

NKK® SERIES B TOGGLE SWITCHES

SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE

Toggles

TYPICAL SWITCH ORDERING EXAMPLE

B **2** **3** **K** **B** - **A** **F**

POLES	
1	SPDT
2	DPDT SP3T

CIRCUITS			
2	ON	NONE	ON
3	ON	OFF	ON
5	ON	NONE	(ON)
8	(ON)	OFF	(ON)
9	ON	OFF	(ON)
4	ON	ON	ON
() = Momentary			

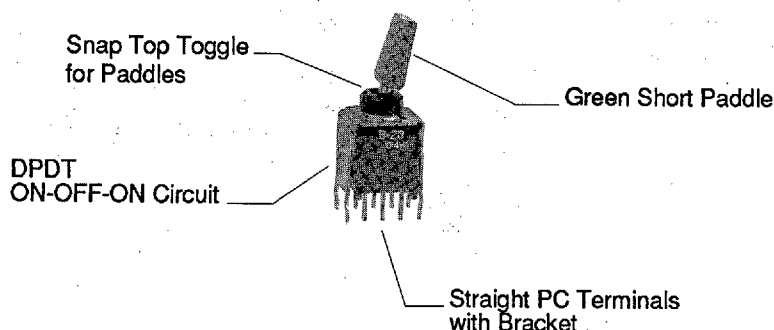
PC TERMINALS	
P	Straight
B	Straight w/Bracket
H	Right Angle w/Bracket
V	Vertical w/Bracket
W	Straight .744" Long

TOGGLES	
A	.394" Bat
E	.394" Flatted
H	.248" Flatted
J	.248" Bat
K	Snap Top for A or B Paddle
L	Locking Lever (w/Circuits 2 & 3 only)

PADDLES	
A	Short Paddle for K Toggle
B	Long Paddle for K Toggle
OPTIONAL CAPS	
G	.394" Bat Lever Cap
J	.248" Bat Lever Cap

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE (B23KB-AF)

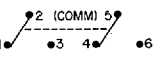
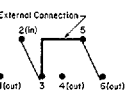
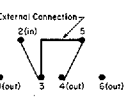
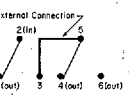
SERIES B TOGGLE



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

NKK® SERIES B TOGGLE SWITCHES

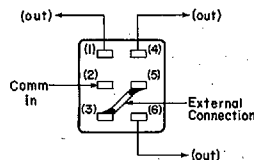
SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE

POLES AND CIRCUITS				
POLE & THROW	MODEL	TOGGLE POSITION & TERMINAL NUMBERS		
		() = Momentary		
		Up 	Center 	Down 
SPDT	B12	ON	NONE	ON
	B13	ON	OFF	ON
	B15	ON	NONE	(ON)
	B18	(ON)	OFF	(ON)
	B19	ON	OFF	(ON)
CONNECTED TERMINALS		2-3	OPEN	2-1
SCHEMATIC 				
DPDT	B22	ON	NONE	ON
	B23	ON	OFF	ON
	B25	ON	NONE	(ON)
	B28	(ON)	OFF	(ON)
	B29	ON	OFF	(ON)
CONNECTED TERMINALS		2-3 5-6	OPEN	2-1 5-4
SCHEMATIC 				
SP3T	B24	ON	ON	ON
CONNECTED TERMINALS W/O EXTRA CONNECTIONS		2-3 5-6	2-3 5-4	2-1 5-4
SCHEMATICS W/EXTERNAL CONNECTIONS				

Terminal numbers are not actually on the switch.

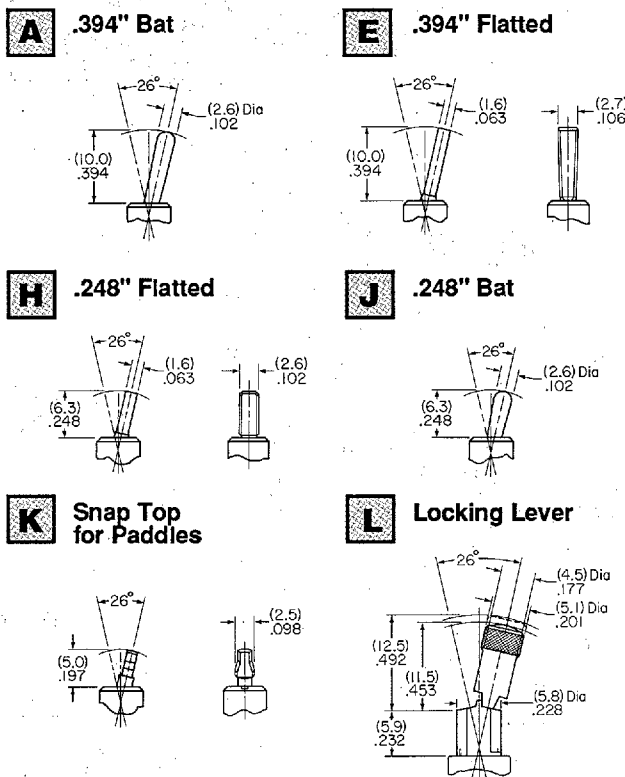
THREE-ON POSITIONS

In the manufacture of the B24 model, a double pole double throw switch is converted to a single pole with 3 independent circuits. The extra connection shown in the diagram must be made during field installation. Note that terminal numbers are not actually indicated on the switch.

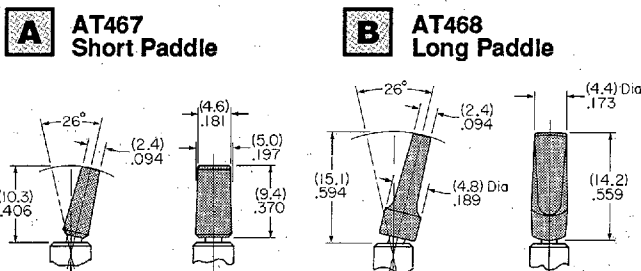


TOGGLES

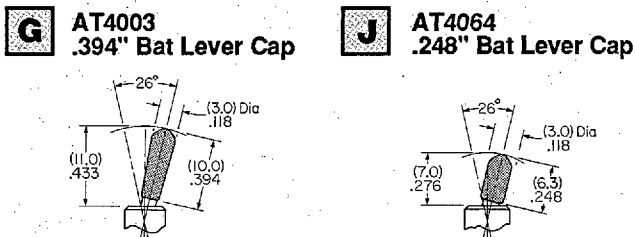
Standard finish: Bright Nickel Optional finish: Black



PADDLES & OPTIONAL CAPS



Paddle Material: Nylon
Colors Available: A Black B White C Red
E Yellow F Green G Blue H Gray



Lever Cap Material: Polyvinyl chloride
Colors Available: A Black B White C Red

NKK® SERIES B TOGGLE SWITCHES

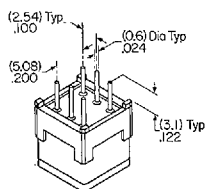
Toggle

SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE

PC TERMINALS

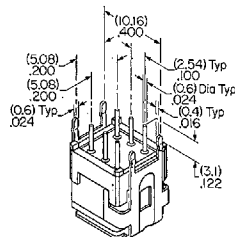
P

Straight



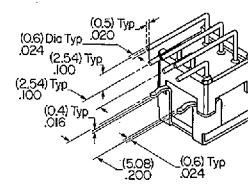
B

Straight with Bracket



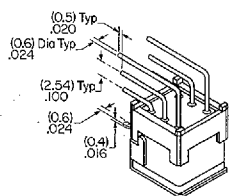
H

Right Angle with Bracket



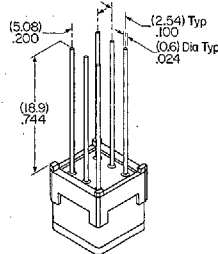
V

Vertical with Bracket



W

Straight .744" Long



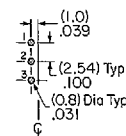
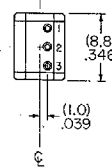
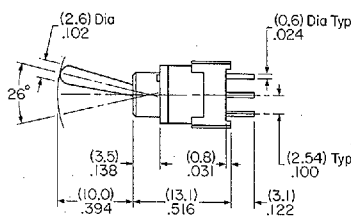
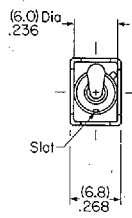
The use of a support bracket or placement of the round bushing in a panel cutout is recommended to increase PCB mounting stability. Soldering time & temperature limits:
3 seconds @ 350°C
5 seconds @ 270°C
Alcohol cleaning solvents are recommended.

P

Straight Terminals without Bracket/Single Pole



B12AP Model Shown

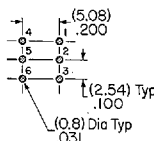
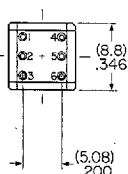
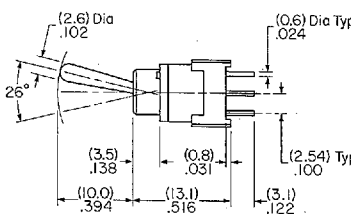
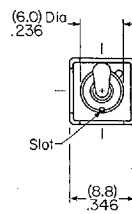


P

Straight Terminals without Bracket/Double Pole



B22AP Model Shown

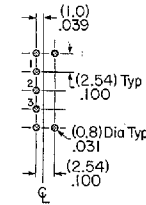
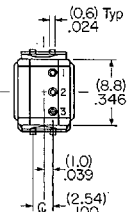
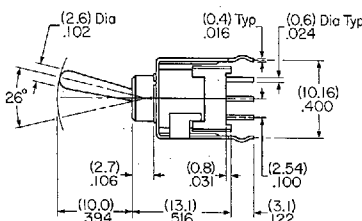
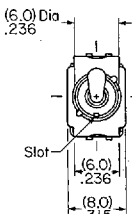


B

Straight Terminals with Bracket/Single Pole



B12AB Model Shown



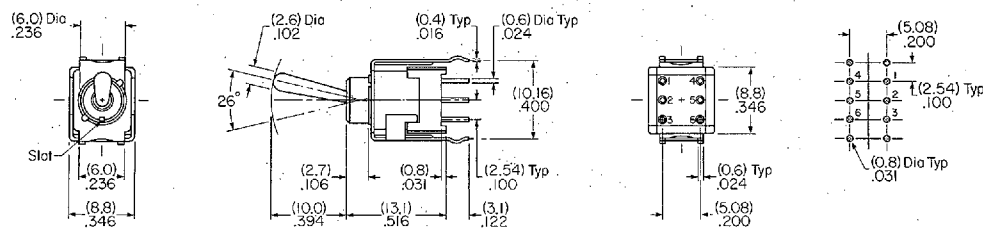
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SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE

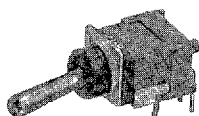
B Straight Terminals with Bracket/Double Pole



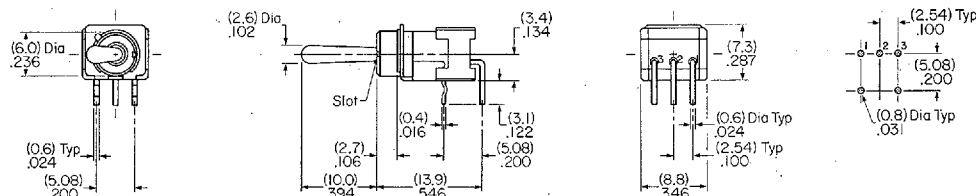
B22AB Model Shown



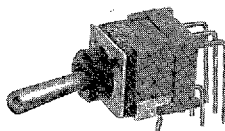
H Right Angle Terminals with Bracket/Single Pole



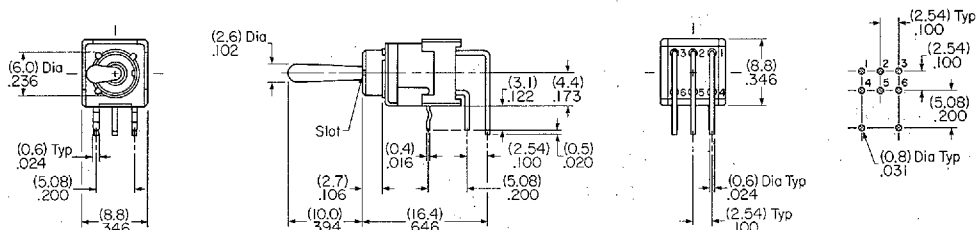
B12AH Model Shown



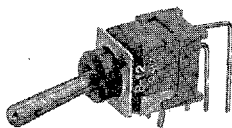
H Right Angle Terminals with Bracket/Double Pole



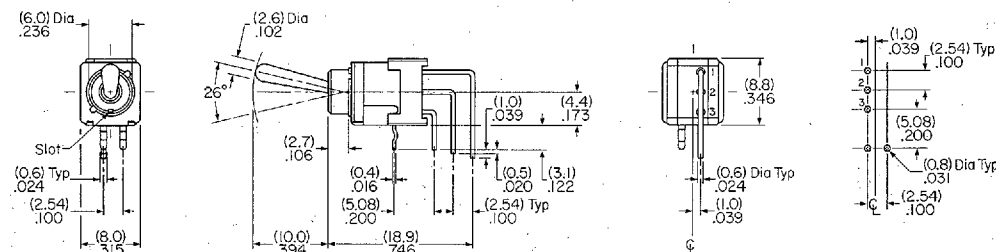
B22AH Model Shown



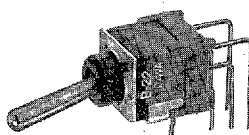
V Vertical Terminals with Bracket/Single Pole



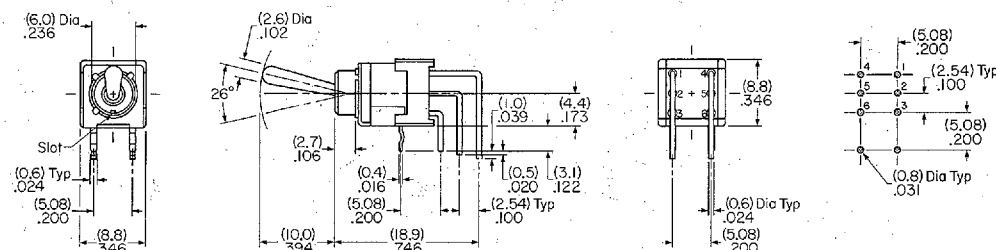
B12AV Model Shown



V Vertical Terminals with Bracket/Double Pole



B22AV Model Shown



Toggles

Pushbuttons

NKK®

SERIES B

SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE

A-25-13

DISTINCTIVE FEATURES



Available with toggles, paddles, and pushbuttons.

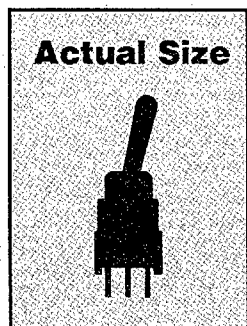
Industry's smallest alternate action pushbutton

Locking lever mechanism offered as a toggle option.

Smooth round 6mm diameter bushing simplifies panel layout.

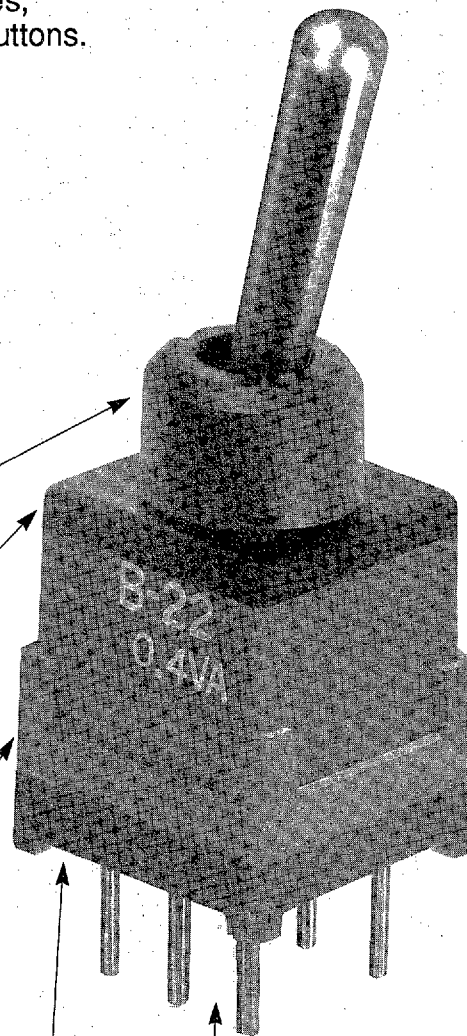
Antistatic superstructure prevents static discharge to the contacts.

Patented Sliding Twin Crossbar (STC) contact mechanism provides smoother, positive detent and more reliable logic-level operation.



Totally sealed body prevents contact contamination and allows wave soldering and washing.

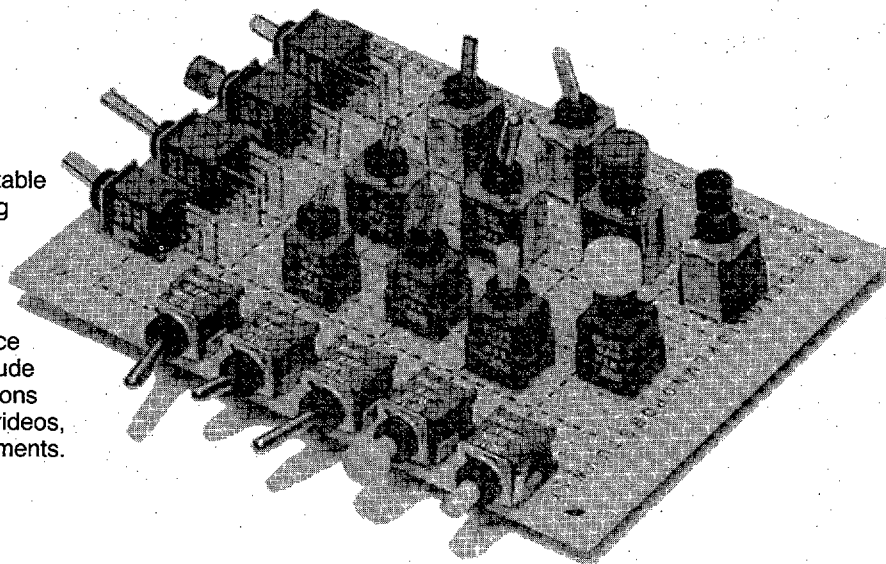
.100" x .100" terminal spacing conforms to standard PC board grids.



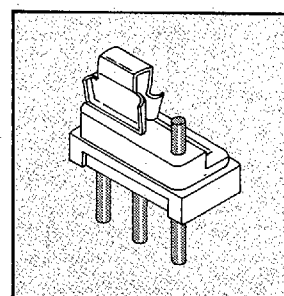
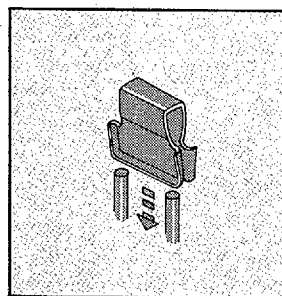
NKK®**SERIES B****SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE****APPLICATIONS**

- Toggles
- Pushbuttons

Ultraminiaturized B Series PC mountable switches feature an antistatic bushing which is smooth and round, Sliding Twin Crossbar (STC) contacts and sealed construction. They are recommended for use in products where reliability is essential and space is restricted. Typical applications include computers, peripherals, communications systems, medical equipment, home videos, cameras and small measuring instruments.

**ANTISTATIC CONSTRUCTION**

The switch is grounded to the PC board by means of the carbon impregnated bushing and the support bracket. Static electricity from an operator's touch travels a safe path from actuator through the bushing and bracket to the PC board, rather than traveling into the contacts.

STC CONTACT MECHANISM

NKK's patented, award-winning STC contact mechanism offers benefits unavailable in conventional mechanisms. The movable twin contact surfaces pinch the stationary contacts to provide increased contact stability and unparalleled logic-level reliability. Continued reliability is assured since the gold-plated contacts are wiped clean with each actuation. Furthermore, if one side of the twin contacts should fail to conduct, the other side functions as a backup, or fail-safe path for the current. The combination of rounded movable and stationary contacts provides smooth contact feel previously unavailable in sliding contact type mechanisms.

SEALED FOR WASHABILITY

Sealed-body construction permits Series B switches to be subjected to time- and money-saving automated soldering techniques. As a result, they can be safely cleaned of flux without fear of compromising operating characteristics.

NKK®
switches

D 98E ■ 6428776 0001919 674 ■

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NKK® SERIES B TOGGLE SWITCHES

SUPER-SUBMINIATURE/PCB/ANTISTATIC/WASHABLE

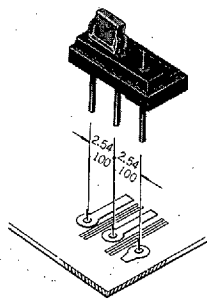
GENERAL SPECIFICATIONS

Electrical Capacity: (Resistive Load)	0.4VA maximum @ 28V AC/DC maximum (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
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 50,000 operations minimum for locking lever models
Electrical Life:	50,000 operations minimum
Ambient Temp Range:	-25°C through +70°C (-13°F through +158°F)
Toggle Angle of Throw:	26°
Nominal Operating Force:	Toggles A & E & K w/Long Paddle: 150g (momentary); 120g (maintained) Toggles J & H & K w/Short Paddle: 278g (momentary); 188g (maintained) Toggle L: 60g

MATERIALS & FINISHES

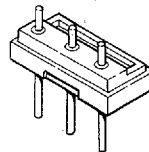
Toggle	Nickel plated brass
Bushing	Carbon blended polyamide; nickel plated zinc alloy for locking levers
Case Housing	Glass fiber reinforced polyamide
Support Bracket	Tin plated phosphor bronze
Movable Contact	Phosphor bronze with gold plating over silver plating
Stationary Contacts	Brass with gold plating over nickel undercoating
Terminals	Brass with gold plating over nickel undercoating

.100 INCH TERMINAL SPACING



Standard 2.54mm x 2.54mm (.100" x .100") grid spacing and 0.6mm (.024") diameter terminals simplify PC board mounting.

MOLDED-IN TERMINALS



Terminals are molded in the base and epoxy sealed to prevent flux, solvents, and other contaminants from reaching the contacts.