

# 13000 series

Professional quick-break momentary pushbutton switches

*Distinctive features and specifications*

UG1006-A



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

## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - silver contacts (A-AD2) : 2A 250VAC - 4A 125VAC - 4A 30VDC
  - gold plated contacts (CD) : 100mA 30V
- Minimum load (AD2-CD contacts) : 10mA 50mV, 10 $\mu$ A 5V min.
- Initial contact resistance : 10 m $\Omega$  max.
- Insulation resistance : 1.000 M $\Omega$  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        | 2A 250VAC - 4A 125VAC - 4A 30VDC                                       | 50.000           |
| AD2      | 2A 250VAC - 4A 125 VAC - 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



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 bracketted 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.

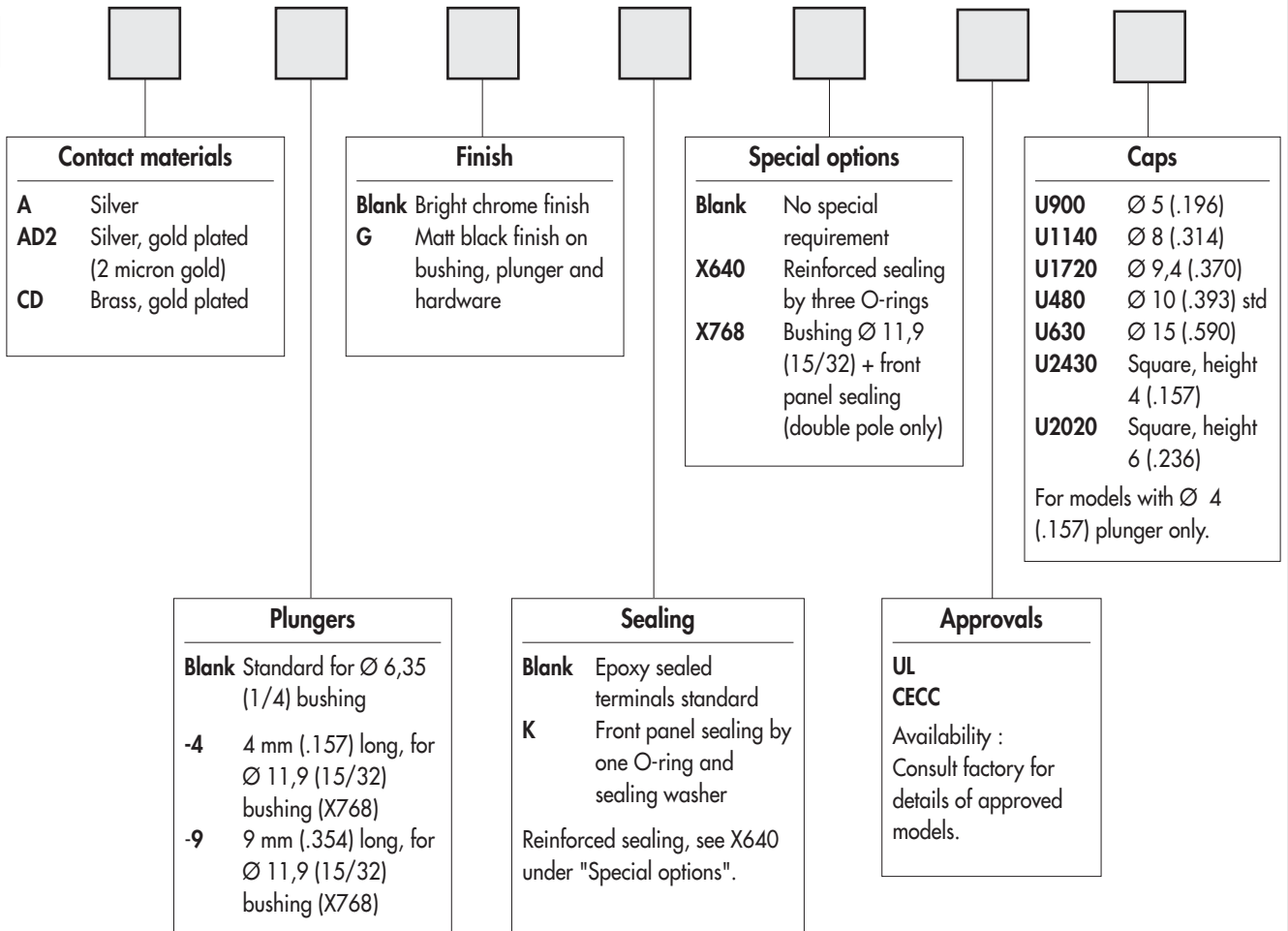
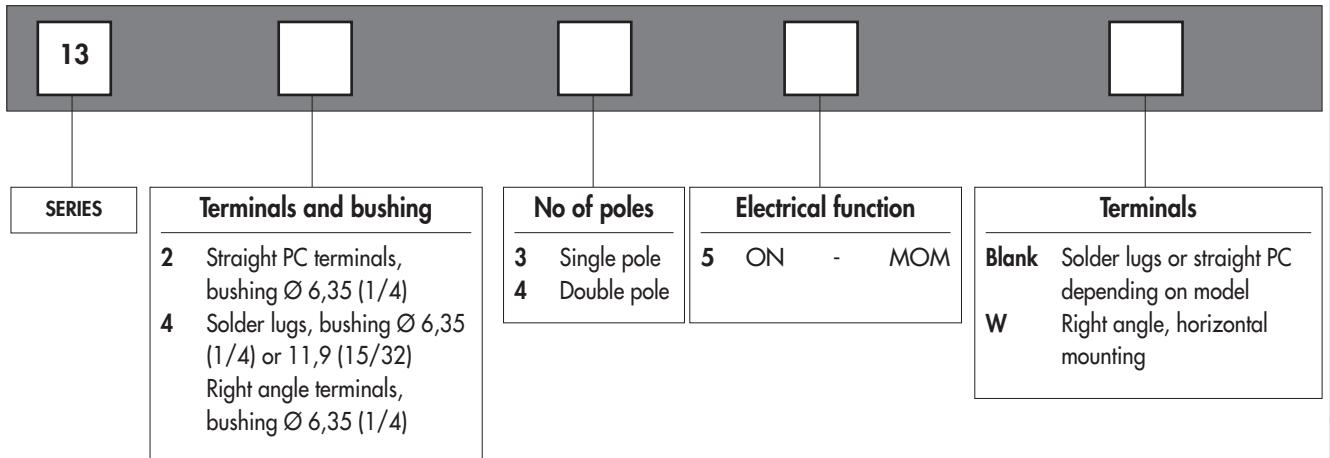


**Packaging unit** : 50 pieces.

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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

B

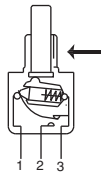
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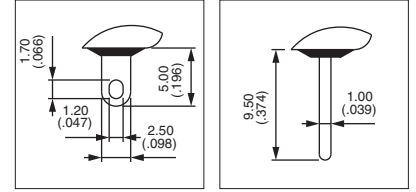
Solder lug terminals : 13400 - Straight PC terminals : 13200



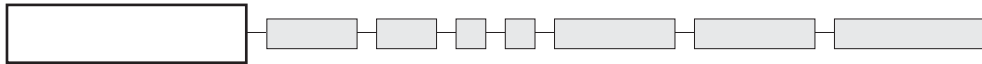
→ Keyway



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



MODEL STRUCTURE



B

## Solder lug terminals : 13400

→ Keyway



Single pole  
13435

Double pole  
13445



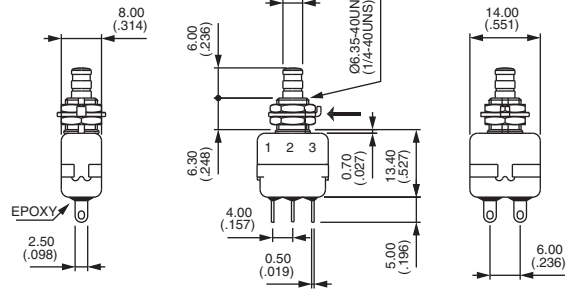
1-3

ON



1-2

MOM



## Straight PC terminals : 13200

→ Keyway



Single pole  
13235

Double pole  
13245



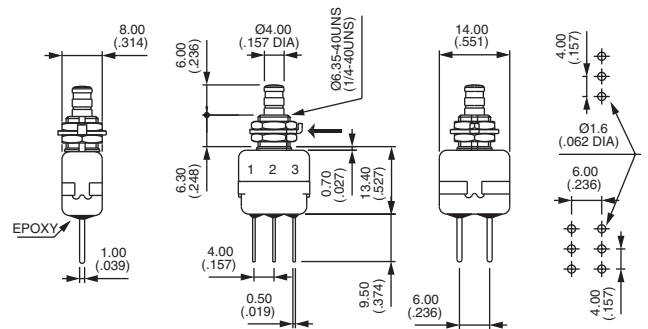
1-3

ON



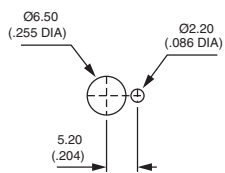
1-2

MOM

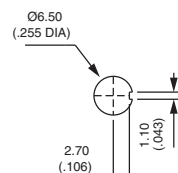


### PANEL CUT-OUT

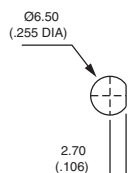
#### 13400 - 13200



Standard



With K  
sealing option



With X640  
sealing option



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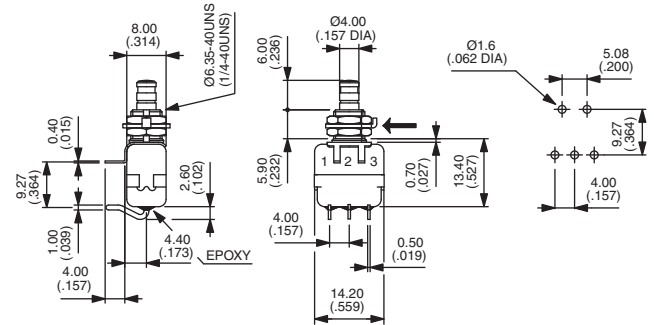
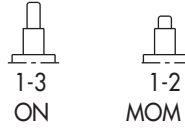
Right angle terminals : 13400W

## Right angle terminals - single pole

→ Keyway

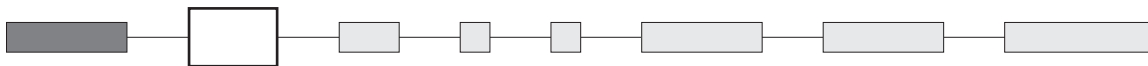


13435W



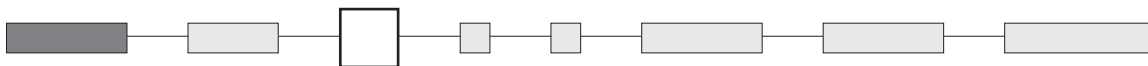
Panel cut-out, see previous page.

## CONTACT MATERIALS



- A Silver
- AD2 Silver, gold plated (2 micron gold)
- CD Brass, gold plated

## PLUNGER



Dash compulsory before plunger code.

- Blank Standard plunger for  $\varnothing 6,35$  (1/4) bushing
- 4 4 mm (.157) long plunger for  $\varnothing 11,9$  (15/32) bushing (X768 option)
- 9 9 mm (.354) long plunger for  $\varnothing 11,9$  (15/32) bushing (X768 option)

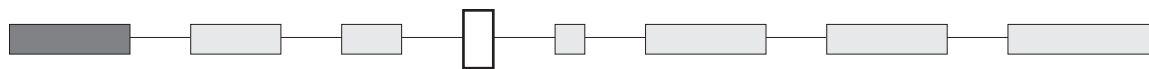
B

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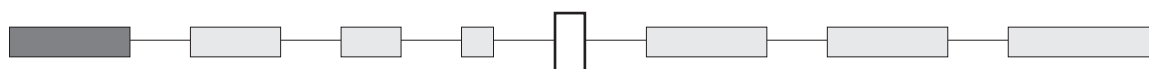
## FINISH



**Blank** Bright chrome finish

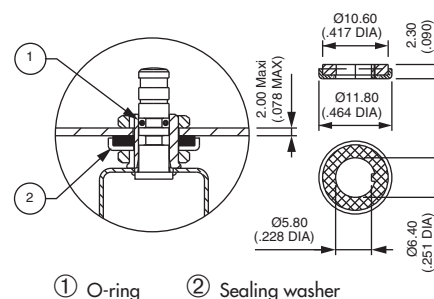
**G** Matt black finish on bushing, actuator and hardware

## SEALING



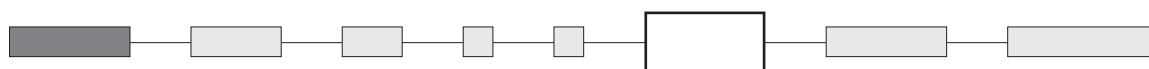
**K** Front panel sealing by one O-ring and sealing washer. Protects the switch against water and dust. Panel seal withstands 1 bar pressure and remains sealed even when switch is operated.

Reinforced sealing : see X640 under "Special options".




① O-ring ② Sealing washer

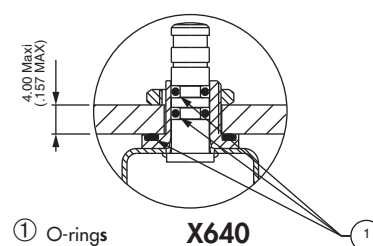
## SPECIAL OPTIONS



**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




① O-rings **X640**



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

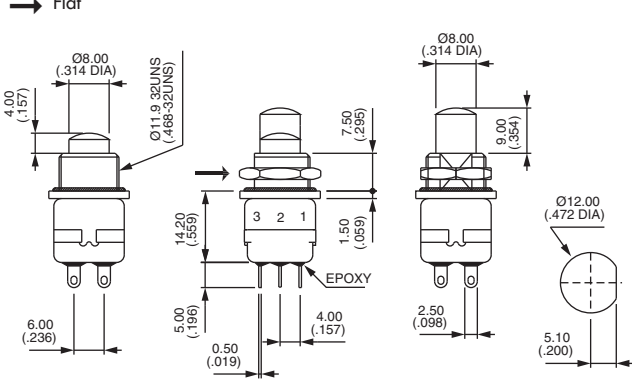


With short plunger  
**13445 -4 X768**

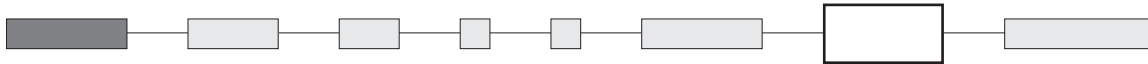
With long plunger  
**13445 -9 X768**

|  |  |
|--|--|
| <br>1-3 | <br>1-2 |
| ON   | MOM  |
| ON   | MOM  |

→ Flat



## 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.

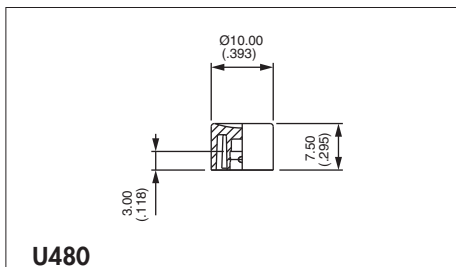
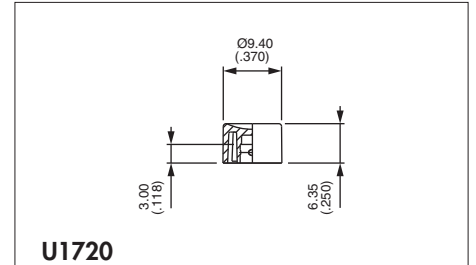
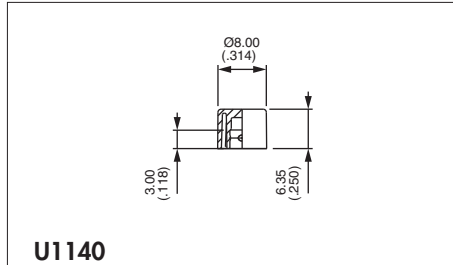
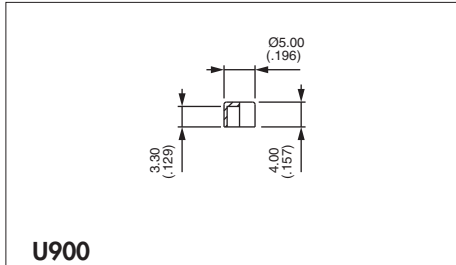
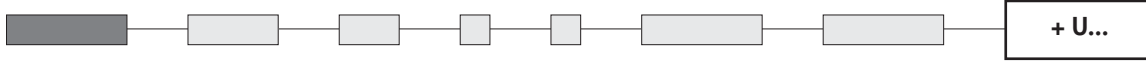
Blank : no agency approval required.

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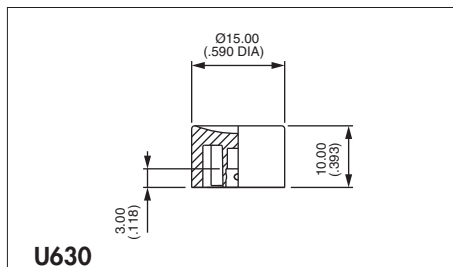
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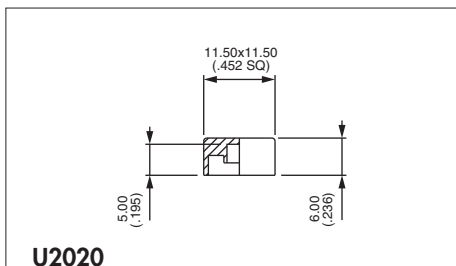
## CAPS



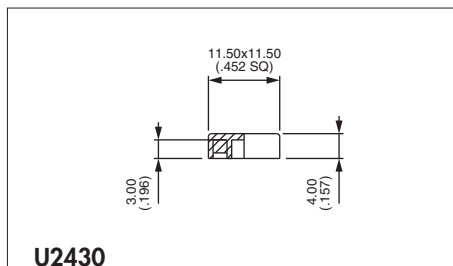
Standard



For models with  $\varnothing$  6,35 (1/4) bushing only.



Square



Square

### Cap colours

Replace last "0" by number

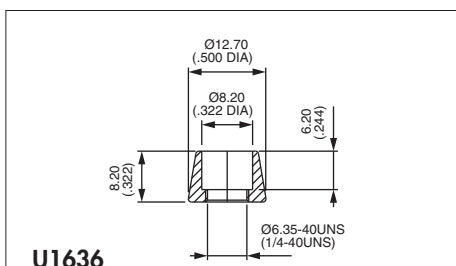
- 1 blue
- 1/4 dark blue
- 2 black
- 3 green
- 4 grey
- 5 yellow
- 6 red
- 7 ivory
- 7/1 white
- 9 orange

## DRESS NUTS

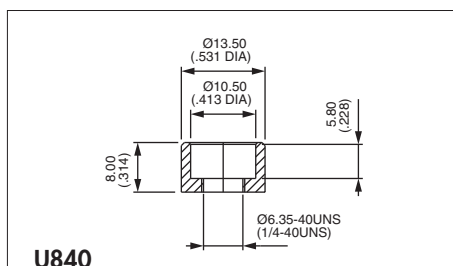
Chrome plated



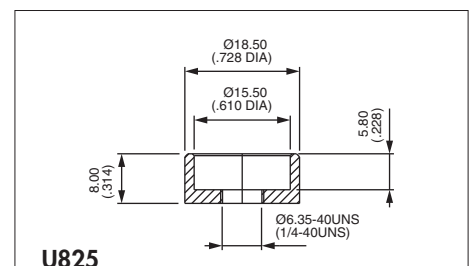
For models with  $\varnothing$  6,35 (1/4) bushing only.



For cap U1140



For cap U480



For cap U630

Dress nuts are to be ordered separately.