## General Specifications

### FB 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.

### 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)

### Materials & Finishes

- **Plunger:** Polycetal
- **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

### 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.

### 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.

- **CSA:**

### SB Series

- **Power Level:** 3A @ 125V AC or 2A @ 250V AC or 2A @ 30V DC for silver
- **Logic Level:** 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.

- **Contact Resistance:** 10 milliohms maximum for silver; 20 milliohms maximum for gold
- **Insulation Resistance:** 200 megohms minimum @ 500V DC
- **Dielectric Strength:** 1,000V AC minimum between contacts & between contacts & case for 1 minute minimum
- **Mechanical Life:** 30,000 operations minimum
- **Electrical Life:** 10,000 operations minimum
- **Nominal Operating Force:** 4.90N
- **Travel:**
  - Normally Open Total Travel .088” (2.24mm)
  - Normally Closed Total Travel .088” (2.24mm)

- **Materials & Finishes:**
  - 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.

- **Standards & Certifications:**
  - 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.

  - 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.
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
**Series FB**

**.5 Amp Momentary Pushbuttons**

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**TYPICAL SWITCH ORDERING EXAMPLE**

```
<table>
<thead>
<tr>
<th>Pole &amp; Circuit</th>
<th>Contact Materials &amp; Ratings</th>
<th>Cap Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>15AN SPST OFF (ON)</td>
<td>1. Silver Contacts 500mA @ 125V AC</td>
<td>A Black</td>
</tr>
<tr>
<td>4. Gold Contacts 0.4VA max. @ 28V AC/DC max.</td>
<td>B White</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>C Red</td>
<td></td>
</tr>
</tbody>
</table>
```

---

**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.

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**DESCRIPTION FOR TYPICAL ORDERING EXAMPLE**

FB15ANEP2-FA

.201" (5.1mm) Diameter
Black Cap
Silver Contacts & 500-Milliamp Rating

SPST OFF-(ON) Circuit
Epoxy Sealed PC/Turret Terminals

---

**POLE & CIRCUIT**

```
<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Plunger Position</th>
<th>Connected Terminals</th>
<th>Note: Terminal numbers are not actually on the switch.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>FB15AN</td>
<td>(   ) = Momentary</td>
<td>Normal 1-2 SPST</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Down</td>
<td></td>
</tr>
</tbody>
</table>
```

---

www.nkkswitches.com
.5 Amp Momentary Pushbuttons

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

Plunger is white polyacetal.

FB15ANEP2-FA

SLIP-ON CAPS & COLORS

**F** AT475 .201” (5.1mm) Diameter

Material: Polyamide

Finish: Glossy

Colors Available: **A** Black **B** White **C** Red

**H** AT496 .295” (7.5mm) Diameter

Material: Polyamide

Finish: Glossy

Panel Thickness: .110” (2.8mm) maximum

STANDARD HARDWARE & PANEL CUTOUT

AT536 Hex Nut

Material: Brass with nickel plating

Panel Thickness: .110” (2.8mm) maximum

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**TYPICAL SWITCH ORDERING EXAMPLE**

<table>
<thead>
<tr>
<th>Pole &amp; Circuits</th>
<th>Plunger Colors</th>
<th>Contact Materials &amp; Ratings</th>
<th>Bushings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally Open</td>
<td>No Code: Black</td>
<td>No Code: Silver Contacts</td>
<td>M: Metric Threaded M12 P1</td>
</tr>
<tr>
<td>* 11NO</td>
<td>C: Red</td>
<td>3A @ 125V AC or 2A @ 250V AC</td>
<td></td>
</tr>
<tr>
<td>* 11NC</td>
<td></td>
<td>G: Gold Contacts</td>
<td>H: Inch Threaded 1.5/32-32 NS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slip-On Cap &amp; Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Code: Without Cap</td>
</tr>
<tr>
<td>2A: Black</td>
</tr>
<tr>
<td>2B: White</td>
</tr>
<tr>
<td>2C: Red</td>
</tr>
<tr>
<td>2E: Yellow</td>
</tr>
<tr>
<td>2F: Green</td>
</tr>
<tr>
<td>2G: Blue</td>
</tr>
</tbody>
</table>

**IMPORTANT:**

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**DESCRIPTION FOR TYPICAL ORDERING EXAMPLE**

**SB4011NOM**

- Standard Black Plunger without Slip-on Cap
- Metric Threaded Bushing
- Silver Contacts with 3-Amp Rating

**POLE & CIRCuits**

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Plunger Position</th>
<th>Connected Terminals</th>
<th>Throw &amp; Switch Schematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>SB4011NO</td>
<td>OFF (ON)</td>
<td>OPEN 1-2</td>
<td>SPST NO NC</td>
</tr>
<tr>
<td></td>
<td>SB4011NC</td>
<td>ON (OFF)</td>
<td>1-2 OPEN</td>
<td></td>
</tr>
</tbody>
</table>

Note: Terminal numbers are not actually on the switch.
### TYPICAL SWITCH DIMENSIONS

**Metric Bushing**

SB4011NOM

Panel Thickness: .157” (4.0mm)

Details in Hardware & Accessories section.

**Inch Bushing**

SB4011NCH

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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