

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.



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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

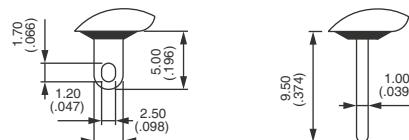
Availability :

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.

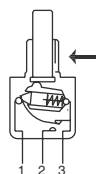


TERMINALS



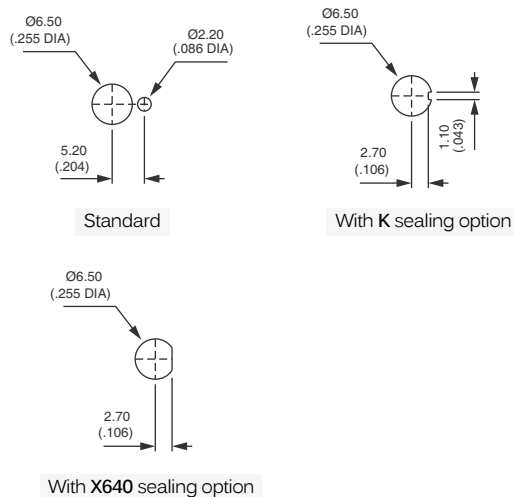
ELECTRICAL FUNCTION

→ KEYWAY



PANEL CUT-OUT

FOR Ø 6,35 (1/4) BUSHING

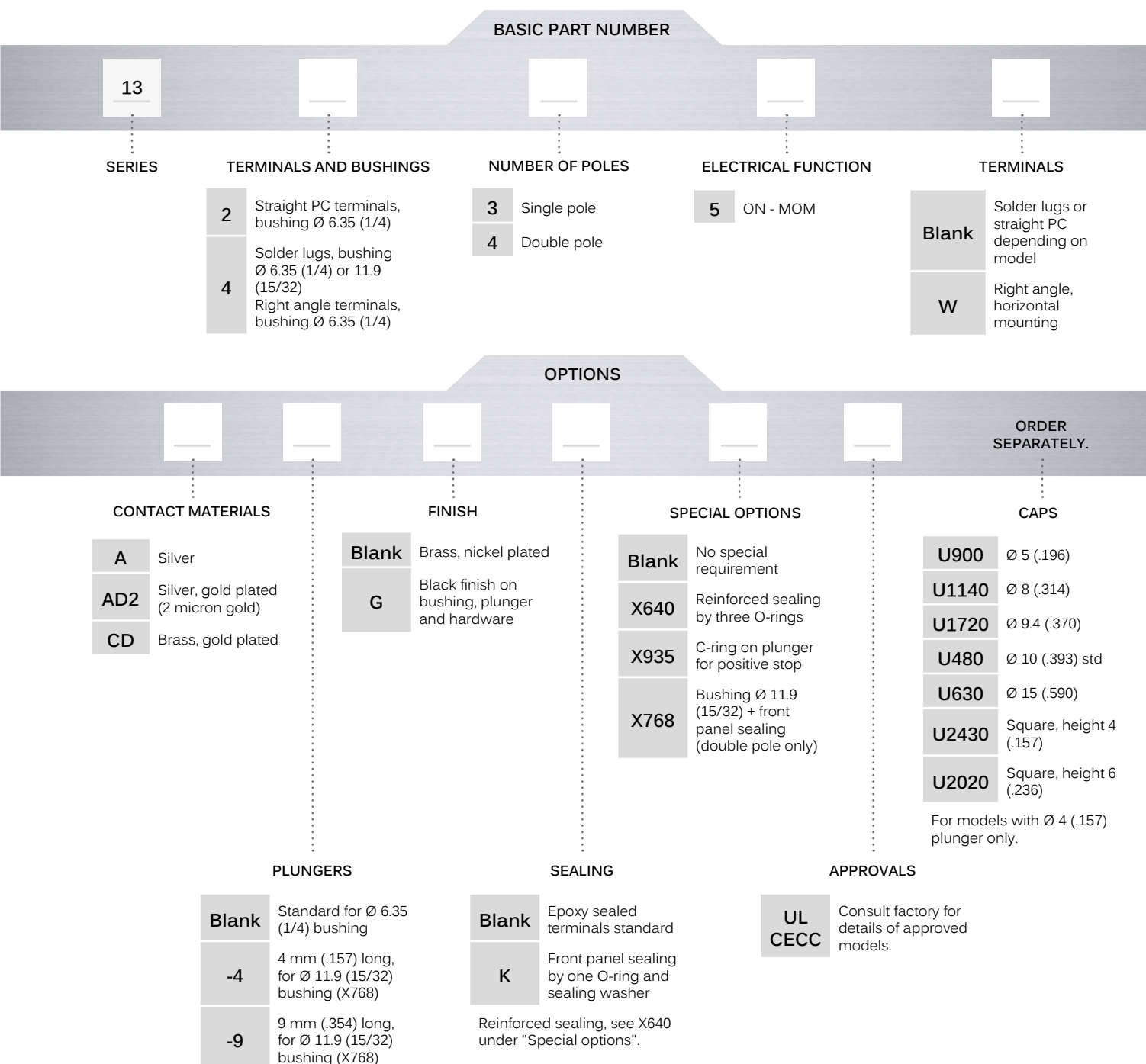


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BUILD YOUR PART NUMBER



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.

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Ø 6.35 BUSHING

SOLDER LUG TERMINALS : 13400



Single pole

13435



1-3

ON



1-2

MOM

Double pole

13445

ON

MOM

Ø 6.35 BUSHING

STRAIGHT PC TERMINALS : 13200



Single pole

13235



1-3

ON



1-2

MOM

Double pole

13245

ON

MOM

Ø 6.35 BUSHING

RIGHT ANGLE TERMINALS



Single pole

13435W



1-3

ON



1-2

MOM

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



Single pole
with short plunger

13445 -4 X768



1-3

ON



1-2

MOM

With long plunger

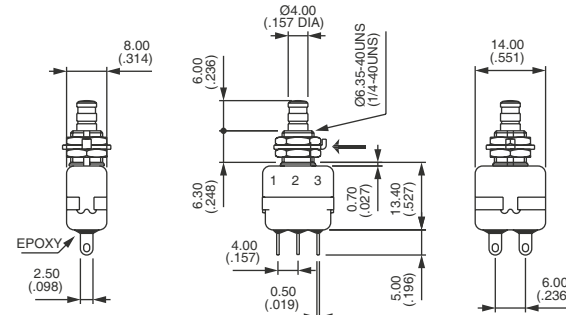
13445 -9 X768

ON

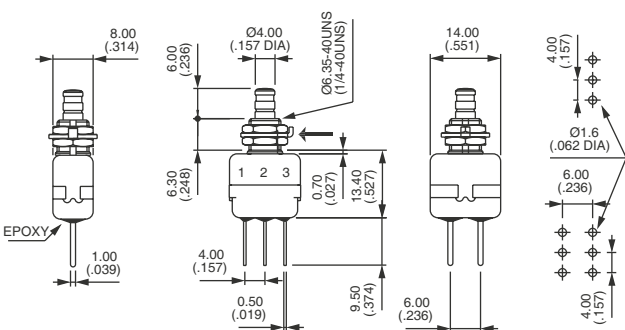
MOM

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

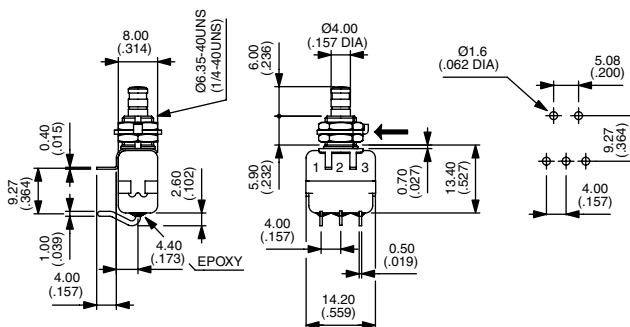
→ KEYWAY



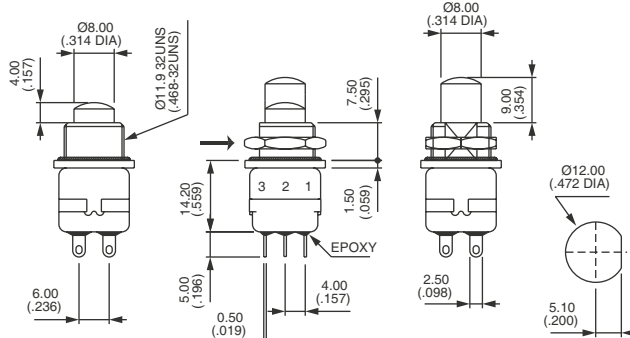
→ KEYWAY



→ KEYWAY



→ FLAT



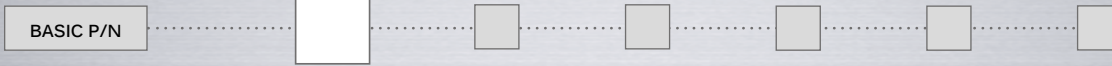
Short (-4)

Long (-9)

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CONTACTS MATERIALS



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

PLUNGERS



Dash compulsory before plunger code.

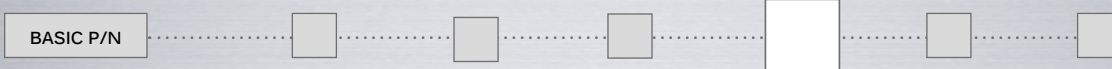
- Blank Standard plunger for Ø 6.35 (1/4) bushing
- 4 4 mm (.157) long plunger for Ø 11.9 (15/32) bushing (X768 option)
- 9 9 mm (.354) long plunger for Ø 11.9 (15/32) bushing (X768 option)

FINISH



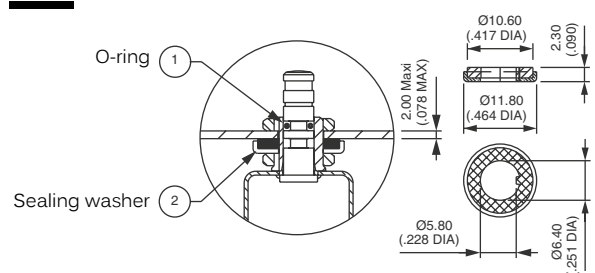
- Blank Bright chrome finish
- G Black finish on bushing, actuator and hardware

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.

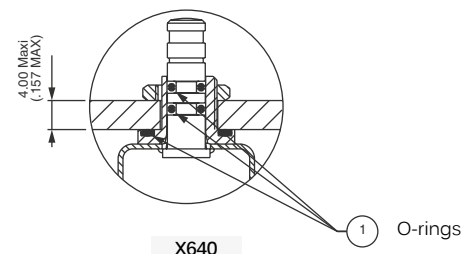
Reinforced sealing : see X640 under "Special options".



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
- X768 Sealed switch with Ø 11.9 (15/32) flatted bushing. Chrome plated actuator. Solder lug terminals, double pole. Contact and finish options available. See above.



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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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Apem:](#)

[13445A](#) [13435AD2](#) [13435AD2GX640](#)