

Distinctive Characteristics

Guide interlocked with actuator block prevents window locking and maintains correct plunger alignment to assure contact stability.

Employs an over-center actuator mechanism, which diminishes sparking and increases operating life in AC circuits.

High torque bushing construction prevents rotation or separation from frame during installation.

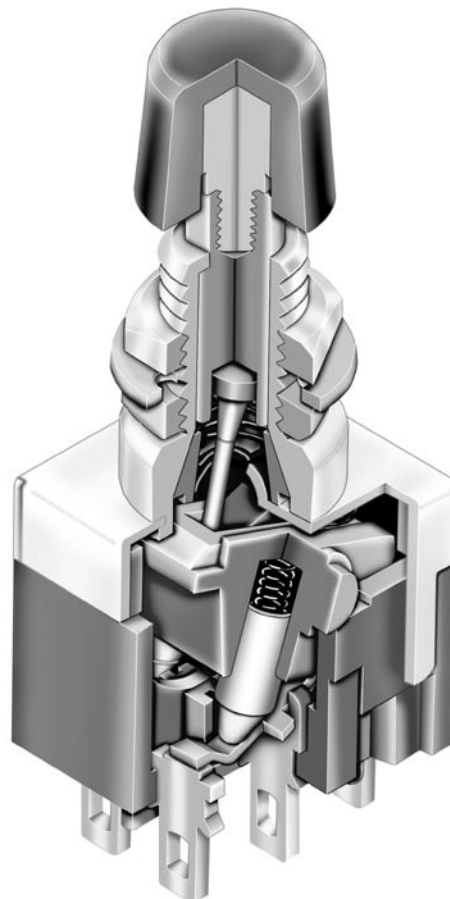
Splashproof option (D3 and B3 bushing codes) features an o-ring within the bushing and one under the face nut to protect from splashed, sprayed, or spilled liquids.

High insulating barriers, formed in the molded diallyl phthalate case, increase isolation of circuits in multipole devices.

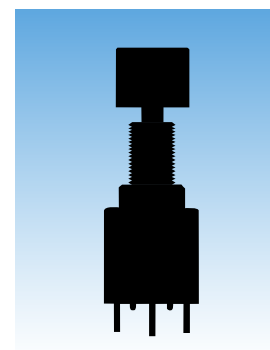
Prominent external insulating barriers increase insulation resistance and dielectric strength.

Epoxy sealed terminals prevent entry of solder flux and other contaminants.

Clinching of the frame to the case well above the base and terminals provides 1,500V dielectric strength.



Actual Size



General Specifications

Electrical Capacity (Resistive Load)

Power Level (code W):	6A @ 125V AC & 3A @ 250V AC or 3A @ 30V DC
Logic Level (code G):	0.4VA maximum @ 28V AC/DC maximum (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
Logic/Power Level (code A):	Combines W & G ratings
Note: Find additional explanation dual rating & operating range in Supplement section.	

Other Ratings

Contact Resistance:	10 milliohms maximum for silver; 20 milliohms maximum for gold
Insulation Resistance:	1,000 megohms minimum @ 500V DC
Dielectric Strength:	1,000V AC minimum between contacts for 1 minute minimum; 1,500V AC minimum between contacts & case for 1 minute minimum
Mechanical Life:	50,000 operations minimum for splashproof models; 100,000 for all other models
Electrical Life:	25,000 operations minimum for silver; 50,000 operations minimum for gold 50,000 operations minimum for silver at 3A @ 125V AC
Nominal Operating Force:	Momentary Action: 1-pole 9.32N; 2-pole 16.18N; 4-pole 25.54N; Alternate Action: 1-pole 4.41N; 2-pole 7.06N; 4-pole 11.77N
Contact Timing:	Slow make, slow break
Plunger Travel:	Screw-on Cap (Mom.) Screw-on Cap (Alt.) Snap-on Cap (Mom. & Alt.)
Pretravel:	.028" (0.71mm) .110" (2.80mm) .125" (3.19mm)
Overtravel:	.043" (1.09mm) .043" (1.10mm) .050" (1.26mm)
Total Travel	.071" (1.80mm) .153" (3.90mm) .175" (4.45mm)

Materials & Finishes

Plunger:	Brass w/nickel plating; polyacetal w/B1 bushing	Bushing:	Brass with nickel plating
Frame:	Stainless steel	Case:	Diallyl phthalate resin (UL94V-0)
Movable Contactor:	Phosphor bronze with silver or gold plating		
Movable Contacts:	Silver alloy (code W); copper with gold plating (code G); or silver alloy with gold plating (code A)		
Stationary Contacts:	Silver with silver plating (code W); copper or brass with gold plating (code G); or silver with gold plating (code A)		
Terminals:	Copper or brass with silver plating; copper or brass with gold plating		

Environmental Data

Operating Temp Range:	-30°C through +85°C (-22°F through +185°F)
Humidity:	90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration:	10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock:	50G (490m/s ²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)
Sealing:	B3 & D3 bushing options equivalent to IP67

Installation

Mounting Torque:	1.5Nm (13.0 lb•in) for double nut; .7Nm (6.0 lb•in) for single nut
Cap Installation Force:	80.0N (18.0 lbf) maximum downward force on actuator
Soldering Time & Temp:	Wave Soldering (PC version): See Profile A in Supplement section. Manual Soldering: See Profile A in Supplement section.
Process Seal:	These devices are not process sealed. Hand clean locally using alcohol based solution.

Standards & Certifications

Flammability Standards:	UL94V-0 case
UL & C-UL Recognized:	All models recognized at 6A @ 125V AC or 3A @ 250V AC or 0.4VA max. @ 28V DC max; UL File No. WOYR2.E44145; add "/U" to end of part number to order UL mark on switch C-UL File No. WOYR8.E44145; add "/C-UL" to end of part number to order C-UL mark on switch
CSA Certified:	All models certified at 6A @ 125V AC or 3A @ 250V AC or 0.4VA max. @ 28V max; CSA File No. 023535-0-000; add "/C" to end of part number to order CSA mark on switch.



TYPICAL SWITCH ORDERING EXAMPLE

MB

2011	SPDT	ON	(ON)
2065	SPDT	ON	ON
2061	DPDT	ON	(ON)
2085	DPDT	ON	ON
2181	4PDT	ON	(ON)
2185	4PDT	ON	ON

() = Momentary
4-pole not for use with right angle terminals

2011

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

S

S	Plunger for Screw-on Caps
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S2

S2	.335" (8.5mm) Smooth with Keyway
S1	.335" (8.5mm) Threaded with Keyway
A2	.200" (5.08mm) Smooth with Keyway Only Available in Part Numbers MB2011SA2G31 & MB2011SA2W31

G

G	Gold Rated 0.4VA max @ 28V AC/DC max
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13

13	.250" (6.35mm) Straight PC with Bracket
40	.150" (3.81mm) Vertical PC
45	.100" (2.54mm) Vertical PC
30	Right Angle PC with .646" (16.4mm) Support to Terminals Available in 1- & 2-pole only
31	Right Angle PC with .500" (12.7mm) Support to Terminals Available in 1-pole only

C

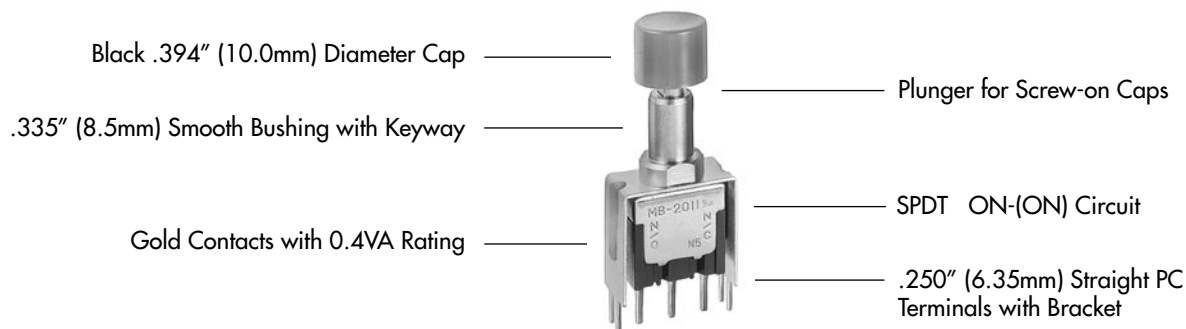
B	.315" (8.0mm) Dia.
C	.394" (10.0mm) Dia.

A

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

IMPORTANT:

Switches are supplied without UL, C-UL, & CSA markings unless specified. Specific models & ratings noted on General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
MB2011SS2G13-CA


POLES & CIRCUITS

Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematics
		Normal 	Down 	Normal 	Down 	
SP	MB2011 MB2065	ON ON	(ON) ON	2-3 2-1	2-1	SPDT
DP	MB2061 MB2085	ON ON	(ON) ON	2-3 5-6 2-1 5-4	2-1 5-4	DPDT
4P	MB2181 MB2185	ON ON	(ON) ON	2-3 5-6 8-9 11-12	2-1 5-4 8-7 11-10	4PDT

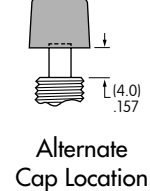
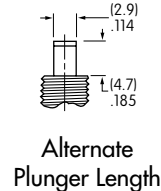
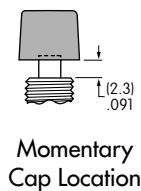
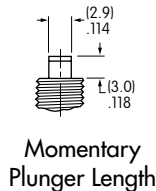
Note: Terminal numbers are not actually on the switch.

PLUNGER TYPE

On alternate action models, after transferring circuit, the plunger returns to its original position and does not latch down.

S

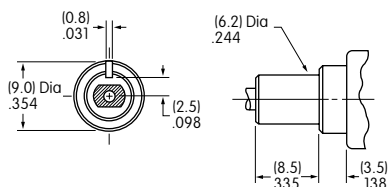
Plunger for Screw-on Caps



BUSHINGS

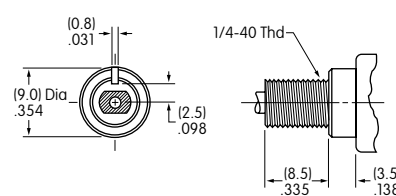
S2

.335" (8.5mm)
Smooth with Keyway



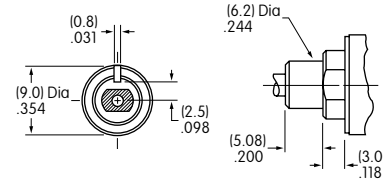
S1

.335" (8.5mm)
Threaded with Keyway



A2

.200" (5.08mm)
Smooth with Keyway

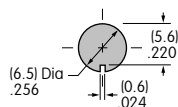


Standard hardware: 2 hex nuts (AT513H)
& 1 lockwasher (AT509)
Optional hardware: Locking ring (AT507)

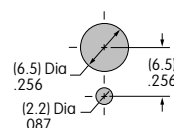
Only available in part numbers
MB2011SA2W31 & MB2011SA2G31

Panel Cutouts

For S2, S1, or A2 Bushing
with Keyway



With Optional
Locking Ring



Maximum Panel Thickness with
Standard Hardware: .154" (3.9mm)

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: Complete explanation of operating range in Supplement section.

A

Gold over Silver

Power Level
or Logic Level

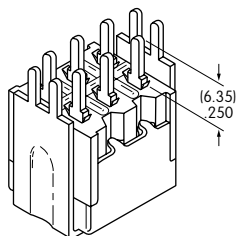
6A @ 125V AC & 3A @ 250V AC
or 0.4VA maximum @ 28V AC/DC maximum

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 for complete explanation of dual rating and operating range.

TERMINALS

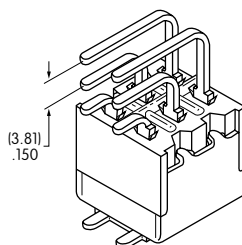
13

.250" (6.35mm) Straight PC
with Bracket



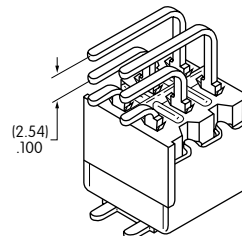
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.150" (3.81mm) Vertical PC



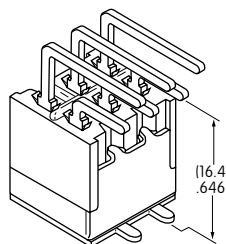
45

.100" (2.54mm) Vertical PC



30

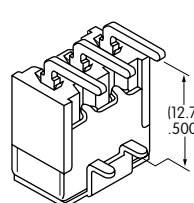
Right Angle PC
with .646" (16.4mm) Support to Terminal



Only Available in 1 & 2 Pole

31

Right Angle PC
with .500" (12.7mm) Support to Terminal



Only Available in Part No. MB2011SA2W31 & MB2011SA2G31

Note: Full dimensioned drawings appear on the following pages.

CAPS & CAP COLORS

B

AT413
.315" (8.0mm) Dia.
Screw-on Cap

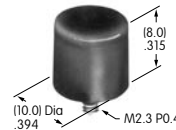
Cap Material: PBT
Finish: Glossy



C

AT407
.394" (10.0mm) Dia.
Screw-on Cap

Cap Material: PBT
Finish: Glossy



Cap Colors
Available:

A

Black

B

White

C

Red

E

Yellow

F

Green

G

Blue

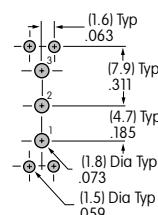
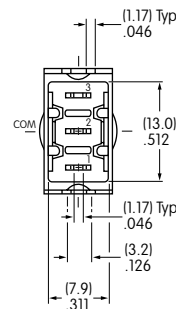
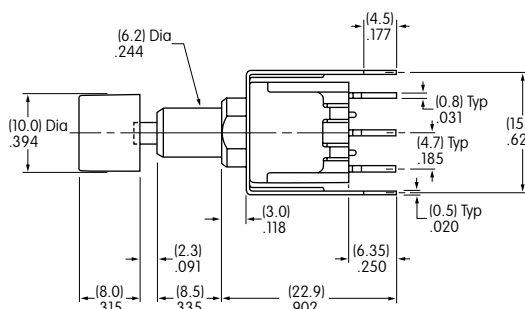
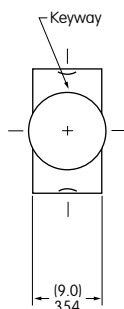
H

Gray

TYPICAL SWITCH DIMENSIONS

Straight PC with Bracket

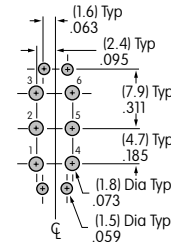
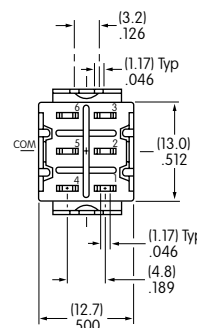
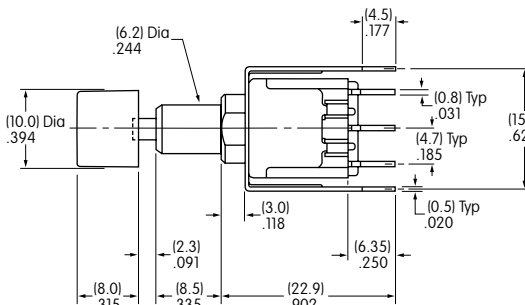
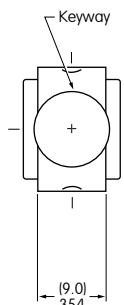
Single Pole



MB2011SS2G13-CA

Straight PC with Bracket

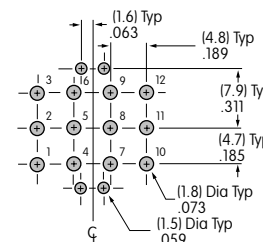
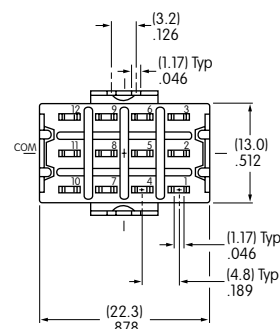
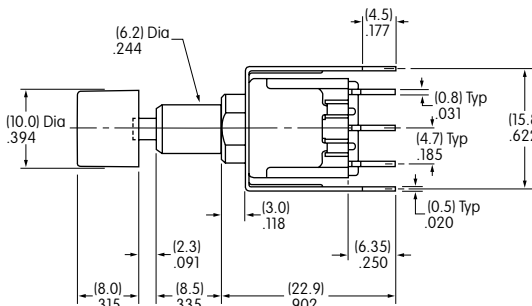
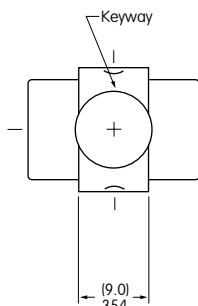
Double Pole



MB2061SS2G13-CA

Straight PC with Bracket

Four Pole

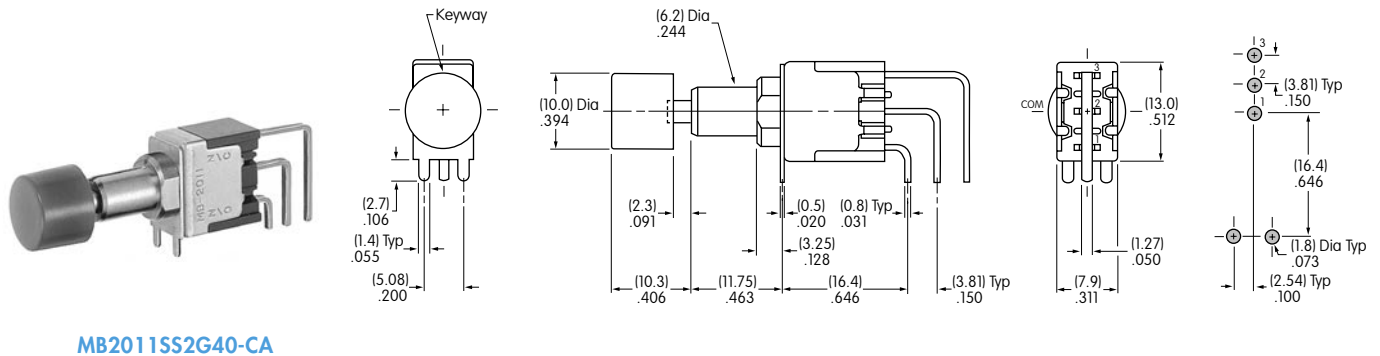


MB2181SS2G13-CA

TYPICAL SWITCH DIMENSIONS

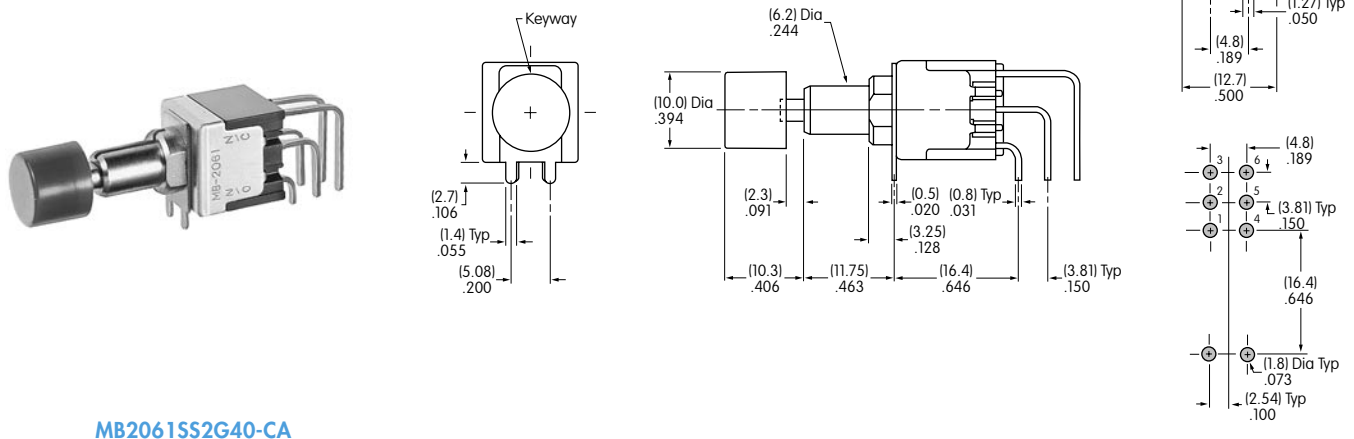
.150" (3.81mm) Vertical PC

Single Pole



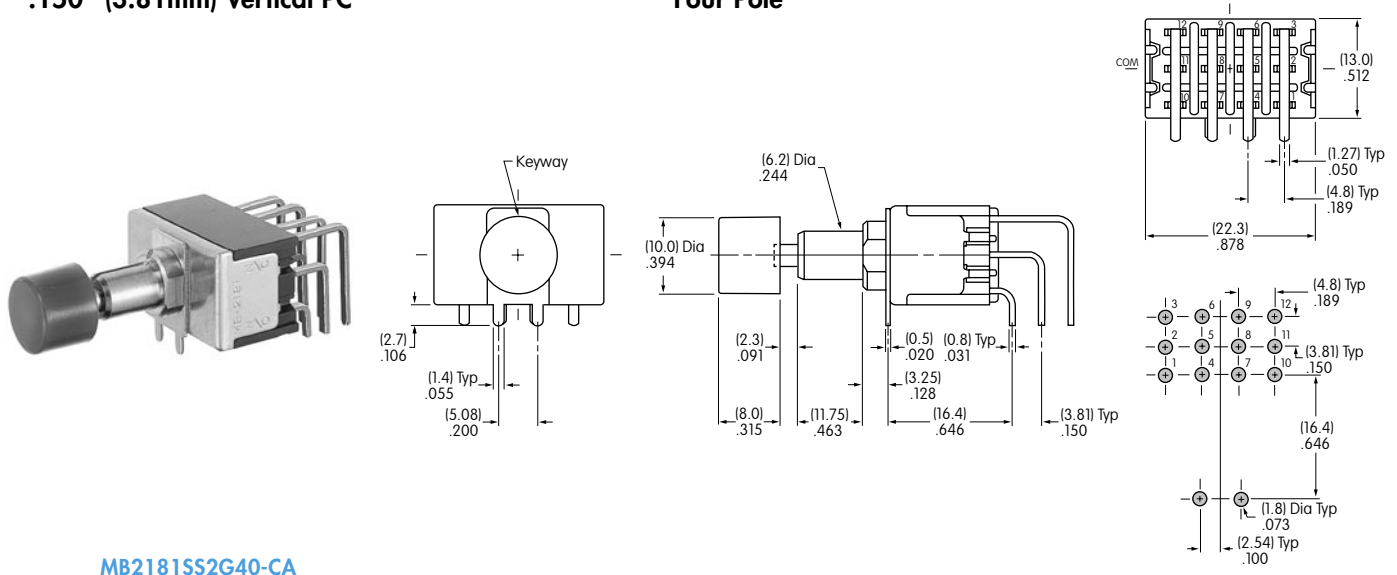
.150" (3.81mm) Vertical PC

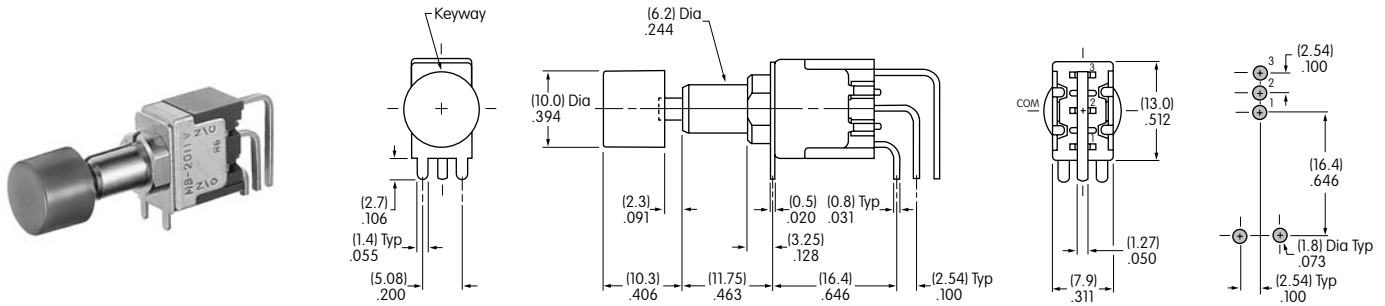
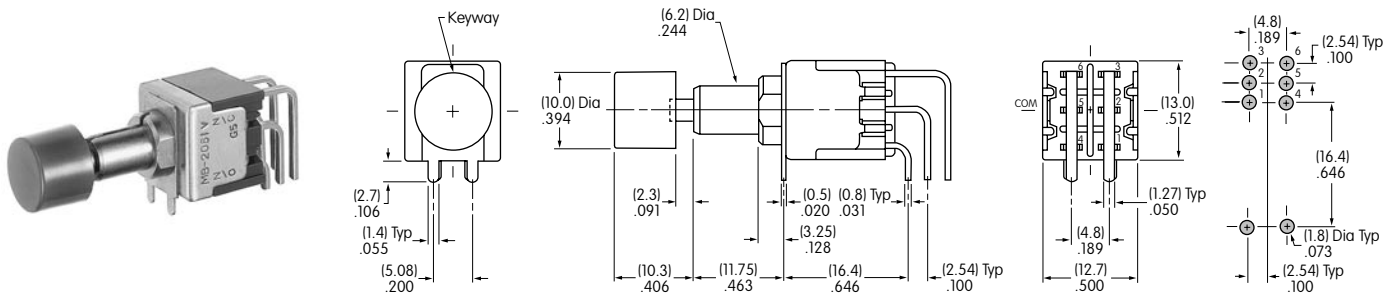
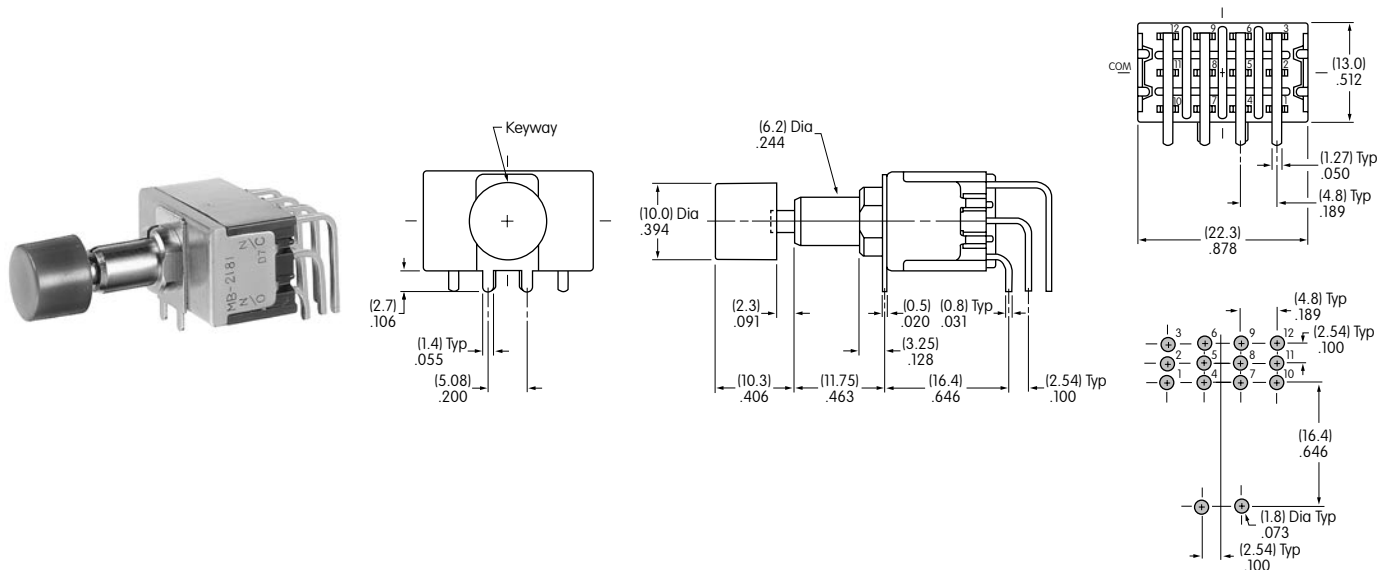
Double Pole



.150" (3.81mm) Vertical PC

Four Pole

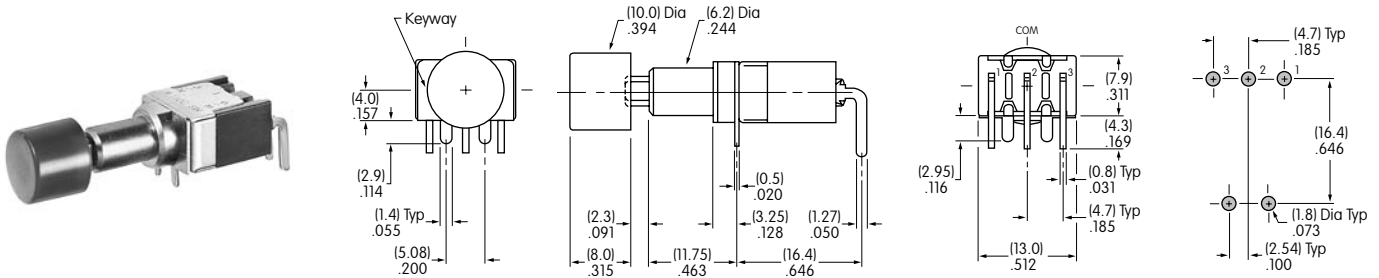


TYPICAL SWITCH DIMENSIONS
.100" (2.54mm) Vertical PC
Single Pole

MB2011SS2G45-CA
.100" (2.54mm) Vertical PC
Double Pole

MB2061SS2G45-CA
.100" (2.54mm) Vertical PC
Four Pole

MB2181SS2G45-CA

TYPICAL SWITCH DIMENSIONS

Right Angle PC

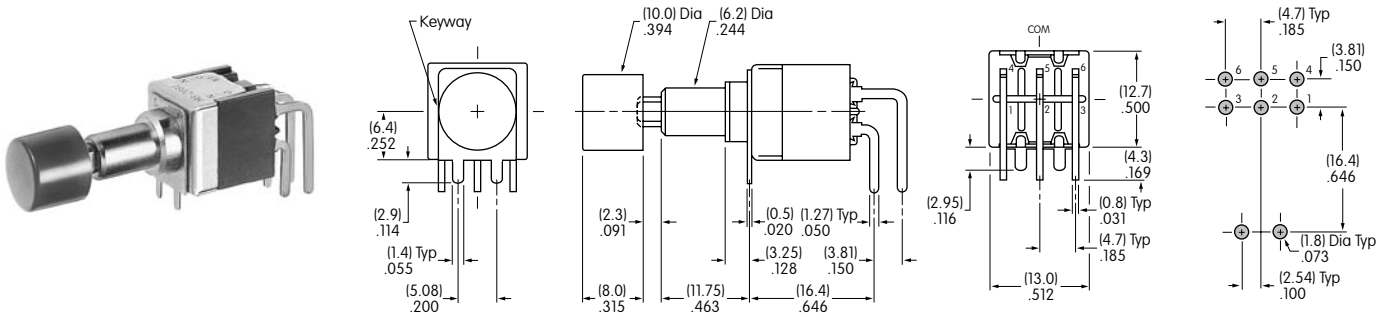
Single Pole



MB2011SS2G30-CA

Right Angle PC

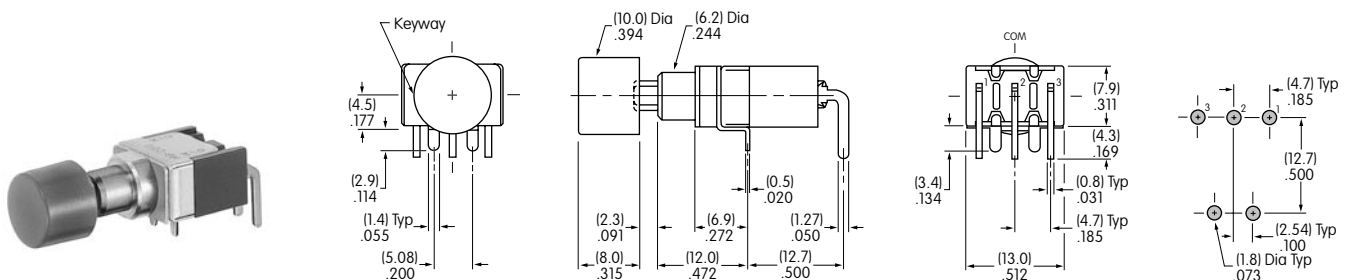
Double Pole



MB2061SS2G30-CA

Right Angle PC with .500" (12.7mm) Support to Terminal

Single Pole



MB2011SA2G31-CA

Only available in Part Numbers MB2022SA2W31 & MB2011SA2G31.