Series FB & SB

Momentary Pushbuttons

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)

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: Copper with silver or gold plating
- Terminals: Copper with silver or gold plating

Environmental & Installation Data
- Operating Temp Range: –10°C through +70°C (+14°F through +158°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)
- 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: 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.

SB Series

Electrical Capacity (Resistive Load)
- Power Level: 3A @ 125V AC or 2A @ 250V AC or
- Logic Level: 2A @ 30V DC for silver
  0.4VA max. @ 28V AC/DC max. for gold
  (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)

Other Ratings
- 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
- Plunger: Black: Phenolic resin; Red: Urea formaldehyde resin
- Bushing: Brass with nickel plating
- Case: Phenolic resin
- Movable Contactor: Copper with silver or gold plating
- Stationary Contacts: Copper with silver or gold plating
- Terminals: Copper with silver or gold plating

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

Standards & Certifications
- UL: 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.
  Models rated 3A @ 125V AC & 2A @ 250V AC.
  Single pole: Momentary action circuit with solder lug terminations. Black plunger only.

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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 anti-jamming 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.

FB15ANE and SB4011NO models have epoxy sealed terminals.
**Series FB**

.5 Amp Momentary Pushbuttons

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**TYPICAL SWITCH ORDERING EXAMPLE**

```
FB  15AN  EP  2  F  A
```

**Pole & Circuit**

- **15AN**  SPST  **OFF** (ON)
- ( ) = Momentary

**Contact Materials & Ratings**

- **2** Silver Contacts
  - 500mA @ 125V AC
- **4** Gold Contacts
  - 0.4VA max. @ 28V AC/DC max.

**Terminals**

- **EP**  Epoxy Sealed PC/Turret
- **P**  No Epoxy PC/Turret

**Cap Colors**

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

**Caps**

- **F**  .201” (5.1mm) Dia.
- **H**  .295” (7.5mm) Dia.

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**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

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**POLE & CIRCUIT**

```
<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></td>
<td></td>
<td>( ) = Momentary</td>
<td>Normal</td>
<td>SPST</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Down</td>
<td>1-2</td>
</tr>
<tr>
<td><strong>Pole</strong></td>
<td><strong>Model</strong></td>
<td><strong>Normal</strong></td>
<td><strong>Down</strong></td>
<td><strong>Normal</strong></td>
</tr>
<tr>
<td>SP</td>
<td>FB15AN</td>
<td>OFF</td>
<td>OPEN</td>
<td>1-2</td>
</tr>
</tbody>
</table>
```

Note: Terminal numbers are not actually on the switch.
.5 Amp Momentary Pushbuttons

TERMINALS

- **EP** Epoxy Sealed PC/Turret Terminals
- **P** No Epoxy PC/Turret Terminals

CONTACT MATERIALS & RATINGS

<table>
<thead>
<tr>
<th>Contacts Type</th>
<th>Power Level</th>
<th>Logic Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Silver Contacts</td>
<td>500mA @ 125V AC</td>
<td>0.4VA maximum @ 28V AC/DC maximum</td>
</tr>
<tr>
<td>4 Gold Contacts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete explanation of operating range in Supplement section.

TYPICAL SWITCH DIMENSIONS

Plunger is white polyacetal.

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

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TYPICAL SWITCH ORDERING EXAMPLE

SB40 11NO M

Pole & Circuits

<table>
<thead>
<tr>
<th>Normally Open</th>
<th>Normally Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 11NO SPST OFF (ON)</td>
<td>11NC SPST ON (OFF)</td>
</tr>
</tbody>
</table>

Plunger Colors

<table>
<thead>
<tr>
<th>No Code</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Red</td>
</tr>
</tbody>
</table>

Contact Materials & Ratings

<table>
<thead>
<tr>
<th>No Code</th>
<th>Silver Contacts 3A @ 125V AC or 2A @ 250V AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Gold Contacts 0.4VA max. @ 28V AC/DC max.</td>
</tr>
</tbody>
</table>

Bushings

<table>
<thead>
<tr>
<th>M</th>
<th>Metric Threaded M12 P1</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Inch Threaded 1.5/32-32 NS</td>
</tr>
</tbody>
</table>

Slip-On Cap & Colors

<table>
<thead>
<tr>
<th>No Code</th>
<th>Without Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>Black</td>
</tr>
<tr>
<td>2B</td>
<td>White</td>
</tr>
<tr>
<td>2C</td>
<td>Red</td>
</tr>
<tr>
<td>2E</td>
<td>Yellow</td>
</tr>
<tr>
<td>2F</td>
<td>Green</td>
</tr>
<tr>
<td>2G</td>
<td>Blue</td>
</tr>
</tbody>
</table>

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DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

SB4011NOM

Standard Black Plunger without Slip-on Cap

SPST OFF-(ON)

Normally Open Circuit

Metric Threaded Bushing

Silver Contacts with 3-Amp Rating

POLE & CIRCUITS

<table>
<thead>
<tr>
<th>Pole</th>
<th>Model</th>
<th>Normal</th>
<th>Down</th>
<th>Connected Terminals</th>
<th>Throw &amp; Switch Schematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>SB4011NO</td>
<td>OFF</td>
<td>(ON)</td>
<td>OPEN 1-2</td>
<td>SPST NO 1-2 NC 1-2</td>
</tr>
<tr>
<td></td>
<td>SB4011NC</td>
<td>ON</td>
<td>(OFF)</td>
<td>1-2 OPEN</td>
<td></td>
</tr>
</tbody>
</table>
**3 Amp Momentary Pushbuttons**

**TYPICAL SWITCH DIMENSIONS**

- **SB4011NOM**
  - Panel Thickness: .157” (4.0mm)
  - Details in Hardware & Accessories section.

- **SB4011NCM**
  - Panel Thickness: .157” (4.0mm)
  - Details in Hardware & Accessories section.

- **SB4011NOH**
  - Panel Thickness: .157” (4.0mm)
  - Details in Hardware & Accessories section.

- **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