

# Distinctive Characteristics

Square, round, rectangular, and round panel seal models available.

Stainless steel clips provide secure mounting with a wide range of panel thicknesses.

Latchdown feature gives indication of circuit status. Audible and tactile feedback with smooth and responsive operation.

Snap-action contact mechanism gives long electrical life and sensitivity of actuation.

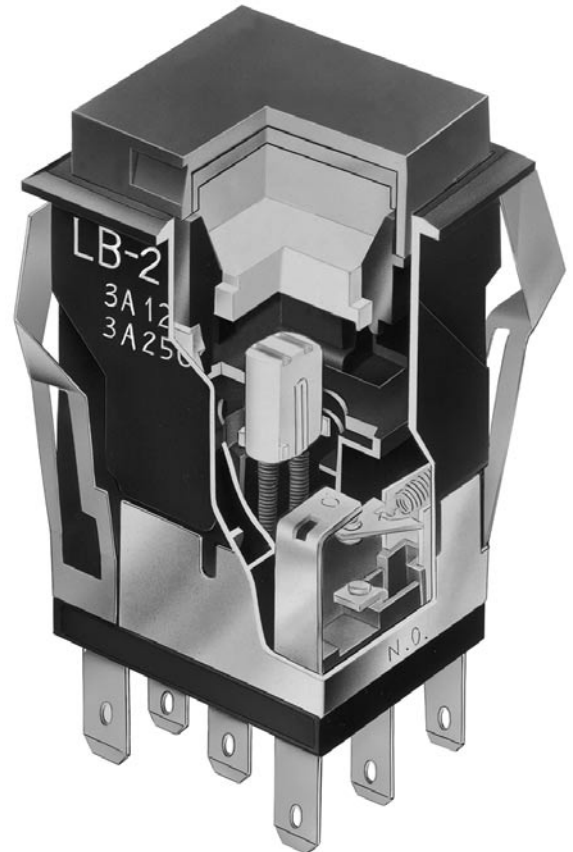
Combination solder lug and .110" quick connect terminals are epoxy sealed to prevent entry of flux, dust, and other contaminants.

Panel sealed model meets IP65 of IEC60529 specifications (similar to NEMA 4 & 13).

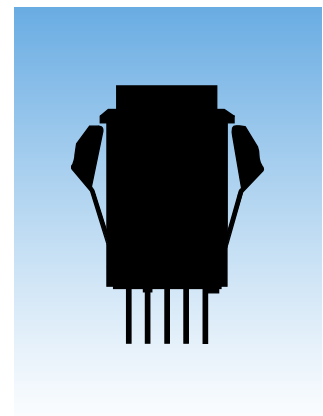
Compact switch design minimizes behind panel depth.

Matching illuminated models available and shown in the Illuminated Pushbutton section.

Matching indicators available and shown at the end of Section M.



Actual Size



## General Specifications

### Electrical Capacity (Resistive Load)

**Power Level (silver):** 3A @ 125V AC or 3A @ 250V AC or 3A @ 30V DC  
**Logic Level (gold):** 0.4VA maximum @ 28V AC/DC maximum  
 (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)  
 Note: Find additional explanation in Supplement section.

### Other Ratings

**Contact Resistance:** 50 milliohms maximum for silver; 100 milliohms maximum for gold  
**Insulation Resistance:** 200 megohms minimum @ 500V DC  
**Dielectric Strength:** 1,000V AC minimum between contacts for 1 minute minimum;  
 1,500V AC minimum between contacts & case for 1 minute minimum  
**Mechanical Life:** 1,000,000 operations minimum for momentary circuit  
 200,000 operations minimum for maintained circuit  
**Electrical Life:** 100,000 operations minimum  
**Nominal Operating Force:** 4.41N  
**Contact Timing:** Nonshorting (break-before-make)  
**Travel:** Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)  
 Pretravel .087" (2.2mm); Overtravel .031" (0.8mm); Total Travel .118" (3.0mm)

### Materials & Finishes

**Housing:** Glass fiber reinforced polyamide (UL94V-0)  
**Snap-in Frame:** Stainless steel  
**Movable Contact:** Silver alloy or copper with gold plating  
**Stationary Contacts:** Silver alloy or copper with gold plating  
**Base:** Liquid crystal polymer (UL94V-0)  
**Terminals:** Phosphor bronze with silver or gold plating

### Environmental Data

**Operating Temp Range:** -25°C through +70°C (-13°F through +158°F)  
 Note: When used with a polyvinyl chloride splash cover, the lowest limit is 0°C (32°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/s<sup>2</sup>) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)  
**Sealing:** Not available for snap-in; see next section for panel seal.

### Installation

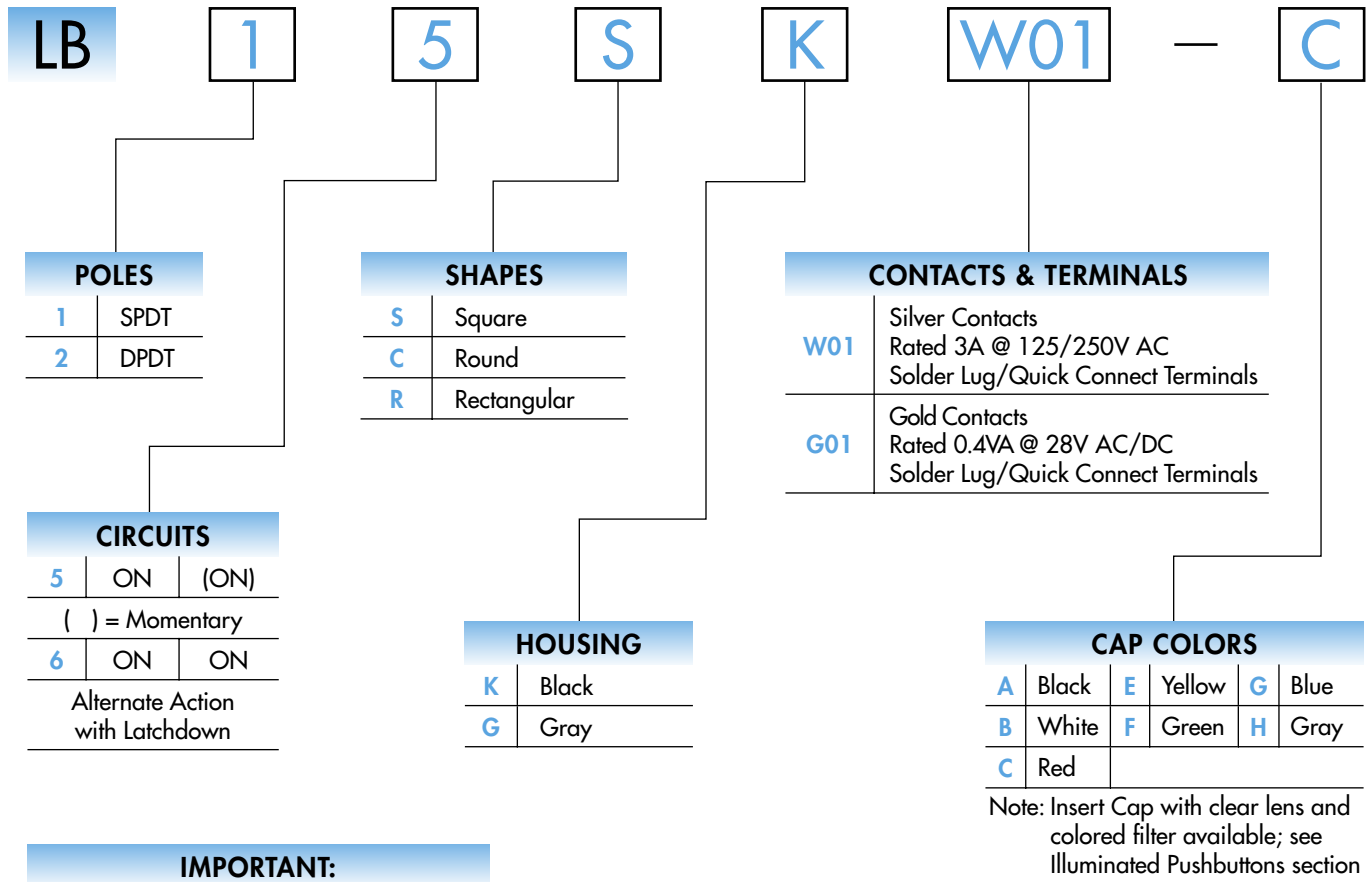
**Cap Installation Force:** 3.92N maximum downward force on cap  
**Quick Connect Force:** 52.95N maximum downward force on connector  
**Soldering Time & Temperature:** Manual Soldering: See Profile A in Supplement section.

### Standards & Certifications



**Flammability Standards:** UL94V-0 housing & base  
**UL & C-UL Recognized:** All models recognized at 3A @ 125V or 250V AC or 0.4VA @ 28V AC/DC maximum;  
 UL File No. WOYR2.E44145; add "/U" to end of part number to order UL mark on switch;  
 C-UL File No. WOYR8.E44145; add "/C-UL" to end of part number to order C-UL mark on switch.  
**CSA Certified:** All models certified at 3A @ 125V or 250V AC or 0.4VA @ 28V AC/DC maximum;  
 CSA File Nos. 023535-0-000; add "/C" to end of part number to order CSA mark on switch.

### TYPICAL SWITCH ORDERING EXAMPLE



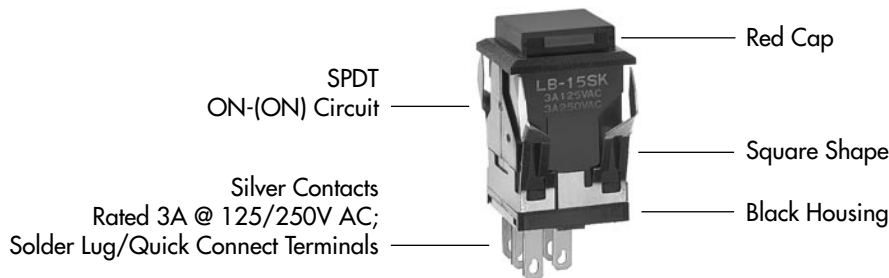
#### IMPORTANT:



Switches are supplied without UL, C-UL & CSA markings unless specified. Specific models & ratings noted on General Specifications page.

#### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

#### LB15SKW01-C



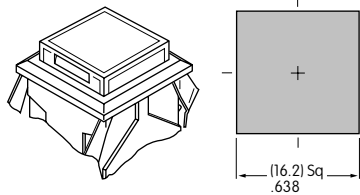
### POLES & CIRCUITS

| Pole | Model         | Plunger Position<br>( ) = Momentary |            | Connected Terminals |         | Throw & Switch/Lamp Schematics |
|------|---------------|-------------------------------------|------------|---------------------|---------|--------------------------------|
|      |               | Normal                              | Down       | Normal              | Down    |                                |
| SP   | LB15<br>*LB16 | ON<br>ON                            | (ON)<br>ON | 1-3                 | 1-2     | SPDT<br>                       |
| DP   | LB25<br>*LB26 | ON<br>ON                            | (ON)<br>ON | 1-3 4-6             | 1-2 4-5 | DPDT<br>                       |

\* When in latchdown position for the alternate circuit, cap position is .039" (1.0mm) above the built-in bezel.

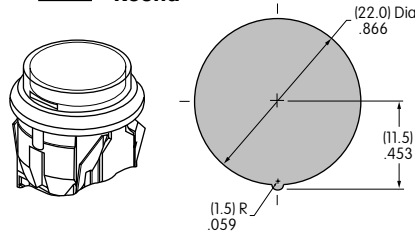
### SHAPES & PANEL CUTOUTS

**S** .622" (15.8mm)  
Square

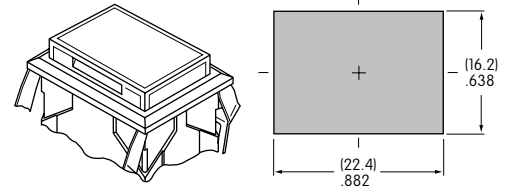


Cutout for 1 switch:  
.638" x .638" (16.2mm x 16.2mm)  
Cutout for 1 switch with barriers:  
.638" x .815" (16.2mm x 20.7mm)

**C** .854" (21.7mm)  
Round



**R** .622" x .866" (15.8mm x 22.0mm)  
Rectangular



Cutout for 1 switch:  
.638" x .882" (16.2mm x 22.4mm)  
Cutout for 1 switch with barriers:  
.638" x 1.059" (16.2mm x 26.9mm)

Panel Thickness for Switches & Barriers: .039" ~ .157" (1.0 ~ 4.0mm)  
Panel Thickness for Protective Guards & Splash Covers: .039" ~ .138" (1.0 ~ 3.5mm)

### HOUSING

Housing Colors Available:

**K** Black

**G** Gray

### CONTACT MATERIALS, RATINGS & TERMINALS

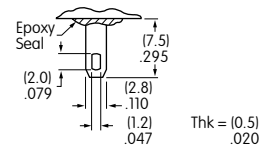
**W01** Silver Contacts

Power Level  
3A @ 125V AC & 250V AC

Solder Lug/Quick Connect

**G01** Gold Contacts

Logic Level  
0.4VA max. @ 28V AC/DC max.

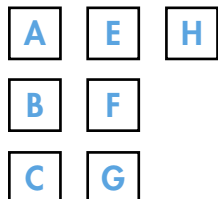


Complete explanation of operating range in Supplement section.

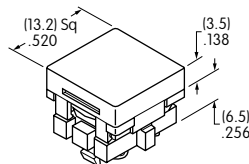
### CAPS & CAP COLORS

Color Codes: A Black B White C Red E Yellow F Green G Blue H Gray

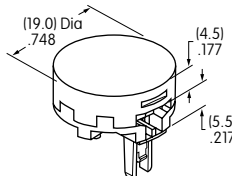
Cap Colors Available:



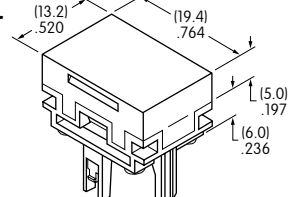
**AT484**  
Square



**AT4017**  
Round



**AT4030**  
Rectangular

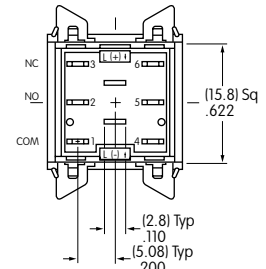
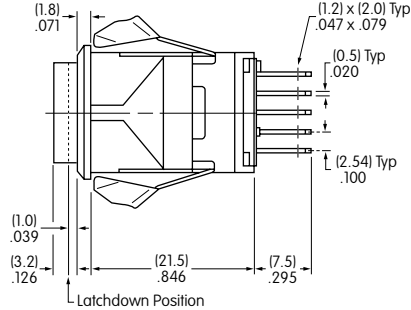
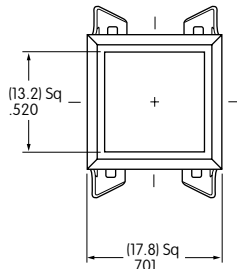


Material: Polycarbonate Finish: Glossy

### TYPICAL SWITCH DIMENSIONS

#### Square

#### Single & Double Pole

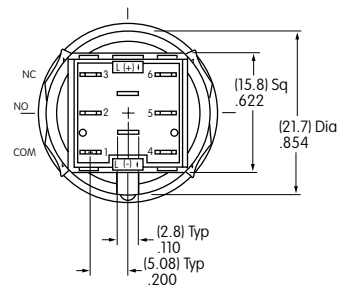
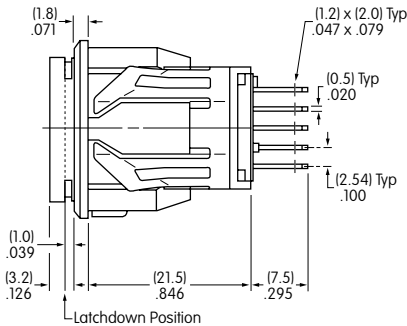
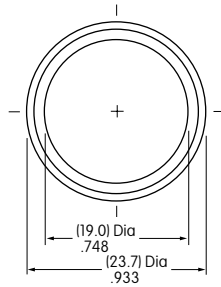


LB15SKW01-C

Single pole models do not have terminals 4, 5, & 6.

#### Round

#### Single & Double Pole

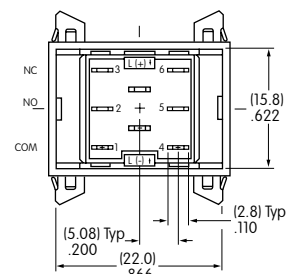
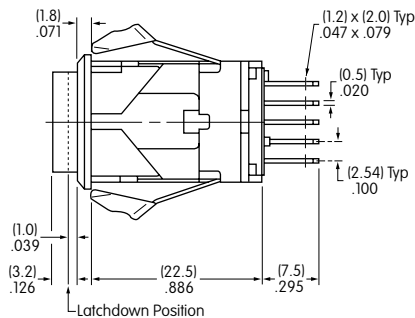
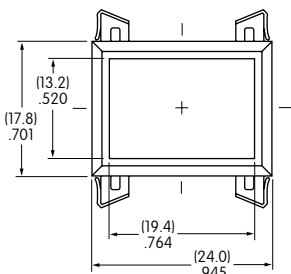


LB16CKW01-C

Single pole models do not have terminals 4, 5, & 6.

#### Rectangular

#### Single & Double Pole

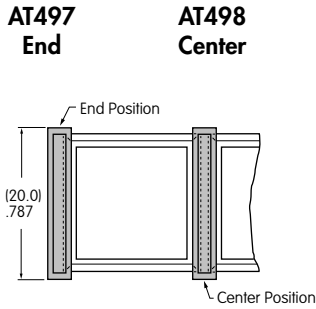


LB26RGW01-C

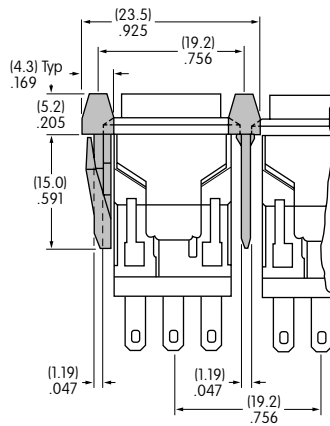
Single pole models do not have terminals 4, 5, & 6.

### OPTIONAL ACCESSORIES

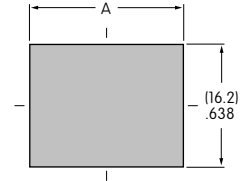
#### Barriers



Material: Polyamide



#### Cutouts for More Than 1 Switch



**Square**

$$A = .752" (19.1\text{mm}) \times \text{Number of Switches} + .051" (1.3\text{mm})$$

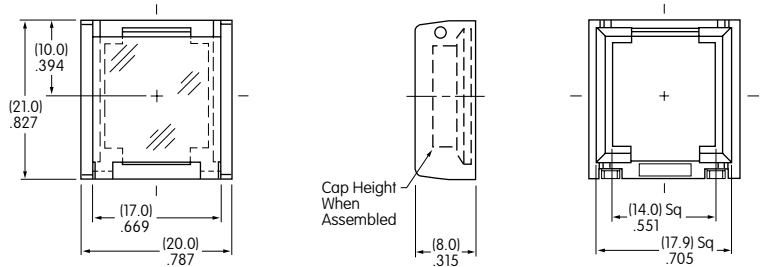
**Rectangular**

$$A = .996" (25.3\text{mm}) \times \text{Number of Switches} + .051" (1.3\text{mm})$$

#### Protective Guard

##### AT499 Square Protective Guard

Opens 90°  
Closes manually



#### Materials:

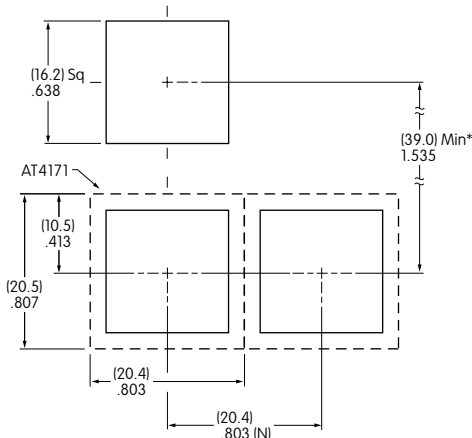
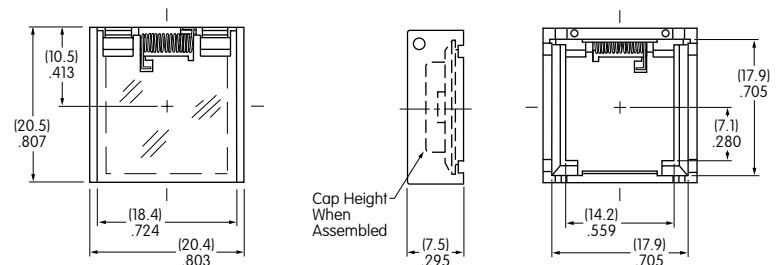
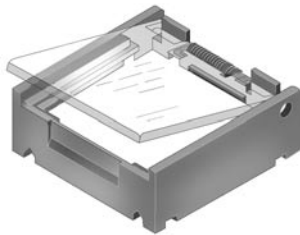
Cover: Clear Polycarbonate  
Base: Black GFR Polyamide

Protective Guards reduce depth of switch behind panel by .020" (0.5mm).

#### Spring Loaded Protective Guard

##### AT4171 Square Protective Guard

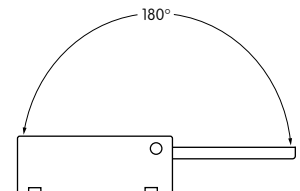
Opens 180°  
Closes automatically



(N) = Number of switches \* Minimum dimension allows opening of cover to 180°

#### Materials:

Cover: Clear Polycarbonate  
Base: Black GFR Polyamide  
Coil Spring: Stainless Steel



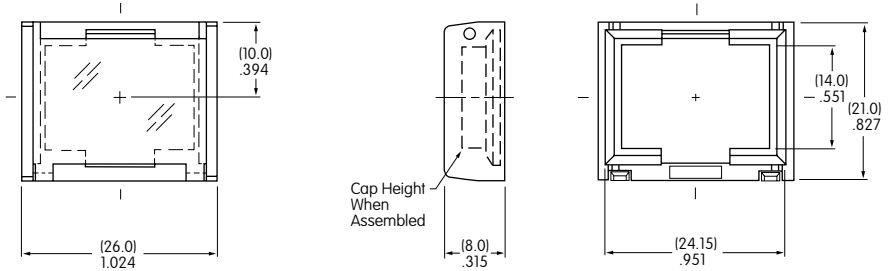
**Recommended Panel Thickness:**  
.039" ~ .106" (1.0mm ~ 2.7mm)

### OPTIONAL ACCESSORIES

#### Protective Guard

**AT4057**  
**Rectangular**  
**Protective Guard**

Opens 90°  
 Closes manually



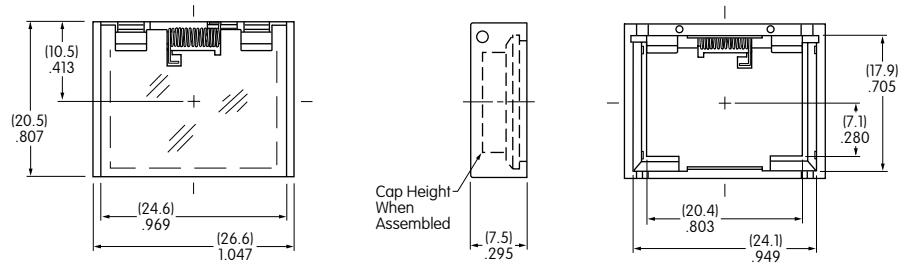
**Materials:**  
 Cover: Clear Polycarbonate  
 Base: Black GFR Polyamide

Protective Guards reduce depth of switch behind panel by .020" (0.5mm).

#### Spring Loaded Protective Guard

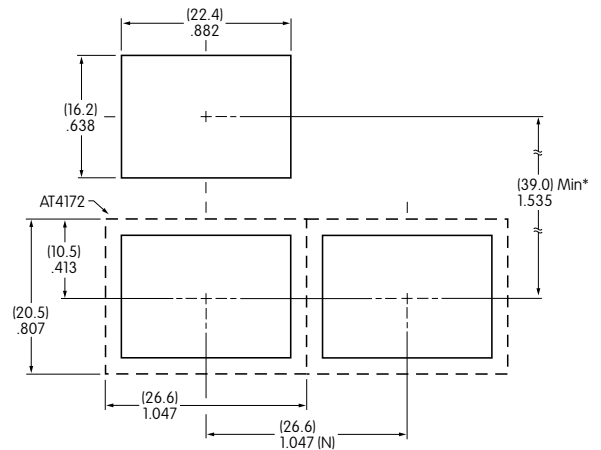
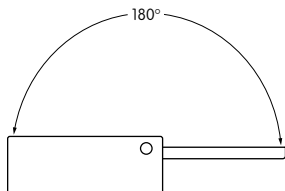
**AT4172**  
**Rectangular**  
**Protective Guard**

Opens 180°  
 Closes automatically



**Materials:**  
 Cover: Clear Polycarbonate  
 Base: Black GFR Polyamide  
 Coil Spring: Stainless Steel

Recommended Panel Thickness: .039" ~ .106" (1.0mm ~ 2.7mm)



(N) = Number of switches \* Minimum dimension allows opening of cover to 180°

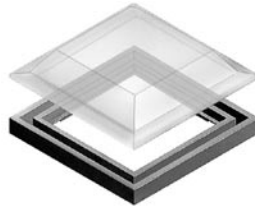
### OPTIONAL ACCESSORIES

#### Dust Covers

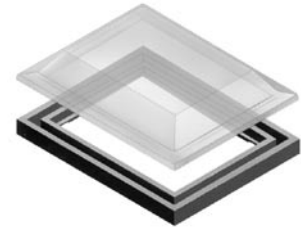
**AT4002**  
Round



**AT4001**  
Square

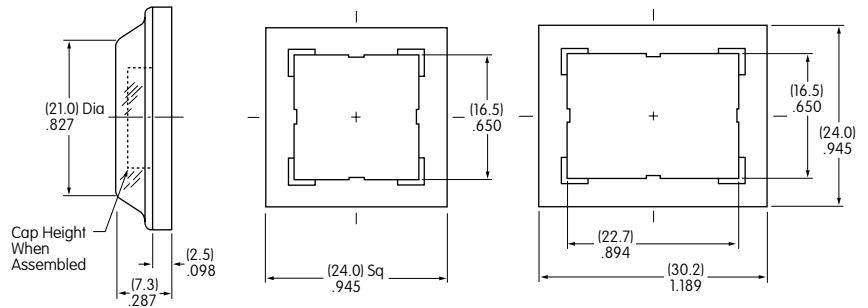
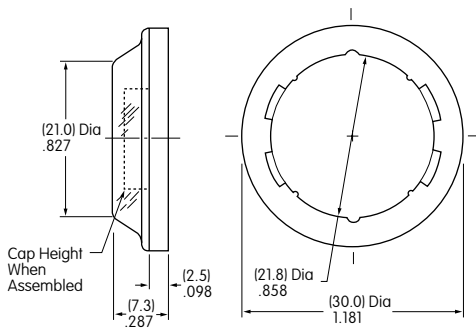


**AT4011**  
Rectangular



**Materials:**  
Lid: Polyvinyl chloride  
Gasket: Polyethylene

PVC loses pliability below 0°C (32°F).

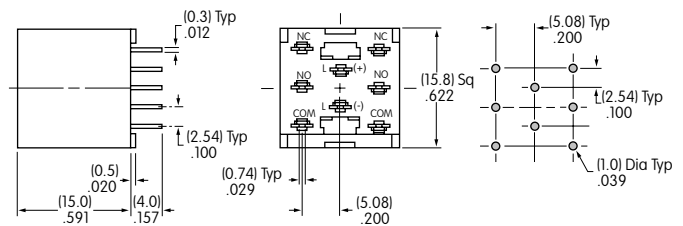
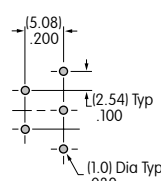
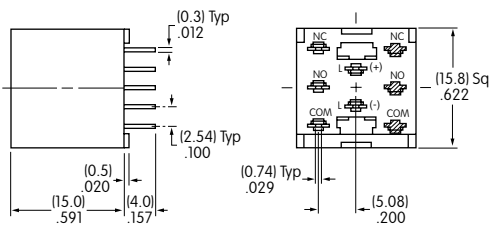


Dust Covers reduce depth of switch behind panel by .020" (0.5mm).

#### PCB Adaptors

**AT711** Single Pole • Straight PC Terminals

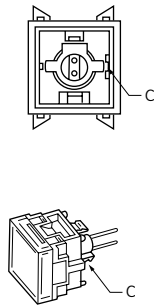
**AT712** Double Pole • Straight PC Terminals



Note: Order adaptors separately.



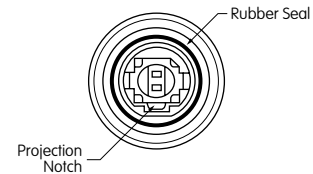
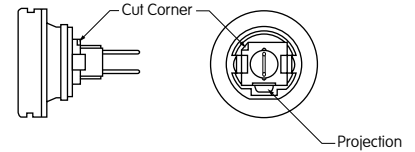
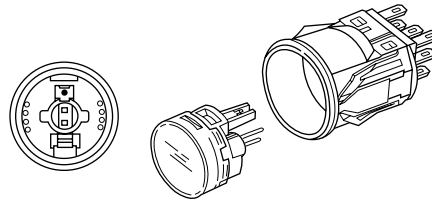
### ASSEMBLY INSTRUCTIONS



#### Square

Match projection (C) on cap assembly with groove (C) inside switch.

**Round & Rectangular**  
Match clip on cap assembly with receptacle inside switch.

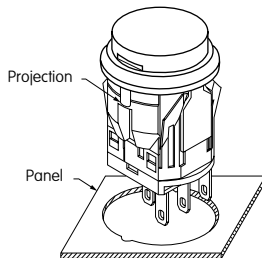


#### Panel Seal

Match projection on cap assembly with notch inside switch.

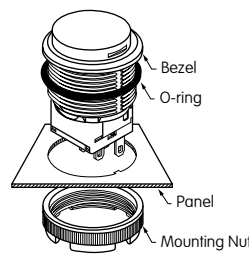
#### Snap-in Mount

Snap-in clip holds all switches firmly in place. To mount round switch, match the antirotation projection on switch with guide cut in panel. Snap into panel cutout.



#### Panel Seal Bushing Mount

Insert switch from the front of the panel with the o-ring between the built-in bezel and the panel. Install mounting nut AT075 (supplied with switch) from the rear of the panel. Overtightening mounting nut may damage the switch housing.

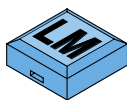


**AT109**  
Cap Extractor



**AT112**  
Socket Wrench

### LEGENDS

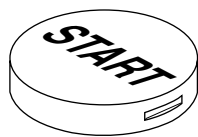


Easily create and submit your own legends using our new on-line Legend Maker.

Visit [www.nkkswitches.com](http://www.nkkswitches.com)

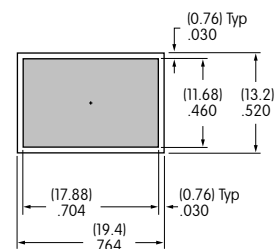
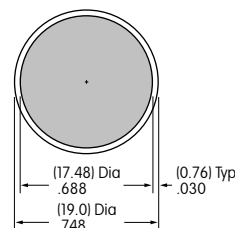
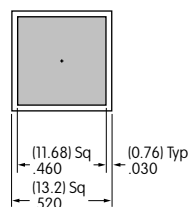
For other legend support options, customers may either contact the factory and request the LB Legend Packet, or utilize the general information and basic specifications presented below.

#### Suggested Printable Area for LB Lens



#### Recommended Methods:

Laser Etch on clear lens;  
Screen Print or Pad Print on lens.  
Epoxy based ink is recommended.



Shaded areas are printable areas.

#### Additional Method

Additional method for legends is engraving the cap. Maximum depth for engraving is .012" (0.3mm) on the cap lens. Enamel paint is recommended to fill the engraved area.