

B22LP Datasheet

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DiGi Electronics Part Number	B22LP-DG
Manufacturer	NKK Switches
Manufacturer Product Number	B22LP
Description	SWITCH TOGGLE DPDT 0.4VA 28V
Detailed Description	Toggle Switch DPDT Through Hole

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Purchase and inquiry

Manufacturer Product Number:

B22LP

Series:

B

Mounting Type:

Through Hole

Switch Function:

On-On

Voltage Rating - AC:

28 V

Actuator Type:

Locking Lever

Illumination:

Non-Illuminated

Illumination Voltage (Nominal):

-

Panel Cutout Dimensions:

-

Ingress Protection:

-

Operating Temperature:

-30°C ~ 85°C

Electrical Life:

50,000 Cycles

Manufacturer:

NKK Switches

Product Status:

Active

Circuit:

DPDT

Current Rating (Amps):

0.4VA (AC/DC)

Voltage Rating - DC:

28 V

Actuator Length:

12.50mm

Illumination Type, Color:

-

Termination Style:

PC Pin

Bushing Thread:

Unthreaded

Features:

Epoxy Sealed Terminals

Actuator Material:

Brass, Nickel Plated

Base Product Number:

B22L

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8536.50.9065

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

Series B

Process Sealed Subminiature Antistatic Toggles

Toggles

A General Specifications

Rockers

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.

Pushbuttons

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

Illuminated PB

Electrical Life: 50,000 operations minimum
Nominal Operating Force: Toggles A, A1 & E: 1.47N (momentary); 1.18N (maintained)
Toggles J & H: 2.72N (momentary); 1.84N (maintained)
Toggle L: 0.59N

Programmable

Contact Timing: Nonshorting (break-before-make)
Angle of Throw: 26°

Keylocks

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

Rotaries

Slides

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)

Tactiles

Tilt

Installation

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

Touch

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.

Indicators

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.

Accessories

Supplement

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.

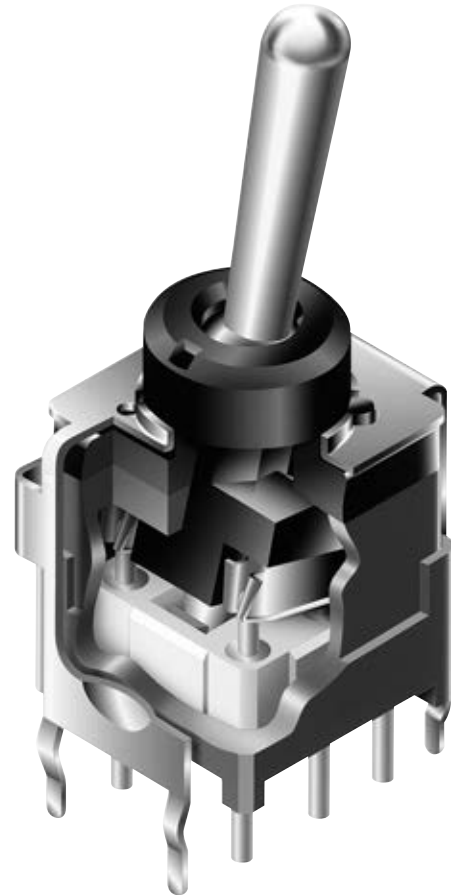
Locking lever mechanism offered as a toggle option.

Optional threaded, 6mm diameter bushing for panel seal mounting meets IP65 of IEC 60529 specifications (similar to NEMA 4 and 13).

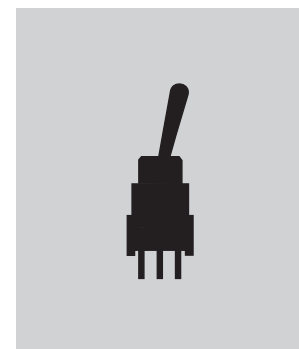
Totally sealed body construction prevents contact contamination and allows time- and money-saving soldering and cleaning. Epoxy sealed terminals lock out flux and other contaminants.

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

Series B

Process Sealed Subminiature Antistatic Toggles

Toggles **A**

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

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Tilt

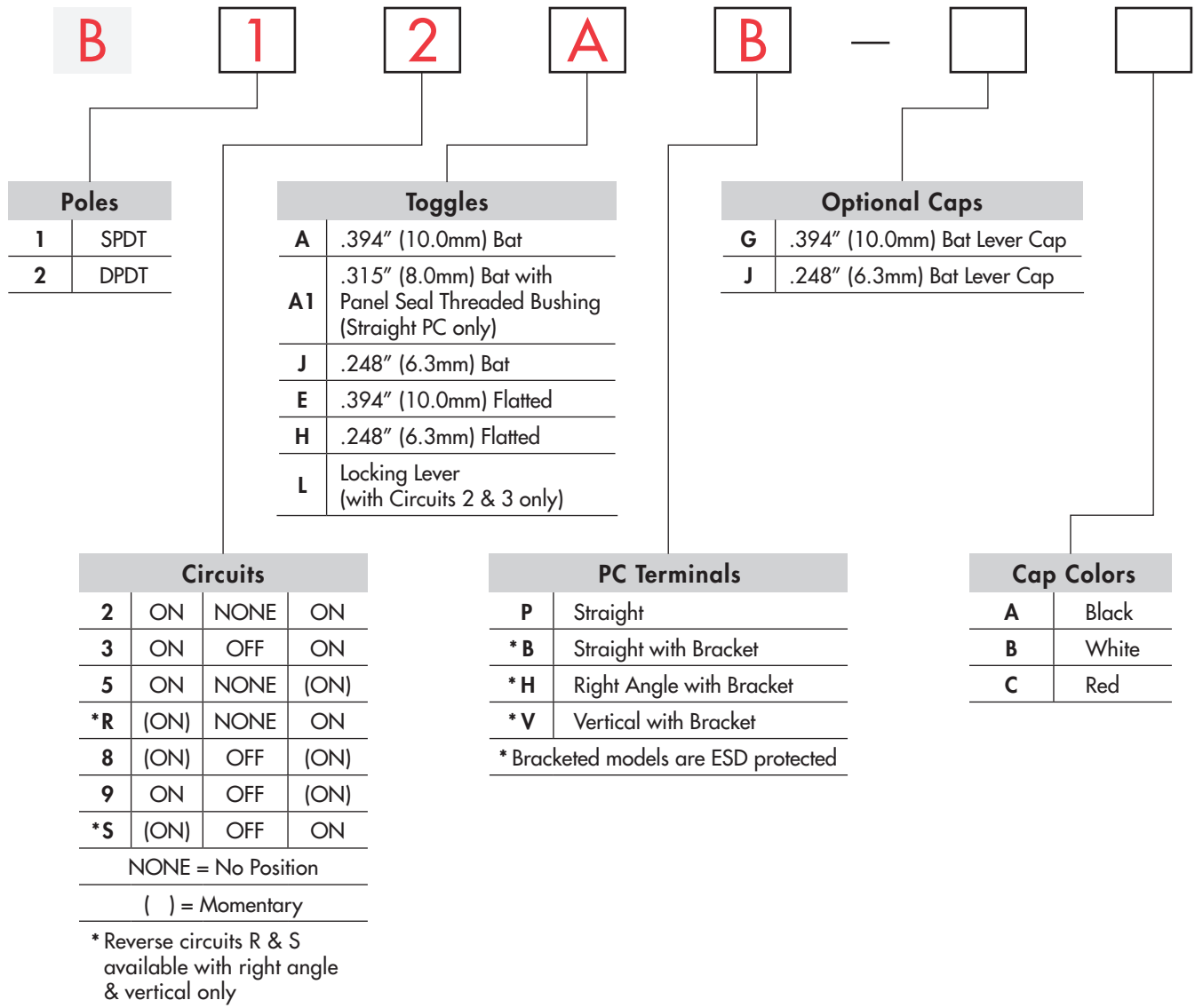
Touch

Indicators

Accessories

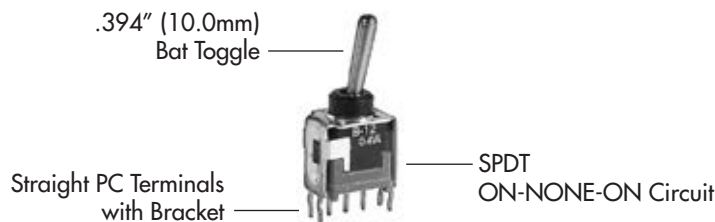
Supplement

TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

B12AB



Process Sealed Subminiature Antistatic Toggles

Series B

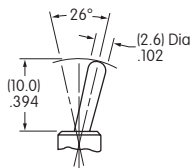
POLES & CIRCUITS

Pole	Model	Toggle Position			Connected Terminals			Throw & Schematics
		Up	Center	Down	Up	Center	Down	
		NONE = No Position () = Momentary						
								Note: Terminal numbers are not actually on the switch.
SP	B12	ON	NONE	ON				SPDT
	B13	ON	OFF	ON				
	B15	ON	NONE	(ON)				
	B1R	(ON)	NONE	ON	2-3	OPEN	2-1	
	B18	(ON)	OFF	(ON)				
	B19	ON	OFF	(ON)				
	B1S	(ON)	OFF	ON				
DP	B22	ON	NONE	ON				DPDT
	B23	ON	OFF	ON				
	B25	ON	NONE	(ON)				
	B2R	(ON)	NONE	ON	2-3 5-6	OPEN	2-1 5-4	
	B28	(ON)	OFF	(ON)				
	B29	ON	OFF	(ON)				
	B2S	(ON)	OFF	ON				

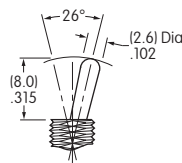
TOGGLES

Standard Material & Finish: Brass with Bright Nickel

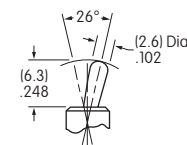
A .394" (10.0mm) Bat



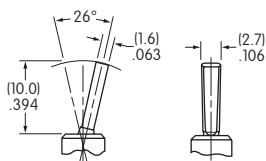
A1 .315" (8.0mm) Bat with Panel Seal Threaded Bushing



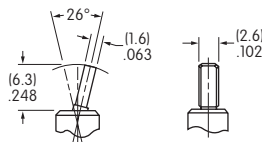
J .248" (6.3mm) Bat



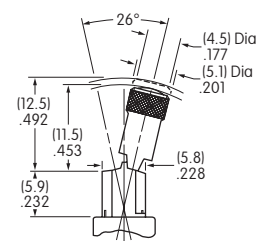
E .394" (10.0mm) Flatted



H .248" (6.3mm) Flatted



L Locking Lever



A Toggles
 Rockers
 Pushbuttons
 Illuminated PB
 Programmable
 Keylocks
 Rotaries
 Slides
 Tactiles
 Tilt
 Touch
 Indicators
 Accessories
 Supplement

Series B

Process Sealed Subminiature Antistatic Toggles

Toggles **A**

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

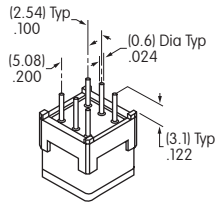
Accessories

Supplement

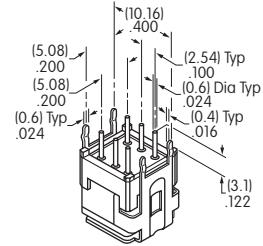
PC TERMINALS

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

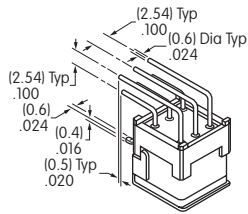
P Straight



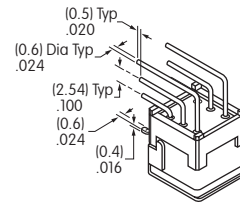
B Straight with Bracket



H Right Angle with Bracket



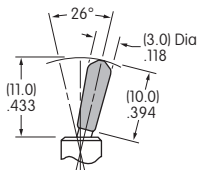
V Vertical with Bracket



OPTIONAL CAPS

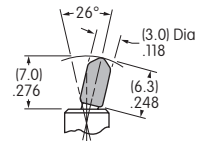
G AT4003
.394" (10.0mm) Bat Lever Cap

Material: PVC
Colors Available:
A, B, C



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

Material: PVC
Colors Available:
A, B, C



Color Codes:

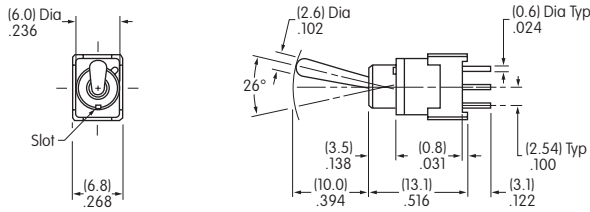
A Black **B** White **C** Red

Process Sealed Subminiature Antistatic Toggles

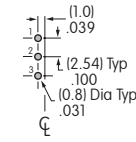
Series B

TYPICAL SWITCH DIMENSIONS

Single Pole

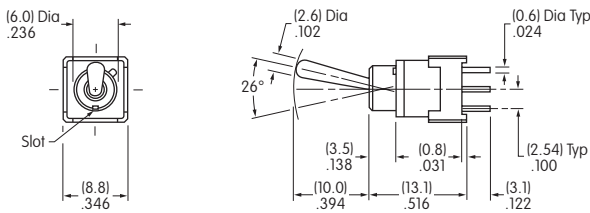


Straight PC

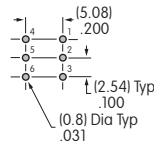


B12AP

Double Pole

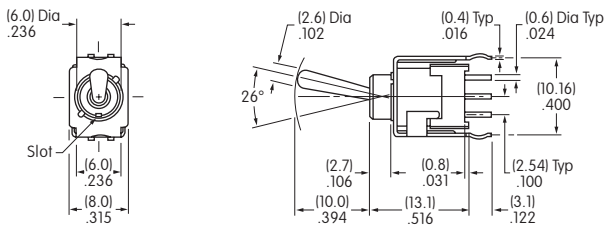


Straight PC

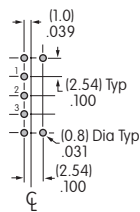


B22AP

Single Pole

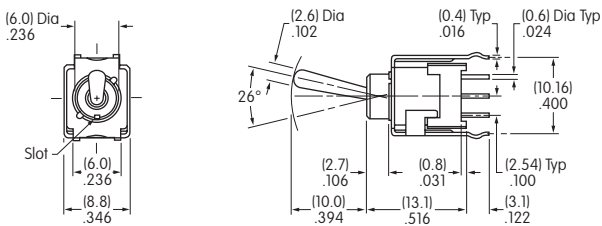


Straight PC • Bracket

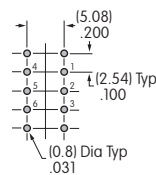


B12AB

Double Pole

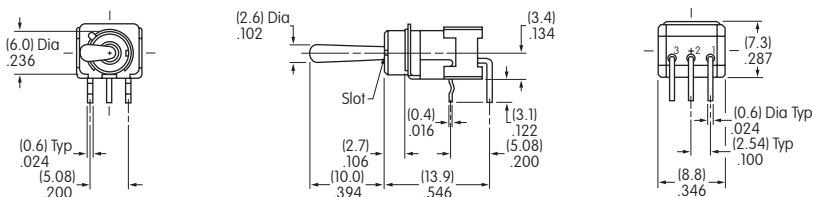


Straight PC • Bracket

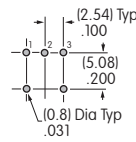


B22AB

Single Pole



Right Angle PC



B12AH

Series B

Process Sealed Subminiature Antistatic Toggles

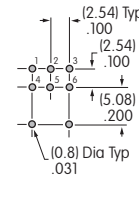
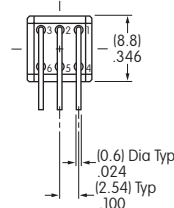
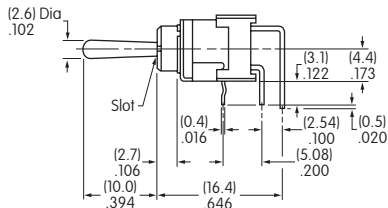
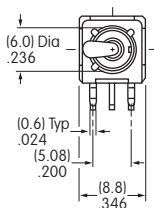
TYPICAL SWITCH DIMENSIONS

Right Angle PC

Double Pole



B22AH

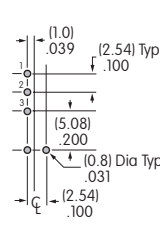
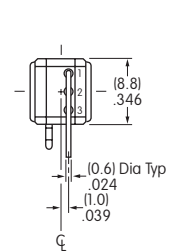
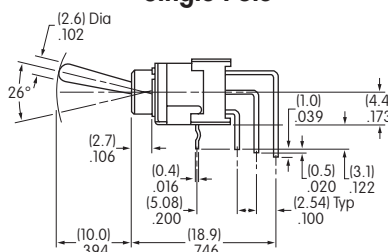
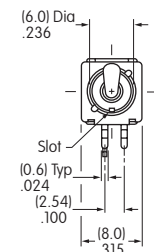


Vertical PC

Single Pole



B12AV

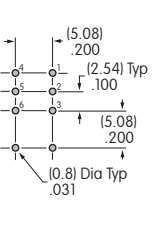
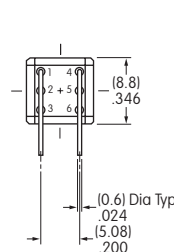
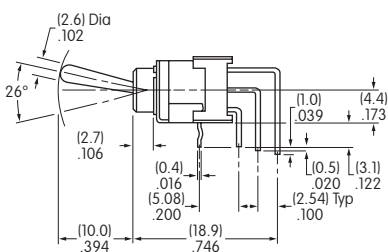
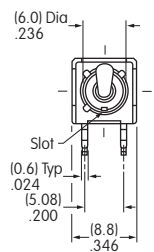


Vertical PC

Double Pole



B22AV

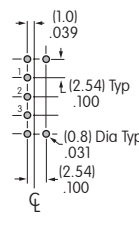
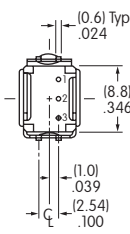
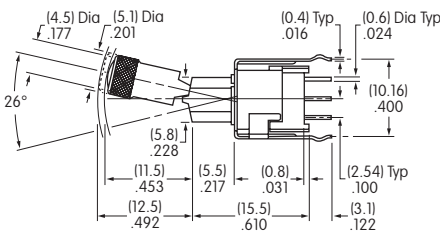
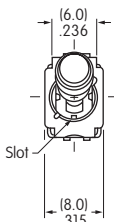


Locking Lever • Straight PC • Bracket

Single Pole



B12LB

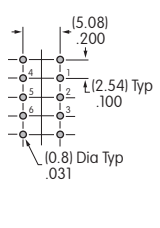
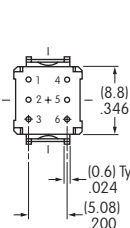
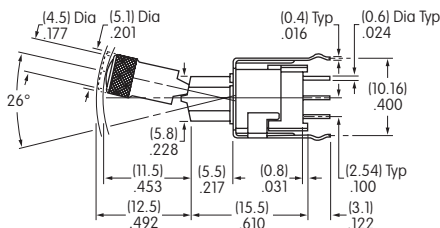
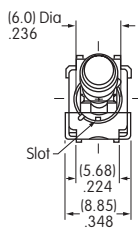


Locking Lever • Straight PC • Bracket

Double Pole



B22LB



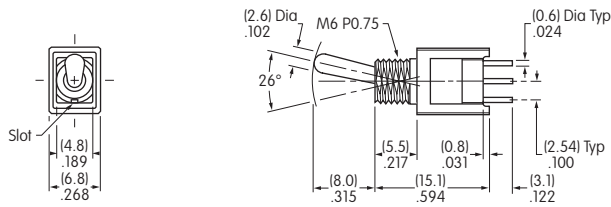
Toggles
A
Rockers
Pushbuttons
Programmable Illuminated PB
Keylocks
Rotaries
Slides
Tactiles
Tilt
Touch
Indicators
Accessories
Supplement

Process Sealed Subminiature Antistatic Toggles

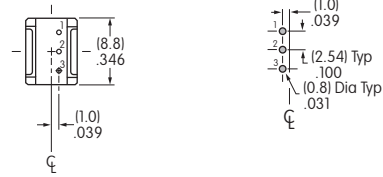
Series B

TYPICAL SWITCH DIMENSIONS

Panel Seal • Single Pole

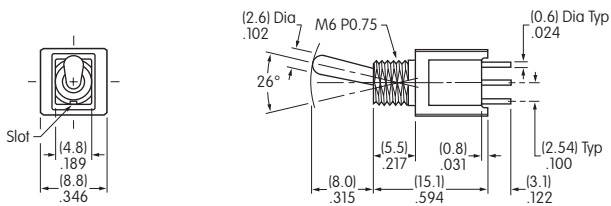


Threaded Bushing • Straight PC

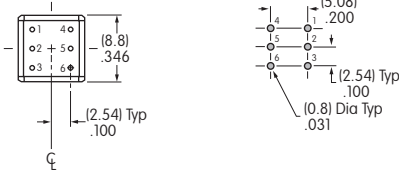


B12A1P

Panel Seal • Double Pole



Threaded Bushing • Straight PC

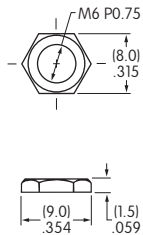


B22A1P

STANDARD HARDWARE & PANEL CUTOUT

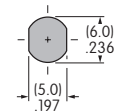
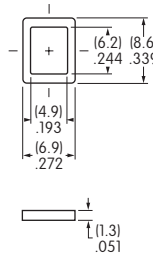
AT513M Metric Hex Nut

Material:
Brass,
Nickel plated



AT063 Gasket

Material:
Nitrile butadiene
rubber



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

OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we strictly control the quality of products and services. Welcome your RFQ to

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