

# 13000 series

## Professional quick-break momentary pushbutton switches

*Distinctive features and specifications*



- ☐ PC and panel mount models
- ☐ Bushing Ø 6,35 (1/4) and 11,9 (15/32)
- ☐ UL and CECC approved

B2

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - silver contacts (A-AD2) : 4A 30VDC
  - gold plated contacts (CD) : 100mA 30V
- Minimum load (AD2-CD contacts) : 10mA 50mV, 10µA 5V min.
- Initial contact resistance : 10 mΩ max.
- Insulation resistance : 1.000 MΩ min. at 500VDC
- Dielectric strength :
  - 1.000 Vrms 50 Hz min. between terminals
  - 2.000 Vrms 50 Hz min. between poles and between terminals and frame
- Contact bounce : 2 ms max.
- Electrical life :

| Contacts | Max. current/voltage rating                   | Number of cycles |
|----------|-----------------------------------------------|------------------|
| A        | 4A 30VDC                                      | 50.000           |
| AD2      | 4A 30VDC<br>(gold plating : 100mA 30VDC max.) | 20.000           |
| CD       | 100mA 30VDC                                   | 50.000           |
|          | Low level or mechanical life                  | 150.000          |

### MATERIALS

- Case : diallylphthalate (DAP)
- Actuator : brass, nickel plated
- Bushing : brass, nickel plated
- Housing : brass, nickel plated
- Contacts : **A** : silver  
**AD2** : silver, gold plated  
(2 micron gold)  
**CD** : brass, gold plated
- Terminal seal : epoxy

Note : AD2 contacts can be used for high level applications. In this case, the gold layer is considered only as a protection against oxidation during storage.

### GENERAL SPECIFICATIONS

- Torque : 1,25 Nm (.922 Ft.lb)  
max. applied to nut
- Standard panel thickness : 2 mm  
(.078 ) max.
- Total travel : 2 mm (.078)
- Operating temperature :  
-40°C to +85°C

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Specifications

### RELIABILITY - RUN-IN TEST

Upon request, each individual switch can be submitted to a low level run-in test of 50 or 250 cycles to ensure suitability for special applications requiring a very high level of reliability (military, space, etc.).

### AGENCY APPROVALS



2A 125VAC/250VAC



CECC 96401-001

Designed to **MIL** specifications

#### Availability :

UL : all models with silver or gold plated silver contacts

CECC : consult factory for details of approved models.

**Marking** : to order switches marked UL or CECC, complete appropriate box of ordering format.

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



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



**Mounting accessories** : standard hardware supplied with all models : 2 hex nuts 8 mm (.314) across flats, 1 locking ring and 1 lockwasher.

Standard and special hardware available are presented in section I.

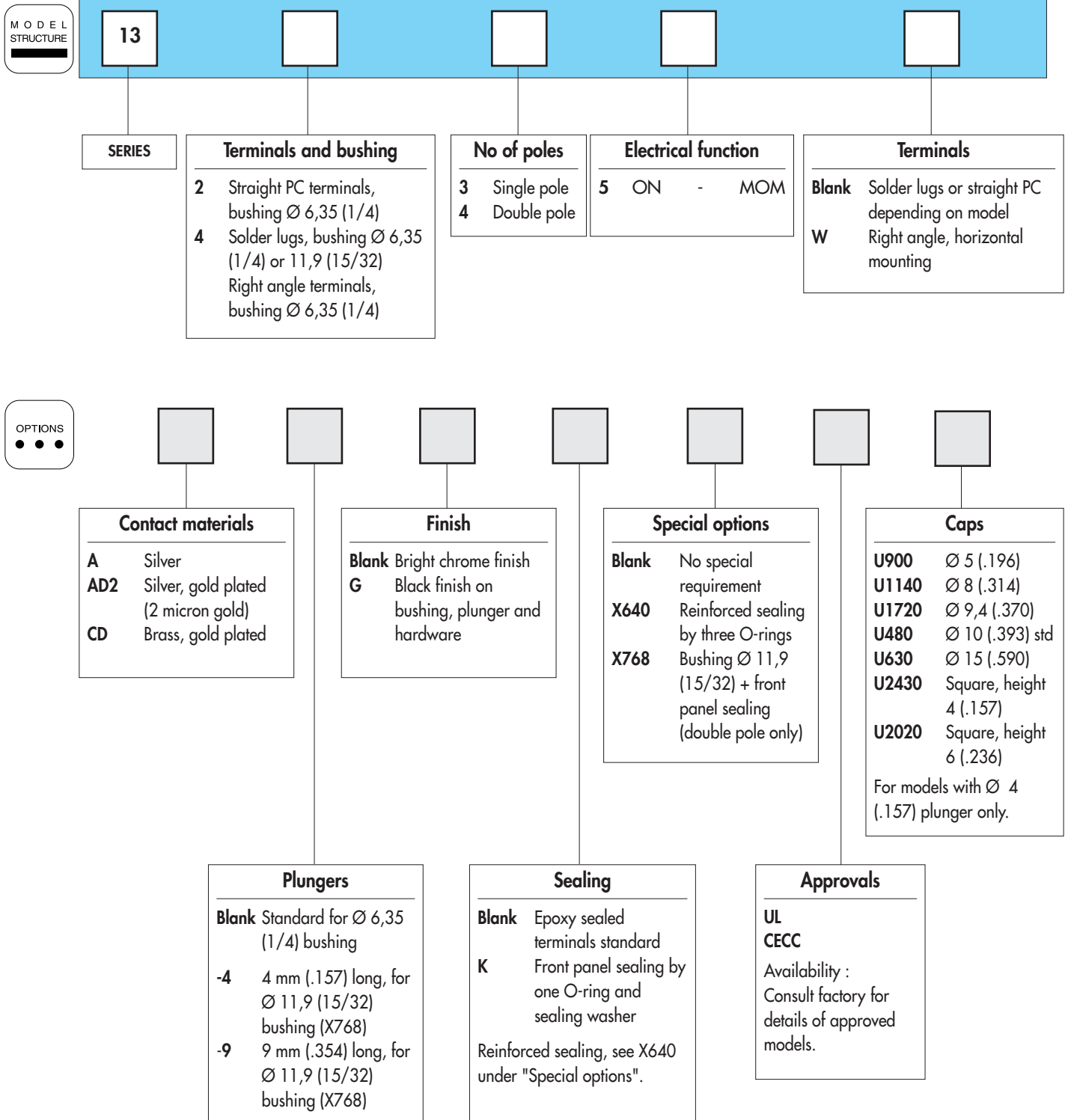


**Packaging unit** : 50 pieces.

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### Overview



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

### ABOUT THIS SERIES

On the following pages, you will find successively :

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

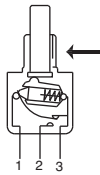


# 13000 series

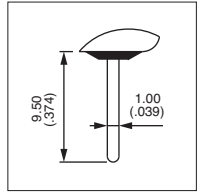
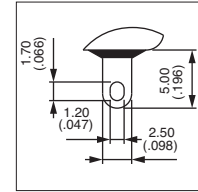
Professional quick-break momentary pushbutton switches

Solder lug terminals : 13400 - Straight PC terminals : 13200

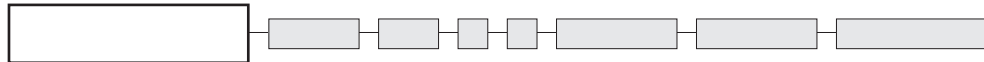
→ Keyway



- Threaded bushing  $\varnothing 6,35$  mm (1/4)
- Epoxy sealed terminals standard



MODEL  
STRUCTURE



B2

## Solder lug terminals : 13400

→ Keyway



Single pole  
13435

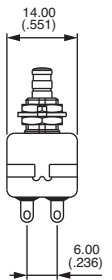
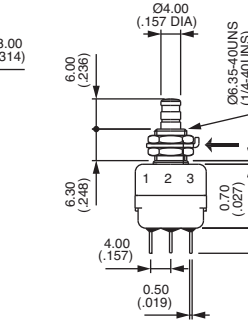
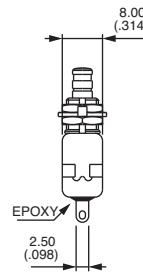
Double pole  
13445



ON



MOM



## Straight PC terminals : 13200

→ Keyway



Single pole  
13235

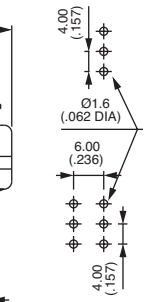
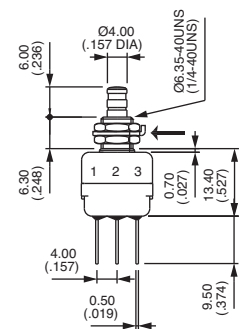
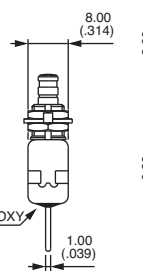
Double pole  
13245



ON

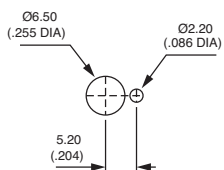


MOM

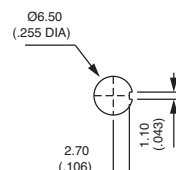


## PANEL CUT-OUT

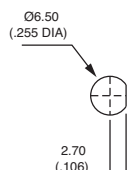
### 13400 - 13200



Standard



With K  
sealing option

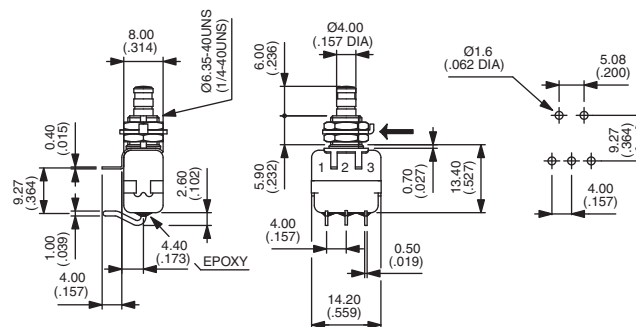
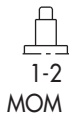


With X640  
sealing option

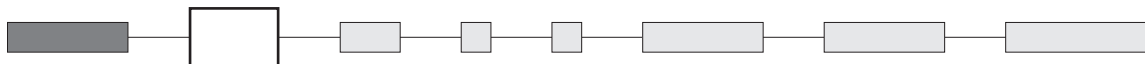
Right angle terminals : 13400W

• • •

→ Keyway

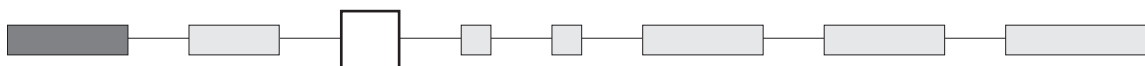


## CONTACT MATERIALS



|            |                                     |
|------------|-------------------------------------|
| <b>A</b>   | Silver                              |
| <b>AD2</b> | Silver, gold plated (2 micron gold) |
| <b>CD</b>  | Brass, gold plated                  |

## PLUNGER



Dash compulsory before plunger code.

**Blank** Standard plunger for Ø 6,35 (1/4) bushing

**-4** 4 mm (.157) long plunger for Ø 11,9 (15/32) bushing (X768 option)

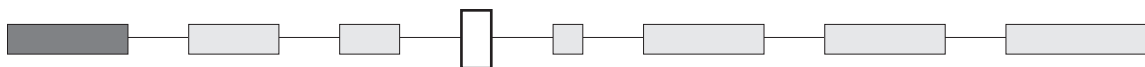
**-9** 9 mm (.354) long plunger for Ø 11,9 (15/32) bushing (X768 option)



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### FINISH



**Blank** Bright chrome finish

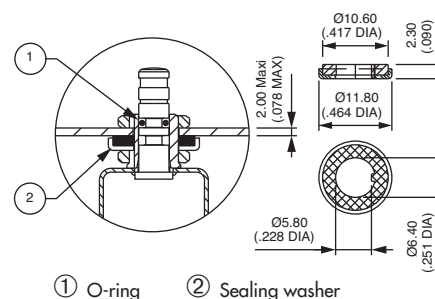
**G** Black finish on bushing, actuator and hardware

### SEALING

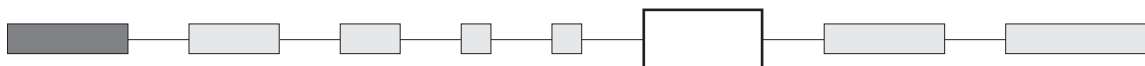


**K** Front panel sealing by one O-ring and sealing washer. Protects the switch against water and dust. Panel seal withstands 1 bar pressure and remains sealed even when switch is operated.

Reinforced sealing : see X640 under "Special options".



### SPECIAL OPTIONS

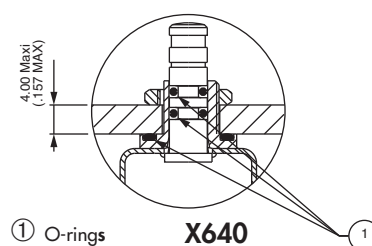


**X640** Front panel sealing by three O-rings. Flatted bush for precise orientation. Protects the switch against water and dust. Panel seal withstands 1 bar pressure and remains sealed even when switch is operated.



Available on models with Ø 6,35 (1/4) bushing only.

**X935** C-ring on plunger for positive stop



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OPTIONS  
● ● ●

**X768** Sealed switch with Ø 11,9 (15/32) flatted bushing. Chrome plated actuator. Solder lug terminals, double pole. Contact and finish options available.

**Security cap** for this model : see section I.



With short plunger  
**13445 -4 X768**

With long plunger  
**13445 -9 X768**

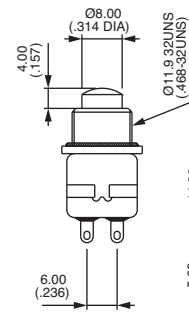


ON

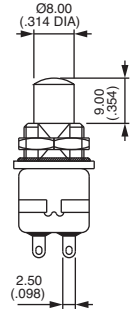
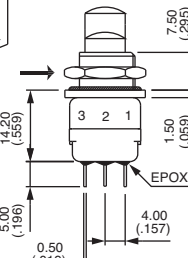


MOM

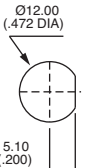
→ Flat



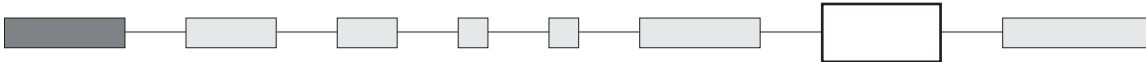
Short (-4)



Long (-9)



## AGENCY APPROVALS



UL

CECC CECC 96401-001

### Availability :

UL : all models with silver or gold plated silver contacts

CECC : consult factory for details of approved models.

**Marking** : to order switches marked UL or CECC, please complete above box with desired approval.

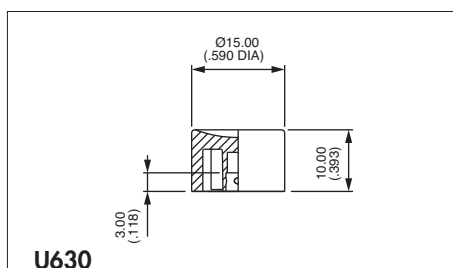
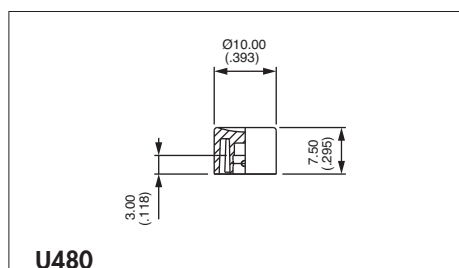
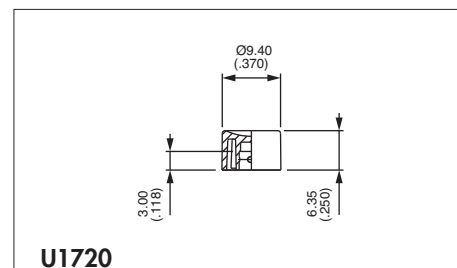
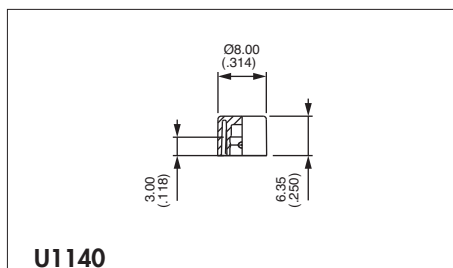
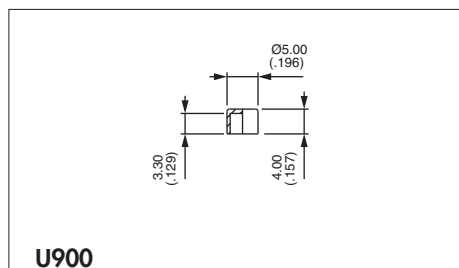
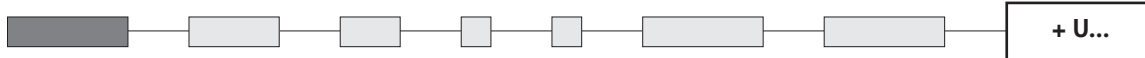
Blank : no agency approval required.



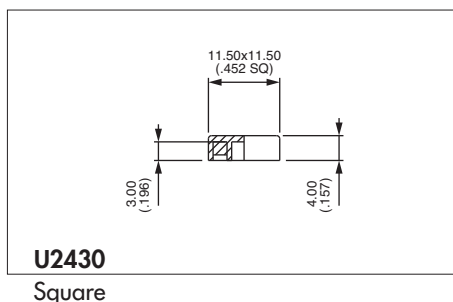
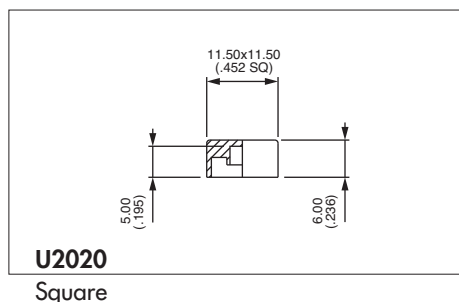
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### CAPS



For models with Ø 6,35 (1/4) bushing only.



#### Cap colours

Replace last "0" by number

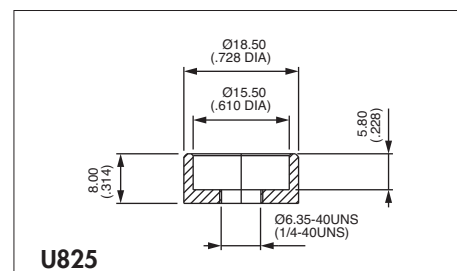
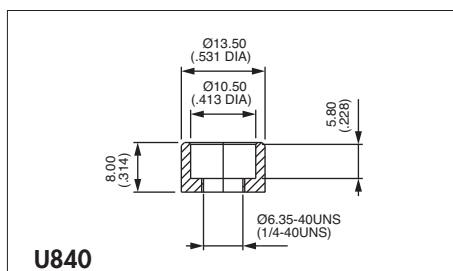
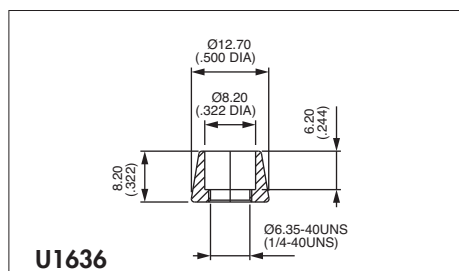
|     |           |
|-----|-----------|
| 1   | blue      |
| 1/4 | dark blue |
| 2   | black     |
| 3   | green     |
| 4   | grey      |
| 5   | yellow    |
| 6   | red       |
| 7   | ivory     |
| 7/1 | white     |
| 9   | orange    |

### DRESS NUTS

Chrome plated



For models with Ø 6,35 (1/4) bushing only.



Dress nuts are to be ordered separately.