TYPICAL SWITCH ORDERING EXAMPLE

A	1	2	J	V	—		

POLES

1	SPST SPDT
2	DPDT SP3T

CIRCUITS

1	OFF	NONE	ON
2	ON	NONE	ON
3	ON	OFF	ON
5	ON	NONE	(ON)
R	(ON)	NONE	ON
8	(ON)	OFF	(ON)
9	ON	OFF	(ON)
S	(ON)	OFF	ON
4	ON	ON	ON
6	(ON)	ON	(ON)
7	ON	ON	(ON)

( ) = Momentary

PC TERMINALS

P	Straight
B	Straight with Bracket
B1	Straight w/Inline Bracket (SP only)
H	Right Angle with Bracket
V	Vertical with Bracket
V1	Vertical w/Inline Bracket (SP only)
W	Straight Long

TOGGLES

A	.394" Bat
J	.248" Bat
J2	.248" Antistatic Bat
E	.394" Flatted
H	.248" Flatted
K	Snap Top for A or B Paddle

OPTIONAL CAPS

G	.394" Bat Lever Cap
J	.248" Bat Lever Cap

PADDLES

A	Short Paddle for K Toggle
B	Long Paddle for K Toggle

CAP COLORS / PADDLE COLORS

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

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

A12JV

.248" Long Bat Toggle

SPDT
ON-NONE-ON Circuit

Vertical PC Terminals

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

Series A

Washable Subminiature Toggle Switches

POLES & CIRCUITS

Pole	Model	Toggle Position ( ) = Momentary: Up	Center	Down	Connected Terminals: Up	Center	Down	Throw & Schematics
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

Note: Terminal numbers are not actually on the switch.

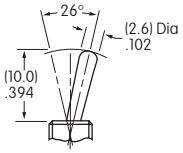
For 3 Throw (3-On)

Pole	Model	Connected Terminals & Schematics: Up	Center	Down	External Connection
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.

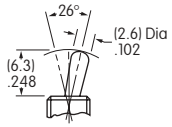
TOGGLES

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

A **.394" Bat**



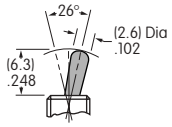
J **.248" Bat**



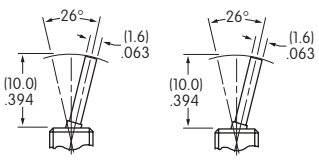
J2 **Antistatic .248" Bat**

Dissipating 20Kv ESD: Straight PC

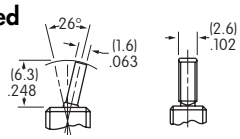
Dissipating 10Kv ESD: Straight PC w/ Bracket, Right Angle, & Vertical



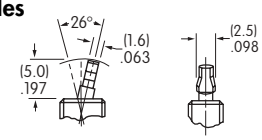
E **.394" Flatted**



H **.248" Flatted**



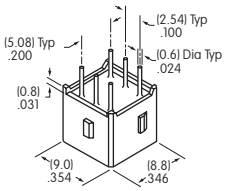
K **Snap Top for Paddles**



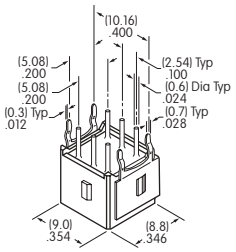
PC TERMINALS

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

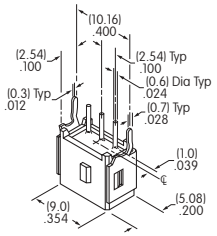
P Straight



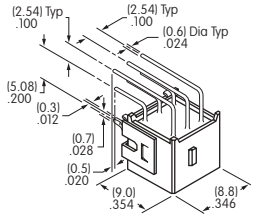
B Straight with Bracket



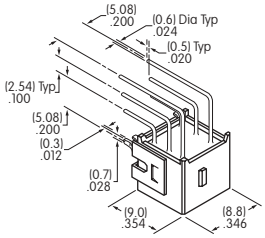
B1 Straight with Inline Bracket (SP only)



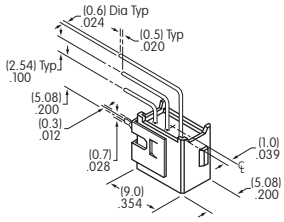
H Right Angle with Bracket



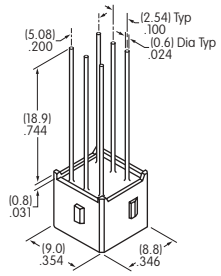
V Vertical with Bracket



V1 Vertical with Inline Bracket (SP only)



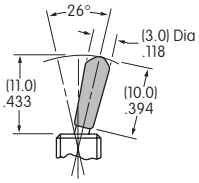
W Straight Long



CAPS & PADDLES

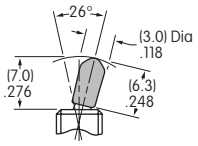
G AT4003 .394" Bat Lever Cap

Material: PVC
Colors Available:
A, B, C



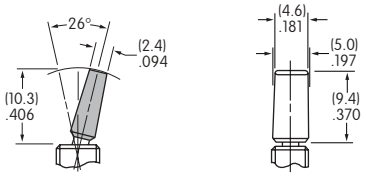
J AT4064 .248" Bat Lever Cap

Material: PVC
Colors Available:
A, B, C



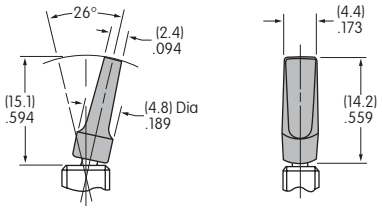
A AT467 Short Paddle

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



B AT468 Long Paddle

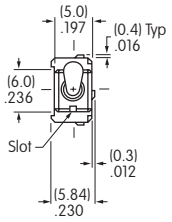
Material: PBT
Colors Available:
A, B, C, E, F, G, H

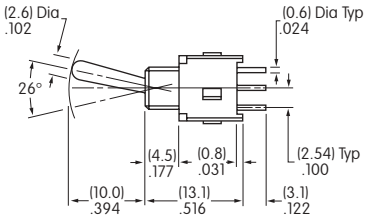


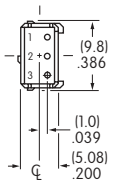
Color Codes: A Black B White C Red E Yellow F Green G Blue H Gray

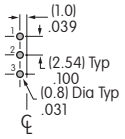
TYPICAL SWITCH DIMENSIONS

Straight PC — Single Pole





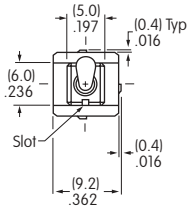


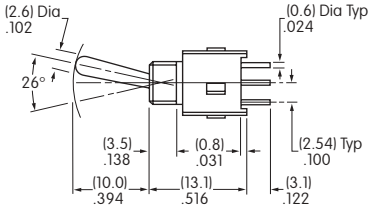


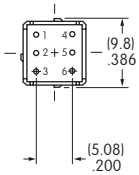
A12AP

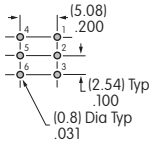
A11 models do not have Terminal 2.

Straight PC — Double Pole



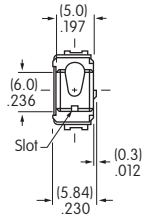


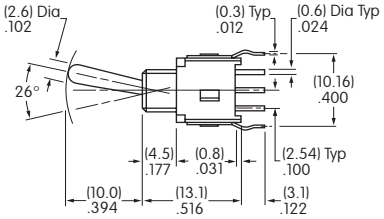


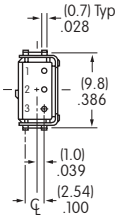


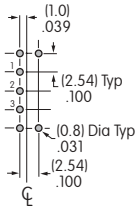
A22AP

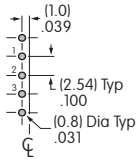
Straight PC • Bracket — Single Pole







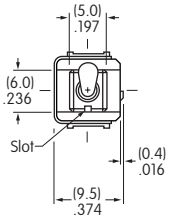


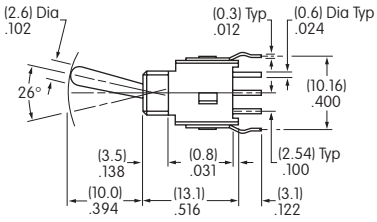


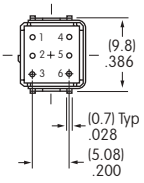
A12AB

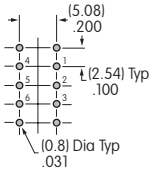
B Terminals B1 Terminals

Straight PC • Bracket — Double Pole







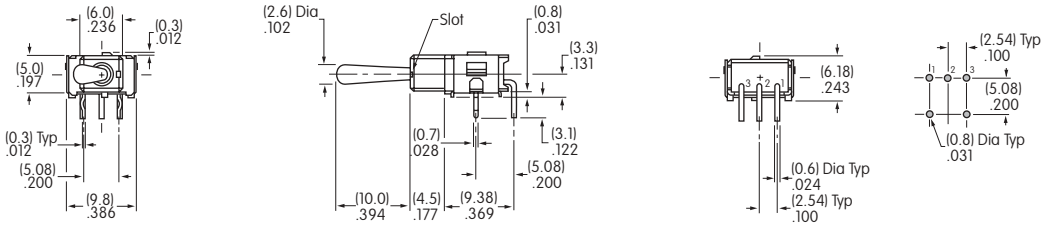


A22AB

TYPICAL SWITCH DIMENSIONS

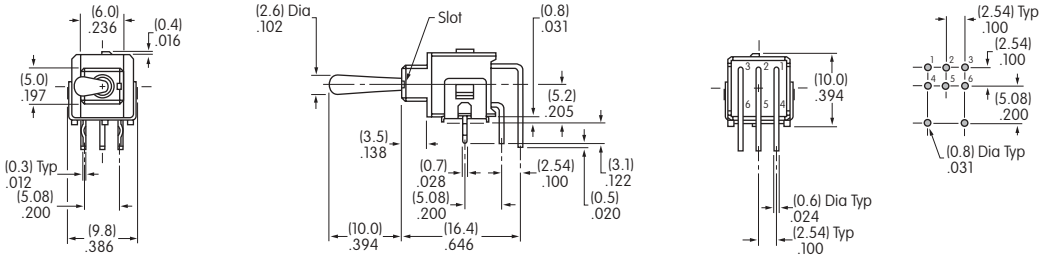
Right Angle PC — Single Pole

A12AH



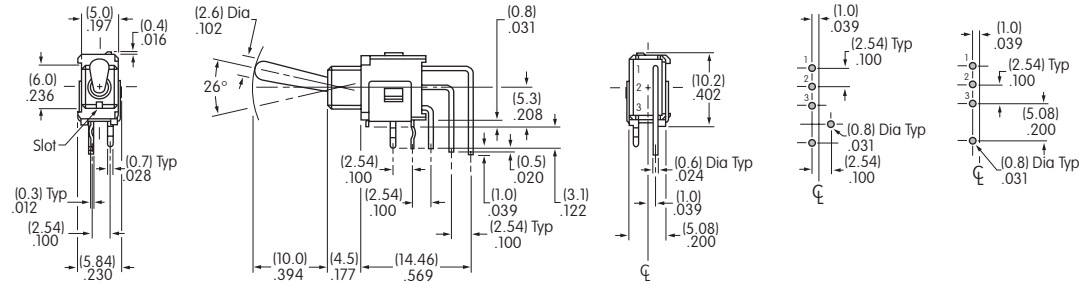
Right Angle PC — Double Pole

A22AH



Vertical PC — Single Pole

A12AV



V Terminals V1 Terminals

Vertical PC — Double Pole

A22AV