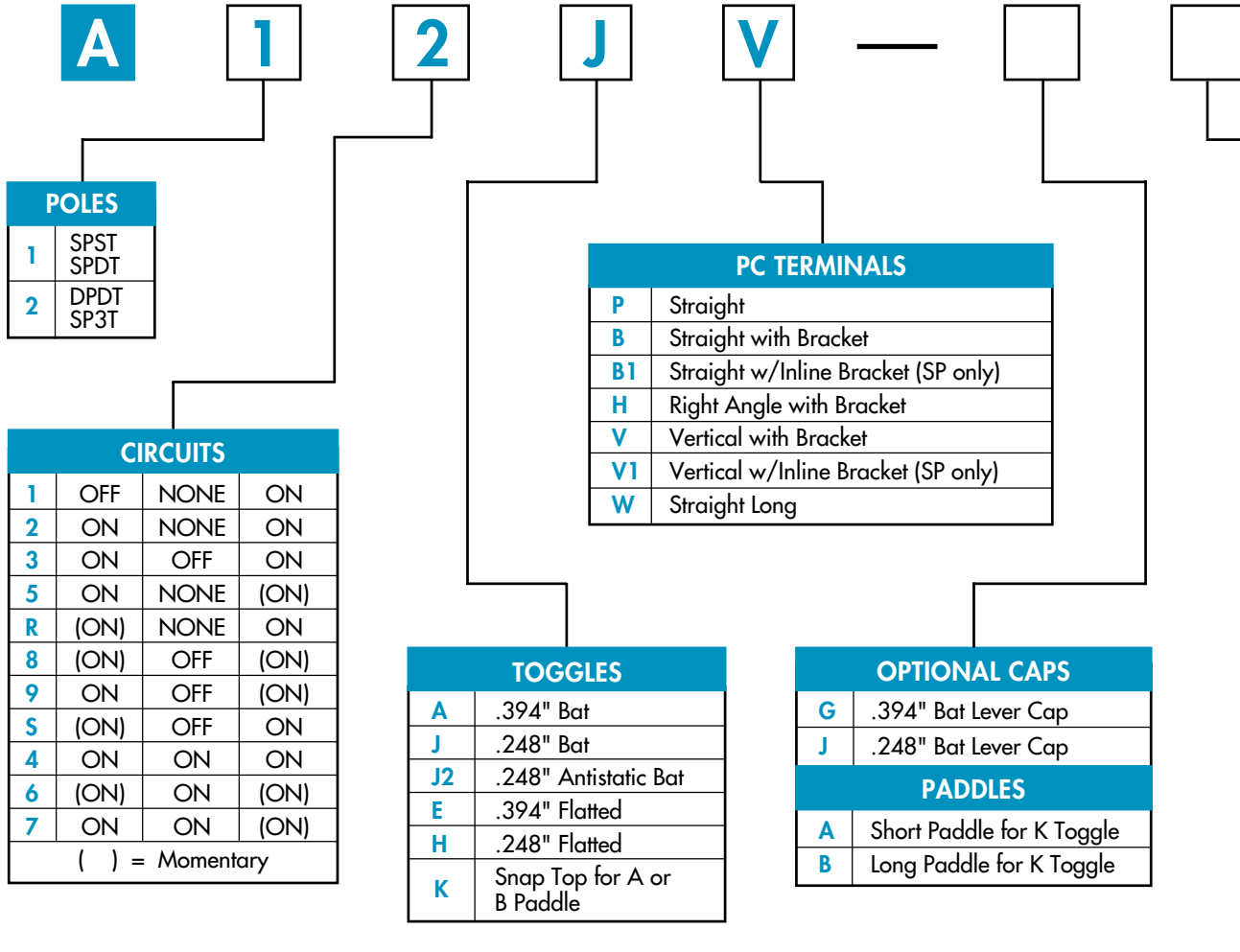


## TYPICAL SWITCH ORDERING EXAMPLE



### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

**A12JV**

.248" Long Bat Toggle ——— Vertical PC Terminals  
 SPDT ———  
 ON-NONE-ON Circuit



CAP COLORS		PADDLE COLORS	
A	Black	A	
B	White	B	
C	Red	C	
---	Yellow	E	
---	Green	F	
---	Blue	G	
---	Gray	H	

## GENERAL SPECIFICATIONS

### Electrical Capacity (Resistive Load)

**Logic Level:** 0.4VA maximum @ 28V AC/DC maximum  
(Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Note: See Supplement Index (page Z1) to find explanation of operating range.

### Other Ratings

**Contact Resistance:** 50 milliohms maximum  
**Insulation Resistance:** 500 megohms minimum @ 500V DC  
**Dielectric Strength:** 500V AC minimum  
**Mechanical Life:** 100,000 operations minimum for On-None-On & On-Off-On  
 50,000 operations minimum for other circuits  
**Electrical Life:** 50,000 operations minimum  
**Nominal Operating Force:** Toggles A & E: 150 grams (momentary); 120 grams (maintained)  
 Toggles J, J2, & H: 278 grams (momentary); 188 grams (maintained)  
**Contact Timing:** Nonshorting (break-before-make)  
**Angle of Throw:** 26°

### Materials & Finishes

**Toggle:** Glass fiber reinforced polyamide for antistatic; nickel plated brass for all others  
**Case Housing:** Glass fiber reinforced polyamide  
**Support Bracket:** Tin plated phosphor bronze  
**Movable Contact:** Phosphor bronze with gold plating over silver plating  
**Stationary Contacts:** Brass with gold plating over nickel undercoating

### 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 3 shocks in each direction)

### Installation

**Soldering Time & Temperature:** 3 seconds @ 350°C or 5 seconds @ 270°C  
**Process Seal:** See Supplement Index (page Z1) for specific processing data.

### Standards & Certifications

**IECQ Approved:** All toggle models recognized at 0.4VA maximum @ 28V AC/DC maximum  
 Qualification Approval Number: JP792-3A

### POLES & CIRCUITS

		Toggle Position ( ) = Momentary			Connected Terminals			Throw & Schematics
Pole	Model	Up	Center	Down	Up	Center	Down	Note: Terminal numbers are not actually on the switch.
SP	A11	OFF	NONE	ON	OPEN	OPEN	3-1	SPST
SP	A12 A13 A15 A1R A18 A19 A1S	ON ON ON (ON) (ON) ON (ON)	NONE OFF NONE NONE OFF OFF OFF	ON ON (ON) ON (ON) (ON) ON	2-3	OPEN	2-1	SPDT
DP	A22 A23 A25 A2R A28 A29 A2S	ON ON ON (ON) (ON) ON (ON)	NONE OFF NONE NONE OFF OFF OFF	ON ON (ON) ON (ON) (ON) ON	2-3 5-6	OPEN	2-1 5-4	DPDT

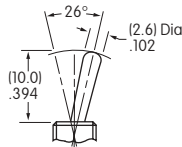
### For 3 Throw (3-On)

		Connected Terminals & Schematics			External Connection
Pole	Model	Up	Center	Down	
SP	A24 A26 A27	ON (ON) ON  2-3 5-6	ON ON ON  2-3 5-4	ON (ON) (ON)  2-1 5-4	The SP3T model utilizes a double pole base.  External connections must be made during field installation.

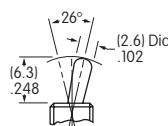
### TOGGLES

**Standard Material & Finish:** Brass with Bright Nickel **Material & Finish for J2:** Matte finish black glass fiber reinforced polyamide

**A** .394" Bat



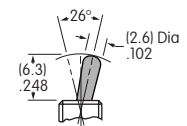
**J** .248" Bat



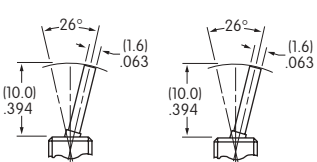
**J2** Antistatic .248" Bat

Dissipating 20Kv ESD: Straight PC

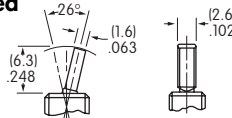
Dissipating 10Kv ESD: Straight PC w/ Bracket, Right Angle, & Vertical



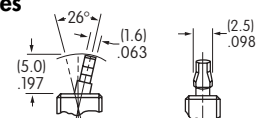
**E** .394" Flatted



**H** .248" Flatted



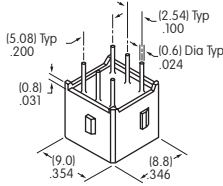
**K** Snap Top for Paddles



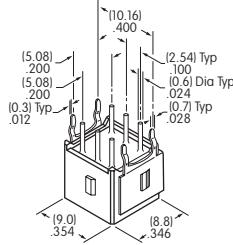
### PC TERMINALS

Use of a support bracket or placement of the square bushing in a panel cutout is recommended to increase PCB mounting stability.

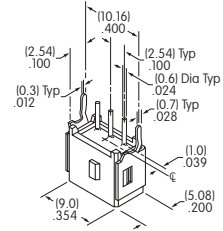
**P** Straight



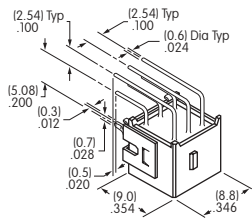
**B** Straight with Bracket



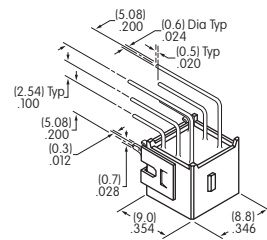
**B1** Straight with Inline Bracket (SP only)



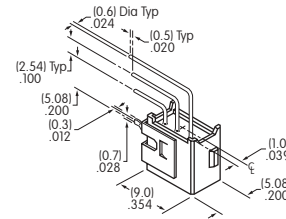
**H** Right Angle with Bracket



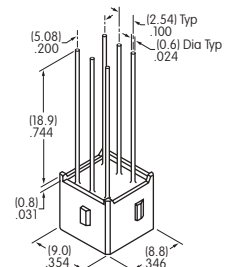
**V** Vertical with Bracket



**V1** Vertical with Inline Bracket (SP only)



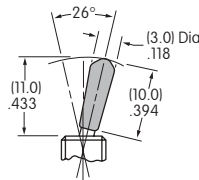
**W** Straight Long



### CAPS & PADDLES

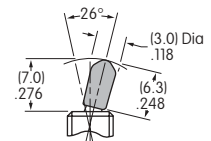
**G** AT4003  
.394" Bat Lever Cap

Material: PVC  
Colors Available:  
A, B, C



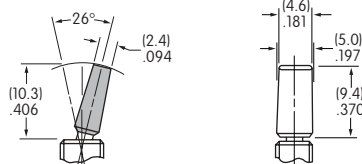
**J** AT4064  
.248" Bat Lever Cap

Material: PVC  
Colors Available:  
A, B, C



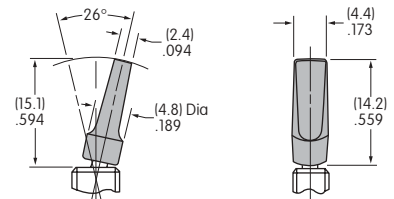
**A** AT467  
Short Paddle

Material: PBT  
Colors Available:  
A, B, C, E, F, G, H



**B** AT468  
Long Paddle

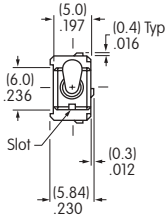
Material: PBT  
Colors Available:  
A, B, C, E, F, G, H



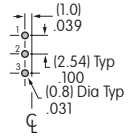
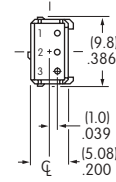
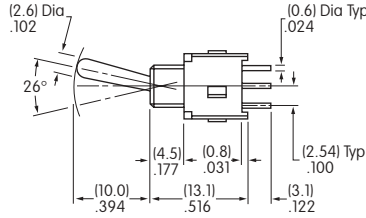
Color Codes: **A** Black **B** White **C** Red **E** Yellow **F** Green **G** Blue **H** Gray

### TYPICAL SWITCH DIMENSIONS

#### Straight PC



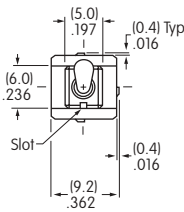
#### Single Pole



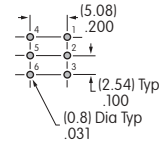
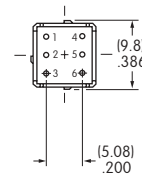
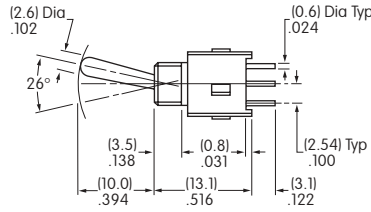
A12AP

A11 models do not have Terminal 2.

#### Straight PC

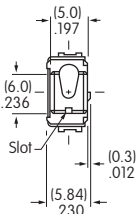


#### Double Pole

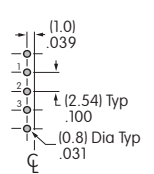
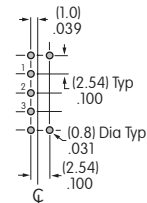
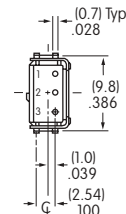
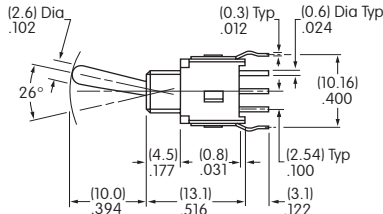


A22AP

#### Straight PC • Bracket



#### Single Pole

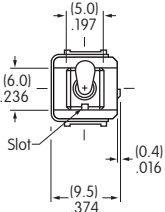


A12AB

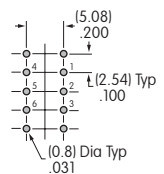
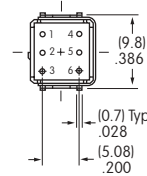
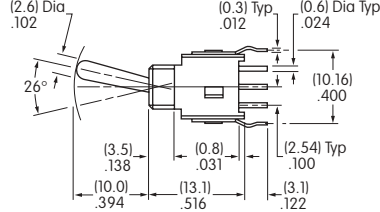
B Terminals

B1 Terminals

#### Straight PC • Bracket



#### Double Pole



A22AB

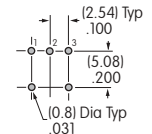
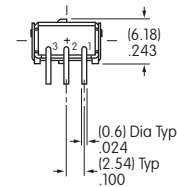
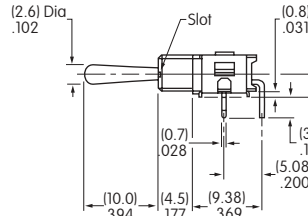
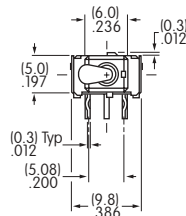
### TYPICAL SWITCH DIMENSIONS

#### Right Angle PC

#### Single Pole



A12AH

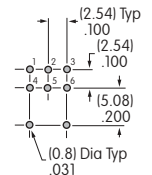
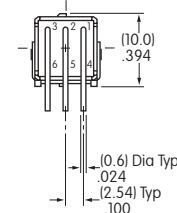
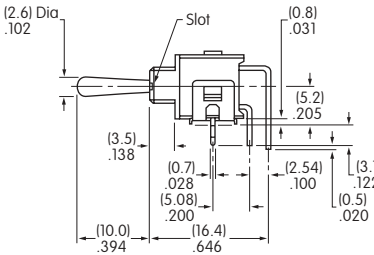
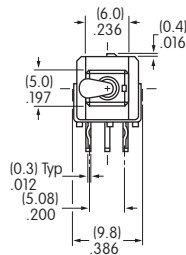


#### Right Angle PC

#### Double Pole



A22AH

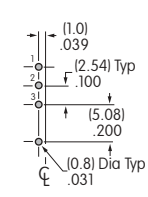
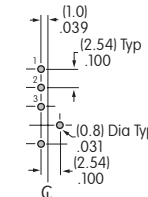
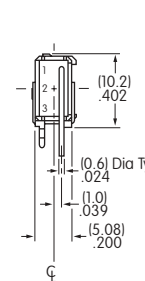
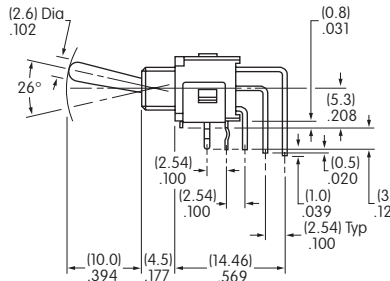
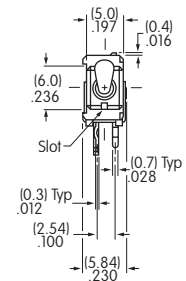


#### Vertical PC

#### Single Pole



A12AV



V Terminals

V1 Terminals

#### Vertical PC

#### Double Pole



A22AV

