

Distinctive Characteristics

Subminiature size saves space on PC boards.

Specifically developed for logic-level applications.

Totally sealed body construction prevents contact contamination and allows time- and money-saving automated soldering and washing.

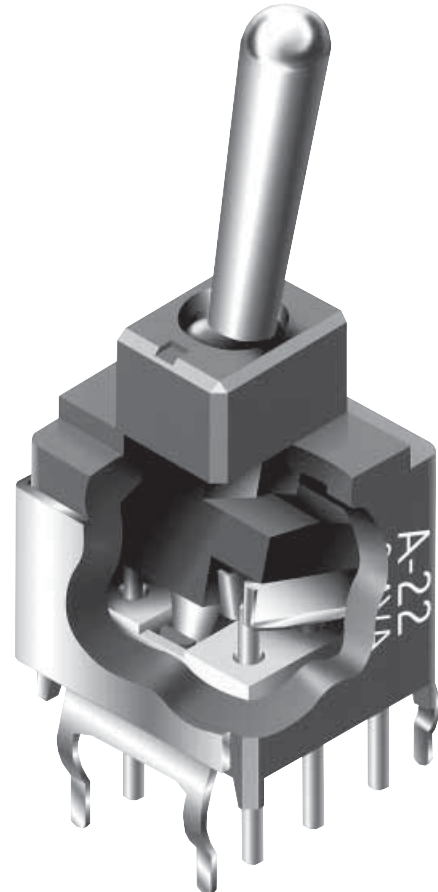
Award-winning STC contact mechanism with benefits unavailable in conventional mechanisms: smoother, positive detent actuation, increased contact stability and unparalleled logic-level reliability. (Additional STC details in Terms & Acronyms; see page Z2.)

Molded-in, epoxy sealed or ultrasonically welded terminals lock out flux, solvents, and other contaminants.

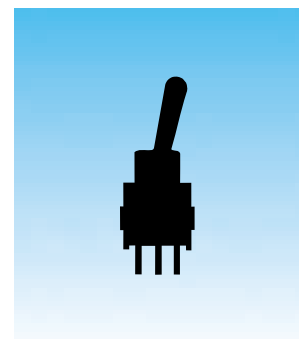
.100" x .100" terminal spacing conforms to standard PC board grid spacing.

Toggle option in antistatic material available for dissipating electrostatic discharges.

Matching indicators available and shown in the Indicator section.



Actual Size



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 Z2) 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 for 1 minute 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: 150 grams (momentary); 120 grams (maintained) for .394" toggles
 278 grams (momentary); 188 grams (maintained) for all other toggles
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
Stationary Contacts: Brass with gold plating

Environmental Data

Operating Temp Range: -30°C through +85°C (-22°F through +185°F)
Humidity: 90 ~ 95% humidity for 240 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/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

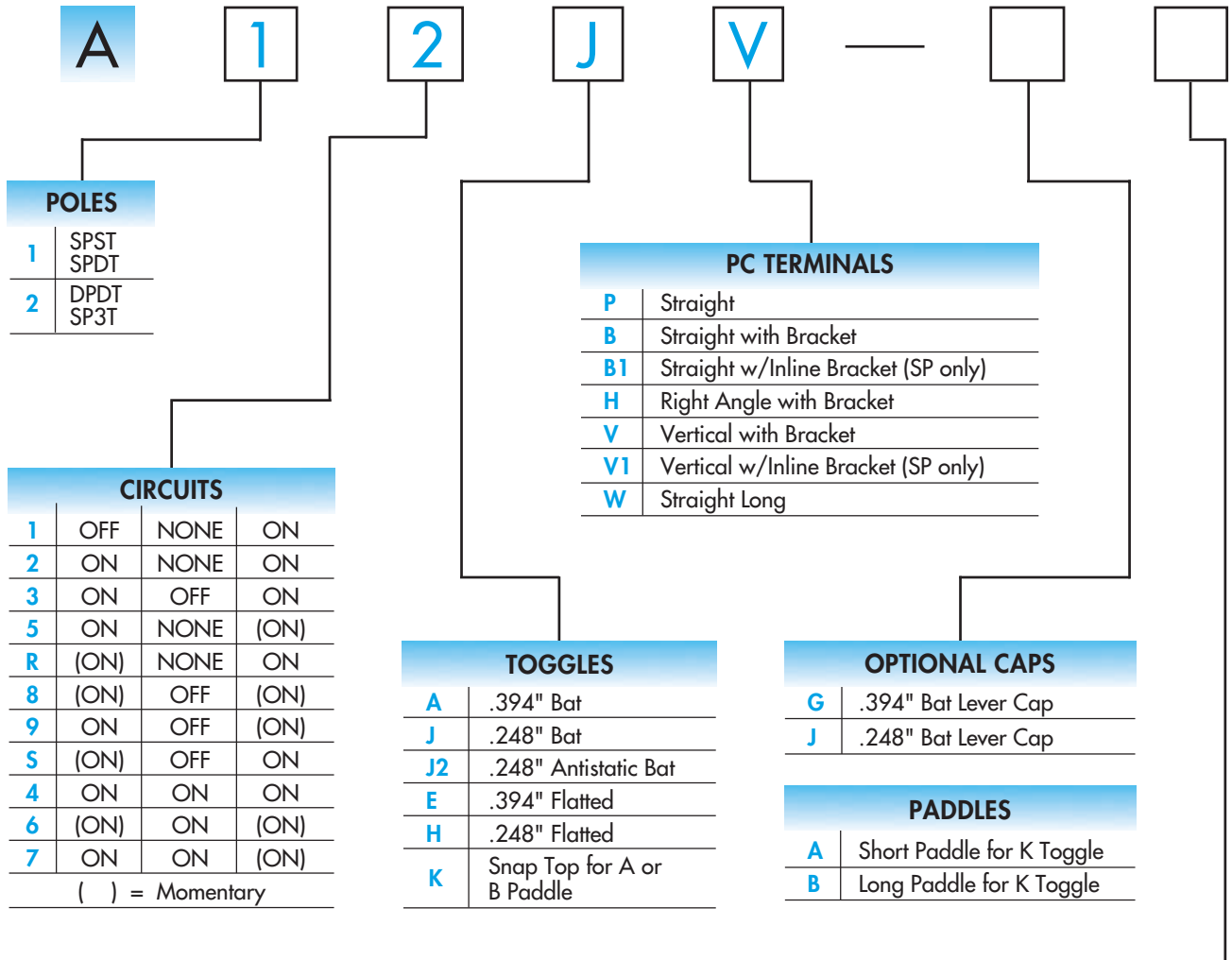
Installation

Soldering Time & Temperature: 3 seconds @ 350°C or 5 seconds @ 270°C
Process Seal: See Supplement Index (page Z2) for specific processing data.

Standards & Certifications

UL Recognition or CSA Certification: The A Series toggles have not been tested for UL recognition or CSA certification. These switches are designed for use in a low-voltage, low-current, logic-level circuit. When used as intended in a logic-level circuit, the results do not produce hazardous energy.

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

POLES & CIRCUITS

Pole	Model	Toggle Position () = Momentary			Connected Terminals			Throw & Schematics
		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

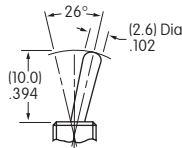
For 3 Throw (3-On)

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

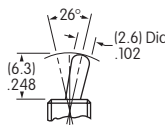
TOGGLES

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

A .394" Bat



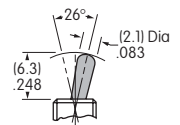
J .248" Bat



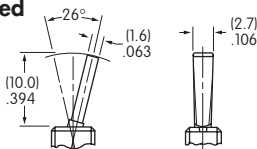
J2 Antistatic .248" Bat

Dissipating 20Kv ESD: Straight PC

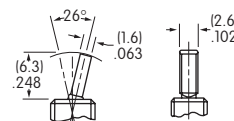
Dissipating 10Kv ESD: Straight PC w/ Bracket, Right Angle, & Vertical



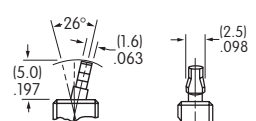
E .394" Flatted



H .248" Flatted



K Snap Top for Paddles

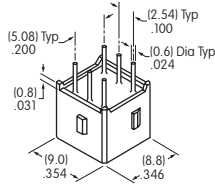


PC TERMINALS

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

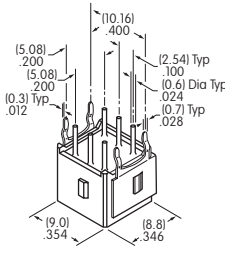
P

Straight



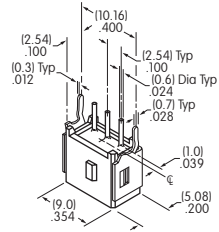
B

Straight with Bracket



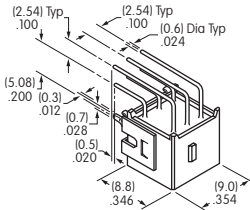
B1

Straight with Inline Bracket (SP only)



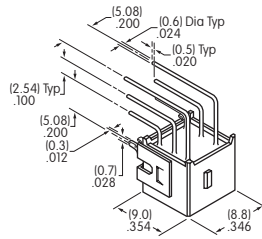
H

Right Angle with Bracket



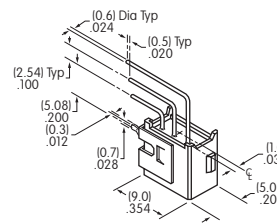
V

Vertical with Bracket



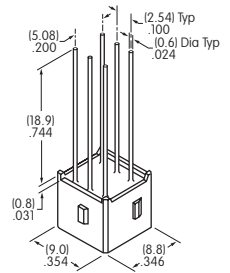
V1

Vertical with Inline Bracket (SP only)



W

Straight Long

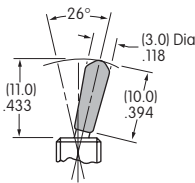


CAPS & PADDLES

G

AT4003
.394" Bat Lever Cap

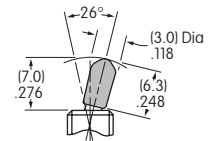
Material: PVC
Colors Available:
A, B, C



J

AT4064
.248" Bat Lever Cap

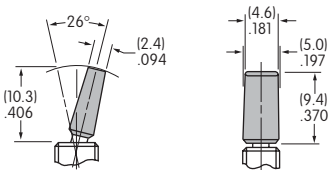
Material: PVC
Colors Available:
A, B, C



A

AT467
Short Paddle

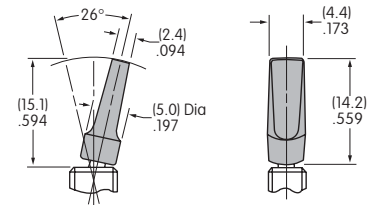
Material: Polyamide
Colors Available:
A, B, C, E, F, G, H



B

AT468
Long Paddle

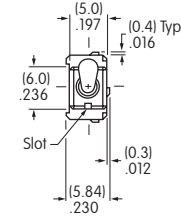
Material: Polyamide
Colors Available:
A, B, C, E, F, G, H



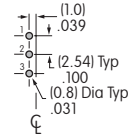
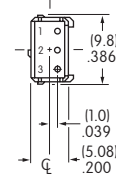
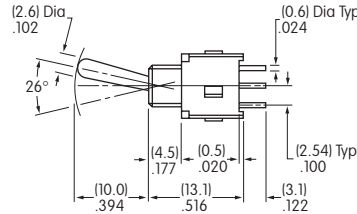
Color Codes: **A** Black **B** White **C** Red **E** Yellow **F** Green **G** Blue **H** Gray

TYPICAL SWITCH DIMENSIONS

Straight PC



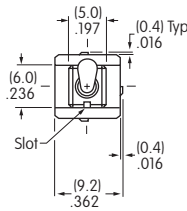
Single Pole



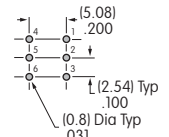
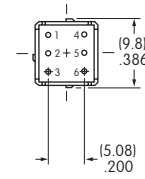
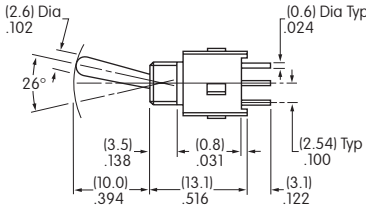
A12AP

A11 models do not have Terminal 2.

Straight PC

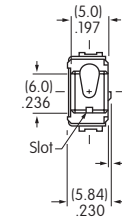


Double Pole

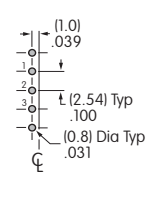
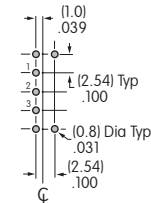
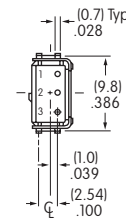
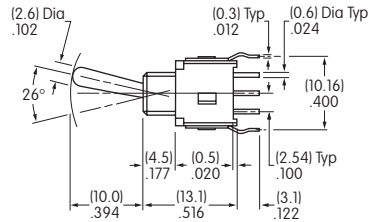


A22AP

Straight PC • Bracket



Single Pole

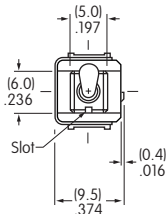


A12AB

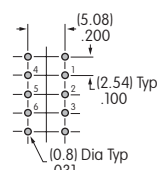
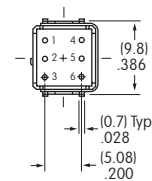
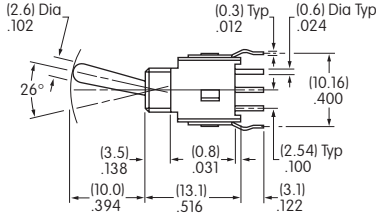
B Terminals

B1 Terminals

Straight PC • Bracket



Double Pole

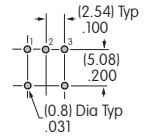
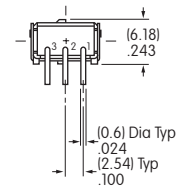
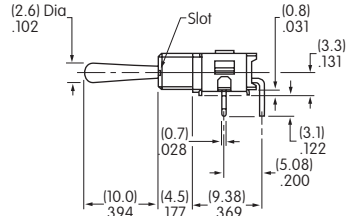
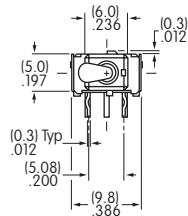


A22AB

TYPICAL SWITCH DIMENSIONS

Right Angle PC

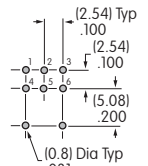
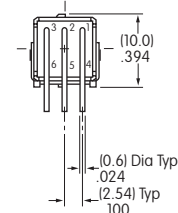
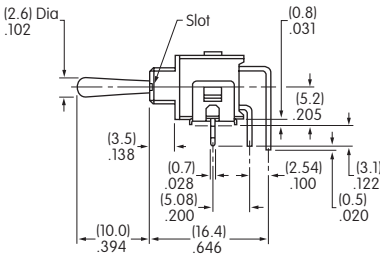
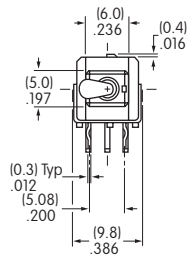
Single Pole



A12AH

Right Angle PC

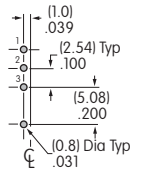
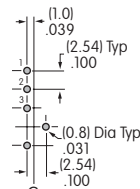
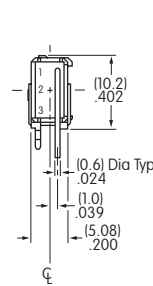
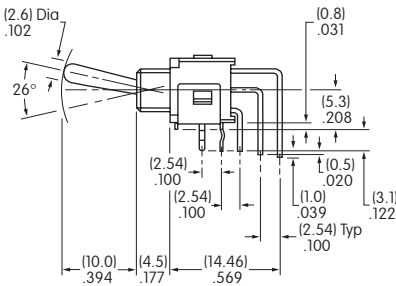
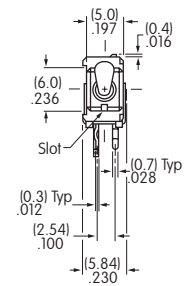
Double Pole



A22AH

Vertical PC

Single Pole



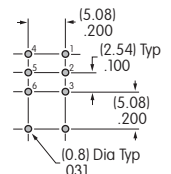
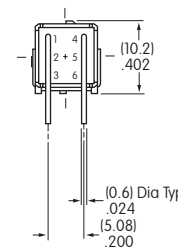
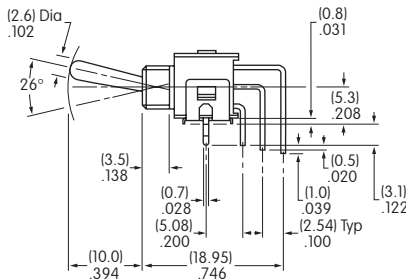
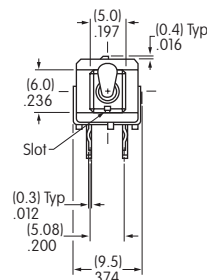
A12AV

V Terminals

V1 Terminals

Vertical PC

Double Pole



A22AV