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

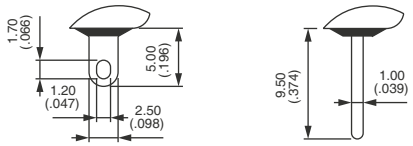
CECC 96401-001

Designed to **MIL** specifications

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

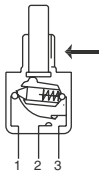
Marking : to order switches marked UL or CECC, complete appropriate box of ordering format.

TERMINALS



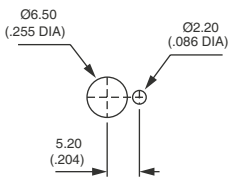
ELECTRICAL FUNCTION

→ KEYWAY

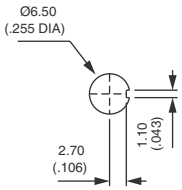


PANEL CUT-OUT

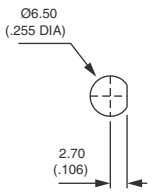
FOR Ø 6,35 (1/4) BUSHING



Standard



With **K** sealing option



With **X640** sealing option

13000 series

Professional quick-break
momentary pushbutton switches

BUILD YOUR PART NUMBER

BASIC PART NUMBER

13 _ _ _ _

SERIES

TERMINALS AND BUSHINGS

2	Straight PC terminals, bushing Ø 6.35 (1/4)
4	Solder lugs, bushing Ø 6.35 (1/4) or 11.9 (15/32) Right angle terminals, bushing Ø 6.35 (1/4)

NUMBER OF POLES

3	Single pole
4	Double pole

ELECTRICAL FUNCTION

5	ON - MOM

TERMINALS

Blank	Solder lugs or straight PC depending on model
W	Right angle, horizontal mounting

OPTIONS

_ _ _ _ _ _

ORDER SEPARATELY.

CONTACT MATERIALS

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

FINISH

Blank	Brass, nickel plated
G	Black finish on bushing, plunger and hardware

SPECIAL OPTIONS

Blank	No special requirement
X640	Reinforced sealing by three O-rings
X935	C-ring on plunger for positive stop
X768	Bushing Ø 11.9 (15/32) + front panel sealing (double pole only)

CAPS

U900	Ø 5 (.196)
U1140	Ø 8 (.314)
U1720	Ø 9.4 (.370)
U480	Ø 10 (.393) std
U630	Ø 15 (.590)
U2430	Square, height 4 (.157)
U2020	Square, height 6 (.236)

For models with Ø 4 (.157) plunger only.

PLUNGERS

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

SEALING

Blank	Epoxy sealed terminals standard
K	Front panel sealing by one O-ring and sealing washer

Reinforced sealing, see X640 under "Special options".

APPROVALS

UL CECC	Consult factory for details of approved models.

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

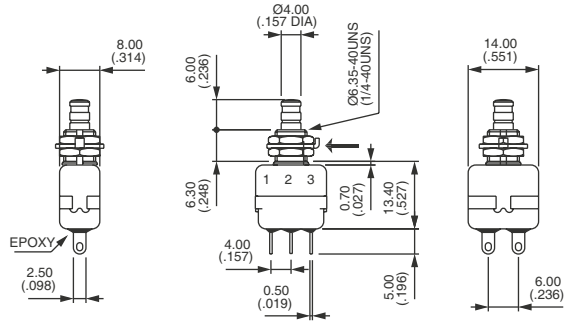
Professional quick-break momentary pushbutton switches

Ø 6.35 BUSHING
SOLDER LUG TERMINALS : 13400



	1-3	1-2
Single pole		
13435	ON	MOM
Double pole		
13445	ON	MOM

KEYWAY

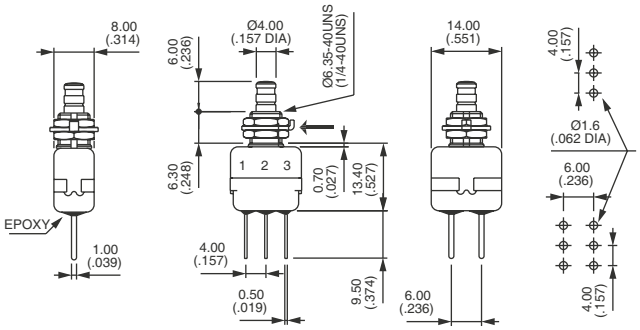


Ø 6.35 BUSHING
STRAIGHT PC TERMINALS : 13200



	1-3	1-2
Single pole		
13235	ON	MOM
Double pole		
13245	ON	MOM

KEYWAY

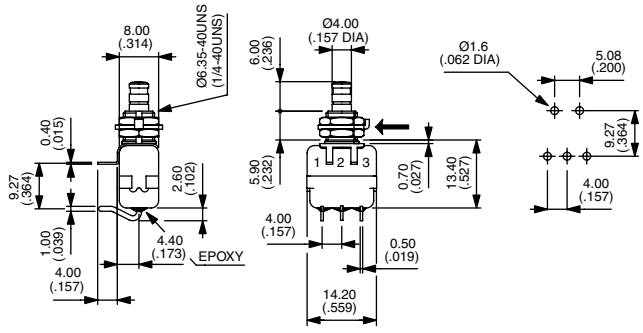


Ø 6.35 BUSHING
RIGHT ANGLE TERMINALS



	1-3	1-2
Single pole		
13435W	ON	MOM

KEYWAY



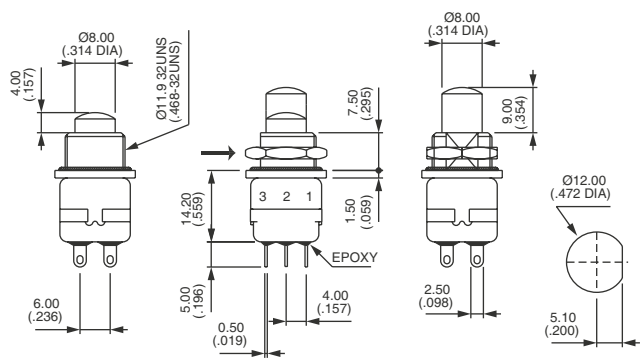
SEALED SWITCH WITH Ø 11.9 FLATTED BUSHING : X768 - SOLDER LUG TERMINALS



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

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

FLAT



Short (-4) Long (-9)

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CONTACTS MATERIALS

BASIC P/N

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

PLUNGERS

BASIC P/N

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

BASIC P/N

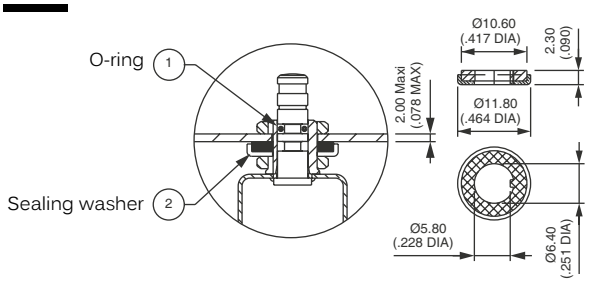
Blank	Bright chrome finish
G	Black finish on bushing, actuator and hardware

SEALING

BASIC P/N

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".



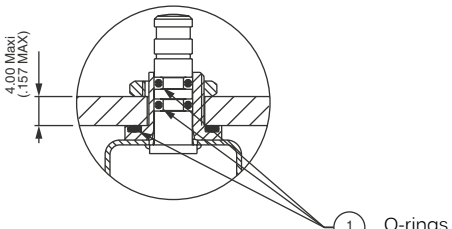
SPECIAL OPTIONS

BASIC P/N

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

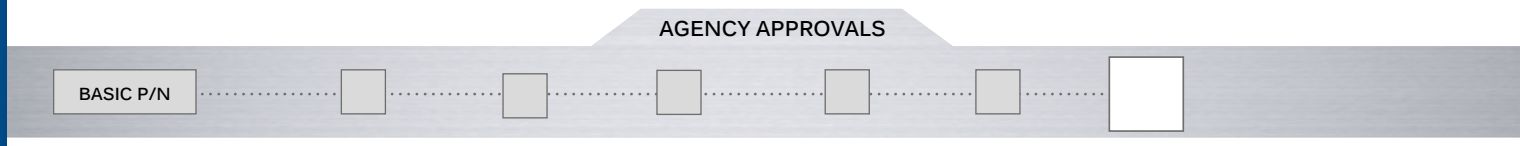
X768 Sealed switch with Ø 11.9 (15/32) flatted bushing. Chrome plated actuator. Solder lug terminals, double pole. Contact and finish options available. See above.



X640

13000 series

Professional quick-break momentary pushbutton switches



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.