

General Specifications

FB Series

SB Series

Electrical Capacity (Resistive Load)

Power Level: 500mA @ 125V AC for silver
Logic Level: 0.4VA max. @ 28V AC/DC max. for gold
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
 Note: Find additional explanation in Supplement section.

3A @ 125V AC or 2A @ 250V AC or 2A @ 30V DC for silver
 0.4VA max. @ 28V AC/DC max. for gold
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
 Note: Find explanation of operating range in Supplement section.

Other Ratings

Contact Resistance: 30 milliohms maximum for silver;
 30 milliohms maximum for gold
Insulation Resistance: 100 megohms minimum @ 500V DC
Dielectric Strength: 1,000V AC minimum between contacts & between contacts & case for 1 minute minimum
Mechanical Life: 50,000 operations minimum
Electrical Life: 50,000 operations minimum
Nominal Operating Force: 2.16N
Travel: Pretravel .043" (1.1mm)
 Overtravel .022" (0.57mm)
 Total Travel .065" (1.67mm)

10 milliohms maximum for silver;
 20 milliohms maximum for gold
 200 megohms minimum @ 500V DC
 1,000V AC minimum between contacts & between contacts & case for 1 minute minimum
 30,000 operations minimum
 10,000 operations minimum
 4.90N
 Normally Open
 Total Travel .088" (2.24mm)
 Normally Closed
 Total Travel .088" (2.24mm)

Materials & Finishes

Plunger: Polyacetal
Bushing: Brass with nickel plating
Case: Phenolic resin
Movable Contactor: Copper with silver or gold plating
Stationary Contacts: Phosphor bronze with silver or gold plating
Terminals: Phosphor bronze with silver or gold plating

Black: Phenolic resin
 Red: Urea formaldehyde resin
 Brass with nickel plating
 Phenolic resin
 Copper with silver or gold plating
 Copper with silver or gold plating
 Copper with silver or gold plating

Environmental & Installation Data

Operating Temp Range: -10°C through +70°C (+14°F through +158°F)
Soldering Time & Temperature: Manual Soldering:
 See Profile A in Supplement section.

-10°C through +70°C (+14°F through +158°F)
 Manual Soldering:
 See Profile A in Supplement section.

Standards & Certifications

UL: File No. E44145 - Recognized only when ordered with marking on switch. Add "/U" or "/CUL" before dash in part number to order UL recognized switch. Models rated 0.5A @ 125V AC Single pole; Momentary action circuit with solder lug terminations.

File No. E44145 - Recognized only when ordered with marking on switch. Add "/U" or "/CUL" before dash in part number to order UL recognized switch. Models rated 3A @ 125V AC & 2A @ 250V AC. Single pole: Momentary action circuit with solder lug terminations. Black plunger only.

CSA:

File No. 023535_0_000 - Certified only when ordered with marking on switch. Add "/C" before dash in part number to order CSA certified switch. SB series rated 3A @ 125V AC & 2A @ 250V AC. Single pole: Momentary action circuit with solder lug terminations. Black plunger only.

Distinctive Characteristics

Optional caps in different colors to vary appearance as needed.

Low operating force for ease of actuation.

Rear panel bushing mount with compact behind panel dimension.

Internal antijamming feature to protect the contacts from damage due to excessive force on the plunger.

Self-cleaning contacts make FB models highly reliable.

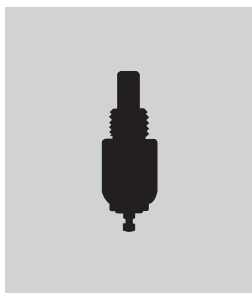
Low cost device of rugged one-piece bushing and housing construction.

Reliability of construction with an internal guide to maintain contact alignment.

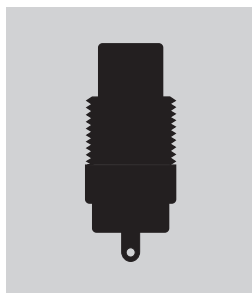
FB15ANEP and SB4011NO models have epoxy sealed terminals.



Actual Size FB



Actual Size SB



FB Bushing Mount

Page C40

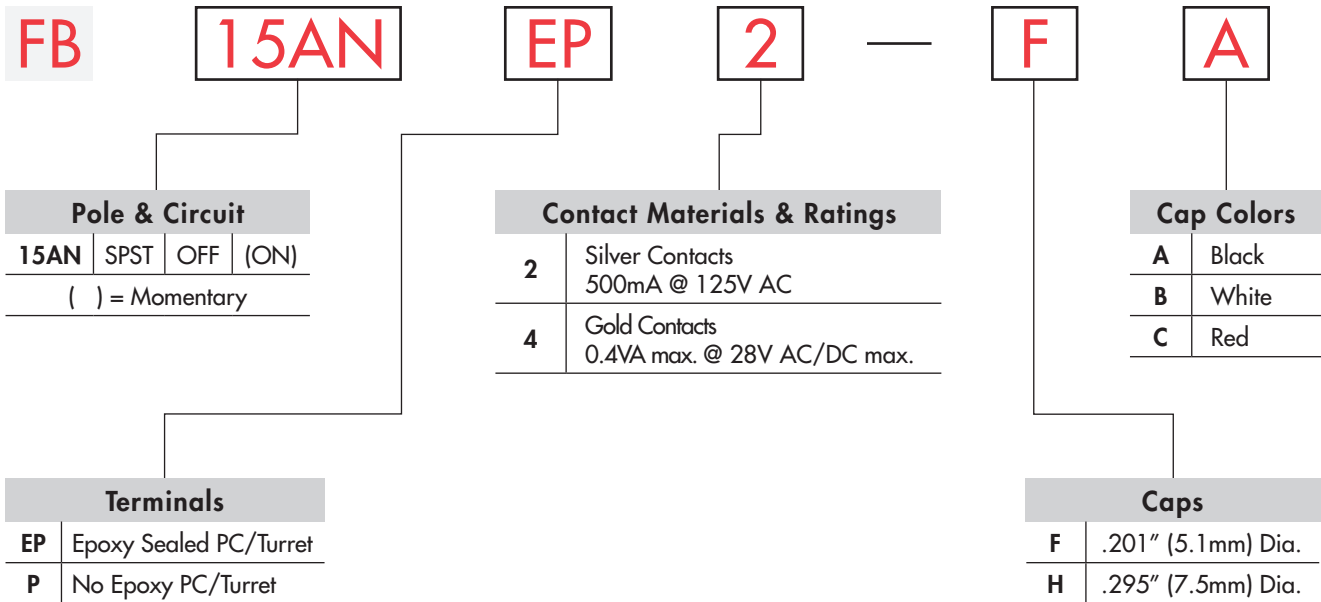


SB Bushing Mount

Page C42

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

TYPICAL SWITCH ORDERING EXAMPLE



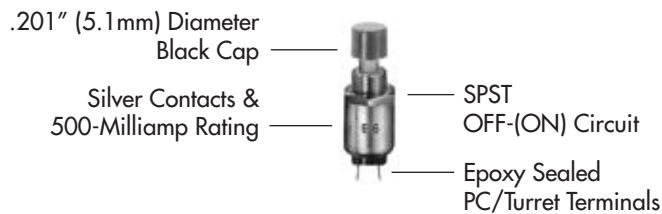
IMPORTANT:



Switches are supplied without UL & cULus marking unless specified.
UL & cULus recognized only when ordered with marking on the switch.
 Specific models, ratings, & ordering instructions are noted on the General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

FB15ANEP2-FA



POLE & CIRCUIT

		Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematics
Pole	Model	Normal	Down	Normal	Down	
SP	FB15AN	OFF	(ON)	OPEN	1-2	SPST

Note: Terminal numbers are not actually on the switch.

Toggles
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TERMINALS

EP Epoxy Sealed
PC/Turret Terminals

P No Epoxy
PC/Turret Terminals

CONTACT MATERIALS & RATINGS

2 Silver Contacts

Power Level

500mA @ 125V AC

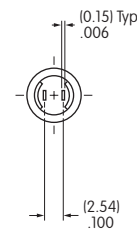
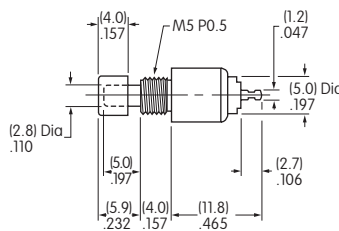
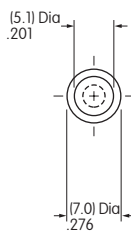
4 Gold Contacts

Logic Level

0.4VA maximum @ 28V AC/DC maximum

Complete explanation of operating range in Supplement section.

TYPICAL SWITCH DIMENSIONS



PC/Turret



Plunger is white polyacetal.

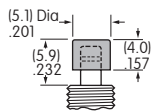
FB15ANEP2-FA

SLIP-ON CAPS & COLORS

F AT475
.201" (5.1mm) Diameter

Material: Polyamide

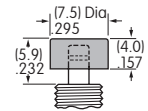
Finish: Glossy



H AT496
.295" (7.5mm) Diameter

Material: Polyamide

Finish: Glossy



Colors Available:

A Black

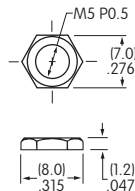
B White

C Red

STANDARD HARDWARE & PANEL CUTOUT

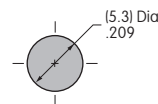
AT536 Hex Nut

Material:
Brass with nickel plating



Panel Thickness:

.110" (2.8mm) maximum



TYPICAL SWITCH ORDERING EXAMPLE

SB40

11NO

M



Pole & Circuits			
Normally Open			
* 11NO	SPST	OFF	(ON)
Normally Closed			
11NC	SPST	ON	(OFF)
() = Momentary			
* SB4011NO models have epoxy sealed terminals			

Plunger Colors	
No Code	Black
C	Red

Contact Materials & Ratings	
No Code	Silver Contacts 3A @ 125V AC or 2A @ 250V AC
G	Gold Contacts 0.4VA max. @ 28V AC/DC max.

Bushings	
M	Metric Threaded M12 P1
H	Inch Threaded 15/32-32 NS

Slip-On Cap & Colors	
No Code	Without Cap
2A	Black
2B	White
2C	Red
2E	Yellow
2F	Green
2G	Blue

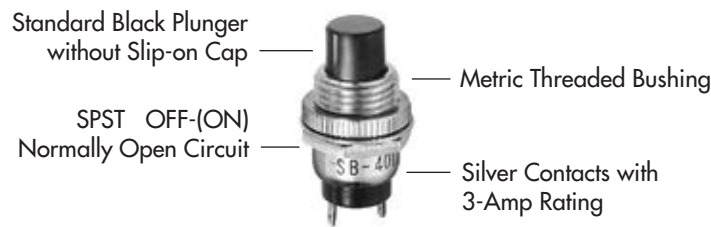
IMPORTANT:



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DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

SB4011NOM

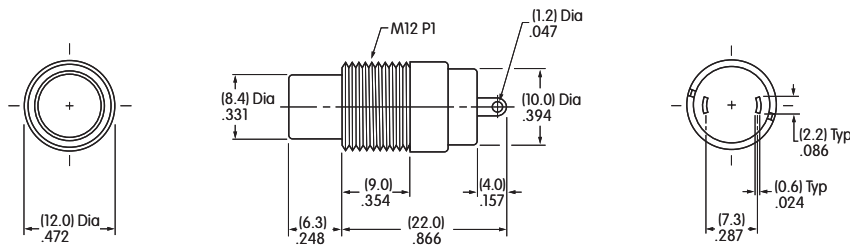


POLE & CIRCUITS

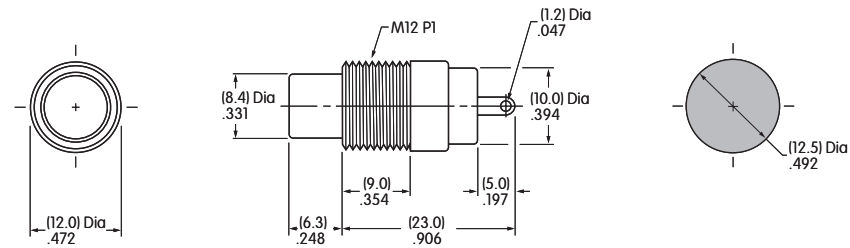
		Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematics
Pole	Model	Normal	Down	Normal	Down	
SP	SB4011NO	OFF	(ON)	OPEN	1-2	Note: Terminal numbers are not actually on the switch. SPST NO NC
	SB4011NC	ON	(OFF)	1-2	OPEN	

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TYPICAL SWITCH DIMENSIONS



SB4011NOM



SB4011NCM

Metric Bushing

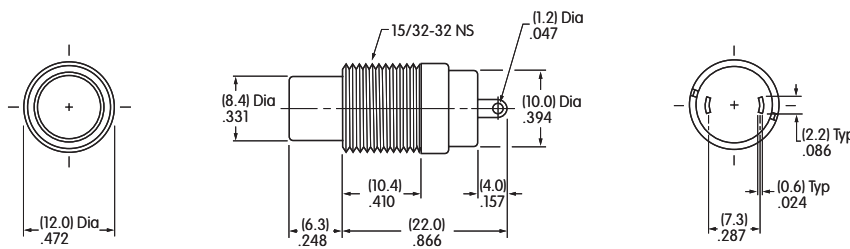


SB4011NOM

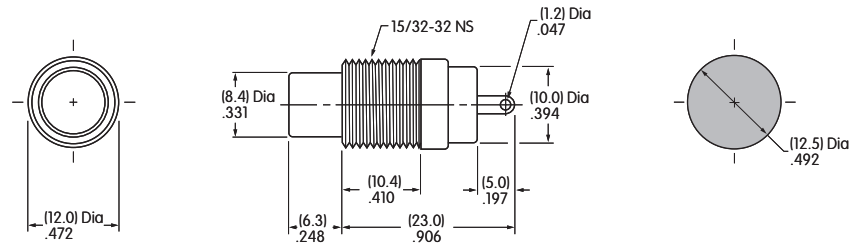
Hardware provided:
 1 AT504 Knurled Face Nut
 1 AT508 Lockwasher
 1 AT527M Hex Mounting Nut

Panel Thickness:
 .157" (4.0mm)

Details in Hardware & Accessories section.



SB4011NOH



SB4011NCH

Inch Bushing



SB4011NCH

Hardware provided:
 2 AT503H Hex Mounting Nuts
 1 AT508 Lockwasher

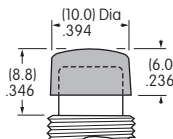
Panel Thickness:
 .157" (4.0mm)

Details in Hardware & Accessories section.

SLIP-ON CAP & COLORS

AT422
 .394" (10.0mm) Diameter Cap

Material: Polyethylene
 Finish: Matte



- | | | |
|-----------------|------------------|-----------------|
| 2A Black | 2C Red | 2F Green |
| 2B White | 2E Yellow | 2G Blue |

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NKK Switches:

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[SB4011NOM-2C](#) [SB4011NOH-2C](#) [SB4011NCH-2C](#) [SB4011NOHG-2C](#) [SB4011NOHC-2F](#) [SB4011NOM-2G](#)
[SB4011NOHC-2G](#) [SB4011NCMG-2G](#) [SB4011NOMG-2F](#) [SB4011NOHC-2B](#) [SB4011NOH-2G](#) [SB4011NOM-2B](#)
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[SB4011NOM/CUL](#) [SB4011NOM/214](#) [SB4011NCM/C](#)