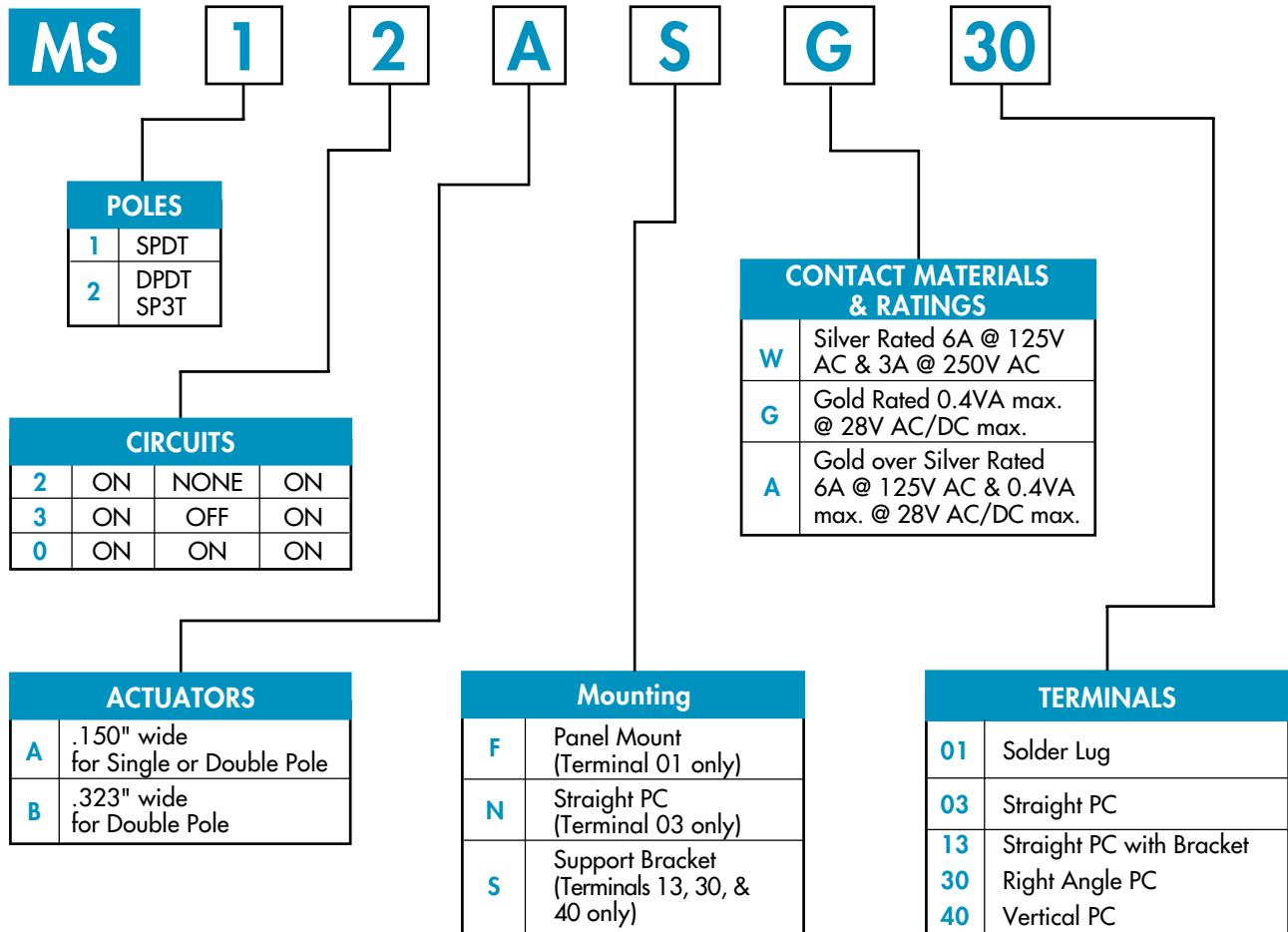


TYPICAL SWITCH ORDERING EXAMPLE



IMPORTANT:



Switches are supplied without UL & CSA marking unless specified. Specific models & ratings noted on General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

MS12ASG30



GENERAL SPECIFICATIONS

Electrical Capacity (Resistive Load)

Power Level (code W):	6A @ 125V AC or 3A @ 250V AC
Logic Level (code G):	0.4VA maximum @ 28V AC/DC maximum
Logic/Power Level (code A):	Combines W & G ratings
Note: See Supplement Index (page Z1) to find explanation of dual rating & operating range.	

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; 1,500V AC minimum between contacts & case
Mechanical Life:	100,000 operations minimum
Electrical Life:	25,000 operations minimum for silver; 50,000 operations minimum for gold
Contact Timing:	Nonshorting
Travel:	2.2mm (.087") total travel for MS12 & MS22 3.5mm (.138") total travel for MS13, MS23, & MS20

Materials & Finishes

Actuator:	Glass fiber reinforced polyester
Frame:	Stainless steel for code N & code F; phosphor bronze with tin lead plating for code S
Dust Cover:	Phosphor bronze with nickel plating
Case:	Glass fiber reinforced diallyl phthalate resin
Movable Contacts:	Silver alloy (code W); or silver alloy with gold plating over nickel (code A); or copper with gold plating over nickel (code G)
Stationary Contacts:	Silver capped copper with silver plating (code W); or silver alloy with gold plating over nickel (code A); or copper with gold plating over nickel (code G)
Terminals:	Copper or brass with silver plating; copper or brass with gold over nickel 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 acceleration (tested in 6 right angled directions, with 5 shocks in each direction)








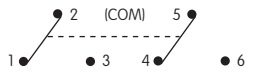
Installation

Soldering Time & Temperature:	3 seconds @ 350°C or 5 seconds @ 270°C
Process Seal:	Not available

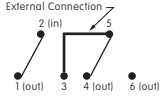
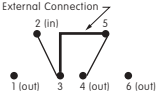
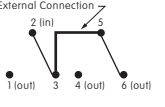
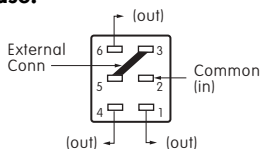
Standards & Certifications

Flammability Standards:	UL94V-0 outer case
UL Recognized:	All models recognized at 6A @ 125V AC or 3A @ 250V AC or 0.4VA maximum @ 28V AC/DC maximum; UL File No. E44145
CSA Certified:	All models certified at 6A @ 125V AC or 3A @ 250V AC or 0.4VA maximum @ 28V AC/DC maximum; CSA File No. LR23535

POLES & CIRCUITS

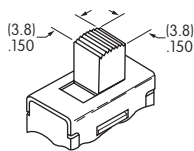
		Slide Position			Connected Terminals			Throw & Schematics
Pole	Model	Left 	Center 	Right 	Left 	Center 	Right 	Note: Terminal numbers are not actually on the switch.
SP	MS12	ON	NONE	ON	2-1	OPEN	2-3	SPDT 
	MS13	ON	OFF	ON	2-1	OPEN	2-3	
DP	MS22	ON	NONE	ON	2-1 5-4	OPEN	2-3 5-6	DPDT 
	MS23	ON	OFF	ON	2-1 5-4	OPEN	2-3 5-6	

For 3 Throw (3-On)

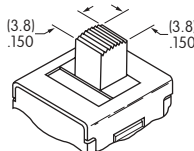
		Connected Terminals & Schematics			External Connection
Pole	Model	Left	Center	Right	
SP	MS20	ON  2-1 5-4	ON  2-1 5-6	ON  2-3 5-6	<p>The SP3T model utilizes a double pole base.</p> <p>External connections must be made during field installation.</p> 

ACTUATORS

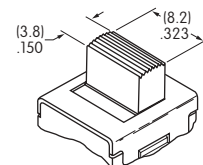
A .150" Wide for Single Pole



.150" Wide for Double Pole



B .323" Wide for Double Pole Only



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 Index (page Z1) 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 Index (page Z1) to find complete explanation of dual rating and operating range.

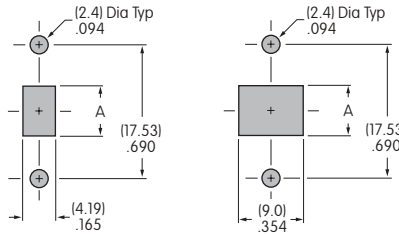
MOUNTING TYPES & TERMINALS

F Panel Mount
(Combines with Solder Lug Terminal 01 only)



Dimension A =
6.8mm (.268") for on-none-on
8.1mm (.319") for on-off-on & on-on-on

Max. Panel Thickness: 5.0mm (.197")



SP or DP with
.150" Actuator

DP Only with
.323" Actuator

N Straight PC Mount
(Combines with Straight PC Terminal 03 only)

Max. Panel Thickness
5.0mm
(.197")



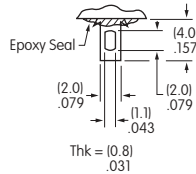
S Support Bracket Mount
(For Terminals 13, 30, & 40)

Max. Panel Thickness
For Straight PC w/Bracket Terminal 13: 5.0mm (.197")
For Angle Mount Terminals 30 & 40: 4.5mm (.177")

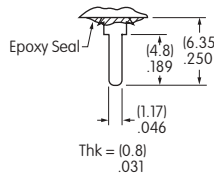


01 Solder Lug

The .043" X .079" oblong hole accommodates 1 solid 18-gg wire or 2 solid or stranded 20-gg wires.



03 Straight PC



13 Straight PC w/Bracket

30 Right Angle PC

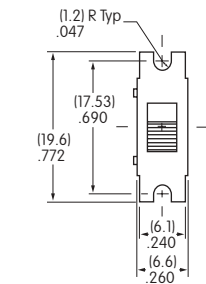
40 Vertical PC

TYPICAL SWITCH DIMENSIONS

Solder Lug Terminals

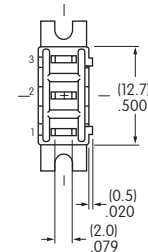
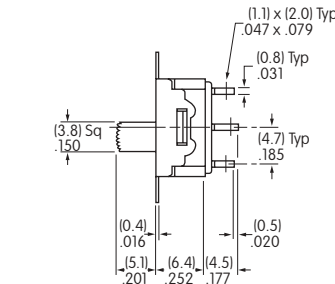


MS12AFW01



Single Pole

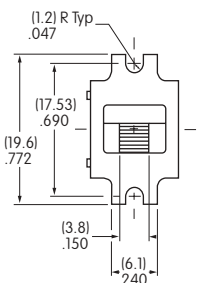
Actuator in LEFT position.



Solder Lug Terminals

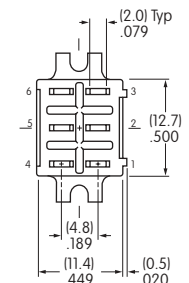
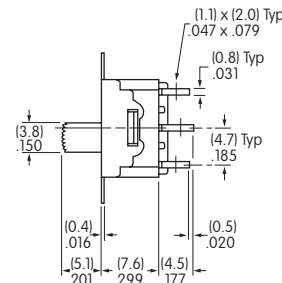
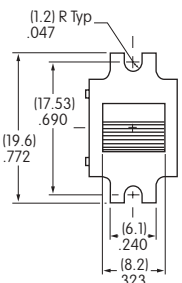


MS22BFW01



Double Pole

Actuator in LEFT position.

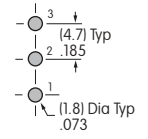
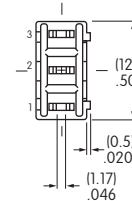
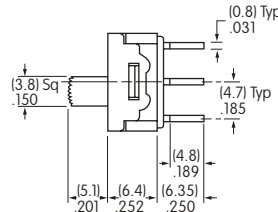
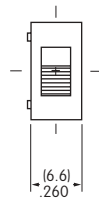


MS22BFW01

TYPICAL SWITCH DIMENSIONS

Straight PC Terminals

Single Pole

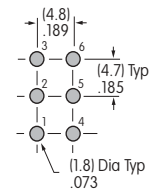
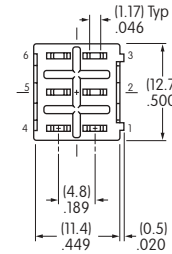
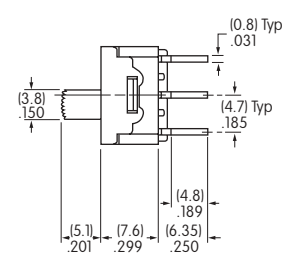
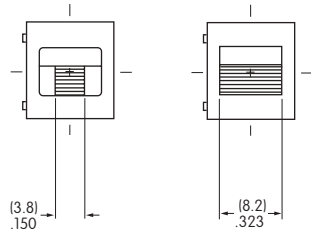


MS12ANG03

Actuator in LEFT position.

Straight PC Terminals

Double Pole

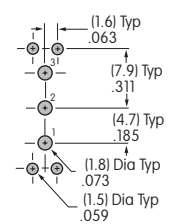
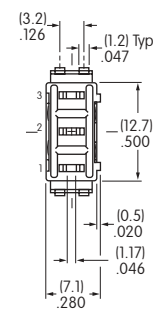
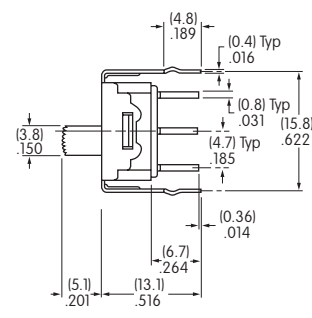
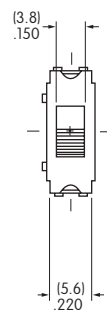


MS22BNG03

Actuator in LEFT position.

Straight PC Terminals with Bracket

Single Pole

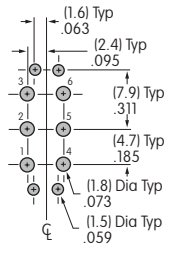
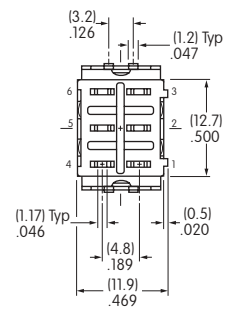
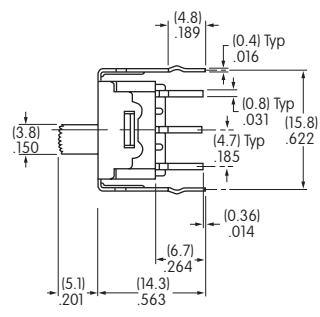
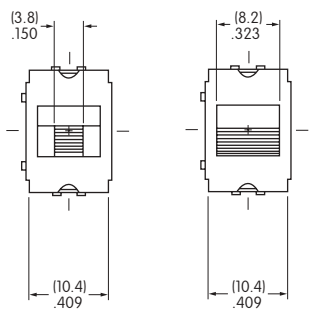


MS12ASG13

Actuator in LEFT position.

Straight PC Terminals with Bracket

Double Pole



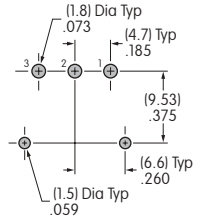
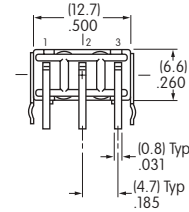
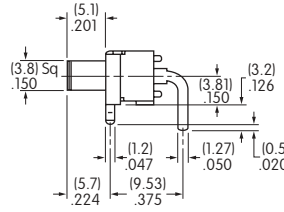
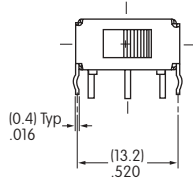
MS22BSG13

Actuator in LEFT position.

TYPICAL SWITCH DIMENSIONS

Single Pole

Right Angle PC Terminals

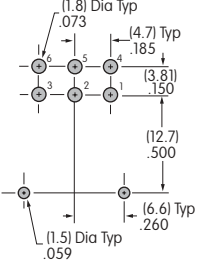
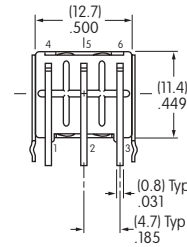
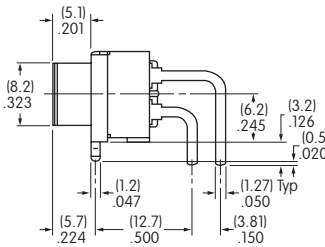
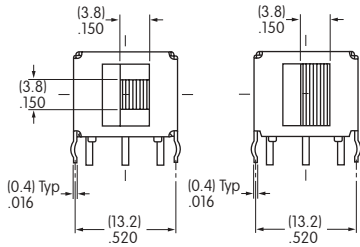


MS12ASG30

Actuator in LEFT position.

Double Pole

Right Angle PC Terminals

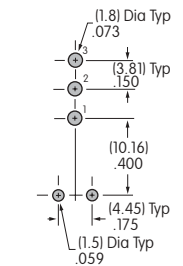
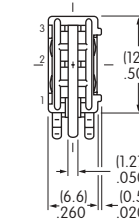
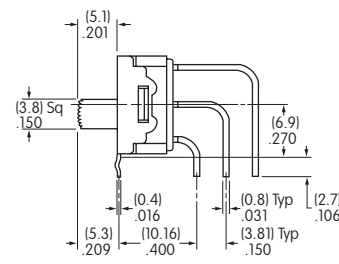
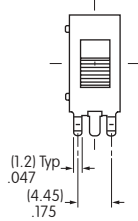


MS22BSG30

Actuator in LEFT position.

Single Pole

Vertical PC Terminals

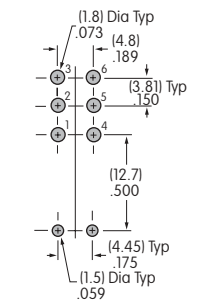
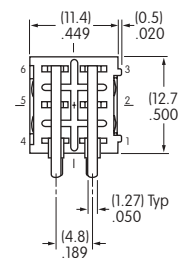
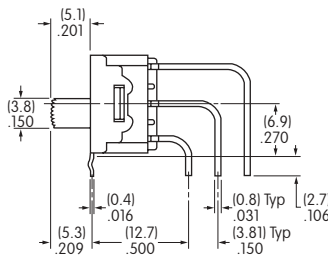
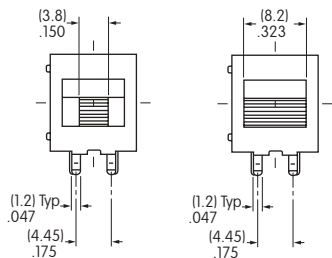


MS12ASG40

Actuator in LEFT position.

Double Pole

Vertical PC Terminals



MS22BSG40

Actuator in LEFT position.