b> Black<br><b>W</b> White<br><b>G</b> Gray | <b>B</b> Black<br><b>G</b> Green<br><b>O</b> Orange<br><b>R</b> Red<br><b>W</b> White<br><b>Y</b> Gray |

Example of completely specified model number:

**MR210C2NBB**

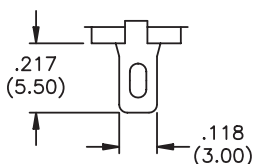
### TERMINALS

#### QUICK-CONNECT



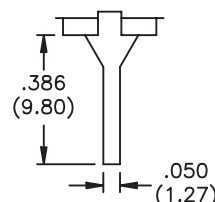
**0**

#### SOLDER LUG



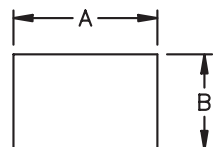
**1**

#### STRAIGHT P.C.



**3**

### PANEL CUT-OUTS



| pnl. tk'nss. | A +0, -.004 | B +0, -.004 |
|--------------|-------------|-------------|
| .029-.049"   | .752"       | .508"       |
| .050-.078"   | .756"       | .508"       |
| .079-.118"   | .768"       | .508"       |

# New! B SERIES SNAP-IN ROCKER SWITCHES

B

## FEATURES

- Cost effective illuminated or non-illuminated models.
- Single pole and double pole maintained action models.
- Actuator and case color selections.
- Standard actuator marking options.

## SPECIFICATIONS

|                                     |                                            |
|-------------------------------------|--------------------------------------------|
| <b>Contact ratings:</b>             | 10A 250VAC (UL/CSA)<br>15A 125VAC (UL/CSA) |
| <b>Initial contact resistance:</b>  | 20 milliohms max.                          |
| <b>Insulation resistance:</b>       | 100 megohms min. at 500 V                  |
| <b>Dielectric strength:</b>         | 1000 VAC for 1 minute                      |
| <b>Electrical life:</b>             | 6000 cycles at full load                   |
| <b>Operating temperature range:</b> | -20°C to 85°C                              |

## MATERIALS

|                   |                                   |                                    |
|-------------------|-----------------------------------|------------------------------------|
| <b>Contacts:</b>  | Copper alloy                      | <b>Lamps:</b> Neon or fluorescent. |
| <b>Terminals:</b> | Silver or tin plated copper alloy |                                    |
| <b>Actuator:</b>  | Nylon (UL94V-2 min.)              |                                    |
| <b>Case:</b>      | Nylon (UL94V-2 min.)              |                                    |

## AGENCY RECOGNITION



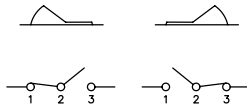
UL & CSA. Models are supplied with agency markings.

### Single pole - non-illuminated - quick connect terminals

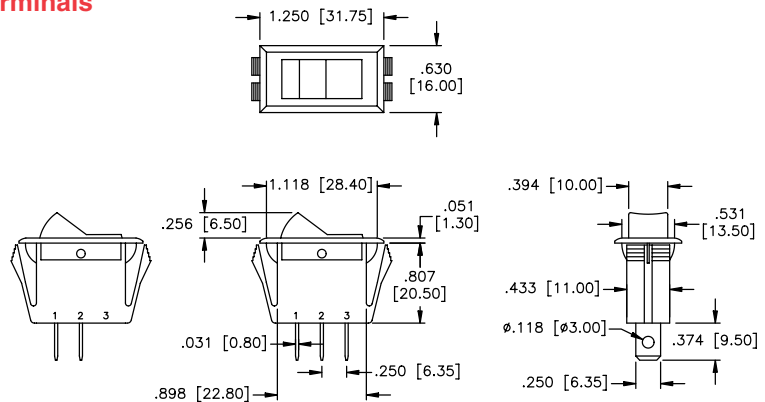


| MODEL NO.    | CIRCUIT     |
|--------------|-------------|
| B120R2NBB0NN | ON NONE ON  |
| B160R2NBB0NN | ON NONE OFF |

Above models have black actuator.



Max. panel thickness: .083 [2.10]

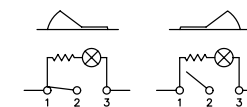


### Single pole - illuminated - quick connect terminals

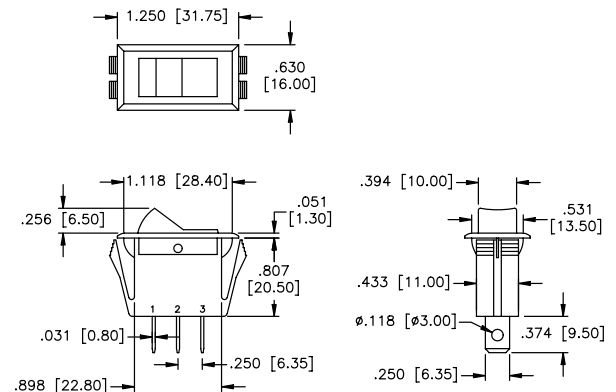


| MODEL NO.    | CIRCUIT     |
|--------------|-------------|
| B120R2LBB1NN | ON NONE ON  |
| B160R2LBB1NN | ON NONE OFF |

Above models have black actuator.



Max. panel thickness: .083 [2.10]



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

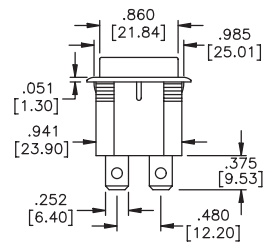
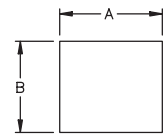
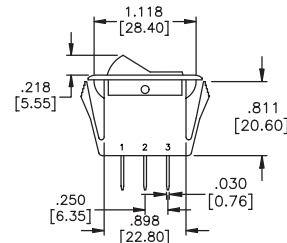
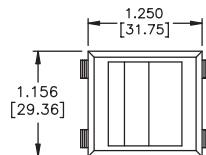
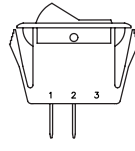
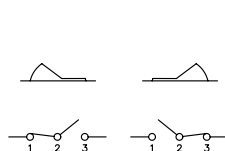
# New! B SERIES SNAP-IN ROCKER SWITCHES

## Double pole - non-illuminated - quick connect terminals



| MODEL NO.    | CIRCUIT     |
|--------------|-------------|
| B260R2NBB0NN | ON NONE OFF |

Above models have black actuator.



**Additional ordering information:** Commonly ordered models are shown above 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.

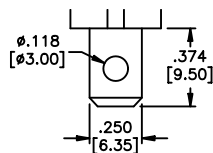
Example of completely specified model number:  
**B160R2NBB0BN**

|                                                                                                              |                                                  |                                                                                     |                                                                                       |                                     |                                                  |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------|
| <b>Series</b>                                                                                                | <b>Number of poles</b>                           | <b>Electrical functions</b>                                                         | <b>Terminals</b>                                                                      | <b>Actuator type</b>                | <b>Actuator marking</b>                          |
| <input type="text" value="B"/>                                                                               | <input type="text" value="2"/>                   | <input type="text" value="6"/>                                                      | <input type="text" value="0"/>                                                        | <input type="text" value="R"/>      | <input type="text" value=""/>                    |
|                                                                                                              | 1 Single pole<br>2 Double pole                   | 2 ON NONE ON*<br>6 ON OFF<br>*-Not available with double pole                       | Quick connect                                                                         | Rocker                              | 1 HI LO<br>2 No marking<br>3 ON OFF<br>4 O —     |
| <b>Illumination</b>                                                                                          | <b>Case color</b>                                | <b>Actuator color</b>                                                               | <b>Lamp position</b>                                                                  | <b>Terminal bending</b>             | <b>Case marking</b>                              |
| <input type="text" value="N"/>                                                                               | <input type="text" value="A"/>                   | <input type="text" value="A"/>                                                      | <input type="text" value="0"/>                                                        | <input type="text" value="N"/>      | <input type="text" value="N"/>                   |
| N No illum.<br>L Illuminated<br>Note: illumination available only with Green, Orange or Red Actuator colors. | A Gray<br>B Black<br>C Brown<br>R Red<br>W White | A Gray<br>B Black<br>C Brown<br>G Green<br>O Orange<br>R Red<br>W White<br>Y Yellow | 0 No lamp<br>1 Solder to term. 1<br>2 Solder to term. 2<br>Note 1 & 2 have neon lamp. | N No bending<br>B Bend terms. 1 & 3 | N No marking<br>M "●" printing (consult factory) |

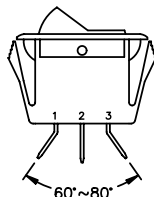
### QUICK-CONNECT TERMINAL

### TERMINAL BENDING

### PANEL CUT-OUTS



0



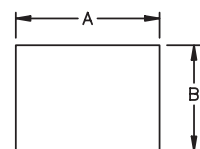
B

#### SINGLE POLE

| pnl. tk'ness. | A +0, -.004 | B +0, -.004 |
|---------------|-------------|-------------|
| .029-.049"    | .752"       | .508"       |
| .050-.078"    | .756"       | .508"       |
| .079-.118"    | .768"       | .508"       |

#### DOUBLE POLE

| pnl. tk'ness. | A +0, -.004 | B +.006, -0 |
|---------------|-------------|-------------|
| .029-.049"    | 1.126"      | 1.000"      |
| .050-.078"    | 1.134"      | 1.000"      |
| .079-.118"    | 1.150"      | 1.000"      |



# New! HB SERIES SNAP-IN ROCKER SWITCHES

B

## FEATURES

- Soft light or standard illuminated and non-illuminated models.
- Single pole maintained action models with splash protection per IP42.
- Actuator and case color selections.
- Standard actuator marking options with optional visible (visi) rocker 'ON' indication.

## SPECIFICATIONS

|                                     |                                                                                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings:</b>             | 20A 125VAC or 16A 250VAC (UL/CSA) 3/4 HP 125VAC or 250VAC (UL/CSA)<br>6A 125VL (UL) 16(4)A 250VAC~ μT85 (VDE, SEMCO, DEMCO, NEMCO, FEMKO, SEV) |
| <b>Initial contact resistance:</b>  | 20 milliohms max.                                                                                                                              |
| <b>Insulation resistance:</b>       | 100 megohms min. at 500 V                                                                                                                      |
| <b>Dielectric strength:</b>         | 1000 VAC for 1 minute                                                                                                                          |
| <b>Electrical life:</b>             | 10,000 cycles at full load                                                                                                                     |
| <b>Operating temperature range:</b> | -20°C to 85°C                                                                                                                                  |

## MATERIALS

|                   |                                     |               |                      |
|-------------------|-------------------------------------|---------------|----------------------|
| <b>Contacts:</b>  | Silver cadmium alloy                | <b>Lamps:</b> | Neon or fluorescent. |
| <b>Terminals:</b> | Silver plated copper                |               |                      |
| <b>Actuator:</b>  | Nylon, type 66 or PC (UL94V-2 min.) |               |                      |
| <b>Case:</b>      | Nylon, type 66 (UL94V-2 min.)       |               |                      |

## AGENCY RECOGNITION



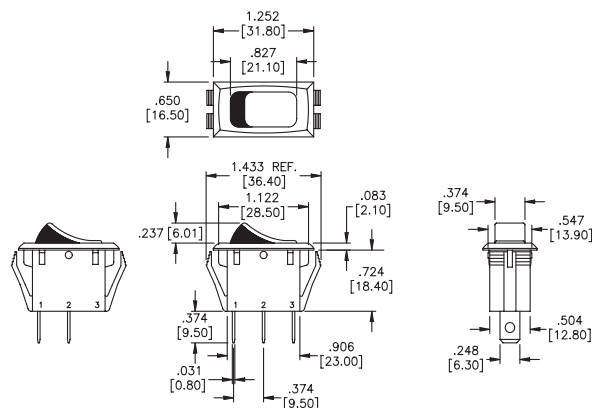
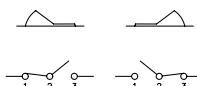
UL, CSA, VDE, SEMKO, NEMKO, DEMKO, FEMKO, & SEV. Models are supplied with agency markings.

## Quick connect terminals - non-illuminated - with visi rocker



| MODEL NO.    | CIRCUIT   |
|--------------|-----------|
| HB110C2NBBRW | ON OFF    |
| HB120C2NBBRW | ON ON     |
| HB130C2NBBRW | ON OFF ON |

Above models have black actuator.



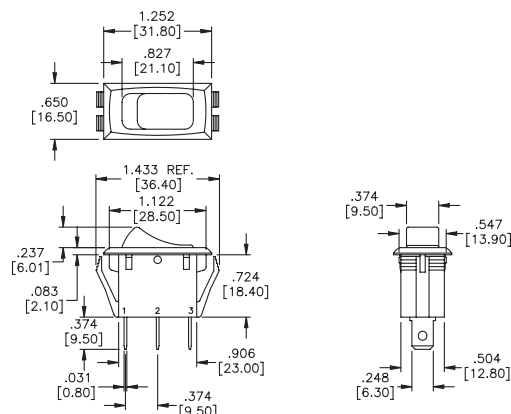
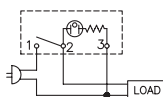
Max. panel thickness: .083 [2.10]

## Quick connect terminals - soft illumination - without visi rocker



| MODEL NO.   | CIRCUIT   |
|-------------|-----------|
| HB110C2SBBN | ON OFF    |
| HB120C2SBBN | ON ON     |
| HB130C2SBBN | ON OFF ON |

Above models have black actuator.



Max. panel thickness: .083 [2.10]

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# New! HB SERIES SNAP-IN ROCKER SWITCHES

**Additional ordering information:** Commonly ordered models are shown above 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 complete model number.

Allowable options are shown below each respective box.

Note 'NONE' indicates box may be left empty.

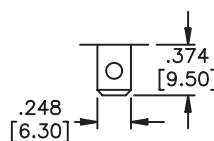
| Series                                                        | Number of poles                | Electrical functions               | Terminals                      | Actuator type                  | Actuator marking                                                                          |
|---------------------------------------------------------------|--------------------------------|------------------------------------|--------------------------------|--------------------------------|-------------------------------------------------------------------------------------------|
| <input type="text" value="H"/> <input type="text" value="B"/> | <input type="text" value="1"/> | <input type="text"/>               | <input type="text" value="0"/> | <input type="text" value="C"/> | <input type="text"/>                                                                      |
|                                                               | Single pole                    | 1 ON OFF<br>2 ON ON<br>3 ON OFF ON | Quick connect                  | Curved rocker                  | 1 HI LO<br>2 No marking<br>3 ON OFF (vertical)<br>4 O I<br>5 O —<br>6 ON OFF (horizontal) |

| Illumination                                                                                                                                                              | Case color                                                                          | Actuator color                                                                                                                              | Actuator style                                                                                           | Sealing                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="text"/>                                                                                                                                                      | <input type="text"/>                                                                | <input type="text"/>                                                                                                                        | <input type="text"/>                                                                                     | <input type="text"/>                                                                                                                                                                           |
| <b>N</b> No illum.<br><b>L</b> Illuminated<br><b>S</b> Soft lighting<br>Note: illumination available only on ON OFF function & with Green, Orange or Red Actuator colors. | <b>A</b> Gray<br><b>B</b> Black<br><b>C</b> Brown<br><b>R</b> Red<br><b>W</b> White | <b>A</b> Gray<br><b>B</b> Black<br><b>C</b> Brown<br><b>G</b> Green<br><b>O</b> Orange<br><b>R</b> Red<br><b>W</b> White<br><b>Y</b> Yellow | <b>R</b> Red (visi rocker)<br><b>N</b> No visi rocker<br>Note: <b>R</b> not available with illumination. | <b>(NONE)</b><br><b>W</b> Splash protected -case is designed to conduct moisture drops outside the switch case and away from the contact mechanism (available on non-illuminated models only). |

Example of completely specified model number:  
**HB110C2NBBRW**

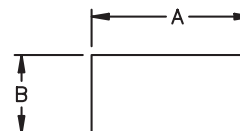
### TERMINALS

#### QUICK-CONNECT



0

### PANEL CUT-OUTS



| pnl. tk'ness. | A +0, -.004 | B +0, -.004 |
|---------------|-------------|-------------|
| .029-.049"    | 1.126"      | .539"       |
| .050-.078"    | 1.134"      | .539"       |
| .079-.118"    | 1.150"      | .539"       |

## New! KG SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

B



### FEATURES

- Designed for safety of operation under extreme conditions.
- Ideal for off-highway vehicle applications.
- Protected actuator sealed to IP 65.
- Panel mounting SPDT & DPDT models.
- Highly visible actuator symbols, laser or hot die stamped with optional backlighting.

### ELECTRICAL & MECHANICAL SPECIFICATIONS

|                                           |                                                                                                                                                                                                           |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact ratings (resistive loads):</b> | ON-OFF and ON-ON functions: 15A 12 VDC, 10A 24VDC, 15A 250VAC max.<br>10mA 14VDC min.<br>ON-ON-ON function: 10A 12VDC, 5A 24VDC, 10A 250VAC max.<br>Other functions: 10A 12VDC, 8A 24VDC, 10A 250VAC max. |
| <b>Initial contact resistance:</b>        | 10 milliohms max. at 1A 2VDC                                                                                                                                                                              |
| <b>Insulation resistance:</b>             | 1000 megohms min. at 500 VDC                                                                                                                                                                              |
| <b>Dielectric strength:</b>               | 2000 V rms min. - between terminals                                                                                                                                                                       |
| <b>Electrical life:</b>                   | 10,000 cycles min. at full load                                                                                                                                                                           |
| <b>Mechanical life:</b>                   | 2 position models; 100,000 cycles min. 3 position models; 30,000 cycles min.                                                                                                                              |

### ENVIRONMENTAL SPECIFICATIONS

|                                     |                                                                          |
|-------------------------------------|--------------------------------------------------------------------------|
| <b>Operating temperature range:</b> | 2 position models; -40°C to +85°C      3 position models; -10°C to +65°C |
| <b>Degree of protection:</b>        | IP65                                                                     |
| <b>Shock resistance:</b>            | 100g per IEC 512-4, test 6c                                              |
| <b>Vibration resistance:</b>        | 10-500 Hz - 10g per IEC 512-4, test 6d                                   |
| <b>Salt Spray resistance:</b>       | 96 hours per IEC 512-6, test 11f                                         |
| <b>Moisture resistance:</b>         | 56 days per IEC 68-2-3                                                   |

### MATERIALS

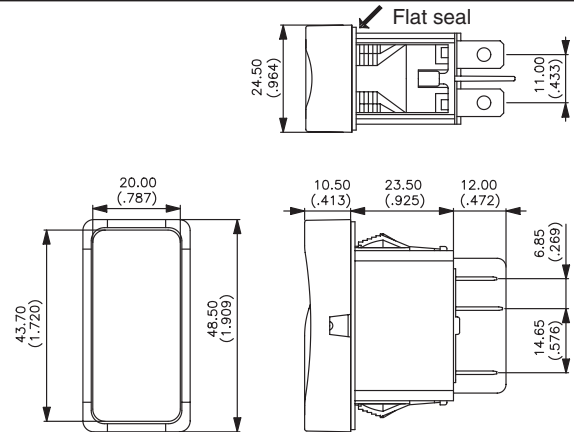
|                        |                       |
|------------------------|-----------------------|
| <b>Contacts:</b>       | Silver                |
| <b>Terminals:</b>      | Silver plated brass   |
| <b>Case and Bezel:</b> | Thermoplastic UL94V-0 |
| <b>Actuator:</b>       | Thermoplastic UL94V-0 |
| <b>Lens:</b>           | Polycarbonate         |

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# New! KG SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

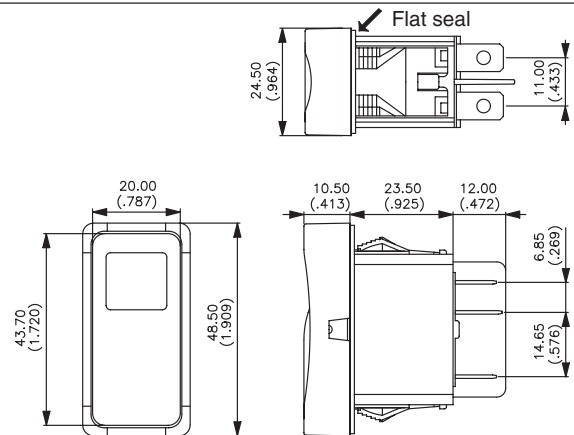
## Non-illuminated - black rocker - solder lug terminals

| SINGLE POLE          | DOUBLE POLE    | CIRCUIT |     |     |
|----------------------|----------------|---------|-----|-----|
| KG312A2XXA21XX       | KG412A2XXA21XX | ON      | -   | OFF |
| -                    | KG442A2XXA21XX | ON      | ON  | ON  |
| KG352A2XXA21XX       | KG452A2XXA21XX | MOM     | -   | ON  |
| KG362A2XXA21XX       | KG462A2XXA21XX | ON      | -   | ON  |
| KG372A2XXA21XX       | KG472A2XXA21XX | MOM     | OFF | MOM |
| KG382A2XXA21XX       | KG482A2XXA21XX | ON      | OFF | MOM |
| KG392A2XXA21XX       | KG492A2XXA21XX | ON      | OFF | ON  |
| Terminals connected: |                | 2-3     | 1-2 |     |
|                      |                | 5-6     | 4-5 |     |

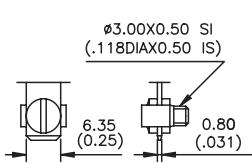


## Illuminated - black rocker - red lens - 12V red L.E.D.

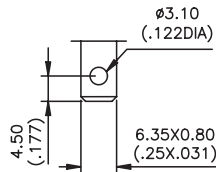
| SINGLE POLE          | DOUBLE POLE    | CIRCUIT |     |     |
|----------------------|----------------|---------|-----|-----|
| KG312A2DXA246X       | KG412A2DXA246X | ON      | -   | OFF |
| -                    | KG442A2DXA246X | ON      | ON  | ON  |
| KG352A2DXA246X       | KG452A2DXA246X | MOM     | -   | ON  |
| KG362A2DXA246X       | KG462A2DXA246X | ON      | -   | ON  |
| KG372A2DXA246X       | KG472A2DXA246X | MOM     | OFF | MOM |
| KG382A2DXA246X       | KG482A2DXA246X | ON      | OFF | MOM |
| KG392A2DXA246X       | KG492A2DXA246X | ON      | OFF | ON  |
| Terminals connected: |                | 2-3     | 1-2 |     |
|                      |                | 5-6     | 4-5 |     |



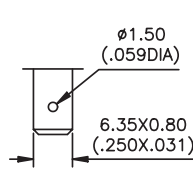
## TERMINALS



0 Screw



2 Solder lug/  
quick-connect

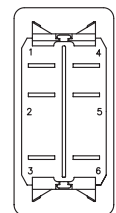


3 Quick-connect

Terminals 1 through 6 are marked on switch case

Side A: terminals 1 and 4  
Side B: terminals 3 and 6

Side A

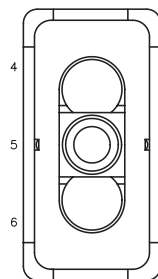


Side B

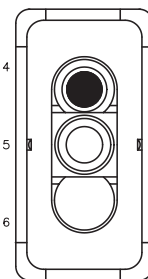
## LAMPS AND LAMP PLACEMENT

- X No lamp
- A 6V LED red
- B 6V LED green
- C 6V LED yellow
- D 12V LED red
- E 12V LED green
- F 12V LED yellow
- J 24V LED red
- K 24V LED green
- L 24V LED yellow
- M Neon 125V
- N Neon 250V
- O Filament 6V
- P Filament 12V
- R Filament 24V

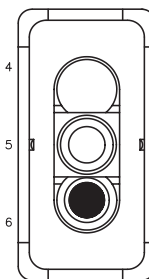
Side A



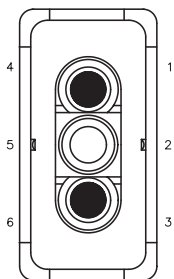
No lamps



1 lamp side A



1 lamp side B



2 lamps, 1 each  
side A & B

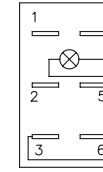
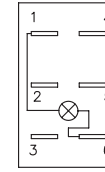
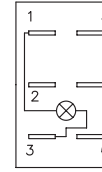
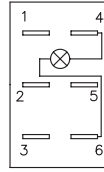
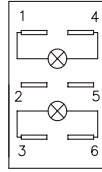
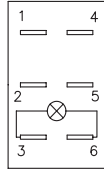
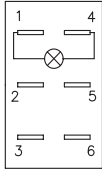
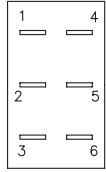
Side B

Note - Lamp location for function 1 models  
(ON - OFF) is always on side B

# New! KG SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

B

## LAMP WIRING

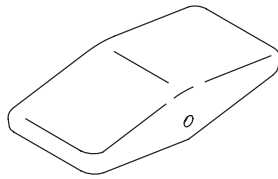


A (standard)

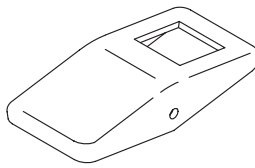
B

C

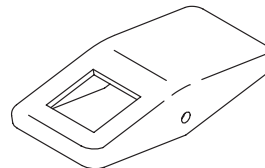
## ROCKER SHAPE AND COLORS



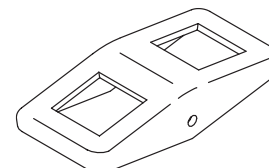
1 Full rocker



4 Opening on side A



6 Opening on side B



8 Opening on sides A and B

- 1 Blue  
2 Black  
3 Green  
4 Gray  
5 Yellow  
6 Red  
7 Ivory  
9 Orange
- Rocker colors

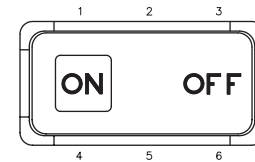
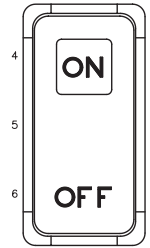
## ROCKER MARKING METHOD AND ORIENTATION

### MARKING METHODS

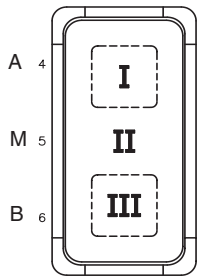
- L Laser  
C Hot stamping

- V Vertical orientation

- H Horizontal orientation



## STANDARD MARKING SYMBOLS



Code XX indicates no marking

Black rockers have white marking. Colored rockers have black marking. Other marking colors - consult factory,

| CODE | SYMBOL | DESCRIPTION |
|------|--------|-------------|
| 01   | ON     | -           |
| 02   | OFF    | -           |
| 03   | ○      | -           |
| 04   |        | -           |
| 05   |        | -           |
| 06   | STOP   | -           |
| 07   | A      | Stop        |
| 08   | M      | Motion      |
| 09   | △      | Up motion   |

| CODE | SYMBOL | DESCRIPTION     |
|------|--------|-----------------|
| 10   | ▽      | Down motion     |
| 11   | ☀      | Hot             |
| 12   | ✱      | Cold            |
| 13   | △      | Hazard lights   |
| 14   | ☀      | Travel lights   |
| 15   | ☀      | Driver lights   |
| 16   | ☀      | Revolving light |
| 17   | ☀      | Rear ventilator |
| 18   | ☀      | Heating         |

| CODE | SYMBOL | DESCRIPTION           |
|------|--------|-----------------------|
| 19   | ☀      | Door opening          |
| 20   | ☀      | Windshield defroster  |
| 21   | ☀      | Windshield wiper      |
| 22   | ☀      | Windshield washer     |
| 23   | ☀      | Ventilator            |
| 24   | ☀      | Side mirror defroster |
| 25   | ☀      | Restarting pump       |
| 26   | ☀      | Front fog lights      |
| 27   | ☀      | Rear fog lights       |

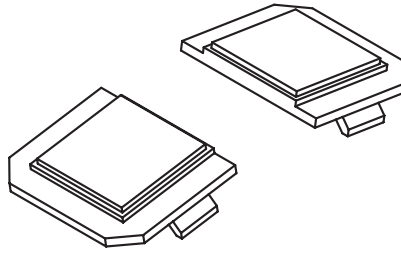
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

# New! KG SERIES - ILLUMINATED & NON-ILLUMINATED ROCKER SWITCHES

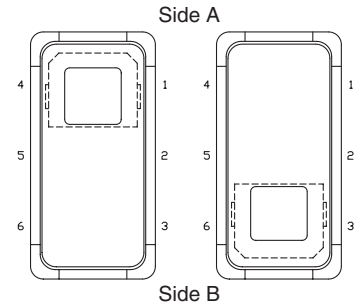
## LENS COLOR AND PLACEMENT

- X** No lens  
**1** Blue  
**3** Green  
**6** Red  
**9** Orange  
**B** White  
**T** Translucent

Lens colors



Lenses



Side B

Fill in boxes with selections shown below for complete model number. Allowable options are shown below each respective box.  
**Note: All 22 boxes below must be filled in with one exception - if no marking is required, do not use the last 8 boxes.**

## 'BUILD YOUR OWN SWITCH' ORDER FORMAT

| Series            | Number of poles                              | Electrical functions                                                                                                                                                                                                                              | Terminals                                                                                        | Contact material | Bezel       | Lamp(s) & placement<br>Side A Side B                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | See Lamps & lamp placement on prior page. |
|-------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>K</b> <b>G</b> |                                              |                                                                                                                                                                                                                                                   |                                                                                                  | <b>A</b>         | <b>2</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                           |
|                   | <b>3</b> Single pole<br><b>4</b> Double pole | <b>1</b> ON - OFF<br><b>4*</b> ON ON ON<br><b>5</b> MOM - ON<br><b>6</b> ON - ON<br><b>7</b> MOM OFF MOM<br><b>8</b> ON OFF MOM<br><b>9</b> ON OFF ON<br>* - Single pole in double pole case. Specify for double pole only - see schematic below. | <b>0</b> Screw & clamp<br><b>2</b> Solder lug/quick-connect<br><b>3</b> Normalized quick-connect | Silver           | Color black | <b>X</b> <b>X</b> No lamp<br><b>A</b> <b>A</b> 6V LED red<br><b>B</b> <b>B</b> 6V LED green<br><b>C</b> <b>C</b> 6V LED yellow<br><b>D</b> <b>D</b> 12V LED red<br><b>E</b> <b>E</b> 12V LED green<br><b>F</b> <b>F</b> 12V LED yellow<br><b>J</b> <b>J</b> 24V LED red<br><b>K</b> <b>K</b> 24V LED green<br><b>L</b> <b>L</b> 24V LED yellow<br><b>M</b> <b>M</b> Neon 125V<br><b>N</b> <b>N</b> Neon 250V<br><b>O</b> <b>O</b> Filament 6V<br><b>P</b> <b>P</b> Filament 12V<br><b>R</b> <b>R</b> Filament 24V |                                           |

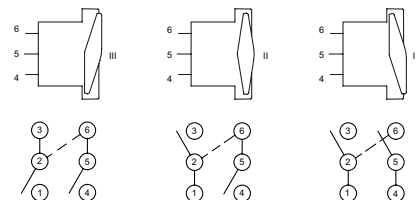
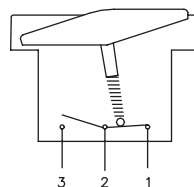
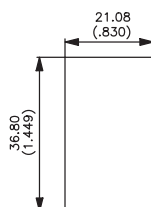
| Lamp wiring                                                                   | Rocker color                                                                                                                               | Rocker shape                                                                                                                             | Lens color & placement<br>side A side B                                                                                                                                                         | Marking method & orientation                                                                                                                          | Marking location<br>side A Middle side B                  |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
|                                                                               |                                                                                                                                            |                                                                                                                                          |                                                                                                                                                                                                 |                                                                                                                                                       |                                                           |
| <b>A</b> (Standard)<br><b>B</b><br><b>C</b><br>See Lamp Wiring on prior page. | <b>1</b> Blue<br><b>2</b> Black<br><b>3</b> Green<br><b>4</b> Gray<br><b>5</b> Yellow<br><b>6</b> Red<br><b>7</b> Ivory<br><b>9</b> Orange | <b>1</b> Full<br><b>4</b> Open side A<br><b>6</b> Open side B<br><b>8</b> Open sides A & B<br>See Rocker Shape and Colors on prior page. | <b>X</b> <b>X</b> No lens<br><b>1</b> <b>1</b> Blue<br><b>3</b> <b>3</b> Green<br><b>6</b> <b>6</b> Red<br><b>9</b> <b>9</b> Orange<br><b>B</b> <b>B</b> White<br><b>T</b> <b>T</b> Translucent | <b>L</b> <b>V</b> Laser, vertical<br><b>L</b> <b>H</b> Laser, horizontal<br><b>C</b> <b>V</b> Hot stamp, vert.<br><b>C</b> <b>H</b> Hot stamp, horiz. | Select from Standard Marking Symbols table on prior page. |

If marking is required - fill in 8 boxes below. if no marking is required, do not use these boxes.

Example of completely specified model number:  
**KG310A2ACA28TTLH13XX02**

## PANEL CUT-OUT, SWITCH CROSS-SECTION & FUNCTION 4 SCHEMATIC

Panel thickness:  
0.8 - 4.6mm  
(.031" - .181")  
Recommended thickness:  
2 - 3.5mm  
(.078" - .138")



**New!**

## H SERIES SNAP-IN ROCKER SWITCHES

B



### FEATURES

- Higher power load ratings.
- Single and double pole models with smooth action and tactile response.
- Bezels, actuators & lenses available in a wide range of colors.
- Unique double rocker design with integral illumination.
- .248" (6.3mm) solder lug/quick-connect terminals.
- Choice of 125 or 250 volt neon indicator lamp.
- Illuminated and non-illuminated models.

### SPECIFICATIONS

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Contact ratings:             | 16 amps (resistive) at 250VAC, 4 amps inductive at 250VAC |
| Electrical life:             | 10,000 operations min. at full load                       |
| Mechanical life:             | 100,000 operations                                        |
| Maximum working temperature: | +85°C                                                     |

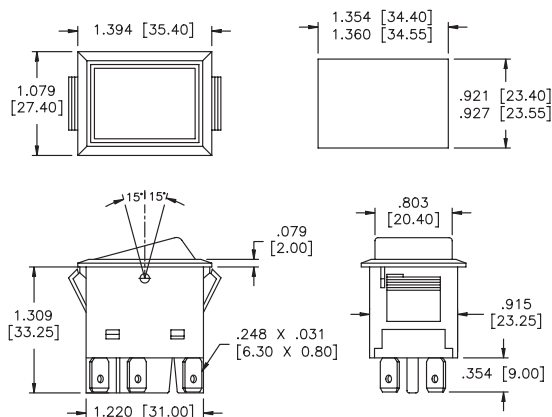
### MATERIALS

|            |                         |
|------------|-------------------------|
| Contacts:  | 90% silver, 10% cadmium |
| Terminals: | Silver plated brass     |
| Armature:  | Silver plated copper    |
| Actuator:  | Polycarbonate or ABS    |
| Body:      | Polyester               |
| Bezel:     | Polycarbonate           |
| Lens:      | Polycarbonate           |



| SINGLE<br>POLE<br>MODEL NO. | DOUBLE<br>POLE<br>MODEL NO. | CIRCUIT |
|-----------------------------|-----------------------------|---------|
| H11CG1R1                    | H21CG1R1                    | ON-OFF  |
| H12CG1R1                    | H22CG1R1                    | ON-ON   |

Above models have silk chrome actuator, gun metal bezel, red lens and 125V neon lamp with resistor wired in series (see wiring diagrams). See order guide for other models.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

**New!**

# H SERIES SNAP-IN ROCKER SWITCHES

## 'BUILD YOUR OWN SWITCH' ORDER GUIDE

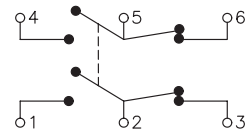
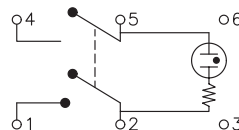
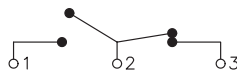
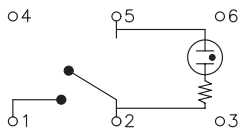
Fill in boxes with selections shown for complete model number.  
Allowable options are shown below each respective box.  
Note 'NONE' indicates box may be left empty.

| Series   | Number of poles      | Electrical function                               | Actuator color                                                           | Bezel color                       | Terminal type                | Lens color                                                        | Lamp voltage                                           |
|----------|----------------------|---------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------|------------------------------|-------------------------------------------------------------------|--------------------------------------------------------|
| <b>H</b> | <input type="text"/> | <input type="text"/>                              | <input type="text"/>                                                     | <input type="text"/>              | <input type="text"/>         | <input type="text"/>                                              | <input type="text"/>                                   |
|          | 1 Single<br>2 Double | 1 ON/OFF<br>2 ON/ON<br>Other functions on request | A White<br>B Black<br>C Chrome<br>G Gun Metal<br>Other colors on request | A White<br>B Black<br>G Gun Metal | Solder lug/<br>Quick-connect | NONE<br>A Amber<br>G Green<br>R Red<br>Illuminated switches only. | NONE<br>1 125V<br>2 250V<br>Illuminated switches only. |

Example of completely specified model number:

**H11BB1R1**

## WIRING DIAGRAMS



**Illuminated single pole    Non-illuminated single pole    Illuminated double pole    Non-illuminated double pole**

## PANEL CUT-OUT & MINIMUM RECOMMENDED SPACING FOR ADJACENT SWITCHES

