

A 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 for 1 minute minimum
Mechanical Life: 100,000 operations minimum for On-None-On & On-Off-On
 50,000 operations minimum for other circuits
 50,000 operations minimum for locking lever models
Electrical Life: 50,000 operations minimum
Nominal Operating Force: Toggles A, A1, E & K with Long Paddle: 1.47N (momentary); 1.18N (maintained)
 Toggles J & H & K with Short Paddle: 2.72N (momentary); 1.84N (maintained)
 Toggle L: 0.59N
Contact Timing: Nonshorting (break-before-make)
Angle of Throw: 26°

Materials & Finishes

Toggle: Nickel plated brass
Bushing: Carbon blended polyamide; nickel plated zinc alloy for locking levers & threaded bushing
Gasket: Nitrile butadiene rubber
Case Housing: Glass fiber reinforced polyamide
Support Bracket: Tin plated phosphor bronze
Movable Contact: Phosphor bronze with gold plating
Stationary Contacts: Copper alloy with gold plating
Terminals: Copper alloy with gold plating

Environmental Data

Operating Temperature 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 (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Installation

Mounting Torque: .30 ~ .45Nm (2.65 ~ 3.98 lb•in) for A1 actuator with threaded bushing only

PCB Processing

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

Standards & Certifications

Flammability Standards: UL94V-0 available
 The B 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.

Distinctive Characteristics

Subminiature size saves space on PC boards.

Specifically developed for logic-level applications.

Antistatic superstructure, consisting of the carbon impregnated bushing and the support bracket, prevents static discharge to the contacts. Static electricity from an operator's touch travels from actuator through the bushing and bracket to the PC board.

Locking lever mechanism offered as a toggle option.

Optional threaded, 6mm diameter bushing for panel seal mounting meets IP65 of IEC60529 specifications (similar to NEMA 4 and 13).

Totally sealed body construction prevents contact contamination and allows time- and money-saving soldering and cleaning. Epoxy sealed terminals lock out flux and other contaminants.

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 section.)

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



Actual Size



A
Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

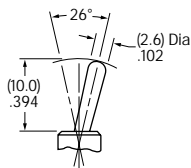
Supplement

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	B12 B13 B15 B1R B18 B19 B1S	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	B22 B23 B25 B2R B28 B29 B2S	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

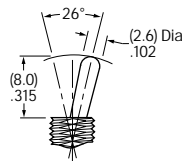
TOGGLES

Standard Material & Finish: Brass with Bright Nickel

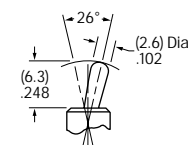
A .394" (10.0mm) Bat



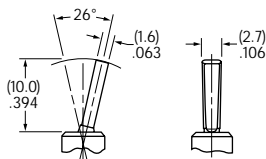
A1 .315" (8.0mm) Bat with Panel Seal Threaded Bushing



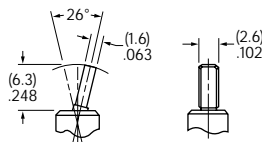
J .248" (6.3mm) Bat



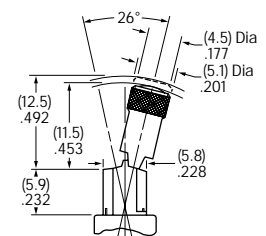
E .394" (10.0mm) Flatted



H .248" (6.3mm) Flatted

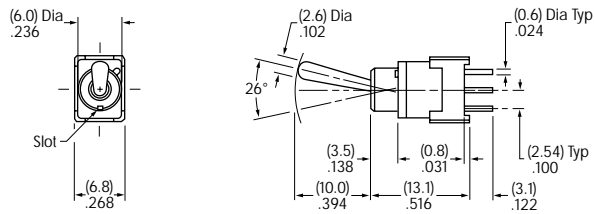


L Locking Lever

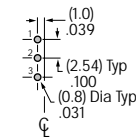


TYPICAL SWITCH DIMENSIONS

Single Pole

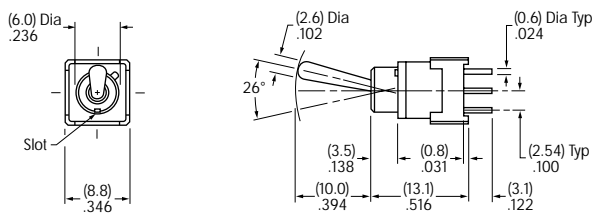


Straight PC

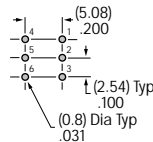


B12AP

Double Pole

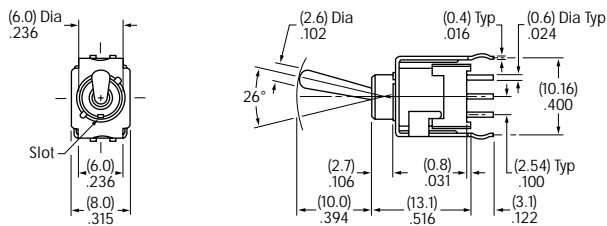


Straight PC

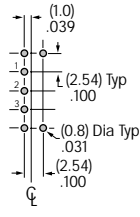


B22AP

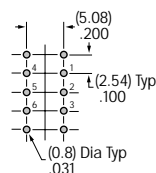
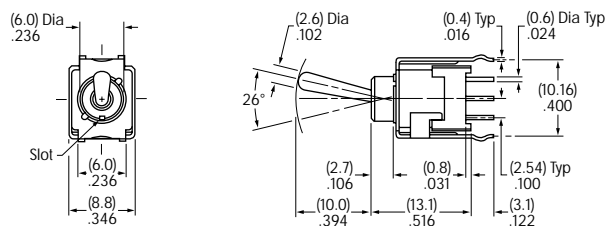
4JOHMF1PMF



4USBJHI1BDFU

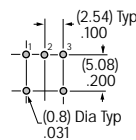
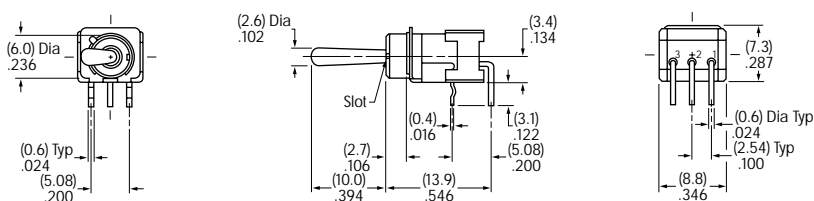


B12AB



B22AB

Single Pole



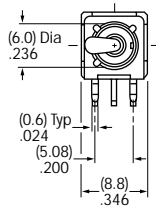
B12AH

TYPICAL SWITCH DIMENSIONS

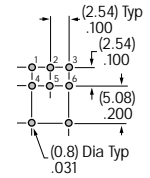
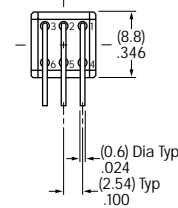
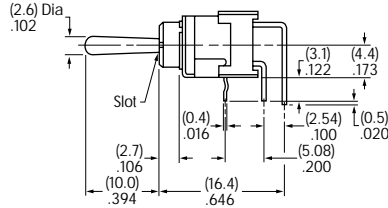
Right Angle PC



B22AH



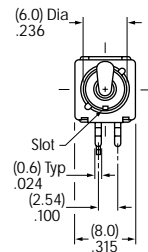
Double Pole



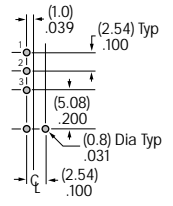
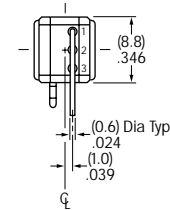
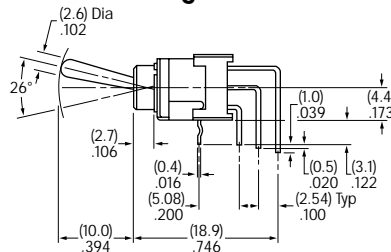
Vertical PC



B12AV



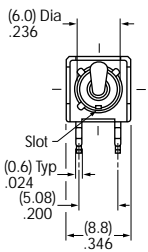
Single Pole



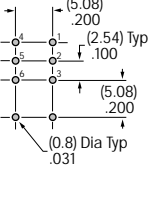
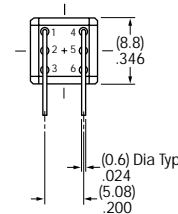
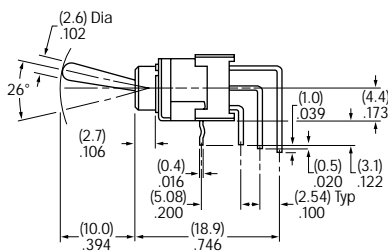
Vertical PC



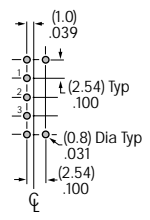
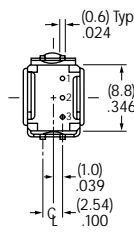
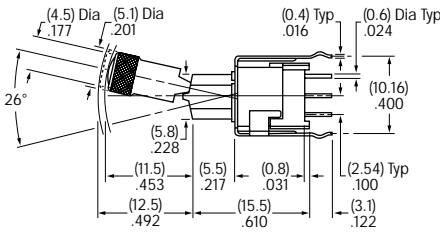
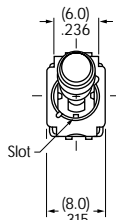
B22AV



Double Pole



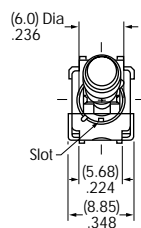
B12LB



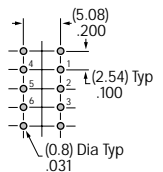
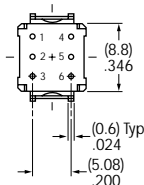
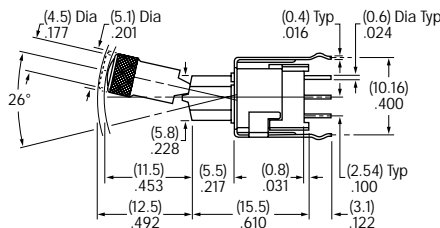
-PDLJ0H-FWFS14USBJHIU18BDFLU



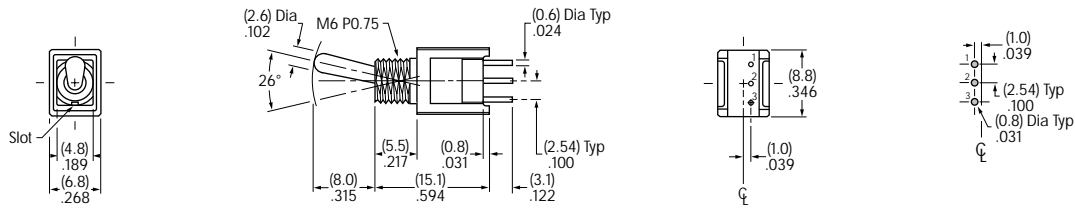
B22LB



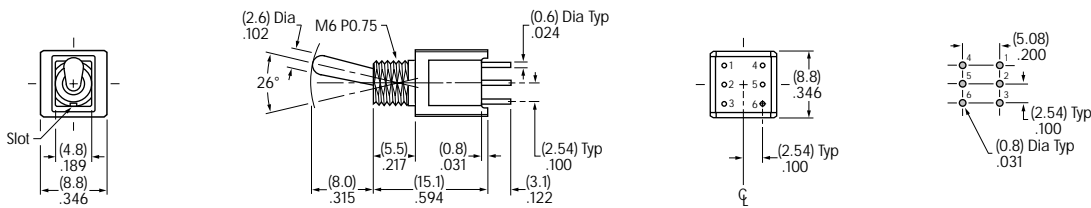
BVCMF1PMF



TYPICAL SWITCH DIMENSIONS



B12A1P

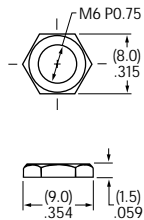


B22A1P

STANDARD HARDWARE & PANEL CUTOUT

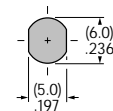
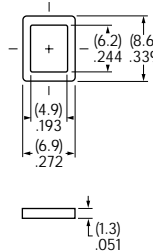
**AT513M
Metric Hex Nut**

Material:
Brass,
Nickel plated



**AT063
Gasket**

Material:
Nitrile butadiene
rubber



Maximum Panel Thickness
with Standard Hardware:
.087" (2.2mm)