

TYPICAL SWITCH

M20

2

2

S

S2

Poles

1	SPDT
2	DPDT SP3T

Circuits

2	ON	NONE	ON
3	ON	OFF	ON
5	ON	NONE	(ON)
8	(ON)	OFF	(ON)
9	ON	OFF	(ON)
*4	ON	ON	ON
*6	(ON)	ON	(ON)
*7	ON	ON	(ON)

() = Momentary

*3-ON circuits

Small Toggles

S	.413" (10.5mm) Bat
S2	.200" (5.08mm) Bat
S3	.256" (6.5mm) Bat
E	.450" (11.4mm) Flatted
E2	.256" (6.5mm) Flatted
E4	.840" (21.3mm) Flatted
Q	.550" (14.0mm) Cone
Q2	.640" (16.26mm) Cone
Q4	.840" (21.3mm) Cone

Toggle dimensions are based on use with
a .350" (8.9mm) bushing; add .070"
(1.78mm) to toggle length when combin-
ing with a .280" (7.1mm) bushing

Locking Lever

L	.201" (5.1mm) Dia. Locking Lever
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Small Bushings

A2	.280" (7.1mm) Smooth with Keyway
S2	.350" (8.9mm) Smooth with Keyway
A1	.280" (7.1mm) Threaded with Keyway
S1	.350" (8.9mm) Threaded with Keyway

Deduct bracket thickness of .020"
(0.51mm) from above dimensions

Bushing For Locking Levers

L2	Smooth with Keyway for Lever Lock
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Standard Toggle & Bushing Combinations:

SS2 & S2A2

IMPORTANT:



Switches are supplied without UL, cULus & CSA marking unless specified.
UL, cULus & CSA recognized only when ordered with marking on the switch.
Specific models, ratings & ordering instructions are noted on the General
Specifications page.

ORDERING EXAMPLE

G

Contact Materials & Ratings	
W	Silver; Rated 6A @ 125V AC & 3A @ 250V AC
G	Gold; Rated 0.4VA max @ 28V AC/DC max
A	Gold over Silver; Rated 6A @ 125V AC & 0.4VA max @ 28V AC/DC max

13

Terminals	
With Bracket	
13	.250" (6.35mm) Straight PC with .465" (11.8mm) Bracket
15	.425" (10.8mm) Straight PC with .630" (16.0mm) Bracket
17	.964" (24.5mm) Straight PC with 1.150" (29.2mm) Bracket
With Reinforced Bracket	
23	.250" (6.35mm) Straight PC with .465" (11.8mm) Bracket
25	.425" (10.8mm) Straight PC with .630" (16.0mm) Bracket
26	.750" (19.05mm) Straight PC with .953" (24.2mm) Bracket

B

Optional Caps	
B	For S Bat Toggle
C	Conical Cap for S Bat Toggle

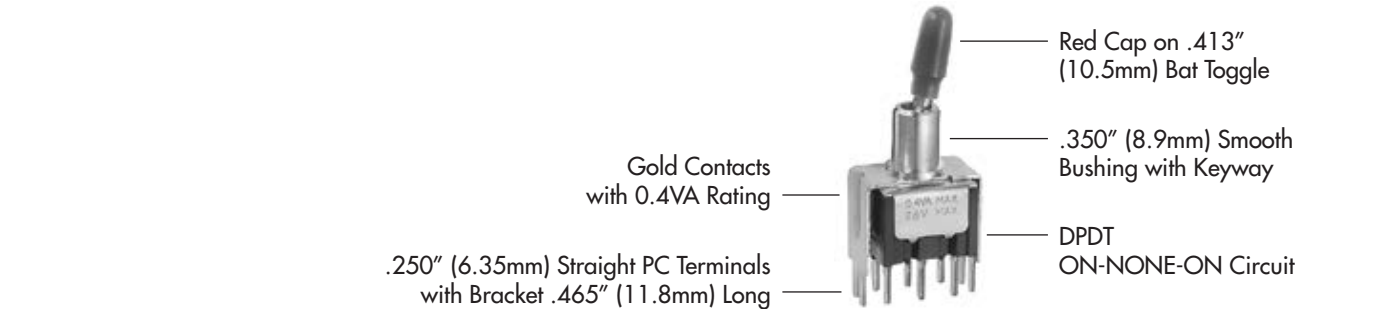
C

Cap Colors	
A	Black
B	White
C	Red
E	Yellow
F	Green
G	Blue

Cap for Locking Lever	
No Code	Nickel Plated Supplied with Switch
A	Black
C	Red
G	Blue

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

M2022SS2G13-BC

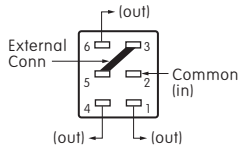
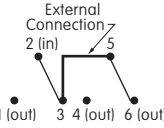
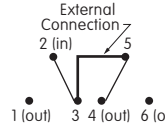
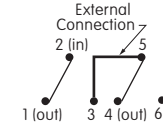


A	Toggles
	Rockers
	Pushbuttons
	Illuminated PB
	Programmable
	Keylocks
	Rotaries
	Slides
	Tactiles
	Tilt
	Touch
	Indicators
	Accessories
	Supplement

POLES & CIRCUITS

Pole	Model	Toggle Position () = Momentary			Connected Terminals			Throw & Schematics
		Down 	Center 	Up 	Down 	Center 	Up 	
SP	M2012	ON	NONE	ON	2-3	OPEN	2-1	SPDT 
	M2013	ON	OFF	ON				
	M2015	ON	NONE	(ON)				
	M2018	(ON)	OFF	(ON)				
	M2019	ON	OFF	(ON)				
DP	M2022	ON	NONE	ON	2-3 5-6	OPEN	2-1 5-4	DPDT 
	M2023	ON	OFF	ON				
	M2025	ON	NONE	(ON)				
	M2028	(ON)	OFF	(ON)				
	M2029	ON	OFF	(ON)				

For 3 Throw (3-On)

Pole	Model	Connected Terminals & Schematics			External Connection
		Down	Center	Up	
SP	M2024 M2026 M2027	ON (ON) ON	ON ON ON	ON (ON) (ON)	The SP3T model utilizes a double pole base. External connection must be made during field installation. 
		 2-3 5-6	 2-3 5-4	 2-1 5-4	

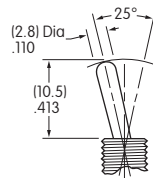
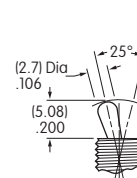
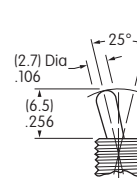
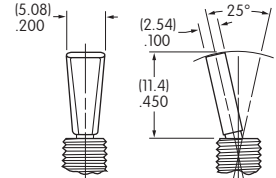
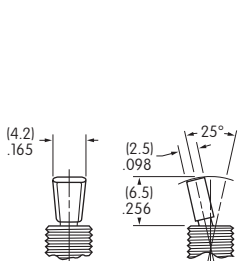
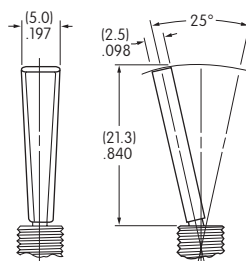
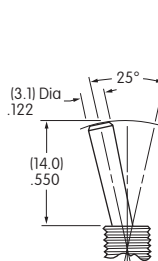
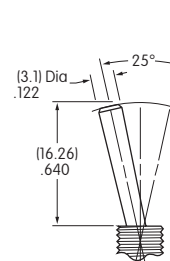
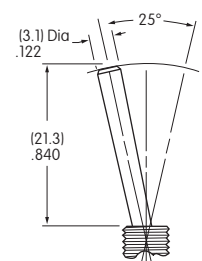
SMALL TOGGLES

Important:

Toggle length changes based on bushing selected. All illustrations are shown with .350" (8.9mm) long bushing. When using a .280" (7.1mm) long bushing, toggle length increases .070" (1.78mm).

Standard Material & Finish:

Brass with Bright Chrome
Contact factory for optional finishes.

S.413"
(10.5mm)
Bat**S2**.200"
(5.08mm)
Bat**S3**.256"
(6.5mm)
Bat**E**.450"
(11.4mm)
Flatted**E2**.256" (6.5mm)
Flatted**E4**.840" (21.3mm)
Flatted**Q**.550" (14.0mm)
Cone**Q2**.640" (16.26mm)
Cone**Q4**.840" (21.3mm)
Cone

SMALL BUSHINGS

A Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

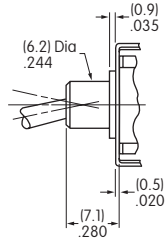
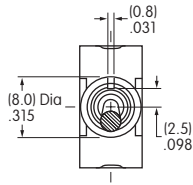
Touch

Indicators

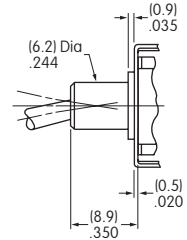
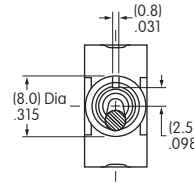
Accessories

Supplement

A2 .280" (7.1mm) Smooth with Keyway

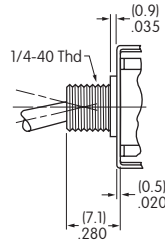
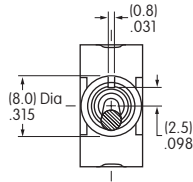


S2 .350" (8.9mm) Smooth with Keyway

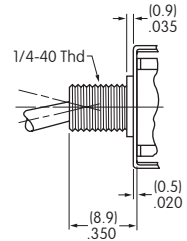
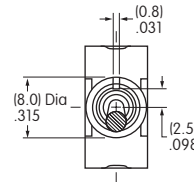


When using this bushing, toggle length is increased by .070" (1.78mm).

A1 .280" (7.1mm) Threaded with Keyway



S1 .350" (8.9mm) Threaded with Keyway

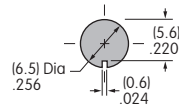


When using this bushing, toggle length is increased by .070" (1.78mm). Maximum Panel Thickness with Standard Hardware: .031" (0.8mm)

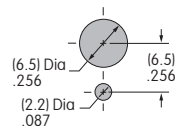
Maximum Panel Thickness with Standard Hardware: .102" (2.6mm)

Panel Cutouts

For A2, S2, A1, or S1 Bushing with Keyway



For A1 or S1 Bushing with Locking Ring



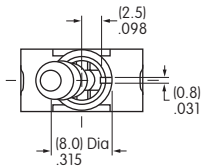
Standard Hardware:

- 2 Hex Nuts (AT513H)
- 1 Lockwasher (AT509)
- 1 Locking Ring (AT507H)

For dimensions, see Accessories & Hardware section.

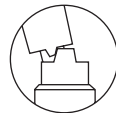
LOCKING LEVER & BUSHING

LL2 Smooth with Keyway



Locking Mechanism

on-none-on



2 positions lock

on-none-(on)



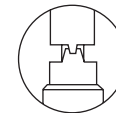
1 position locks

on-off-(on)
on-on-(on)



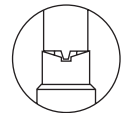
2 positions lock

on-off-on
on-on-on



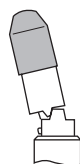
3 positions lock

(on)-off-(on)
(on)-on-(on)



1 position locks

No Code



Cap for Locking Lever

Supplied with Cap AT427
Material & Finish:

Brass with Nickel Plating

Lever Material & Finish:

Brass with Chrome Plating

Color Codes for Optional Anodized Aluminum Caps

A

Black

C

Red

G

Blue

CONTACT MATERIALS & RATINGS

W

Silver over Silver

Power Level

6A @ 125V AC & 3A @ 250V AC

G

Gold over Brass or Copper

Logic Level

0.4VA maximum @ 28V AC/DC maximum

Note: See Supplement section to find complete explanation of operating range.

A

Gold over Silver

Power Level
or Logic Level

6A @ 125V AC
or 0.4VA maximum @ 28V AC/DC maximum

Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See Supplement section to find complete explanation of dual rating and operating range.

TERMINALS

Straight PC Mount with Bracket

Straight PC Mount with Reinforced Bracket

13

.250" (6.35mm)
Terminal with
.465" (11.8mm)
Bracket

15

.425" (10.8mm)
Terminal with
.630" (16.0mm)
Bracket

17

.964" (24.5mm)
Terminal with
1.150" (29.2mm)
Bracket

23

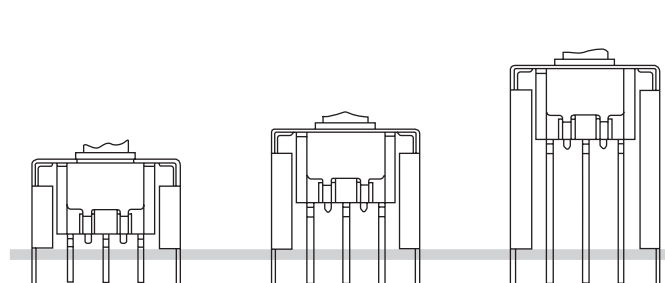
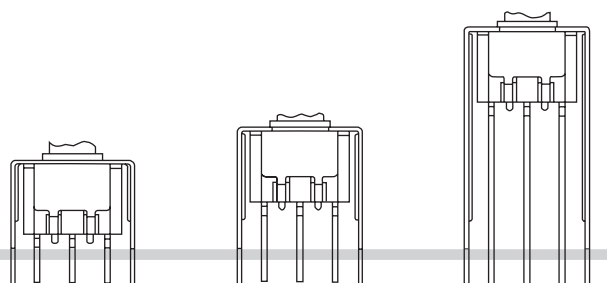
.250" (6.35mm)
Terminal with
.465" (11.8mm)
Bracket

25

.425" (10.8mm)
Terminal with
.630" (16.0mm)
Bracket

26

.750" (19.05mm)
Terminal with
.953" (24.2mm)
Bracket



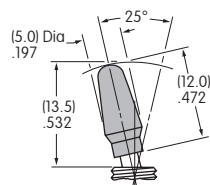
PCB footprints are on the following Typical Switch Dimension page.

OPTIONAL CAPS & CAP COLORS

B

* AT415
for S Bat Toggle

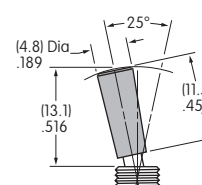
Material:
Polyethylene



C

* AT444
Conical Cap for
S Bat Toggle

Material:
Polyethylene



* AT415 and AT444 for use with S toggles only, not S2 or S3 toggles.

Cap Colors
Available:

A

Black

B

White

C

Red

E

Yellow

F

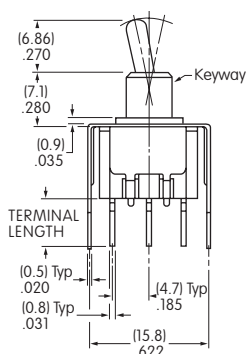
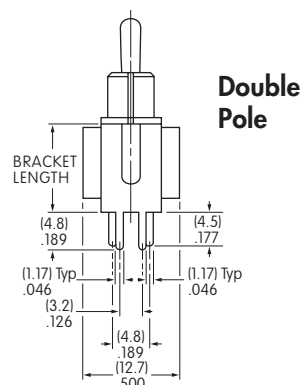
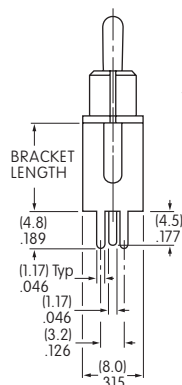
Green

G

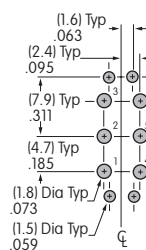
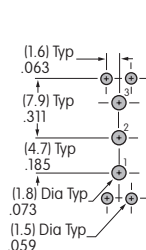
Blue

TYPICAL SWITCH DIMENSIONS

Straight PC • Bracket

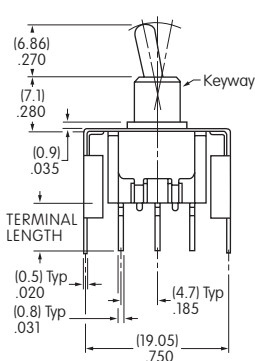
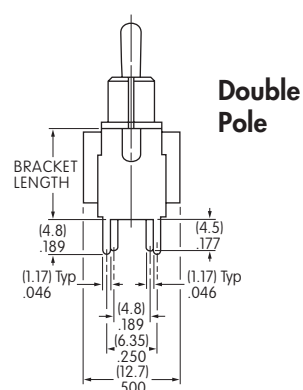
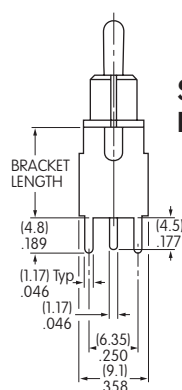


M2012S2A2G13

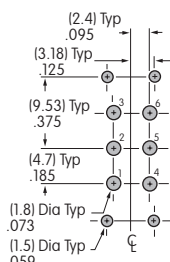
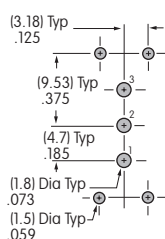


Terminal Code:	Terminal Length:	Bracket Length:
13	.250" (6.35mm)	.465" (11.8mm)
15	.425" (10.8mm)	.630" (16.0mm)
17	.964" (24.5mm)	1.150" (29.2mm)

Straight PC • Reinforced Bracket



M2012S2A2G23



Terminal Code:	Terminal Length:	Bracket Length:
23	.250" (6.35mm)	.465" (11.8mm)
25	.425" (10.8mm)	.630" (16.0mm)
26	.750" (19.05mm)	.953" (24.2mm)

Mouser Electronics

Authorized Distributor

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

NKK Switches:

[M2012EA2W13](#) [M2018SS2G13](#) [M2022SS2W23/UC](#) [M2012S2A2G13](#) [M2012S2A2W13](#) [M2013S2A2W13](#)
[M2013SS2G23](#) [M2022LL2W13](#) [M2028SS2G13](#) [M2012SS2G13-BC](#) [M2012SS1W13/UC](#) [M2022S2A2G26](#)
[M2012SS1W13/CUL](#) [M2013S2A2G15](#) [M2022SS1W13/CUL](#) [M2023SA1W13](#) [M2024S2A2W13](#) [M2028SA1W13](#)
[M2012S2A2W25/UC](#) [M2012SS1W25](#) [M2015SS2G23](#) [M2022SA2A13](#) [M2013SA1W13](#) [M2032SS1W13/UC](#)
[M2013S3S1W13](#) [M2012S3S1W13](#) [M2012SS2G13-BG](#) [M2012S2S1W13](#) [M2013S2S1W13](#) [M2022S2S1W13](#)
[M2012SS2G13-BF](#) [M2012SA1G15](#) [M2012ES1A25](#) [M2012S3S1W13/CUL](#) [M2013S3S1W13/CUL](#) [M2018ES2A23](#)
[M2018B2B1W13](#) [M2022SS1W13](#) [M2012SS1W17](#) [M2012SS2W13](#) [M2015EA2G13](#) [M2022EA1G13](#) [M2012SS1G13](#)
[M2012SS2G13-BE](#) [M2022SS2G13](#) [M2022S2A2W23/U](#) [M2012SA2W13-BA](#) [M2012EA1W15](#) [M2012SS2W13-BC](#)
[M2018SS1W13](#) [M2019EA2A13](#) [M2024E2S2G13](#) [M2012SS1W15](#) [M2012LL2G13](#) [M2015SS2G13](#) [M2013SS2G13](#)
[M2015SA2W13](#) [M2012SS2G13](#) [M2012EA2G13](#) [M2012S3A2G13](#) [M2023SS2G13](#) [M2022SS2W26](#) [M2042SA2W23](#)
[M2012SS1W15-BA](#) [M2022SS2W13/C](#) [M2018SA1G13](#) [M2022SS2W13](#) [M2012S3A1G13](#) [M2012SA2W13](#)
[M2012ES2G13/U](#) [M2012SS2W13/C](#) [M2018EA2A13](#) [M2013SS2W13](#) [M2013SS1W13](#) [M2022SS2G13-BC](#)
[M2022ES2G13/U](#) [M2012SS1W13](#) [M2012S2A2G15](#) [M2012SA1W13](#) [M2018ES2A25](#) [M2022S2A2W13](#)
[M2024SS2G13](#) [M2012S3S2G13](#) [M2012LL2W13](#) [M2032LL3A13](#) [M2018ES2G13](#) [M2022SA2G23](#) [M2012LL2G25](#)
[M2013SA2G13](#) [M2019SS2G13](#) [M2018SS2W13](#) [M2024E2A2W23](#) [M2019S2A1G13](#) [M2015SS2A13](#) [M2015SS1W25](#)
[M2015SA2A13](#) [M2015SS2W13](#) [M2012SA2A13](#) [M2013SA2G13/U](#) [M2012S2A2W25](#)