

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 cleaning.

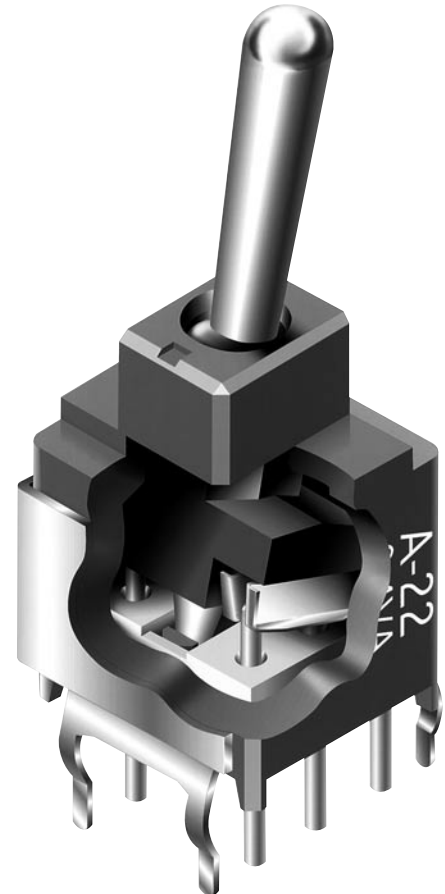
Award-winning STC contact mechanism with benefits unavailable in conventional mechanisms: smoother, positive detent actuation, increased contact stability and unparalleled logic-level reliability. (Additional STC details in Terms & Acronyms; see Supplement contents.)

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

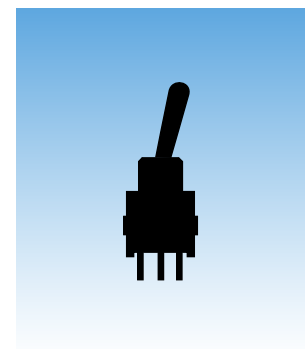
.100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing.

Toggle option in antistatic material available for dissipating electrostatic discharges.

Matching indicators available and shown at the end of Section M.



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: Find additional explanation of operating range in Supplement section.

Other Ratings

Contact Resistance: 50 milliohms maximum
Insulation Resistance: 500 megohms minimum @ 500V DC
Dielectric Strength: 500V AC minimum between contacts for 1 minute minimum;
 500V AC minimum between contacts & case 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: 1.47N (momentary); 1.18N (maintained) for .394" (10.0mm) toggles
 2.73N (momentary); 1.84N (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
Terminals: Brass with gold plating

Environmental Data

Operating Temperature 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)

PCB Processing

Soldering: Wave Soldering Recommended. See Profile A in Supplement section.
 Manual Soldering: See Profile B in Supplement section.
Cleaning: Automated cleaning. See Cleaning Specifications in Supplement section.

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

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
* 3-ON circuits

PC TERMINALS

P	Straight
B	Straight with Bracket
B1	Straight with Inline Bracket (Single Pole only)
H	Right Angle with Bracket
V	Vertical with Bracket
V1	Vertical with Inline Bracket (Single Pole only)
W	Straight Long

TOGGLES

A	.394" (10.0mm) Bat
J	.248" (6.3mm) Bat
J2	.248" (6.3mm) Antistatic Bat
E	.394" (10.0mm) Flatted
H	.248" (6.3mm) Flatted
K	Snap Top for A or B Paddle

OPTIONAL CAPS

G	.394" (10.0mm) Bat Lever Cap
J	.248" (6.3mm) Bat Lever Cap

PADDLES

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

CAP COLORS

A	Black
B	White
C	Red
---	Yellow
---	Green
---	Blue
---	Gray

PADDLE COLORS

A	
B	
C	
E	
F	
G	
H	

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

A12JV

.248" (6.3mm) Long
Bat Toggle

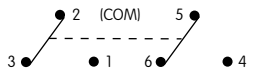
SPDT

ON-NONE-ON Circuit

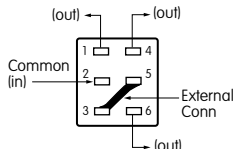
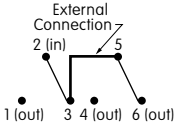
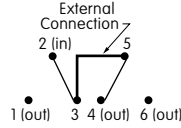
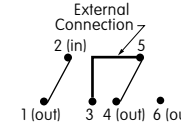


Vertical PC Terminals

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)

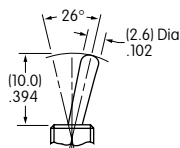
Connected Terminals & Schematics					External Connection
Pole	Model	Up	Center	Down	The SP3T model utilizes a double pole base. External connections must be made during field installation. 
SP	A24 A26 A27	ON (ON) ON  2-3 5-6	ON ON ON  2-3 5-4	ON (ON) (ON)  2-1 5-4	

TOGGLES

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

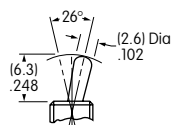
A

.394" (10.0mm) Bat



J

.248" (6.3mm) Bat

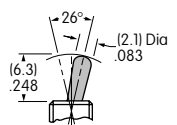


J2

.248" (6.3mm) Antistatic Bat

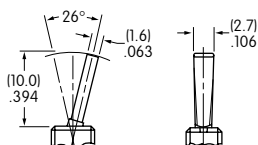
Dissipating 20Kv ESD: Straight PC

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



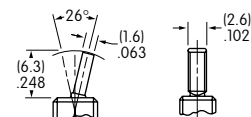
E

.394" (10.0mm) Flatted



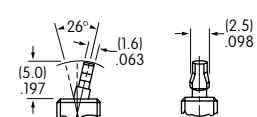
H

.248" (6.3mm) Flatted



K

Snap Top for Paddles

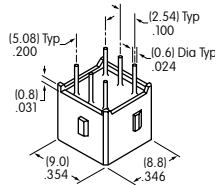


PC TERMINALS

Use of a support bracket is recommended to increase PCB mounting strength and stability.

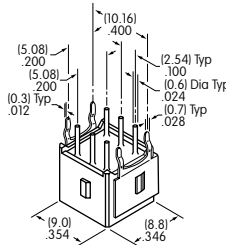
P

Straight



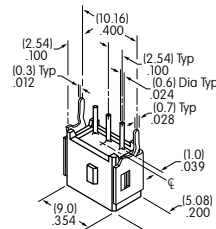
B

Straight with Bracket



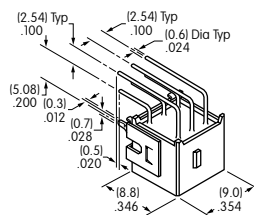
B1

**Straight with Inline Bracket
Single Pole only**



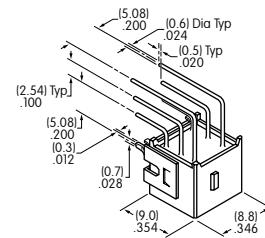
H

**Right Angle
with Bracket**



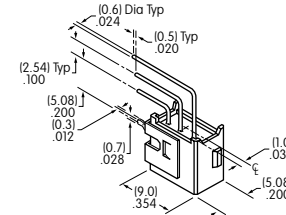
V

Vertical with Bracket



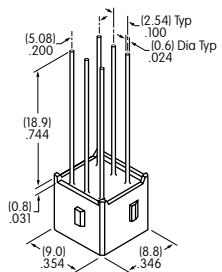
V1

**Vertical with Inline Bracket
Single Pole only**



W

Straight Long

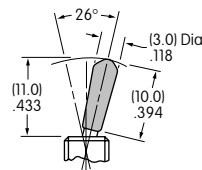


CAPS & PADDLES

G

**AT4003
.394" (10.0mm) Bat Lever Cap**

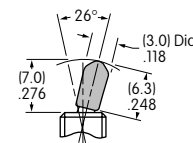
Material: PVC
Colors Available:
A, B, C



J

**AT4064
.248" (6.3mm) Bat Lever Cap**

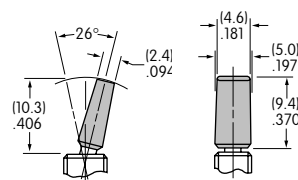
Material: PVC
Colors Available:
A, B, C



A

**AT467
Short Paddle**

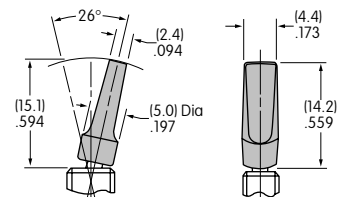
Material: Polyamide
Colors Available:
A, B, C, E, F, G, H



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

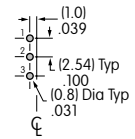
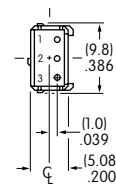
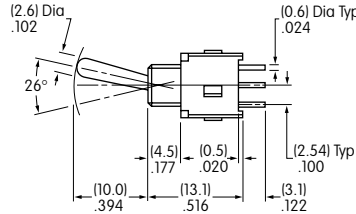
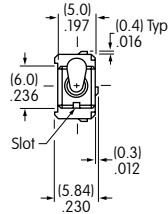
H

Gray

TYPICAL SWITCH DIMENSIONS

Straight PC

Single Pole

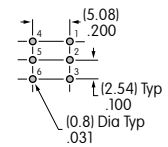
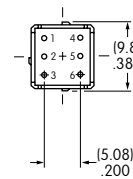
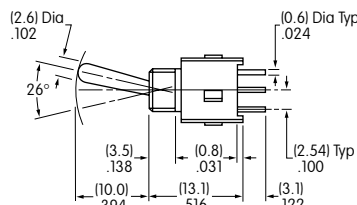
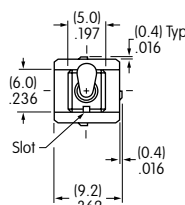


A12AP

A11 models do not have Terminal 2

Straight PC

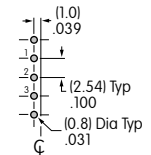
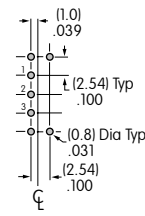
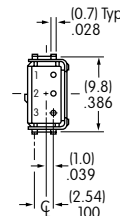
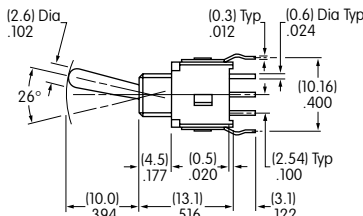
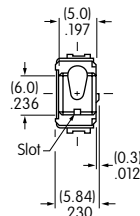
Double Pole



A22AP

Straight PC • Bracket

Single Pole



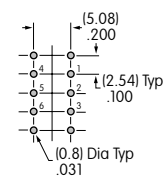
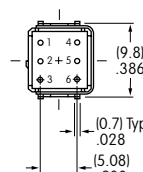
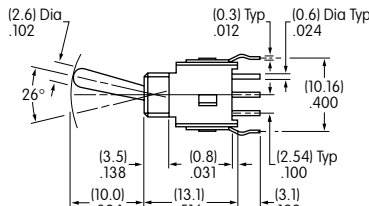
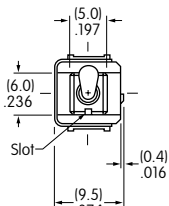
A12AB

B Terminals

B1 Terminals

Straight PC • Bracket

Double Pole

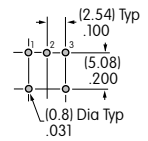
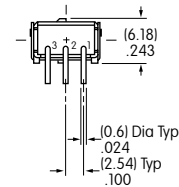
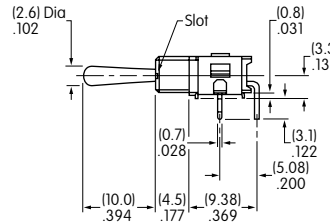
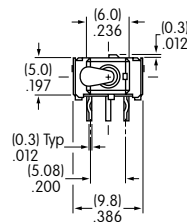


A22AB

TYPICAL SWITCH DIMENSIONS

Right Angle PC

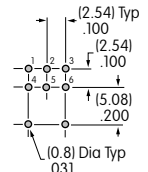
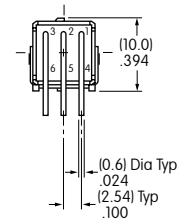
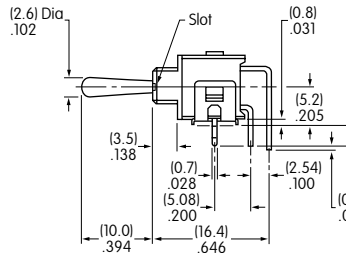
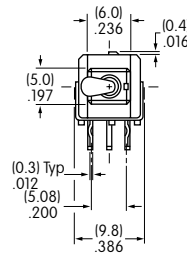
Single Pole



A12AH

Right Angle PC

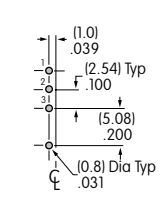
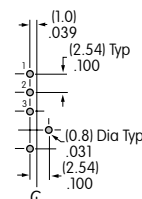
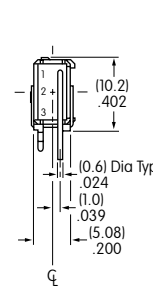
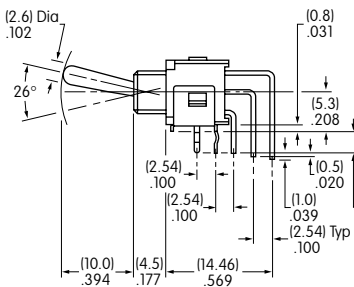
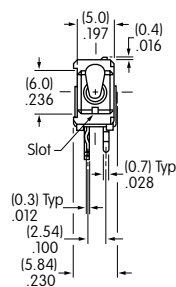
Double Pole



A22AH

Vertical PC

Single Pole



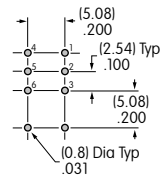
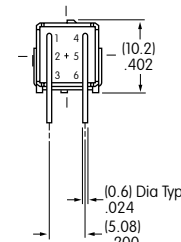
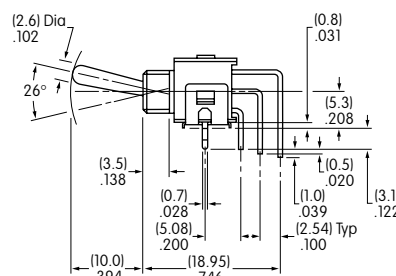
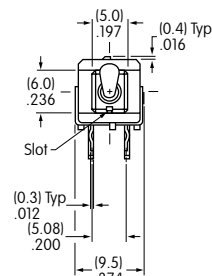
A12AV

V Terminals

V1 Terminals

Vertical PC

Double Pole



A22AV