# SP series

Washable snap-action pushbutton switches

## DISTINCTIVE FEATURES

**Process sealed**
**Front and rear sealing**
**Process compatible (plain bushing models)**
**Wave solderable**
**Washable**

## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - gold plated brass contacts : 100 mA 30 VDC
  - silver or gold plated silver contacts : 1 A 30 VDC
- Initial contact resistance : 50 mΩ max.
- Insulation resistance : 1,000 MΩ min.
- Dielectric strength : 1,000 Vrms 50 Hz min.
- Electrical life : 60,000 cycles

## ENVIRONMENTAL SPECIFICATIONS

- Operating temperature : -20 °C to +85 °C (-4 °F to +185 °F)
- Storage temperature : -40 °C to +85 °C (-40 °F to +185 °F)
- Moisture : The insulating materials employed and the complete seal permit the switches to withstand a 56 days moisture test (IEC 68-2-3).
- Solderability : The switches are tested at 235°C according to IEC 68-2-20 after accelerated aging.

## GENERAL SPECIFICATIONS

- Torque : 0.25 Nm (.18 Ft.lb) applied to nut (threaded bushing)
- Total travel : 0.50 mm (.019)
- Mechanical strength : Terminals are strengthened by a bracket or a ground plate ensuring the rigidity of the switch on the board. Actuator strength is 10 N max.
- Soldering - thermal shock (plain bushing models only) : The switches are especially designed for flow soldering at 260 °C (500 °F) during 5 seconds owing to high temperature polymer parts.
- Iron soldering (threaded bushing models) : 300 °C (572 °F) max., 5 seconds max.

The company reserves the right to change specifications without notice.

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## MATERIALS

- Case and cover : UL94-V0, polyamide, glass filled or PES
- Actuator : polyamide, glass filled
- Contacts
  **0** : brass, gold plated
  **1** : silver
  **2** : silver, gold plated
- Terminal seal : epoxy

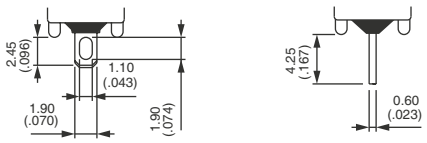
APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

## AGENCY APPROVAL

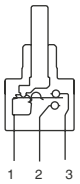
1 A 120 VAC

**Availability :** all models with silver or gold plated silver contacts.
**Marking :** to order switches marked UL , complete appropriate box of ordering format.

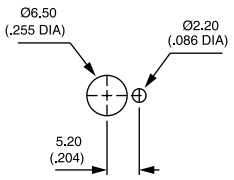
## TERMINALS




## ELECTRICAL FUNCTIONS




## PANEL CUT-OUT



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## BUILD YOUR PART NUMBER

### BASIC PART NUMBER

**SERIES**

SP

**NUMBER OF POLES**

| | |
|---|---|
| 3 | Single pole |
| 4 | Double pole |

**ELECTRICAL FUNCTION**

| | |
|---|---|
| 5 | ON - MOM |

**TERMINALS**

| | |
|---|---|
| P0 | Straight PC |
| Y0 | Straight PC and bracket mounting |
| W0 | Right angle, horizontal mounting |
| WW | Right angle, vertical mounting |
| S0 | Solder lug terminals, (threaded bushing) |

### OPTIONS

**CONTACT AND TERMINAL MATERIALS**

| | |
|---|---|
| 0 | Brass, gold plated |
| 1 | Silver |
| 2 | Silver, gold plated |

**PLUNGERS**

| | |
|---|---|
| 00 | Standard |
| 02 | Short |

**OPTIONS/APPROVAL**

| | |
|---|---|
| 00 | Standard model |
| 01 | UL marking on standard model |
| 02 | UL marking on threaded bushing model (SP only) |
| 76 | Short bushing for plunger 02 (SP only) |
| 77 | Threaded bushing |

**CAPS (MOUNTED)**

| | |
|---|---|
| 10 | Ø 5 (.196) |
| 20 | Ø 8 (.314) |
| 30 | Ø 9,4 (.370) |
| 40 | Ø 10 (.393) |
| 80 | Ø 15 (.590) |
| 70 | Square Height 4 (.157) |
| 50 | Square Height 6 (.236) |

## ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

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

**Mounting accessories :** Standard hardware supplied with all models with Ø 6.35 (1/4) threaded bushing : 2 hex nuts 8 mm (.314) across flats, 1 locking ring and 1 lockwasher. Standard and special hardware available is presented in the "Accessories" section of website.

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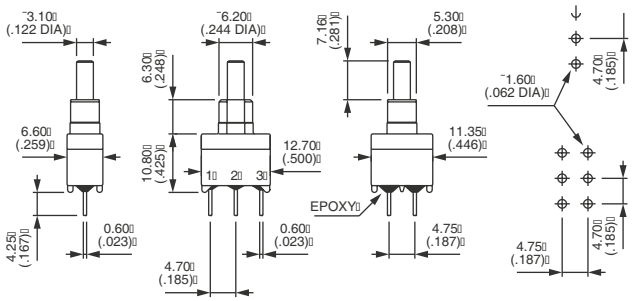
## PLAIN BUSHING -STRAIGHT PC TERMINALS

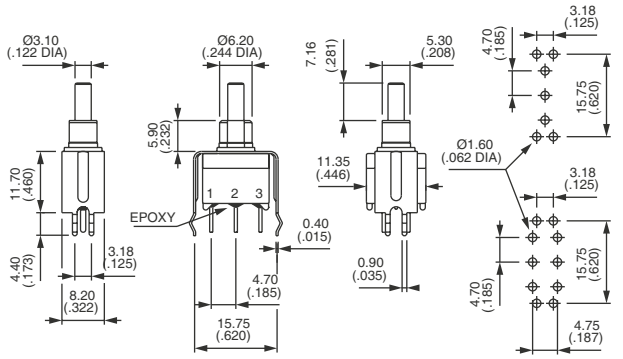
| | 1-3 | 1-2 |
|---|---|---|
| Single pole | | |
| SP35P0... 00 | ON | MOM |
| Double pole | | |
| SP45P0... 00 | ON | MOM |

Shown with standard plunger



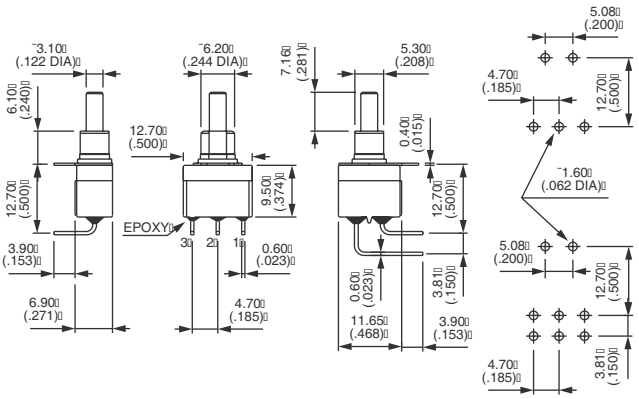

## PLAIN BUSHING - BRACKET MOUNTING

| | 1-3 | 1-2 |
|---|---|---|
| Single pole | | |
| SP35Y0... 00 | ON | MOM |
| Double pole | | |
| SP45Y0... 00 | ON | MOM |



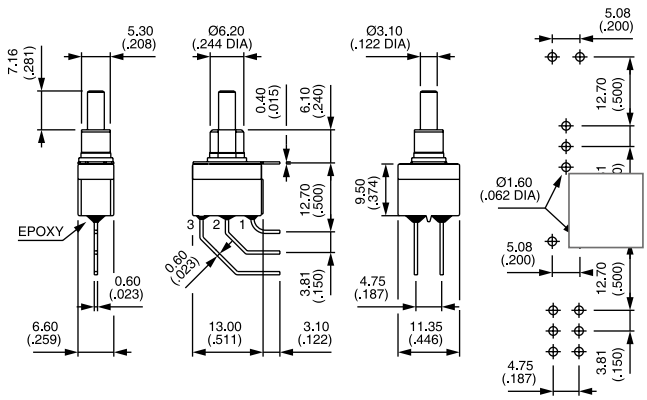

## PLAIN BUSHING -RIGHT ANGLE TERMINALS HORIZONTAL

| | 1-3 | 1-2 |
|---|---|---|
| Single pole | | |
| SP35W0... 00 | ON | MOM |
| Double pole | | |
| SP45W0... 00 | ON | MOM |




## PLAIN BUSHING - RIGHT ANGLE TERMINALS VERTICAL

| | 1-3 | 1-2 |
|---|---|---|
| Single pole | | |
| SP35WW... 00 | ON | MOM |
| Double pole | | |
| SP45WW... 00 | ON | MOM |



# SP series

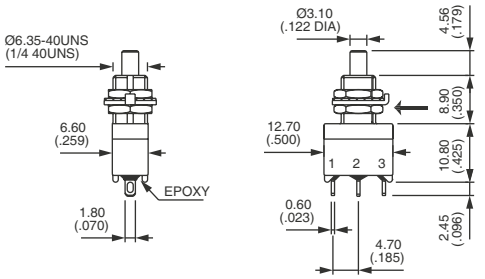
## Washable snap-action pushbutton switches

### THREADED BUSHING - SOLDER LUG TERMINALS

| | 1-3 | 1-2 |
|---|---|---|
| Single pole | | |
| SP35S0... 77 | ON | MOM |

Shown with standard plunger

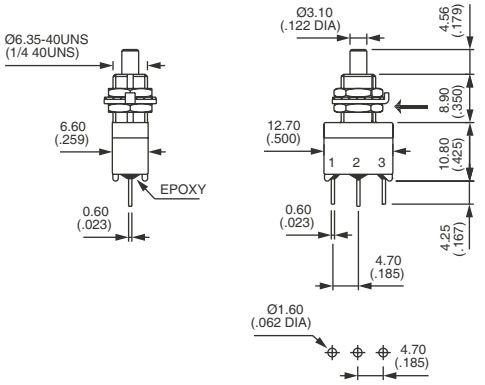
→ KEYWAY




### THREADED BUSHING - STRAIGHT PC TERMINALS

| | 1-3 | 1-2 |
|---|---|---|
| Single pole | | |
| SP35P0... 77 | ON | MOM |

→ KEYWAY




### CONTACT & TERMINAL MATERIALS

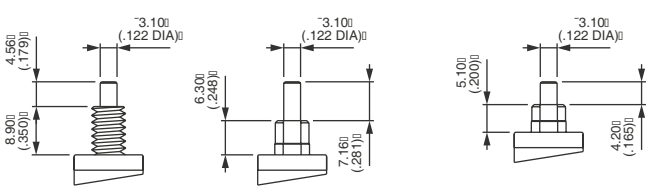
BASIC P/N

| | |
|---|---|
| 0 | Brass, gold plated (standard) |
| 1 | Silver |
| 2 | Silver, gold plated |

### PLUNGERS

BASIC P/N

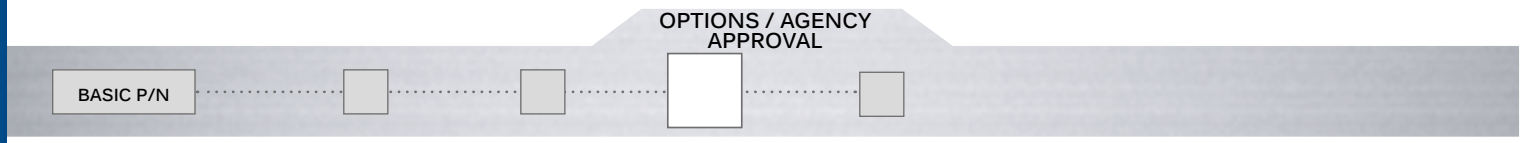
| | |
|---|---|
| 00 | Standard plunger |
| 02 | Short (for models with plain bushing, single pole only) Order with option 76 below. |



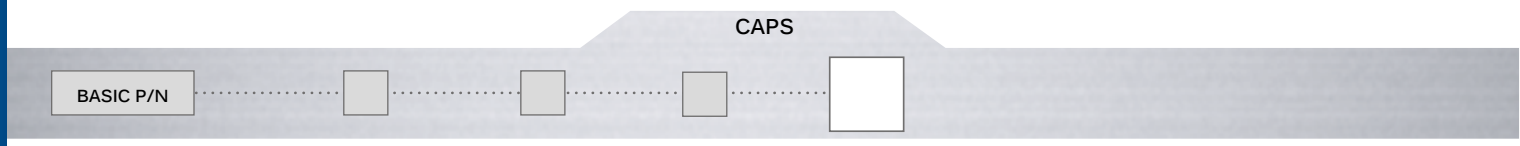

00 02

# SP series

## Washable snap-action pushbutton switches




| | |
|---|---|
| **00** | Standard model |
| **01** | UL marking for standard model |
| **02** | UL marking for threaded bushing model (single pole models only) |
| **76** | Short plain bushing for 02 plunger (single pole models only) |
| **77** | Threaded bushing (included in basic part numbers on previous page) |

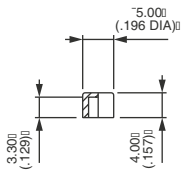



| | |
|---|---|
| **Blank** | Without cap |
| **10** | P/N U2400 |
| **20** | P/N U2510 |
| **30** | P/N U2130 |
| **40** | Standard - P/N U2900 |
| **50** | Square - P/N U2340. Not available with plunger 02 |
| **70** | Square - P/N U910 |
| **80** | P/N U3400. Not available with plunger 02 |

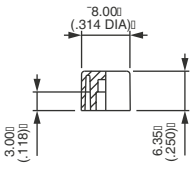
For cap colors, replace «**0**» with number :

| | |
|---|---|
| **1** | Blue |
| **1/4** | Dark blue |
| **2** | Black |
| **3** | Green |
| **4** | Grey |
| **5** | Yellow |
| **6** | Red |
| **7** | Ivory |
| **7/1** | White |
| **9** | Orange |

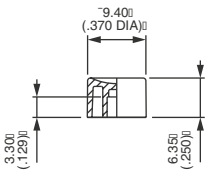
To order caps separately, use their P/N (U...) (for threaded bushing order only separately).




10




20

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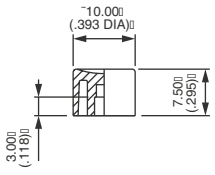


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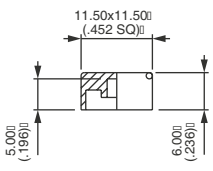
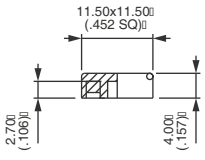
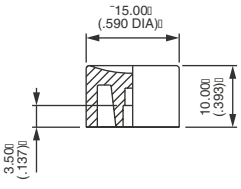



50




70




80

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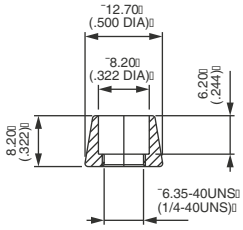
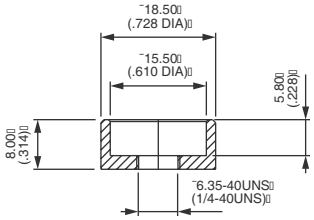
## DRESS NUT

### For threaded bushing models only

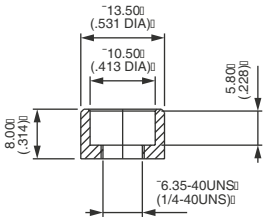
Dress nuts are to be ordered separately.




**U1636**
For cap U2510




**U825**
For cap U3400




**U840**
For cap U2900

LifeElectronics
Живое партнерство

**ООО «ЛайфЭлектроникс»** **“LifeElectronics” LLC**

*ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703*

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