

M20

1

2

S2

A2

Poles

1	SPDT
2	DPDT SP3T
3	3PDT
*4	4PDT DP3T

*4-pole available on vertical models only.

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 available with double and four pole bases only

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

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

Bushing For Locking Levers

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

S2A2G30, S2A2G40, SS2G30, SS2G40,
LL2G30, & LL2G40

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

40

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

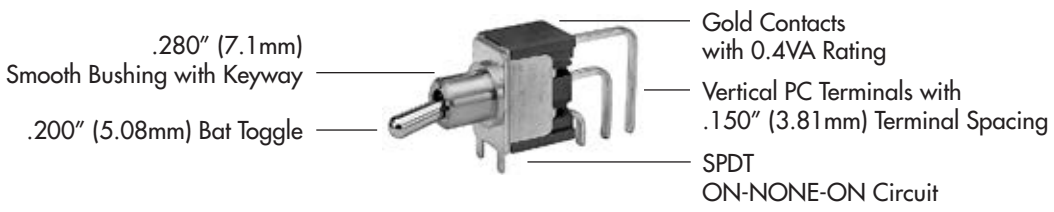
Terminals	
30	.150" (3.81mm) Right Angle PC (1-3 Pole)
32	Right Angle PCB (1 Pole & 0.4VA Rating Only)
40	.150" (3.81mm) Vertical PC (1-4 Pole)
45	.100" (2.54mm) Vertical PC (1-4 Pole)

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

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

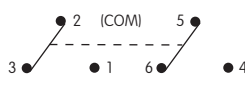
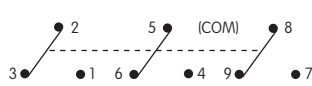
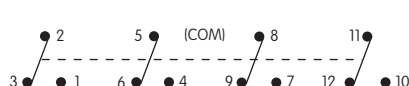
Cap Colors	
A	Black
B	White
C	Red
E	Yellow
F	Green
G	Blue

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
M2012S2A2G40



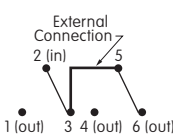
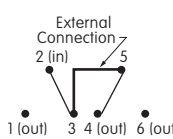
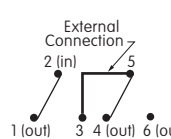
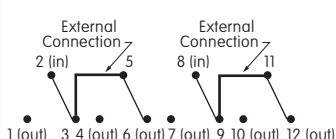
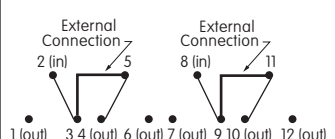
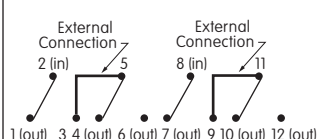
A	Toggles
	Rockers
	Pushbuttons
	Illuminated PB
	Programmable
	Keylocks
	Rotaries
	Slides
	Tactiles
	Tilt
	Touch
	Indicators
	Accessories
	Supplement

POLES & CIRCUITS

Pole	Model	Toggle Position () = Momentary			Connected Terminals			Throw & Schematics
		Down 	Center 	Up 	Down 	Center 	Up 	
SP	* M2012	ON	NONE	ON				Note: Terminal numbers are not actually on the switch. * Reverse circuits available for vertical mount SP & DP upon request. 
	M2013	ON	OFF	ON				
	M2015	ON	NONE	(ON)	2-3	OPEN	2-1	
	* M2018	(ON)	OFF	(ON)				
	M2019	ON	OFF	(ON)				
DP	* M2022	ON	NONE	ON				
	M2023	ON	OFF	ON				
	M2025	ON	NONE	(ON)	2-3 5-6	OPEN	2-1 5-4	
	* M2028	(ON)	OFF	(ON)				
	M2029	ON	OFF	(ON)				
3P	M2032	ON	NONE	ON				
	M2033	ON	OFF	ON				
	M2035	ON	NONE	(ON)	2-3 5-6 8-9	OPEN	2-1 5-4 8-7	
	M2038	(ON)	OFF	(ON)				
	M2039	ON	OFF	(ON)				
4P	M2042	ON	NONE	ON				
	M2043	ON	OFF	ON				
	M2045	ON	NONE	(ON)	2-3 5-6 8-9 11-12	OPEN	2-1 5-4 8-7 11-10	
	M2048	(ON)	OFF	(ON)				
	M2049	ON	OFF	(ON)				

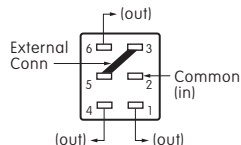
For 3 Throw (3-On)

Connected Terminals & Schematics

Pole	Model	Down	Center	Up	Down	Center	Up
SP	M2024	ON	ON	ON			
	M2026	(ON)	ON	(ON)			
	M2027	ON	ON	(ON)			
DP	M2044	ON	ON	ON			
	M2046	(ON)	ON	(ON)			
	M2047	ON	ON	(ON)			

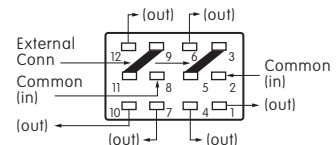
The SP3T model utilizes a double pole base.

External connection must be made during field installation.



The DP3T model utilizes a four pole base.

External connection must be made during field installation.

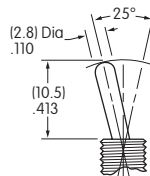


SMALL TOGGLES

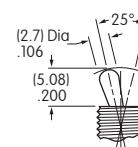
Important:

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).

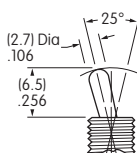
S .413" (10.5mm) Bat



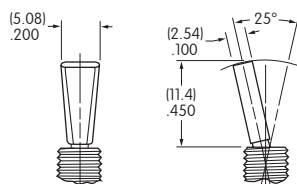
S2 .200" (5.08mm) Bat



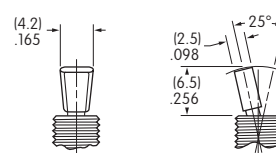
S3 .256" (6.5mm) Bat



E .450" (11.4mm) Flatted



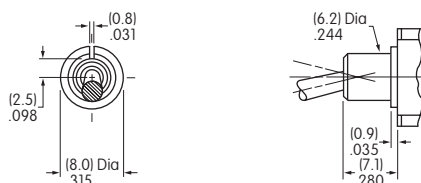
E2 .256" (6.5mm) Flatted



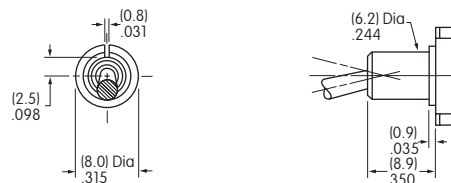
Standard Material & Finish: Brass with Bright Chrome
Contact factory for optional finishes.

SMALL BUSHINGS

A2 .280" (7.1mm) Smooth with Keyway

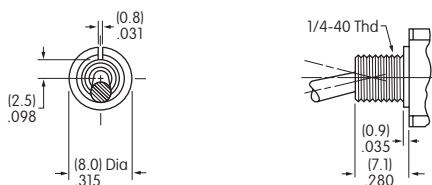


S2 .350" (8.9mm) Smooth with Keyway

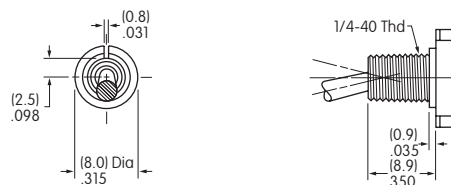


When using this bushing, toggle length is increased by .070" (1.78mm).

A1 .280" (7.1mm) Threaded with Keyway



S1 .350" (8.9mm) Threaded with Keyway

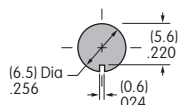


When using this bushing, toggle length is increased by .070" (1.78mm). Maximum Panel Thickness with Standard Hardware: .031" (0.8mm)

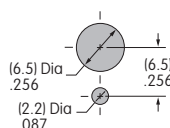
Maximum Panel Thickness with Standard Hardware: .102" (2.6mm)

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)

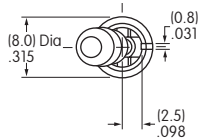
For dimensions, see Accessories & Hardware section.

LOCKING LEVER & BUSHING

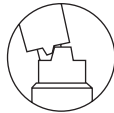
LL2

Smooth with Keyway

Locking Mechanism



on-none-on



2 positions lock

on-none-(on)



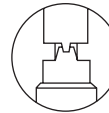
1 position locks

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



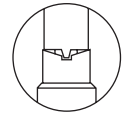
2 positions lock

on-off-on
on-on-on

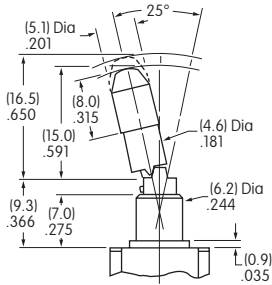


3 positions lock

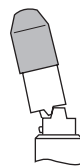
(on)-off-(on)
(on)-on-(on)



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

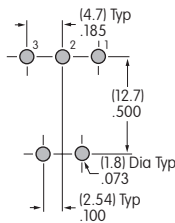
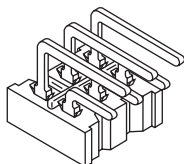
6A @ 125V AC
or 0.4VA maximum @ 28V AC/DC maximum

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.

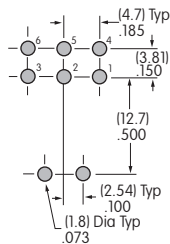
TERMINALS

30

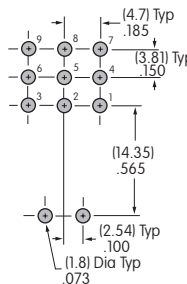
.150" (3.81mm)
Right Angle PC (1-3 Pole)



Single Pole



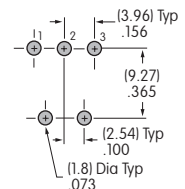
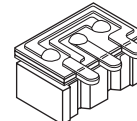
Double Pole



Three Pole

32

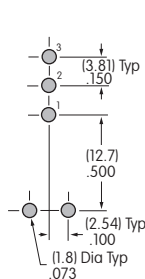
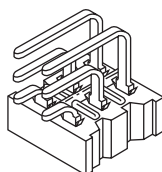
Right Angle PCB
with Reverse Circuit
(1 Pole & 0.4VA Rating Only)



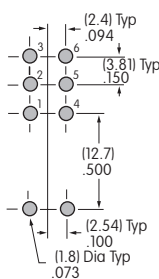
Terminal dimensions are shown on the Typical Switch Dimensions pages which follow.

TERMINALS (Continued)

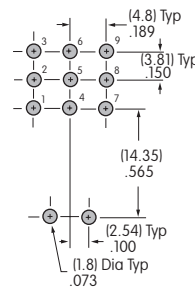
40 .150" (3.81mm) Vertical PC (1-4 Pole)



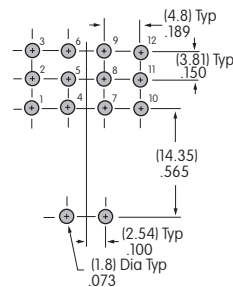
Single Pole



Double Pole

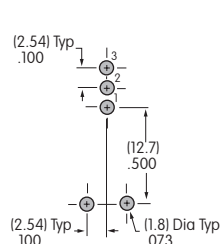
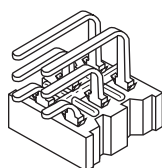


Three Pole

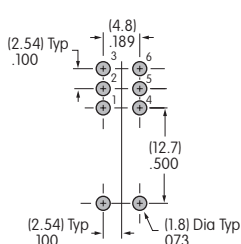


Four Pole

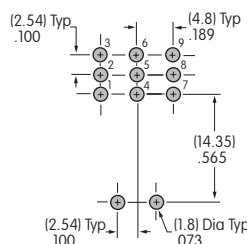
45 .100" (2.54mm) Vertical PC (1-4 Pole)



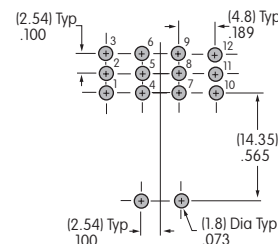
Single Pole



Double Pole



Three Pole



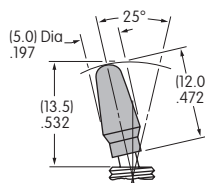
Four Pole

Terminal dimensions are shown on the Typical Switch Dimensions pages which follow.

OPTIONAL CAPS & CAP COLORS

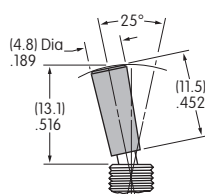
B * AT415 for S Bat Toggle

Material:
Polyethylene



C * AT444 Conical Cap for S Bat Toggle

Material:
Polyethylene



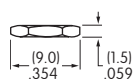
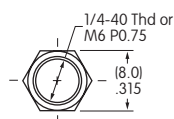
Colors Available

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

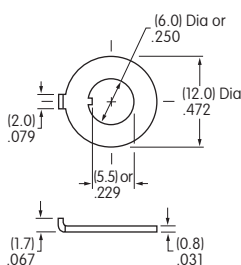
* AT415 and AT444 for use with S toggles only, not S2 or S3 toggles.

STANDARD HARDWARE

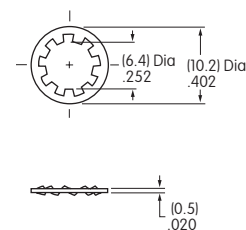
AT513H for Inch
AT513M for Metric
Hex Nut (2 per switch)
Brass/Nickel



AT507H for Inch
AT507M for Metric
Locking Ring (1 per switch)
Steel with Zinc/Chromate



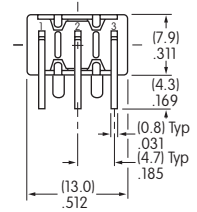
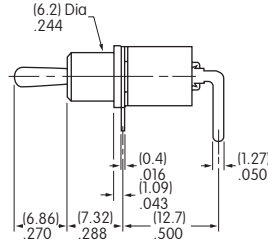
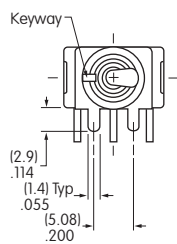
AT509
Lockwasher (1 per switch, none
with splashproof)
Steel with Zinc/Chromate



TYPICAL SWITCH DIMENSIONS

.150" (3.81mm) Right Angle PC

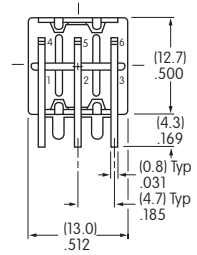
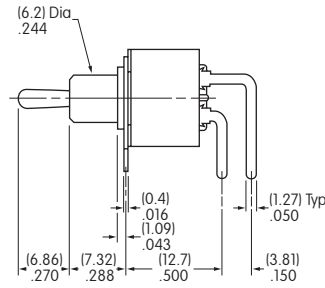
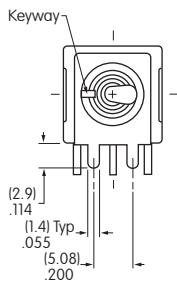
Single Pole



M2012S2A2G30

.150" (3.81mm) Right Angle PC

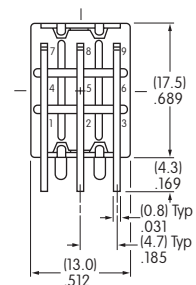
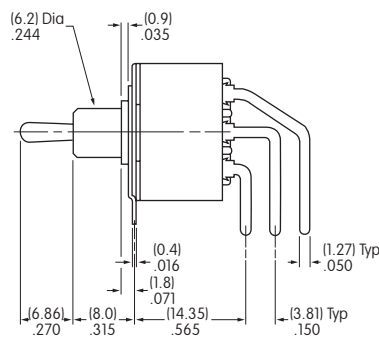
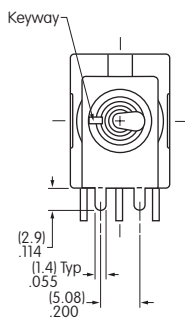
Double Pole



M2022S2A2G30

.150" (3.81mm) Right Angle PC

Three Pole

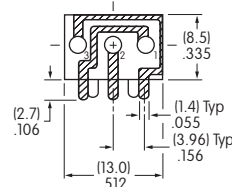
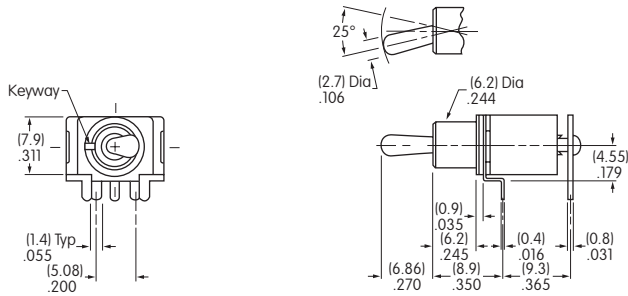


M2032S2A2G30

TYPICAL SWITCH DIMENSIONS

Single Pole • Reverse Circuit

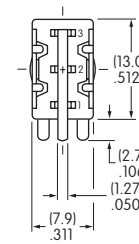
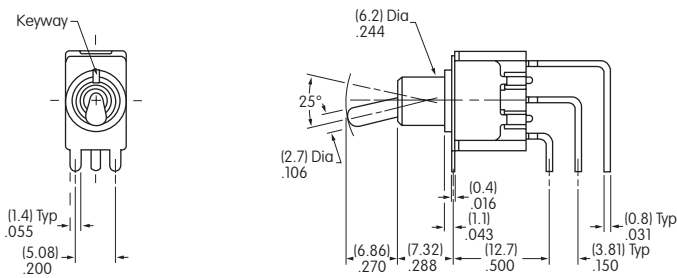
Right Angle PCB



M2012S2A2G32

Single Pole

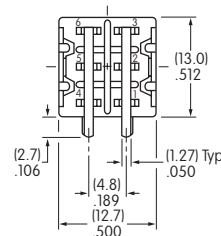
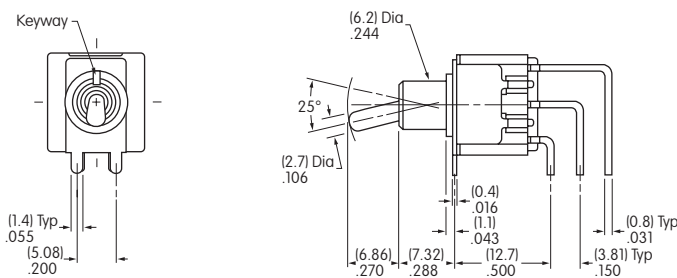
.150" (3.81mm) Vertical PC



M2012S2A2G40

Double Pole

.150" (3.81mm) Vertical PC

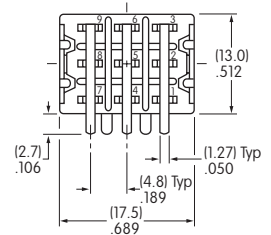
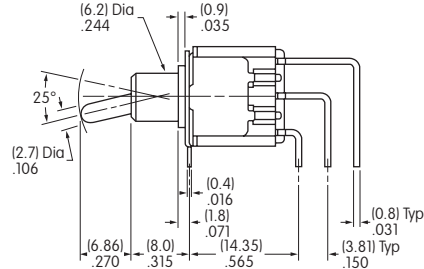
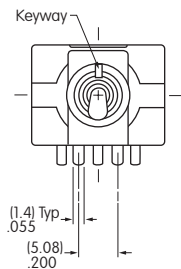


M2022S2A2G40

TYPICAL SWITCH DIMENSIONS

.150" (3.81mm) Vertical PC

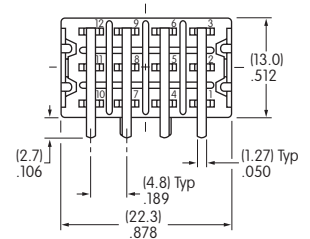
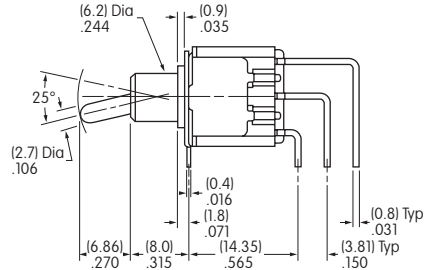
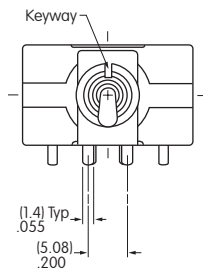
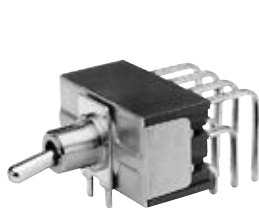
Three Pole



M2032S2A2G40

.150" (3.81mm) Vertical PC

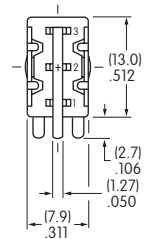
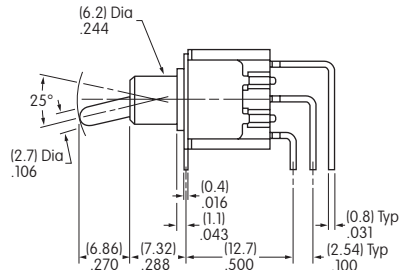
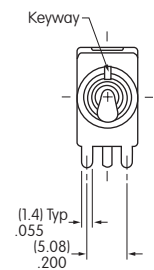
Four Pole



M2042S2A2G40

.100" (2.54mm) Vertical PC

Single Pole

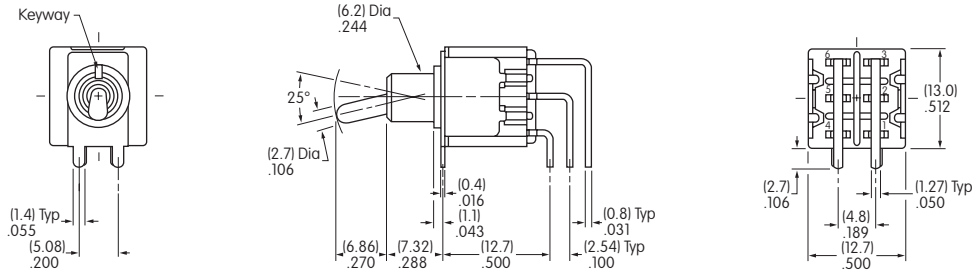


M2012S2A2G45

TYPICAL SWITCH DIMENSIONS

Double Pole

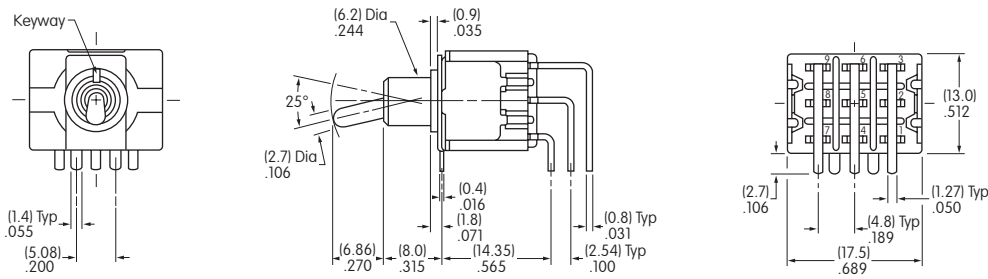
.100" (2.54mm) Vertical PC



M2022S2A2G45

Three Pole

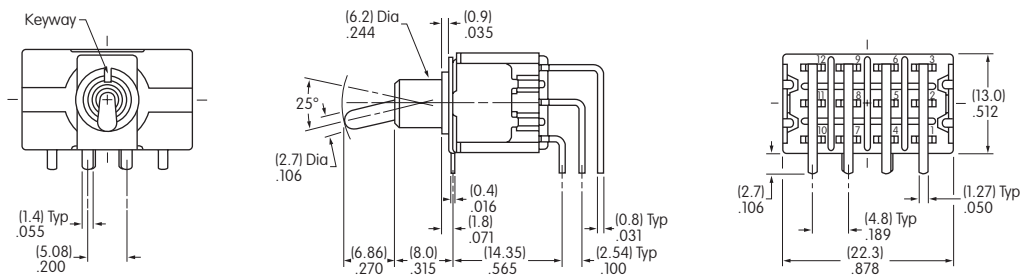
.100" (2.54mm) Vertical PC



M2032S2A2G45

Four Pole

.100" (2.54mm) Vertical PC



M2042S2A2G45

Mouser Electronics

Authorized Distributor

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[M2012S2A1G32](#) [M2013S2A2W30](#) [M2022LL2W30](#) [M2022SA2G30](#) [M2022SA2G40](#) [M2025SA2G30/305](#)
[M2033S2A2G40](#) [M2042SA1G40](#) [M2032S2A2G30](#) [M2012LL2G40-RO](#) [M2012S2S2W30](#) [M2012S2S2W40](#)
[M2012SS2G45](#) [M2013SA2A40](#) [M2013SA2W40](#) [M2013SS1G30](#) [M2013SS1G45](#) [M2013SS2G45](#) [M2018ES1A40](#)
[M2018SA2G40](#) [M2018SS1W40](#) [M2018SS1W45](#) [M2022LL2A30](#) [M2022S3A2W40](#) [M2022SA1W30](#) [M2023ES2W40-](#)
[RO](#) [M2023S2A2W30](#) [M2024SS2G45](#) [M2032S2A2W40-RO](#) [M2042SS1G45](#) [M2042SS1W45](#) [M2022SS1W30-BA-RO](#)
[M2012S2A1W30](#) [M2022S2A2W40/UC](#) [M2013S2A2G40-RO](#) [M2012SS1G45-RO](#) [M2022SS2G45](#) [M2027S2A2G30](#)
[M2022SA2W40](#) [M2032E2S1G40](#) [M2024SS2G30](#) [M2022SS1W30-RO](#) [M2033SS1A40](#) [M2012SA2G32](#)
[M2015S2A2A40](#) [M2015S2A2W40](#) [M2024S3A2A30](#) [M2026SA2G40](#) [M2032S2A2W30](#) [M2046SA2G40](#)
[M2024S3S1G30](#) [M2012S2S1W40](#) [M2013S2S1W40](#) [M2042SS1G45-BA](#) [M2012S2S1W30](#) [M2027S2A2W30](#)
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[M2012SA2G40](#) [M2012S2A2W30](#) [M2012LL1G45](#) [M2022S2A2G45](#) [M2032S2A2W40](#) [M2022LL1G30](#)
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