9100-9200-9500 series

Subminiature momentary pushbutton switches



DISTINCTIVE FEATURES

Panel and PC mount models, horizontal or vertical
Self-cleaning and butt action contacts
Several plunger options



ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load : 100 mA 30 VDC
- Initial contact resistance : 30 mΩ max.
- Insulation resistance : 1,000 MΩ min. at 500 VDC
- Dielectric strength :
  500 Vrms 50 Hz min. between terminals
  1,000 Vrms 50 Hz min. between terminals and frame
- Electrical life at full load :
  9100 - 9200N and 9500N : 250,000 cycles
  9200 - 9500 : 100,000 cycles

GENERAL SPECIFICATIONS

- Torque : 0.5 Nm (.590 Ft.lb) max. applied to nut
- Operating temperature : -30 °C to +65 °C (-22 °F to +146 °F)
- Panel thickness : 1.50 mm (.059) max.
- Travels : see table below . Tolerance : ± 0.3 mm (.011)

	9533-9233	9532-9232	9533N 9233N-9133
Total travel	1.10 (.043)	1.80 (.070)	1 (.039)
Pre-travel	0.80 (.031)	1.00 (.039)	-
Over travel	0.30 (.011)	0.75 (.029)	-

MATERIALS

- Case : Pa6T
- Actuator : polyamide, glass filled
- Bushing : brass, nickel plated
- Contacts : **CD** : brass, gold plated
- Terminal seal : epoxy

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

The company reserves the right to change specifications without notice.

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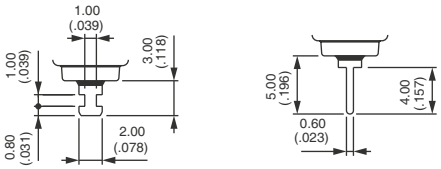
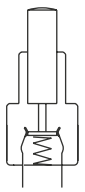
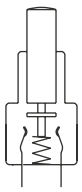
TERMINALS



ELECTRICAL FUNCTIONS

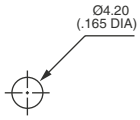


Function 2 (NC)

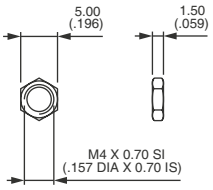


Function 3 (NO)

PANEL CUT-OUT



STANDARD HARDWARE
(FOR THREADED BUSHING MODELS)



U544 (nickel plated)

9100-9200-9500 series

Subminiature momentary pushbutton switches

BUILD YOUR PART NUMBER

BASIC PART NUMBER

SERIES

9

TERMINALS, CASE AND BUSHING

Case height 8 (.314)

2	Straight terminals - threaded bushing
2..Y	Tall bracket - plain bushing
2..WW	Right angle terminals - plain bushing
5	Solder lugs - threaded bushing

Case height 6.1 (.240)

1	Straight terminals - threaded bushing - 7.10 (.279) PCB to panel
1..Y	Short bracket - plain bushing
1..WW	Right angle terminals - plain bushing
2..N	Straight terminals - threaded bushing - 8.90 (.350) PCB to panel
2..NY	Tall bracket - plain bushing
5..N	Solder lugs - threaded bushing

NUMBER OF POLES

3	Single pole

ELECTRICAL FUNCTIONS

2	Normally closed (NC)
3	Normally open (NO)

OPTIONS

CONTACT MATERIALS

CD	Gold plated brass (standard)

SEALING

Blank	Epoxy sealed terminals standard
K	Front panel sealing by two O-rings

PLUNGER

Blank	Standard
-0	Flush
-4	Long

CAPS

For plunger -4

U4310	Height 4 (.157)
U4320	Height 3.9 (.153)

MOUNTING BEZEL

U4922	For 9500 model only.

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. See "Sealing Boots" section of website.

Mounting accessories : standard hardware supplied with all threaded bushing models : 1 nickel plated hex nut 5 (.196) across flats, part number U544. This nut is presented on previous page.

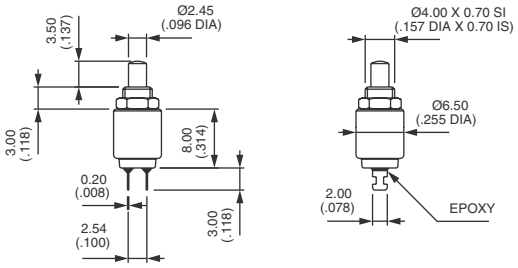
9100-9200-9500 series

Subminiature momentary pushbutton switches

LONG CASE - SOLDER LUGS : 9500



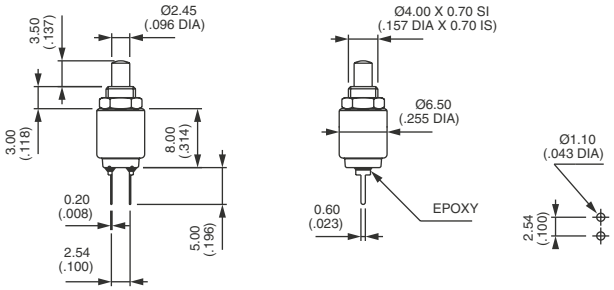
9532	Normally Closed
9533	Normally Open



LONG CASE - STRAIGHT PC TERMINALS : 9200



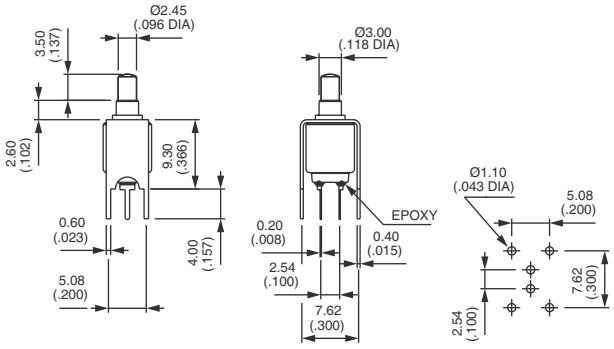
9232	Normally Closed
9233	Normally Open



LONG CASE - STRAIGHT PC TERMINALS BRACKET MOUNTING : 9200Y



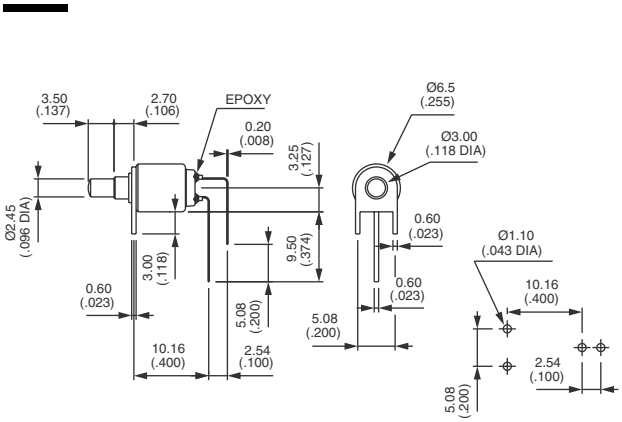
9232Y	Normally Closed
9233Y	Normally Open



LONG CASE - RIGHT ANGLE TERMINALS : 9200WW



9232WW	Normally Closed
9233WW	Normally Open



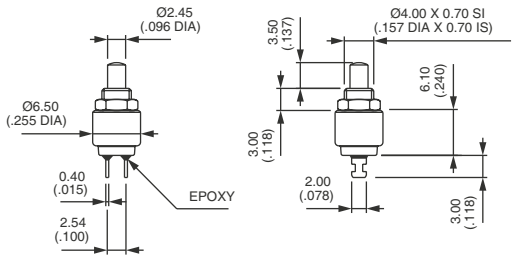
9100-9200-9500 series

Subminiature momentary pushbutton switches

SHORT CASE - SOLDER LUGS : 9500N



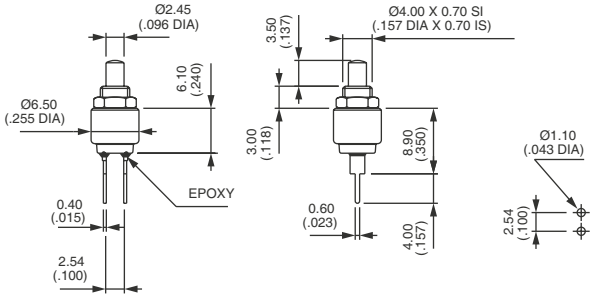
9533N Normally Open



SHORT CASE - STRAIGHT PC TERMINALS 8.90 (.350) PCB TO PANEL



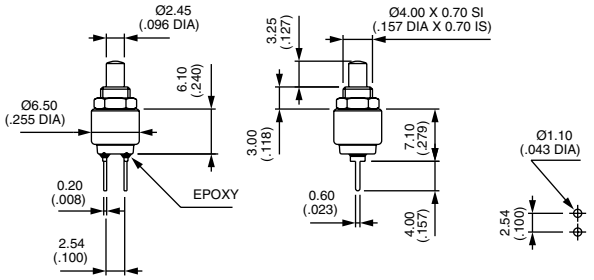
9233N Normally Open



SHORT CASE - STRAIGHT PC TERMINALS 7.10 (.279) PCB TO PANEL



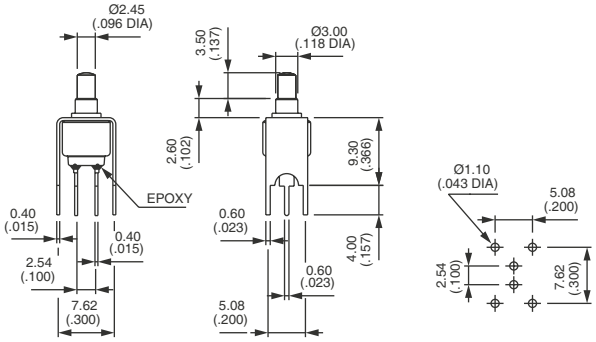
9133 Normally Open



SHORT CASE - STRAIGHT PC TERMINALS TALL BRACKET : 9200NY



9233NY Normally Open



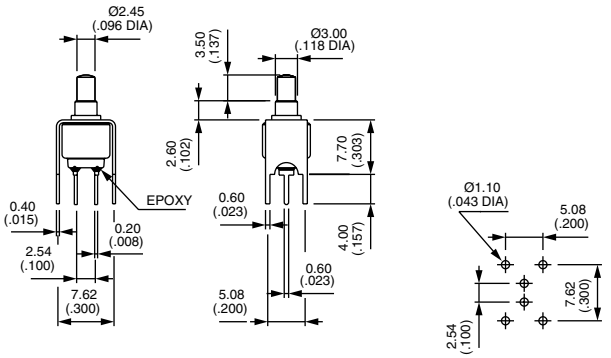
9100-9200-9500 series

Subminiature momentary pushbutton switches

SHORT CASE - STRAIGHT PC TERMINALS SHORT BRACKET : 9100Y



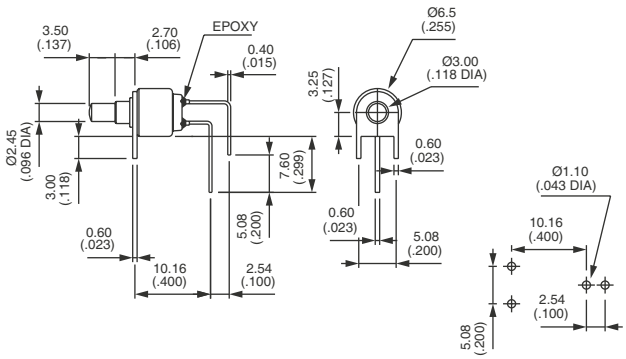
9133Y Normally Open



SHORT CASE - RIGHT ANGLE TERMINALS - VERTICAL : 9100WW



9133WW Normally Open



CONTACT MATERIALS

BASIC P/N

CD Gold plated brass (standard)

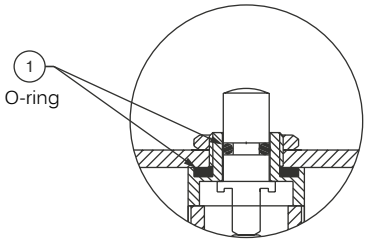
SEALING

BASIC P/N

Blank Epoxy sealed terminals standard

K Front panel sealing by two O-rings. Protects the switch against water and dust. Panel seal withstands 0.1 bar pressure.

ⓘ Option K for models 9533N, 9233N and 9133 only.

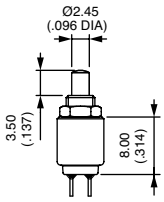


9100-9200-9500 series

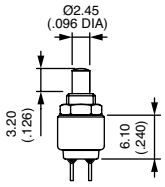
Subminiature momentary pushbutton switches

PLUNGERS

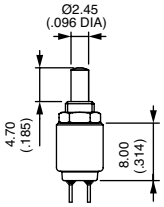
BASIC P/N [ ]



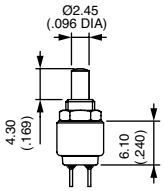
Blank
Standard
with long case



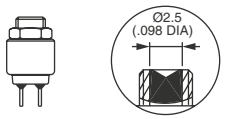
Blank
Standard
with short case



-4
Long
with long case



-4
Long
with short case



-0
Flush

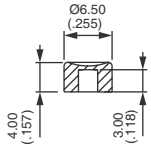
CAPS

BASIC P/N [ ] + U...

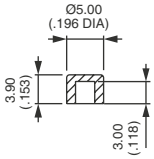
U4310 For use with plunger -4 only
U4320 For use with plunger -4 only

For cap colors, replace "**0**" with number :

1	Blue
1/4	Dark blue
2	Black
3	Green
4	Grey
5	Yellow
6	Red
7	Ivory
7/1	White
9	Orange



U4310



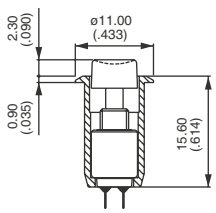
U4320

If not combined with bezel U4922, caps are to be ordered separately.

MOUTING BEZEL

BASIC P/N [ ] + U...

For 9500 model (case height 8 mm) only



U4922

The mounting bezel U4922 has been designed to facilitate the mounting of the 9500 series pushbutton switch onto a panel. The switch + bezel assembly is snapped into the equipment through the front of the panel, then electrically connected by solder lug terminals.
Panel cut-out : Ø 8.15 mm ± 0.05 (.320 DIA ± .002)