

5000 series

Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing



DISTINCTIVE FEATURES

17 actuators including toggles, paddle levers and locking levers in different lengths.

Various contact materials for low and high currents.

8 functions including maintained and momentary versions.

1 to 4 pole configurations.

12 terminal types including 9 for PC board mounting.

Other types include quick-connect and wire-wrap.

Several bushing styles.

3 types of finish including military black.

3 approvals (UL - CSA - CECC).

4 types of sealing for terminal or front panel requirements.

Numerous accessories available.



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ELECTRICAL SPECIFICATIONS

- Current/voltage rating with resistive load :

Contact	Maximum	Minimum	Level*
Silver (A)	4 A 30 VDC	50 mA 10 VDC	III and IV
Silver, gold plated (AD)	4 A 30 VDC Gold plating withstands up to 100 mA 30 VDC	10 mA 50 mV 10 µA 5 V	I to IV
Brass, gold plated (CD)	0.4 VA at 20 VAC or DC	10 mA 50 mV 10 µA 5 V	I and II

*For details, see Technical Information on website.

- For inductive, lamp or capacitive load, consult factory.
- Initial contact resistance : 10 mΩ max.
- Insulation resistance : 1,000 MΩ min. at 500 VDC
- Dielectric strength :
1,000 Vrms 50 Hz min. between terminals
1,500 Vrms 50 Hz min. between poles
1,500 Vrms 50 Hz min. between terminals and frame
- Contact bounce : 2 ms max.
- Electrical life at full load :
50,000 cycles for single and double pole
40,000 cycles for 3 pole
30,000 cycles for 4 pole
- Low level or mechanical life : 100,000 cycles



GENERAL SPECIFICATIONS

- Torque : 1.25 Nm (.922 Ft.lb) max. applied to nut
- Panel thickness : 2.5 mm (.098) with 2 nuts - 4 mm (.157) with 1 nut
- Operating temperature : -40 °C to +85 °C (-40 °F to +185 °F)



MATERIALS

- Case : diallylphthalate (DAP) or high temperature plastic material (UL94-V0)
- Actuator : brass, nickel plated
- Paddles : UL94HB polyamide
- Lever caps : vinyl
- Bushing : brass, nickel plated
- Housing : stainless steel or steel tin plated
- Contacts
A : silver
AD : silver, gold plated
CD : brass, gold plated
X814 : for peak currents, see "Special options".
- Terminal seal : epoxy

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

AGENCY APPROVALS



CECC 96201-007

3 A 250 VAC, 6 A 125 VAC

For VDE, refer to 55000 series.

NATO

Availability : consult factory for details of approved models.

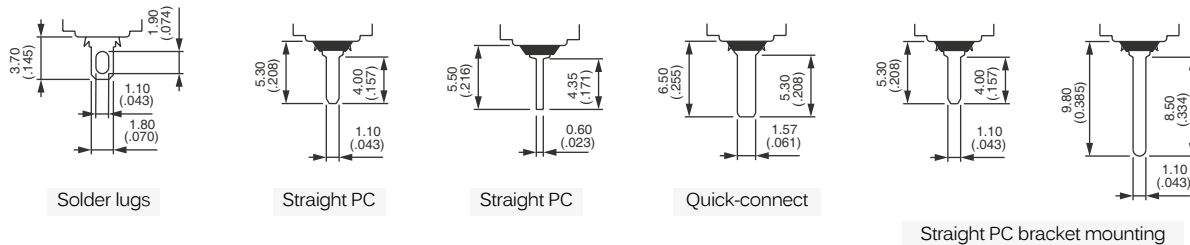
Marking : to order switches marked UL, CSA or CECC, complete appropriate box of ordering format. The preferential list does not appear on the switches.

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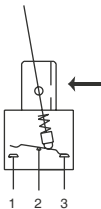


TERMINALS

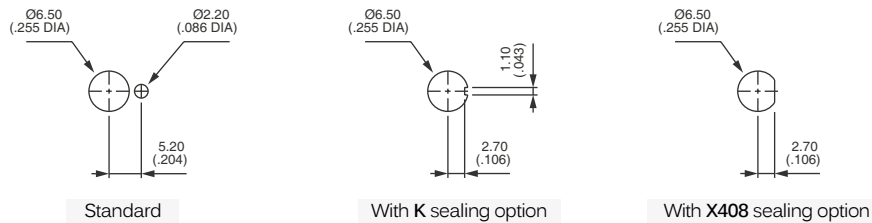


ELECTRICAL FUNCTION

→ KEYWAY

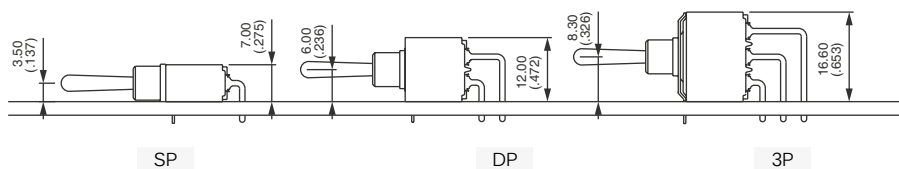


PANEL CUT-OUT

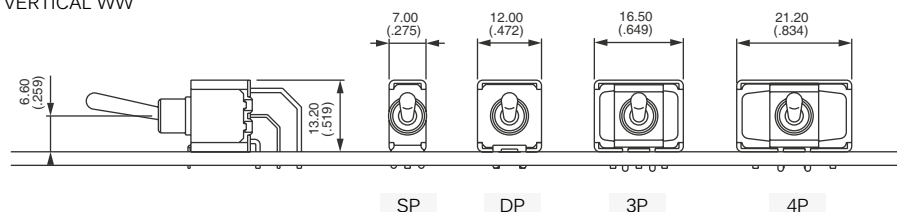


PCB MOUNTING FOR RIGHT ANGLE TERMINAL MODELS

HORIZONTAL W



VERTICAL WW



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BUILD YOUR PART NUMBER

5

SERIES

NUMBER OF POLES

3

Single pole

4

Double pole

5

Three pole

6

Four pole

TERMINALS

Blank

Solder lugs or straight PC depending on model

W

Right angle, horizontal mounting (5200 - 5400 switches)

WW

Right angle, vertical mounting (5200 - 5400 switches)

Y•

Bracket mounting (5200 switches)

Z

Quick-connect (5200 - 5900 switches)

MOMENTARY FOR FUNCTION 4

1R

ON ON MOM

2R

MOM ON MOM

0

Straight PC terminals, 5.08 (.200) terminal spacing

2

Straight PC terminals, 4.70 (.185) terminal spacing, right angle or quick-connect

4

6

7

9

6

ON - ON

9

7

8

2

4

Function 4

Must not have blank in «connections» box.
▲ Must not have blank in «momentary» box.

TH

Standard

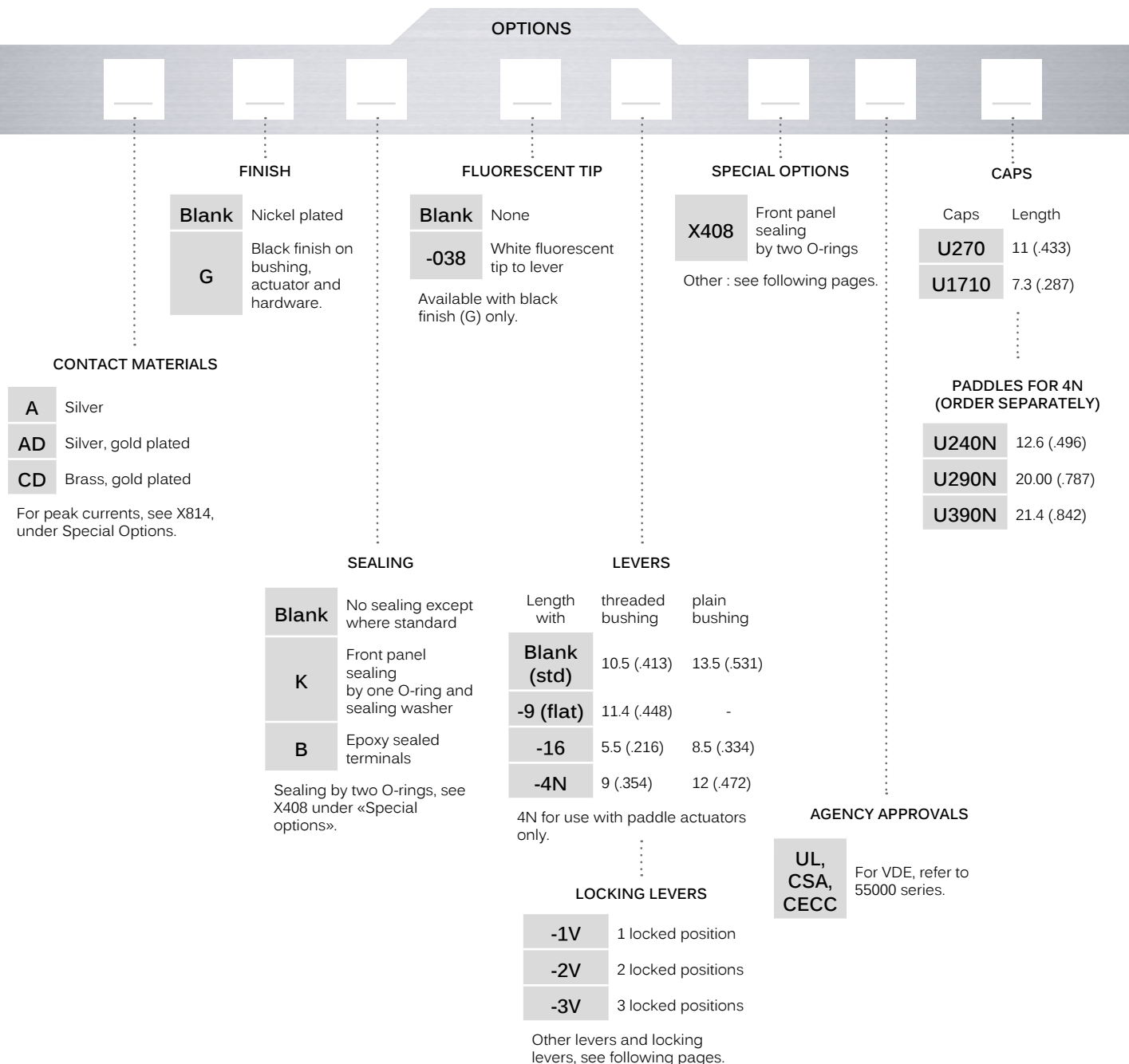
CT

ReversedFor functions 4, 4-1R, 4-2R (leave blank for all other functions).
Wiring diagrams, see Technical information on website.

Bushing Ø 6 (.236) x 0.75 IS also available as standard.

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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. See "Sealing Boots" section of website.



Mounting accessories : standard hardware supplied with all models with Ø 6.35 (1/4) or Ø 6 (.236) threaded bushing : 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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threaded bushing Ø 6.35 mm

SOLDER LUG TERMINALS SINGLE POLE



	III 2-3	II	I 1-2
5636	ON	-	ON
5639	ON	OFF	ON
5637	MOM	OFF	MOM
5638	ON	OFF	MOM
5632	ON	-	MOM

**SOLDER LUG TERMINALS
DOUBLE POLE**



	III 2-3 5-6	II	I 1-2 4-5
5646	ON	-	ON
5649	ON	OFF	ON
5647	MOM	OFF	MOM
5648	ON	OFF	MOM
5642	ON	-	MOM
5644*	ON	ON	ON
5644 1R*	ON	ON	MOM
5644 2R*	MOM	ON	MOM

SOLDER LUG TERMINALS THREE POLE



	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
5656	ON	-	ON
5659	ON	OFF	ON
5657	MOM	OFF	MOM
5658	ON	OFF	MOM
5652	ON	-	MOM

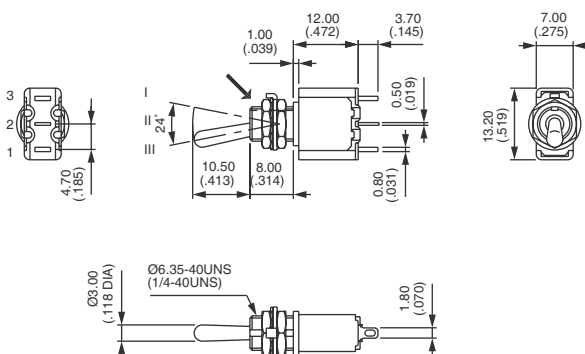
SOLDER LUG TERMINALS
FOUR POLE



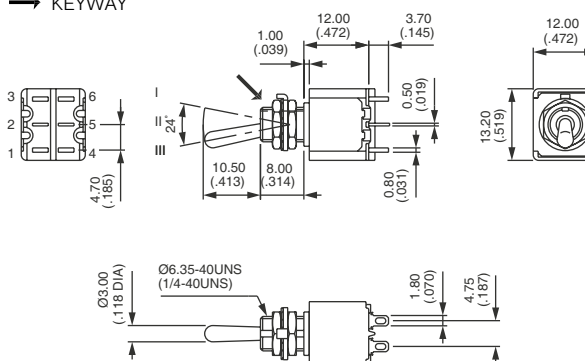
	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
	11-12		10-11
5666	ON	-	ON
5669	ON	OFF	ON
5667	MOM	OFF	MOM
5668	ON	OFF	MOM
5662	ON	-	MOM
5664*	ON	ON	ON
5664 1R*	ON	ON	MOM
5664 2R*	MOM	ON	MOM

→ KEYWAY

Shown with standard lever

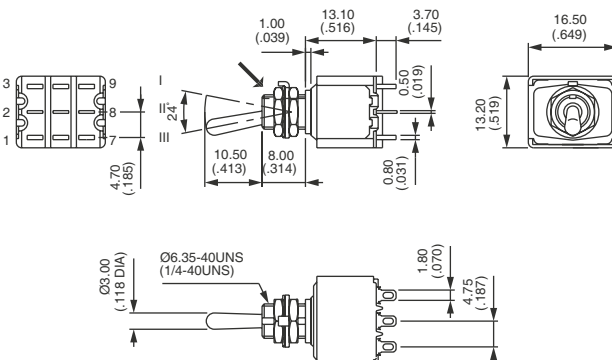


→ KEYWAY

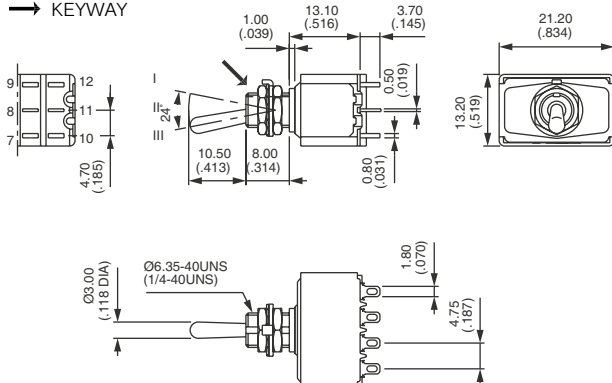


* Function 4 : SP in DP case - specify CT or TH connections.

→ KEYWAY



→ KEYWAY



* Function 4 : DP in 4P case - specify CT or TH connections.

All models above also available with flatted bushing : **5700** or with dia. 6 mm x 0.75 SI (.236 x 0.75 IS) : **5500**.

Miniature toggle switches •
Ø 6.35 mm or plain bushing

	III 2-3	II	I 1-2
5236 B	ON	-	ON
5239 B	ON	OFF	ON
5237 B	MOM	OFF	MOM
5238 B	ON	OFF	MOM
5232 B	ON	-	MOM

	III 2-3 5-6	II	I 1-2 4-5
5246 B	ON	-	ON
5249 B	ON	OFF	ON
5247 B	MOM	OFF	MOM
5248 B	ON	OFF	MOM
5242 B	ON	-	MOM
5244 B*	ON	ON	ON
5244 1R B*	ON	ON	MOM
5244 2R B*	MOM	ON	MOM

	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
5256 B	ON	-	ON
5259 B	ON	OFF	ON
5257 B	MOM	OFF	MOM
5258 B	ON	OFF	MOM
5252 B	ON	-	MOM

	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
	11-12		10-11
5266 B	ON	-	ON
5269 B	ON	OFF	ON
5267 B	MOM	OFF	MOM
5268 B	ON	OFF	MOM
5262 B	ON	-	MOM
5264 B*	ON	ON	ON
5264 1R B*	ON	ON	MOM
5264 2R B*	MOM	ON	MOM

All models above also available with flatted bushing : **5900** or with terminal spacing 4 mm (.157) : **5400**.

Shown with standard lever

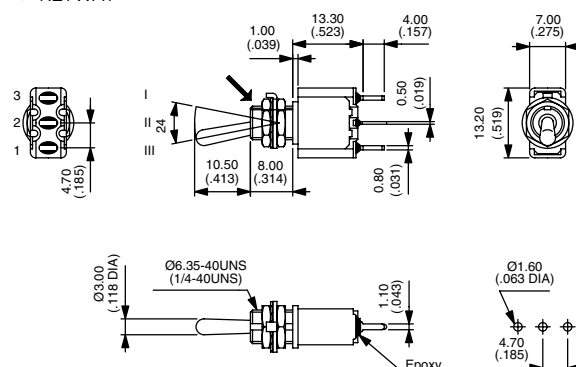


Figure 1 shows the dimensions of the connector. The top view shows a rectangular housing with six pins. The side view shows the connector assembly with dimensions for the pins and the housing. The cross-sectional view shows the internal structure of the connector, including the pins and the housing.

Dimensions (inches and millimeters):

- Top view: 3, 2, 1, 6, 5, 4, 4.70 (.185)
- Side view: 1.00 (.039), 13.30 (.523), 4.00 (.157), 12.00 (.472), 13.20 (.519), 24, 10.50 (.413), 8.00 (.314), 0.50 (.019), 0.80 (.031)
- Cross-sectional view: 03.00 (.118 DIA), 06.35-40UNS (1/4-40UNS), 1.10 (.043), 4.75 (.187), 4.75 (.187), 0.160 (.063 DIA), 4.70 (.185), Epoxy

* Function 4 : SP in DP case - specify CT or TH connections.

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STRAIGHT PC TERMINALS SPACING 5.08 (.200)



		III 2-3 5-6	II -	I 1-2 4-5
Single pole	Double pole			
5036 B	5046 B	ON	-	ON
5039 B	5049 B	ON	OFF	ON
5037 B	5047 B	MOM	OFF	MOM
5038 B	5048 B	ON	OFF	MOM
5032 B	5042 B	ON	-	MOM
	5044* B	ON	ON	ON
	5044 1R* B	ON	ON	MOM
	5044 2R* B	MOM	ON	MOM

Epoxy sealed terminals standard (B).

QUICK-CONNECT TERMINALS SINGLE POLE



	III 2-3 ON	II - OFF	I 1-2 ON
5236Z B	ON	-	ON
5239Z B	ON	OFF	ON
5237Z B	MOM	OFF	MOM
5238Z B	ON	OFF	MOM
5232Z B	ON	-	MOM

Single and double pole models also available with flatted bushing : 5900Z.
Epoxy sealed terminals standard (B).

QUICK-CONNECT TERMINALS DOUBLE POLE



	III 2-3 5-6	II -	I 1-2 4-5
5246Z B	ON	-	ON
5249Z B	ON	OFF	ON
5247Z B	MOM	OFF	MOM
5248Z B	ON	OFF	MOM
5242Z B	ON	-	MOM
5244Z* B	ON	ON	ON
5244Z 1R* B	ON	ON	MOM
5244Z 2R* B	MOM	ON	MOM

Epoxy sealed terminals standard (B).

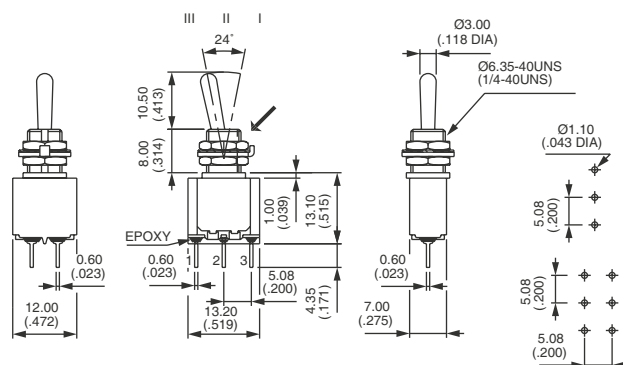
RIGHT ANGLE TERMINALS - HORIZONTAL SINGLE POLE



	III 2-3 ON	II - OFF	I 1-2 ON
5236W	ON	-	ON
5239W	ON	OFF	ON
5237W	MOM	OFF	MOM
5238W	ON	OFF	MOM
5232W	ON	-	MOM

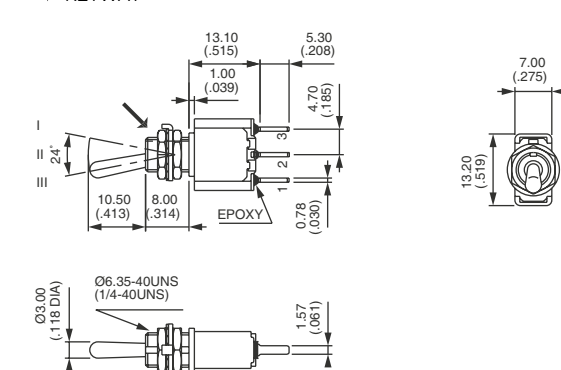
Also available with terminal spacing 4 mm (.157) instead of 4.7 (.185) : 5400W.

→ KEYWAY

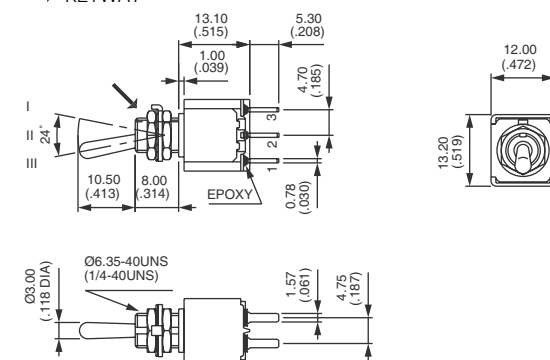


* Function 4 : SP in DP case - specify CT or TH connections.

→ KEYWAY

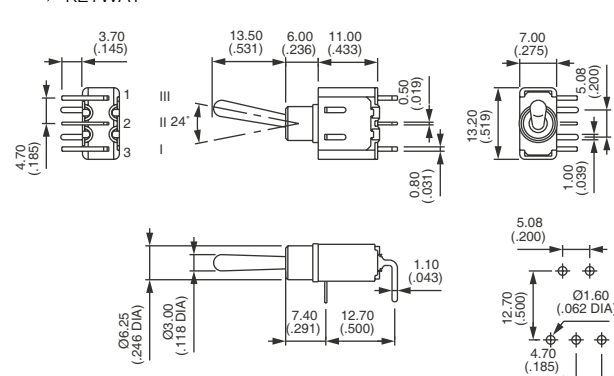


→ KEYWAY



* Function 4 : SP in DP case - specify CT or TH connections.

→ KEYWAY



5000 series

Miniature toggle switches •
plain bushing

RIGHT ANGLE TERMINALS - HORIZONTAL DOUBLE POLE



	III	II	I
	2-3		1-2
	5-6		4-5
5246W	ON	-	ON
5249W	ON	OFF	ON
5247W	MOM	OFF	MOM
5248W	ON	OFF	MOM
5242W	ON	-	MOM
5244W*	ON	ON	ON
5244W 1R*	ON	ON	MOM
5244W 2R*	MOM	ON	MOM

Also available with terminal spacing 4 mm (.157) instead of 4.7 (.185) : **5400W**.

RIGHT ANGLE TERMINALS - HORIZONTAL THREE POLE



	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
5256W	ON	-	ON
5259W	ON	OFF	ON
5257W	MOM	OFF	MOM
5258W	ON	OFF	MOM
5252W	ON	-	MOM

RIGHT ANGLE TERMINALS - VERTICAL SINGLE POLE



	III	II	I
	2-3		1-2
5236WW	ON	-	ON
5239WW	ON	OFF	ON
5237WW	MOM	OFF	MOM
5238WW**	ON	OFF	MOM
5232WW**	ON	-	MOM

RIGHT ANGLE TERMINALS - VERTICAL DOUBLE POLE



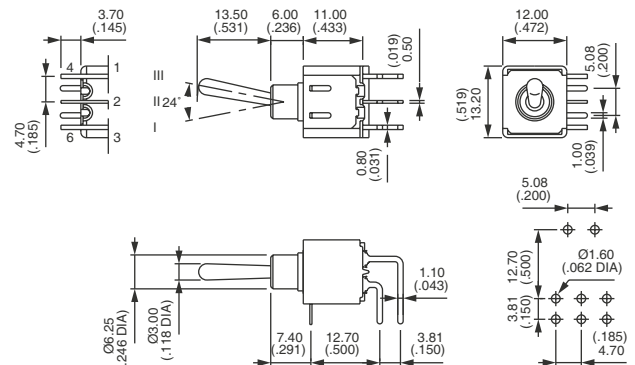
	III	II	I
	2-3		1-2
	5-6		4-5
5246WW	ON	-	ON
5249WW	ON	OFF	ON
5247WW	MOM	OFF	MOM
5248WW**	ON	OFF	MOM
5242WW**	ON	-	MOM
5244WW*	ON	ON	ON
5244WW 1R*	ON	ON	MOM
5244WW 2R*	MOM	ON	MOM

Vertical right angle models above : * Function 4 : SP in DP case, DP in 4P case - specify CT or TH connections.

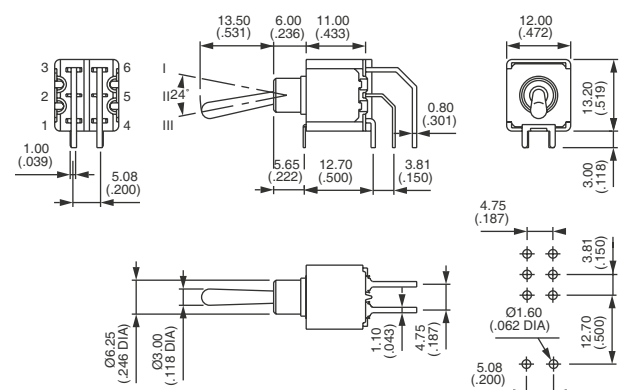
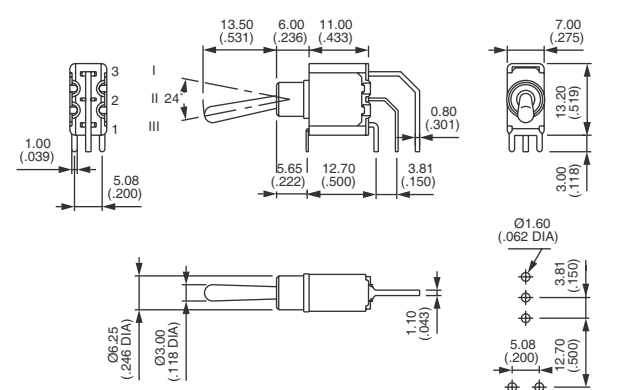
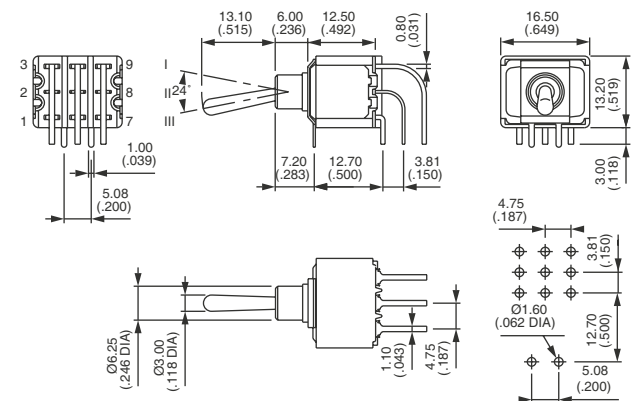
** Functions 2 and 8 : reversed connection available, consult factory.

Also available with pin spacing 2.54 mm (.100) instead of 3.81 mm (.150) : **5400WW**

Shown with standard lever



* Function 4 : SP in DP case - specify CT or TH connections.



5000 series

Miniature toggle switches •
plain bushing

RIGHT ANGLE TERMINALS - VERTICAL THREE POLE



	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
5256WW	ON	-	ON
5259WW	ON	OFF	ON
5257WW	MOM	OFF	MOM
5258WW**	ON	OFF	MOM
5252WW**	ON	-	MOM

** Functions 2 and 8 : reversed connection available, consult factory.

RIGHT ANGLE TERMINALS - VERTICAL FOUR POLE



	III	II	I
	2-3		1-2
	5-6		4-5
	8-9		7-8
	11-12		10-11
5266WW	ON	-	ON
5269WW	ON	OFF	ON
5267WW	MOM	OFF	MOM
5268WW**	ON	OFF	MOM
5262WW**	ON	-	MOM
5264WW*	ON	ON	ON
5264WW 1R*	ON	ON	MOM
5264WW 2R*	MOM	ON	MOM

Vertical right angle models above also available with terminal spacing 2.54 mm (.100) instead of 3.81 mm (.150) : 5400WW.

SHORT BRACKET - WIDTH 15.75 (.620) SINGLE POLE



	III	II	I
	2-3		1-2
5236Y B	ON	-	ON
5239Y B	ON	OFF	ON
5237Y B	MOM	OFF	MOM
5238Y B	ON	OFF	MOM
5232Y B	ON	-	MOM

Epoxy sealed terminals standard (B).

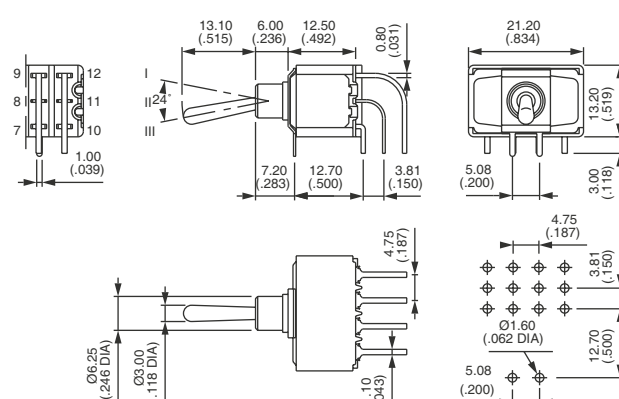
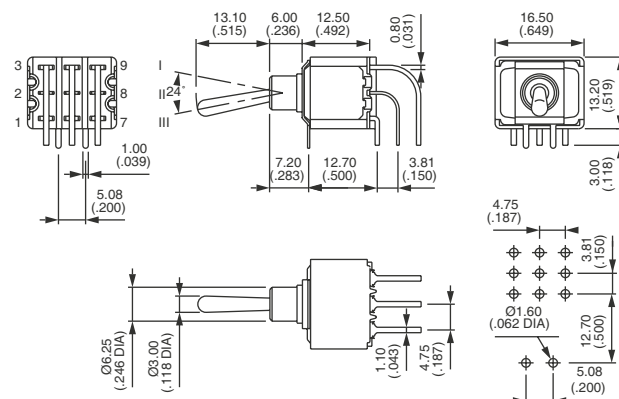
SHORT BRACKET - WIDTH 15.75 (.620) DOUBLE POLE



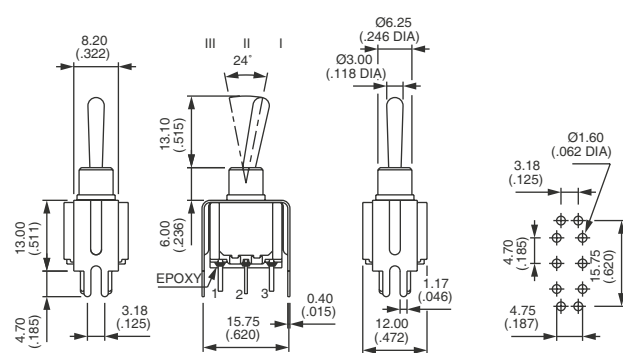
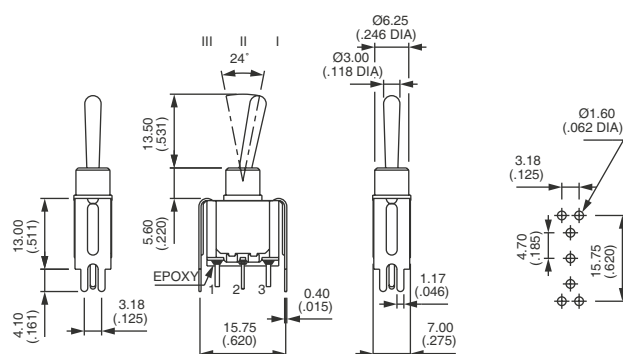
	III	II	I
	2-3		1-2
	5-6		4-5
5246Y B	ON	-	ON
5249Y B	ON	OFF	ON
5247Y B	MOM	OFF	MOM
5248Y B	ON	OFF	MOM
5242Y B	ON	-	MOM
5244Y B*	ON	ON	ON
5244Y 1R B*	ON	ON	MOM
5244Y 2R B*	MOM	ON	MOM

Epoxy sealed terminals standard (B).

Shown with standard lever



* Function 4 : SP in DP case, DP in 4P case - specify CT or TH connections.



*Function 4 : SP in DP case - specify CT or TH connections.

Miniature toggle switches • plain bushing

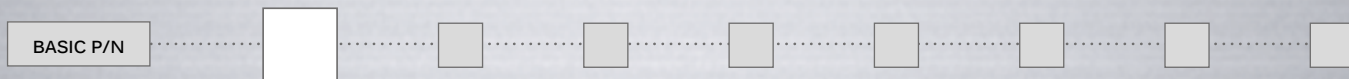
[illegible]

* Function 4 : SP in DP case - specify CT or TH connections.

5000 series

Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing

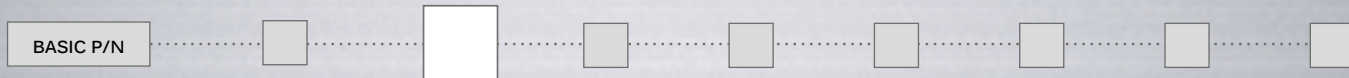
CONTACT MATERIALS



- A Silver
- AD Silver, gold plated
- CD Brass, gold plated

Special contacts for peak currents : see X814, under "Special Options".

FINISH



- Blank Nickel plated
- G Black finish on bushing, actuator and hardware

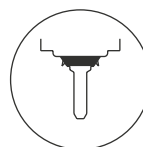
SEALING



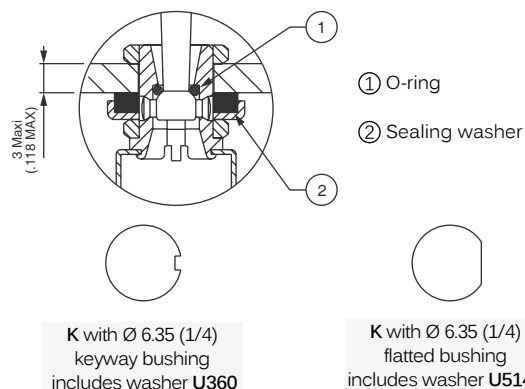
- Blank • For 5000 and 5200Z models : epoxy sealed terminals standard
- Other models : no sealing required
- K Front panel sealing by one O-ring and sealing washer. Protects the switch against water and dust. Panel seal withstands 1 bar pressure and remains sealed even when switch is operated.
- ⚠ Available on models with Ø 6.35 (1/4) **threaded bushing only**.
- Not available with levers 8, 9, 12, 22, 23.
- B Epoxy sealed terminals
- KB Combined sealings

Sealing by two O-rings, see X408 under "Special options".

OPTION B



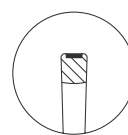
OPTION K



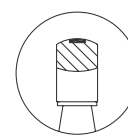
FLUORESCENT TIP



- Blank None
- 038 White fluorescent tip.
- Becomes luminous when submitted to ultraviolet rays.
- ⚠ Available with black finish (option G) only.
- Consult factory for levers available with this option.



-19
Standard lever



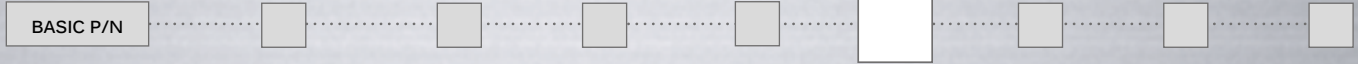
Locking lever

Same dimensions as standard actuator on next page.

5000 series

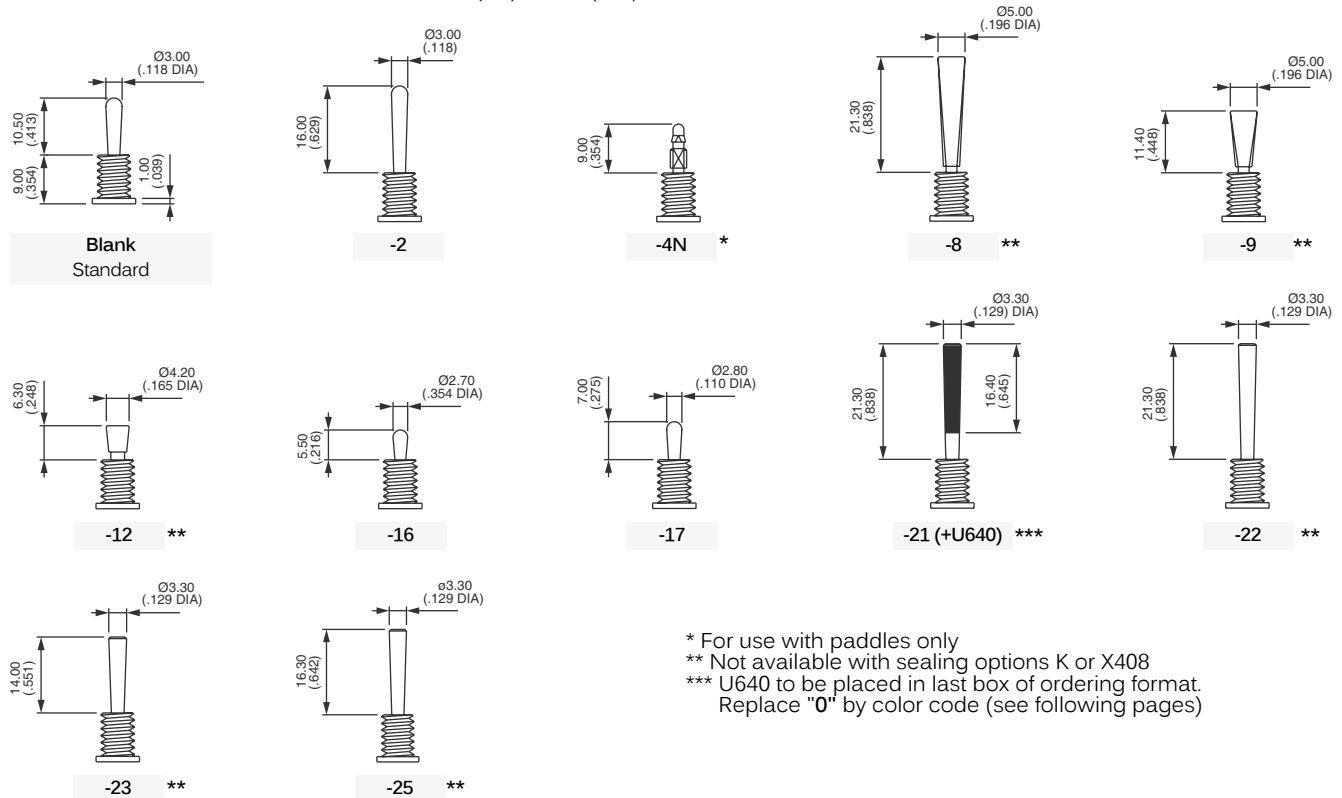
Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing

ACTUATORS



Dash compulsory before lever code.

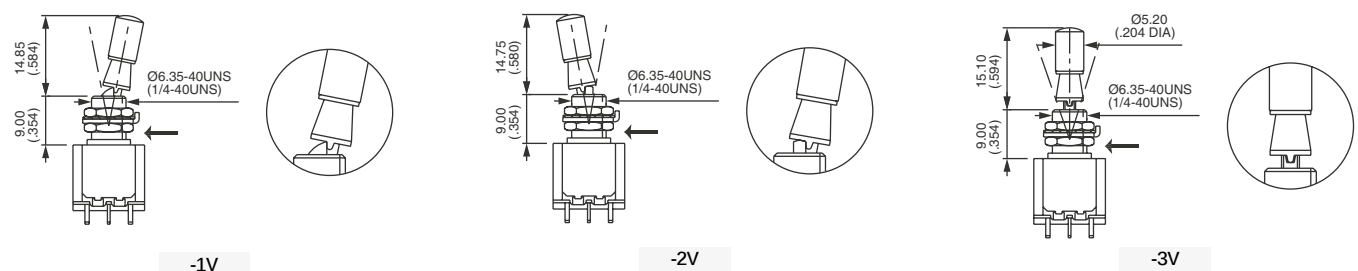
LEVERS FOR THREADED BUSHING MODELS Ø 6,35 (1/4) OR Ø 6 (.236)



LOCKING LEVERS FOR THREADED BUSHING MODELS Ø 6,35 (1/4)

- 1V 1 locked position (function 6)
- 2V 2 locked position (function 6)
- 3V 3 locked positions (functions 9 and 4)

→ KEYWAY



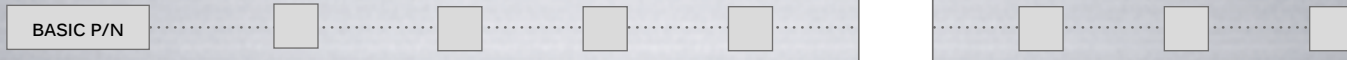
Consult factory for other locking lever options.

For plain bushing models, see X386 or X916 under "Special options" on the following pages.

5000 series

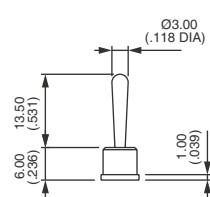
Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing

ACTUATORS (CONTINUED)

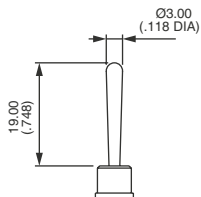


LEVERS FOR PLAIN BUSHING MODELS : W - WW AND Y

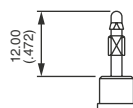
Lever length : With bracket or mounting plate lever length will be reduced by 0.4 mm (.015) as a rule. Please refer to switch technical drawings of basic models pages for details.



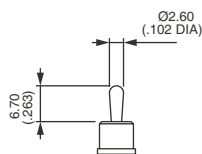
Blank
Standard



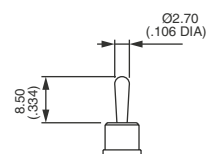
-2



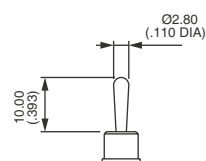
-4N



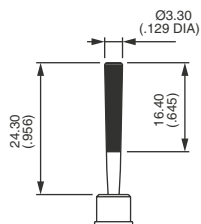
-7



-16



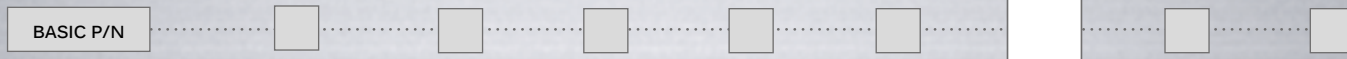
-17



-21 (+U640) *

* U640 to be placed in last box of ordering format.
For actuator colors, replace «0» by color code (see following pages)

SPECIAL OPTIONS



Blank No special requirement

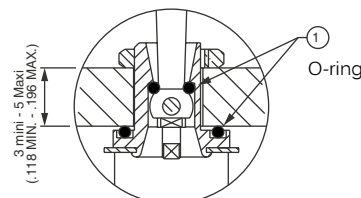
X408 Front panel sealing by two O-rings. Flatted bushing for precise orientation. Protects the switch against water and dust. Panel seal withstands 1 bar pressure and remains sealed even when switch is operated. Includes sealed terminals (option B).

⚠ Available only on models with threaded bushing.
Not available with levers 8, 9, 12, 22, 23.

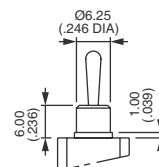
X371 Plain bushing Ø 6.25 mm (.246) (instead of standard threaded bushing).

X372 Threaded bushing Ø 6.35 (1/4). Height 7 mm (.274).

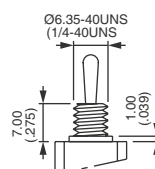
X386 Threaded bushing Ø 6.35 mm (1/4) to replace plain bushing on models W - WW and Y.



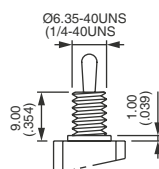
X408



X371



X372

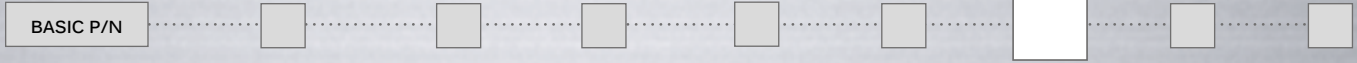


X386

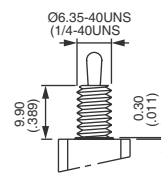
5000 series

Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing

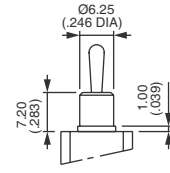
SPECIAL OPTIONS (CONTINUED)



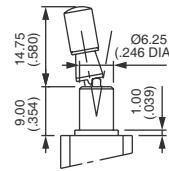
- X442** Threaded bushing Ø 6.35 mm (1/4) - **Height 9.9 mm (.389)**.
- X445** Plain bushing. **Height 7.2 mm (.283)** - for W, WW and Y models.
Available with the same levers, insulating cap and paddles as X404.*
- X601** **Silver plated brass contacts.**
Current/voltage rating for an electrical life of 20,000 cycles :
0.5 A 30 VDC. Minimum quantity : 5,000 pieces per model and shipment.
- X681** **Satin chrome actuator**
- X814** **Switches for peak currents** - single and double pole.
On request.
- X902** Plain bushing Ø 6.25 mm (.246) - **Height 9 mm (.354)** (not available with K sealing option).
- X916** Locking lever on model with plain bushing.
- X404** **Horizontal right angle (W) with reduced overall dimensions** (shown with lever -16)



X442



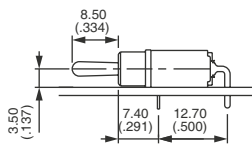
X445



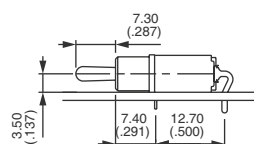
X916

⚠ With options X372, X386, X442 and X445, the lever lengths indicated on previous pages will be modified.

OPTION X404



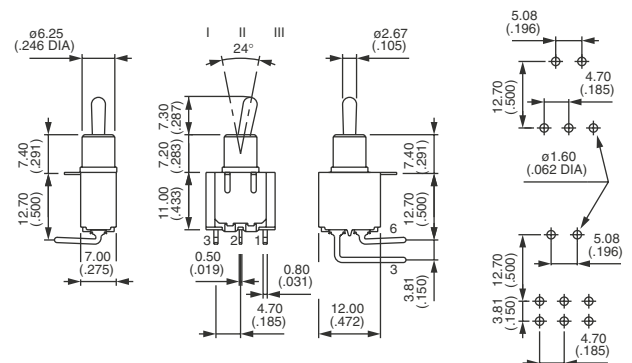
Standard W



Option X404



Single pole	Double pole	III	II	I
5236W X404	5246W X404	2-3		1-2
5239W X404	5249W X404	5-6	-	4-5
5237W X404	5247W X404	ON	OFF	ON
5238W X404	5248W X404	MOM	OFF	MOM
5232W X404	5242W X404	ON	-	MOM
	5244W X404*	ON	ON	ON
	5244W 1R X404*	ON	ON	MOM
	5244W 2R X404*	MOM	ON	MOM

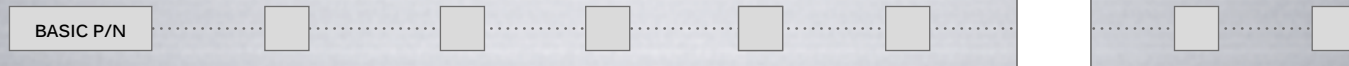


* Function 4 : SP in DP case - specify CT or TH connections

5000 series

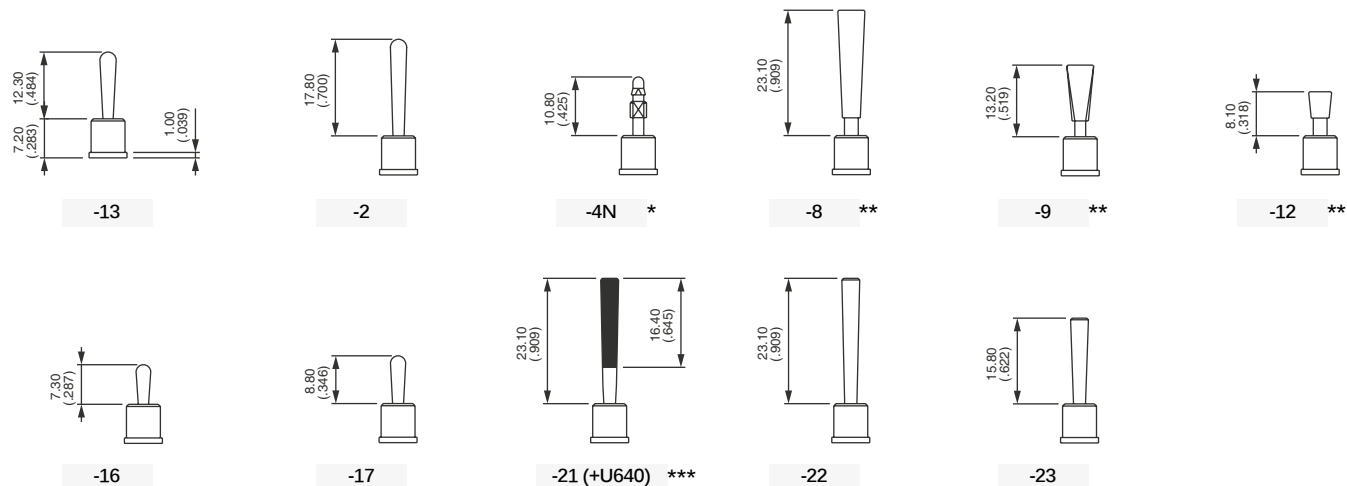
Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing

SPECIAL OPTIONS (CONTINUED)



OPTION X404 (CONTINUED)

LEVERS LENGTHS FOR X404 (ALSO AVAILABLE WITH X445 OPTION)



* For paddles

** Levers -8, -9 and -12 not available with function 2 (ON-MOM)

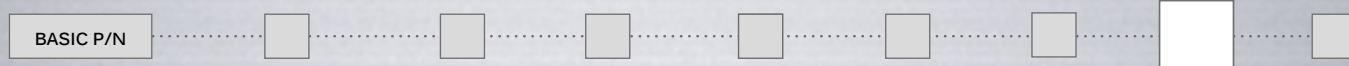
*** U640 to be placed in last box of ordering format. Replace "0" with color code.

Insulating caps and paddles for X404 :

Insulating cap U1710 available with lever style 16.

Paddles U240N, U290N and U390N available with lever style 4N. See details on next page..

AGENCY APPROVALS



Blank No agency approval required.

UL All standard models

CSA

CECC Standard models 5600 - 5200

Availability : consult factory for details of approved combinations or options.

Marking : to order switches marked UL, CSA or CECC, complete above box with desired approvals, in this order & without space (ex. : ULCSACECC). **VDE (with UL & CSA)** : Refer to 55000 series.

Preferential lists : see specifications.

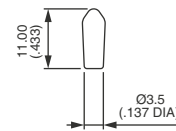
5000 series

Miniature toggle switches •
threaded bushing Ø 6.35 mm or plain bushing

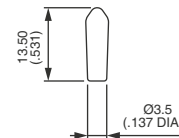
INSULATING CAPS



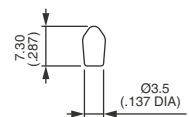
- U270** For standard lever & threaded bushing only
U1040 For standard lever & plain bushing only
U1710 For lever 17 and threaded bushing
 For lever 7 and plain bushing



U270



U1040



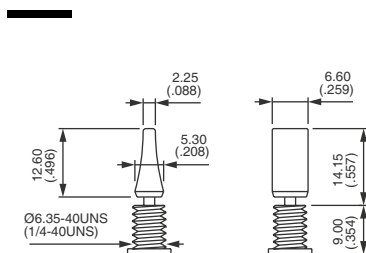
U1710

For cap colors, replace "0" with number :

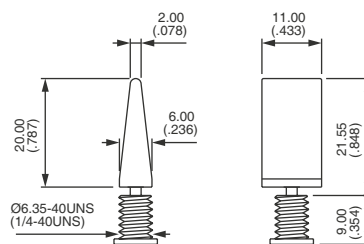
- 1 Blue
- 1/4 Dark blue
- 2 Black
- 3 Green
- 4 Grey
- 5 Yellow
- 6 Red
- 7/1 White
- 9 Orange

PADDLES

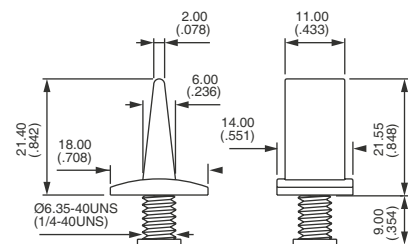
For use with lever 4N only. Shown with standard threaded bushing. Order separately.



U240N



U290N



U390N

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