

# 13000 series

Professional quick-break  
momentary pushbutton switches



## DISTINCTIVE FEATURES

PC and panel mount models

Bushing Ø 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) : 4 A 30 VDC
  - gold plated contacts (CD) : 100 mA 30 V
- Minimum load (AD2-CD contacts) : 10 mA 50 mV, 10 µA 5 V min.
- Initial contact resistance : 10 mΩ max.
- Insulation resistance : 1,000 MΩ min. at 5 00VDC
- 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	4 A 30 VDC	50,000
AD2	4 A 30 VDC (gold plating : 100 mA 30 VDC max.)	20,000
CD	100 mA 30 VDC	50,000
	Low level or mechanical life	150,000



## 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 (-40 °F to +185 °F)

The company reserves the right to change specifications without notice.



# 13000 series

Professional quick-break momentary pushbutton switches

## 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

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

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.

## 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



2 A 125 VAC/250 VAC



CECC 96401-001

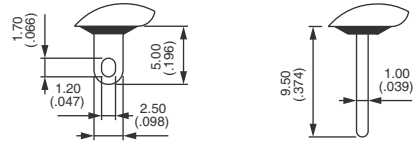
Designed to MIL specifications

**Availability :**

UL : all models with silver or gold plated silver contacts.  
 CECC : consult factory for details of approved models.

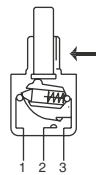
**Marking :** to order switches marked UL or CECC, complete appropriate box of ordering format.

## TERMINALS



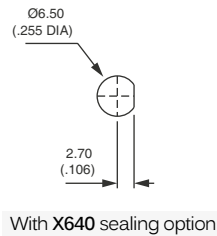
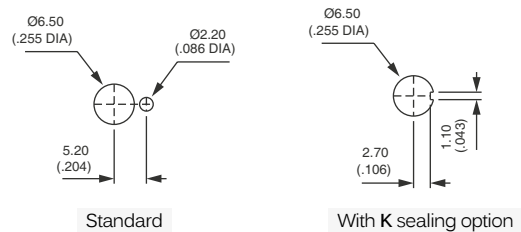
## ELECTRICAL FUNCTION

→ KEYWAY



## PANEL CUT-OUT

FOR Ø 6,35 (1/4) BUSHING

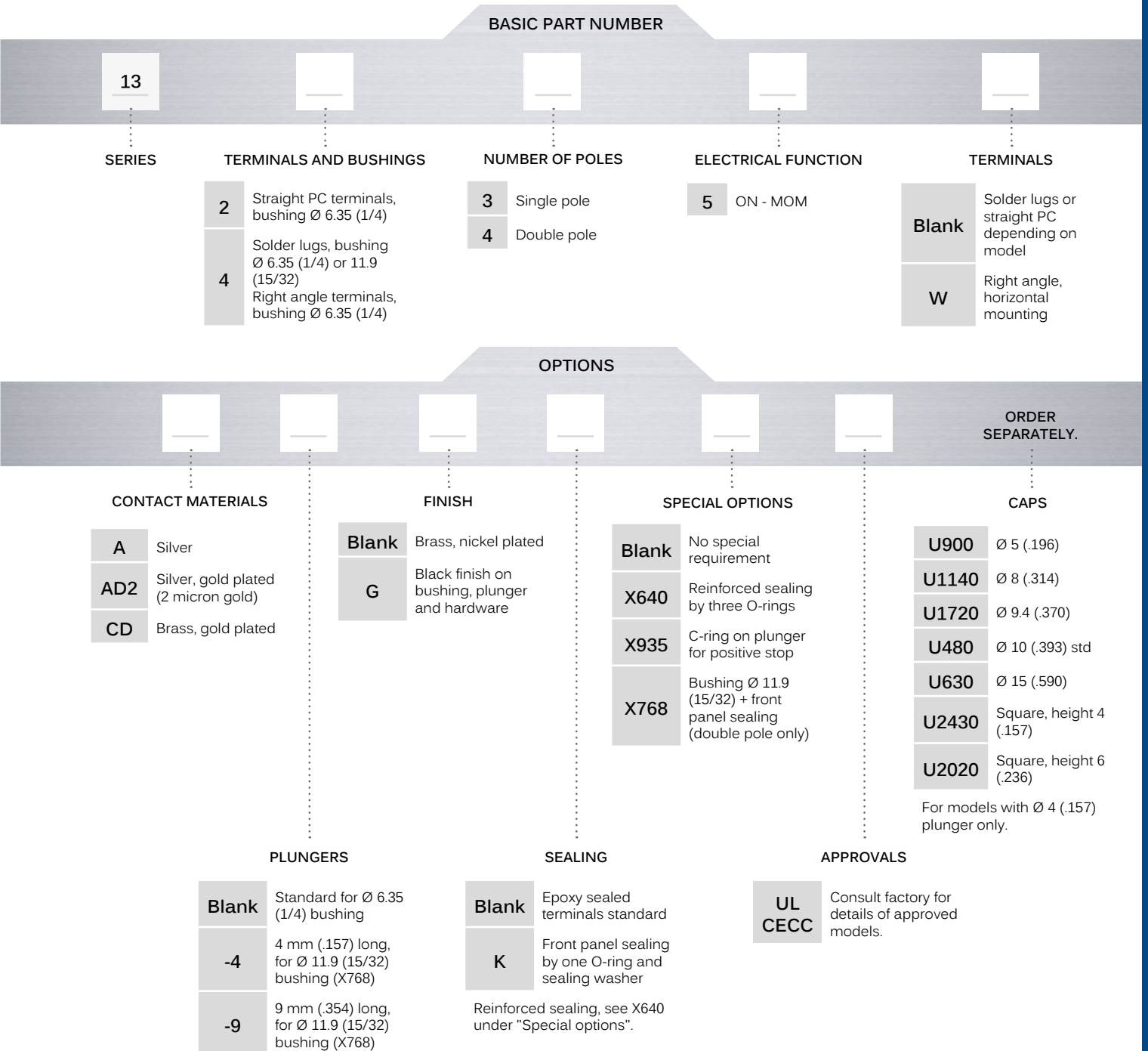


# 13000 series

Professional quick-break momentary pushbutton switches



## BUILD YOUR PART NUMBER



## 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.
- 💧 **Sealing boots** are available to protect the switches against dust and water. See "Sealing Boots" section of website.
- 🔧 **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 is presented in the "Hardware" section of website.

# 13000 series

Professional quick-break momentary pushbutton switches

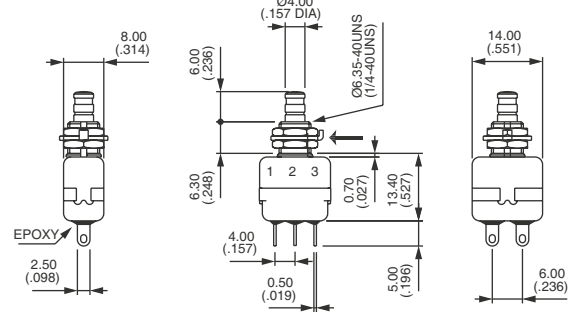
Ø 6.35 BUSHING  
SOLDER LUG TERMINALS : 13400



Single pole	1-3	1-2
<b>13435</b>	ON	MOM
Double pole	1-3	1-2
<b>13445</b>	ON	MOM



→ KEYWAY



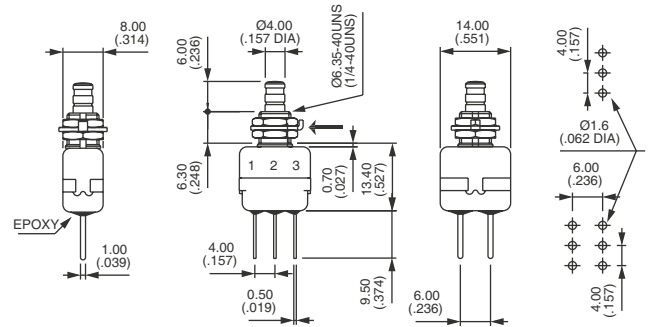
Ø 6.35 BUSHING  
STRAIGHT PC TERMINALS : 13200



Single pole	1-3	1-2
<b>13235</b>	ON	MOM
Double pole	1-3	1-2
<b>13245</b>	ON	MOM



→ KEYWAY



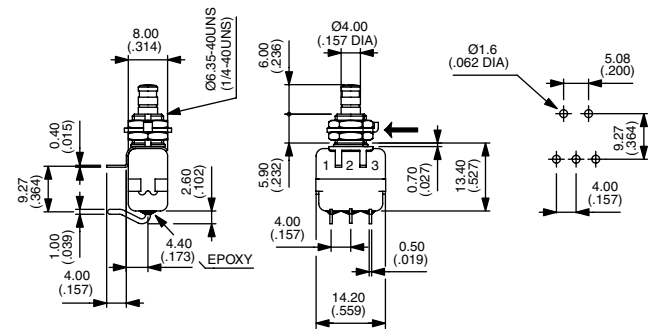
Ø 6.35 BUSHING  
RIGHT ANGLE TERMINALS



Single pole	1-3	1-2
<b>13435W</b>	ON	MOM



→ KEYWAY



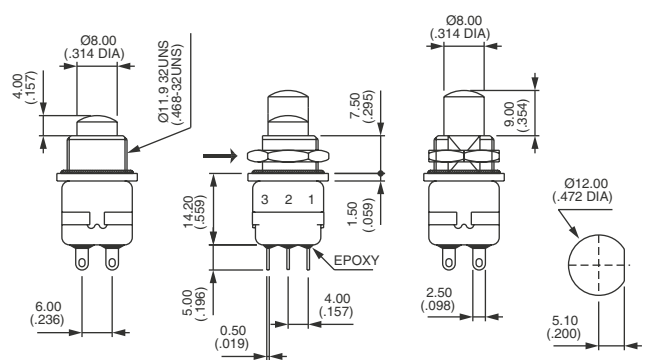
SEALED SWITCH WITH Ø 11.9 FLATTED BUSHING : X768 - SOLDER LUG TERMINALS



Single pole with short plunger	1-3	1-2
<b>13445 -4 X768</b>	ON	MOM
With long plunger	1-3	1-2
<b>13445 -9 X768</b>	ON	MOM



→ FLAT



Short (-4)

Long (-9)

Chrome plated actuator.  
Switch guard available for this model : see "Switch guards" section of website.

# 13000 series

Professional quick-break momentary pushbutton switches

## CONTACTS MATERIALS



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

## PLUNGERS



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)

## FINISH



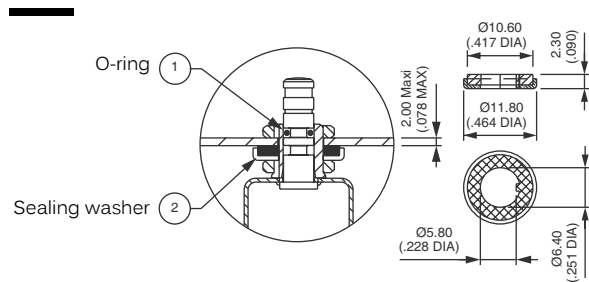
- Blank Bright chrome finish
- G Black finish on bushing, actuator and hardware

## 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.

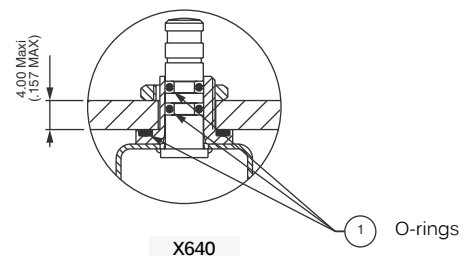
Reinforced sealing : see X640 under "Special options".



## 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  $\varnothing$  6.35 (1/4) bushing only.
- X935 C-ring on plunger for positive stop
- X768 Sealed switch with  $\varnothing$  11.9 (15/32) flatted bushing. Chrome plated actuator. Solder lug terminals, double pole. Contact and finish options available. See above.



# 13000 series

Professional quick-break  
momentary pushbutton switches

## AGENCY APPROVALS

BASIC P/N

**UL**

**CECC** CECC 96401-001

**Blank** No agency approval required.

### 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.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Pushbutton Switches](#) category:*

*Click to view products by [Apem](#) manufacturer:*

Other Similar products are found below :

[8940K2012](#) [LW1L-M1C10V-A](#) [LW1L-M1C70-A](#) [LW2L-A1C20M-GD](#) [LW2L-M1C20M-A](#) [60324L](#) [M22-D-R-GB0/K11](#) [M7E-HRN2](#)  
[67021K512](#) [67081K512X](#) [701PB580](#) [7190K101](#) [7199K101](#) [810K12910](#) [810KSV30B](#) [MML21EA2ADK](#) [MML21KA3ABK](#)  
[MML23KA3AC05K-001](#) [MML23KW3AA01W](#) [8418K2](#) [8442K3](#) [8450K1](#) [860K11911T01A](#) [861901](#) [861K11911T01A07](#)  
[861K13810T00A14](#) [861K13911](#) [8646AB6X718UL](#) [8646ABUL](#) [9001KXRK](#) [907AYY100](#) [PMHD155A1](#) [95-313.000](#)  
[9533CD4+U574+U4922](#) [95-414.000](#) [99-450.837](#) [99-453.837](#) [PV3H2B0NN-341](#) [1203MRA](#) [A22NZBGANGA](#) [A22NZBMMNGA](#)  
[A22NZBNANGA](#) [A22NZMPATRA](#) [A2PMA1X03EC56](#) [A3A-5123-02](#) [A3A-7140](#) [A3A-7310](#) [A3A-7340](#) [A3U-TMW-A2C-5M](#) [A595](#)