

# Distinctive Characteristics

Combination of PCB mountability and short body allows use in compact applications.

Small behind panel dimension for snap-in mounting in tight spaces.

Snap-acting contact mechanism provides sensitive actuation with audible feedback.

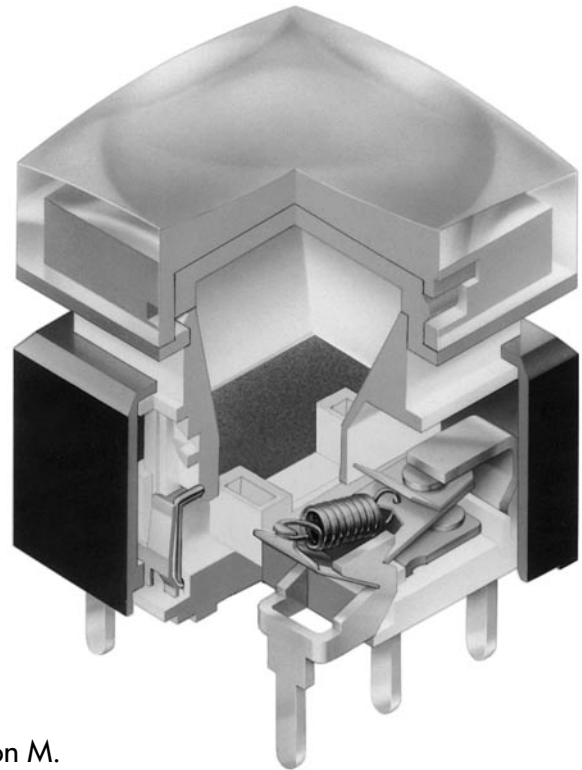
Latchdown mechanism, independent of switching mechanism, gives visible, audible, and tactile indication of circuit status.

Terminals are epoxy sealed to lock out flux, solvents, and other contaminants.

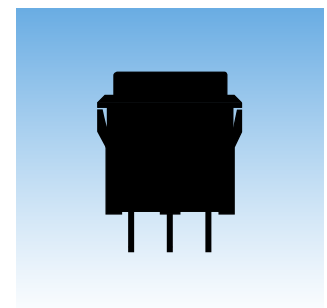
Momentary and alternate action circuits available in the same space-saving body size.

Illuminated models available and shown in Illuminated Pushbutton section.

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



Actual Size



# General Specifications

## Electrical Capacity (Resistive Load)

**Power Level (code W):** 5A @ 125/250V AC or 5A @ 30V DC  
**Logic Level (code G):** 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;  
 200,000 operations minimum for alternate action  
**Electrical Life:** 10,000 operations minimum for silver;  
 200,000 operations minimum for gold  
**Nominal Operating Force:** Single Pole: 1.90N  
 Double Pole: 2.55N  
**Contact Timing:** Break before make  
**Travel:** Pretravel .067" (1.7mm); Overtravel .024" (0.6mm); Total Travel .091" (2.3mm)

## Materials & Finishes

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

## Environmental Data

**Operating Temp Range:** -25°C through +70°C (-4°F through +158°F)  
**Humidity:** 90 ~ 95% humidity for 240 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)

## Installation

**Cap Installation Force:** 15.0N maximum downward force on cap

## Processing

**Soldering:** Wave Soldering (PC version): See Profile A in Supplement section.  
 Manual Soldering: See Profile A in Supplement section.  
**Cleaning:** These devices are not process sealed. Hand clean locally using alcohol based solution.

## Standards & Certifications

**Flammability Standards:** UL94V-0 housing/bezel & base  
**UL & C-UL Recognized:** All single & double pole models recognized at 5A @ 125/250V AC or 0.014A @ 28V DC;  
 UL File No. WOYR2.E44145 & C-UL File No. WOYR8.E44145;  
 add "/U" to end of part number to order UL mark on switch & add "/U-C" to end of part number to order C-UL mark on switch (equivalent to CSA certification).



### TYPICAL SWITCH ORDERING EXAMPLE

**UB2** **1** **5** **SK** **G** **03** **N** — **5C**

**POLES**

|   |      |
|---|------|
| 1 | SPDT |
| 2 | DPDT |

**CIRCUITS**

|                                 |    |      |
|---------------------------------|----|------|
| 5                               | ON | (ON) |
| ( ) = Momentary                 |    |      |
| 6                               | ON | ON   |
| Alternate Action with Latchdown |    |      |

**CONTACTS & RATINGS**

|   |                                      |
|---|--------------------------------------|
| W | Silver Rated 5A @ 125/250V AC        |
| G | Gold Rated 0.4VA max @ 28V AC/DC max |

**CAP TYPES & COLORS**

| Sculptured Cap Lens/Insert Colors |             |
|-----------------------------------|-------------|
| 4JA                               | Clear/Black |
| 4JB                               | Clear/White |
| 4JC                               | Clear/Red   |
| 4JD                               | Clear/Amber |
| 4JF                               | Clear/Green |
| Beveled Cap & Colors              |             |
| 5A                                | Black       |
| 5B                                | White       |
| 5C                                | Red         |
| 5D                                | Amber       |
| 5F                                | Green       |

**MOUNTING TYPES**

| PCB Mounting                         |        |
|--------------------------------------|--------|
| SK                                   | Square |
| * Snap-in Mounting                   |        |
| KK                                   | Square |
| * Standard with Solder Lug terminals |        |

**IMPORTANT:**

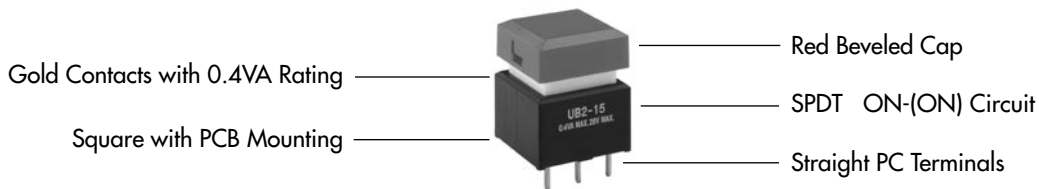
Switches are supplied without UL & C-UL marking unless specified. Specific models & ratings noted on General Specifications page.

**TERMINALS**

|    |                                   |
|----|-----------------------------------|
| 01 | Solder Lug (for Snap-in Mounting) |
| 03 | Straight PC                       |

### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

**UB215SKG03N-5C**



Note: Flat Cap with clear lens and colored diffuser available; see Illuminated Pushbuttons section

### POLES & CIRCUITS

| Pole | Model           | Plunger Position<br>( ) = Momentary |            | Connected Terminals |         | Throw & Schematics |
|------|-----------------|-------------------------------------|------------|---------------------|---------|--------------------|
|      |                 | Normal                              | Down       | Normal              | Down    |                    |
| SP   | UB215<br>*UB216 | ON<br>ON                            | (ON)<br>ON | 1-3                 | 1-2     | SPDT<br>           |
| DP   | UB225<br>*UB226 | ON<br>ON                            | (ON)<br>ON | 1-3 4-6             | 1-2 4-5 | DPDT<br>           |

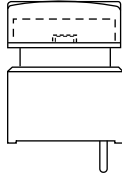
\* When in latchdown position for the alternate circuit, cap positions above the housing are: .059" (1.5mm) for snap-in models & .276" (7.0mm) for PCB models.

### MOUNTING TYPES & SHAPES

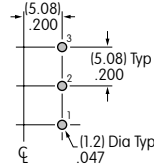
#### PCB Mounting

**SK**

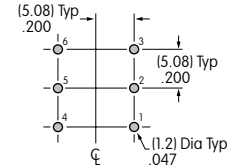
Square



Single Pole



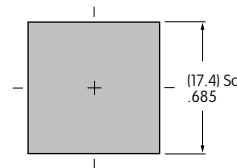
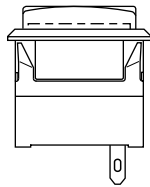
Double Pole



#### Snap-in Mounting (Solder Lug)

**KK**

Square with Built-in Bezel



Panel Thickness:  
.039 ~ .126"  
(1.0 ~ 3.2mm)

### CONTACT MATERIALS & RATINGS

**W**

Silver Contacts

Power Level

5A @ 125V AC & 250V AC

**G**

Gold Contacts

Logic Level

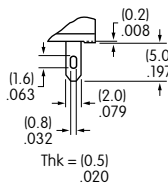
0.4VA maximum @ 28V AC/DC maximum

Complete explanation of operating range in Supplement section.

### TERMINALS

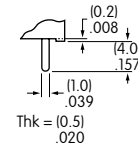
**01**

Solder Lug



**03**

Straight PC



### CAP TYPES & COLOR COMBINATIONS

**4**

AT3073 Sculptured

Lens/Insert  
Colors Available:

**JA**

Clear/  
Black

**JB**

Clear/  
White

**JC**

Clear/  
Red

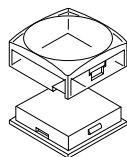
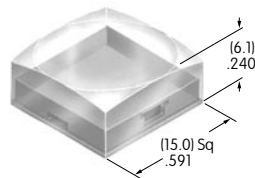
**JD**

Clear/  
Amber

**JF**

Clear/  
Green

Material: Polycarbonate  
Finish: Glossy



Clear Lens  
Opaque  
Colored Insert

**5**

AT3077 Beveled

Cap  
Colors Available:

**A**

Black

**B**

White

**C**

Red

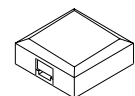
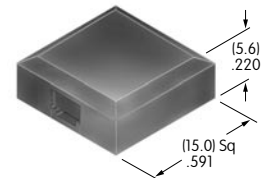
**D**

Amber

**F**

Green

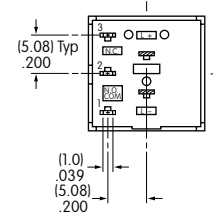
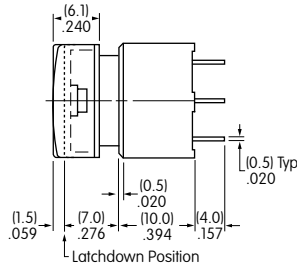
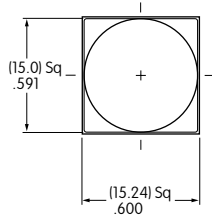
Material: Polycarbonate  
Finish: Glossy



Opaque  
Colored Cap

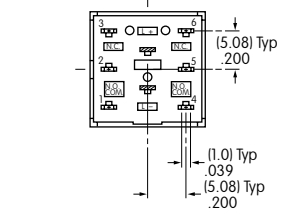
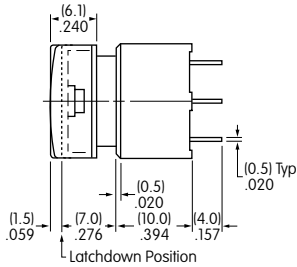
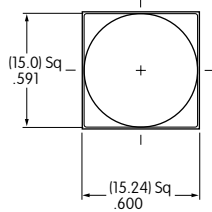
## TYPICAL SWITCH DIMENSIONS

### Single Pole • PCB Mount



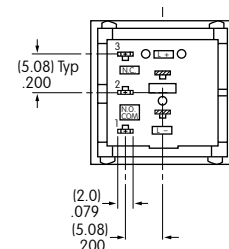
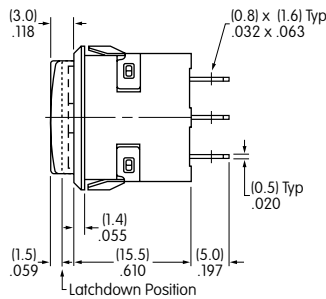
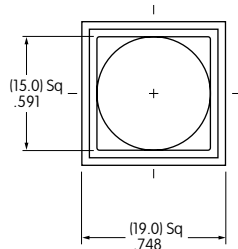
UB215SKG03N-4JC

### Double Pole • PCB Mount



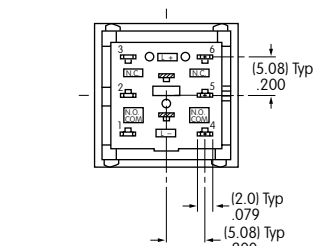
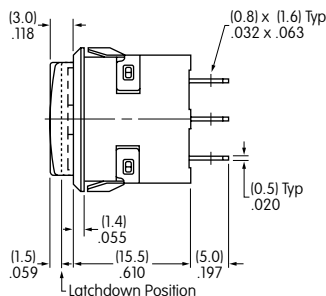
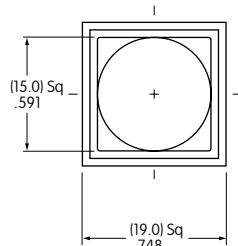
UB225SKG03N-4JC

### Single Pole • Snap-in Mount • Solder Lug



UB216KKW01N-4JC

### Double Pole • Snap-in Mount • Solder Lug



UB226KKW01N-4JC

## OPTIONAL ACCESSORIES

### Protective Guard for Snap-in Model

#### AT4141

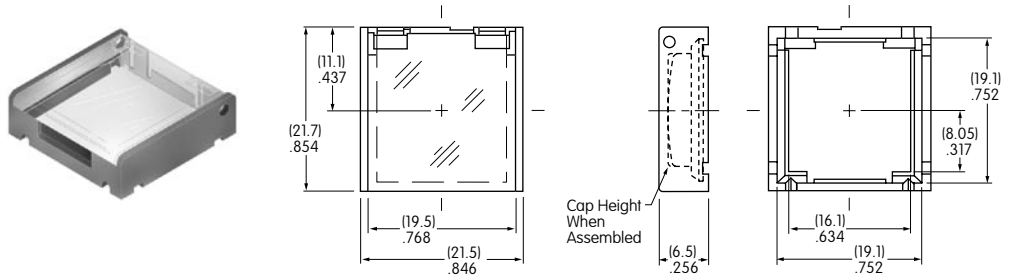
Opens 90°  
Closes manually

#### Materials:

Cover: Clear Polycarbonate  
Base: Black GFR Polyamide

#### Recommended Panel Thickness:

.039" ~ .106" (1.0mm ~ 2.7mm)



### Spring Loaded Protective Guard for Snap-in Mounting of PCB Model

#### AT4170

Opens 180°  
Closes automatically

#### Materials:

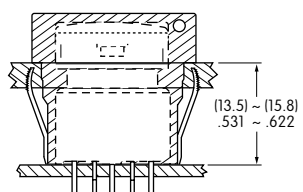
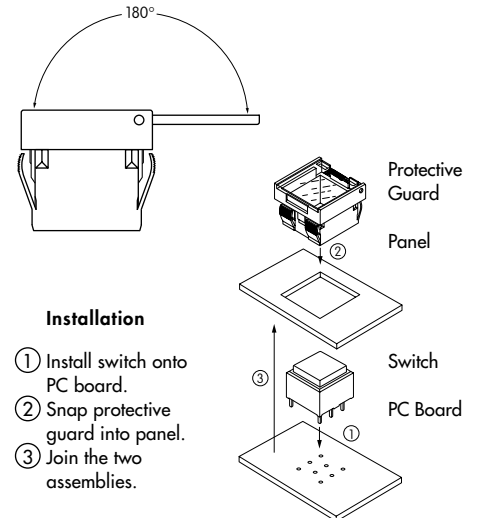
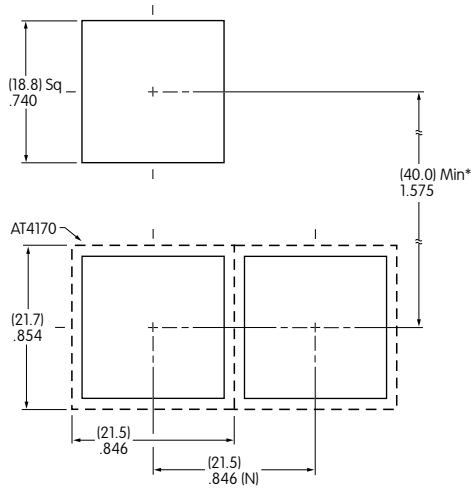
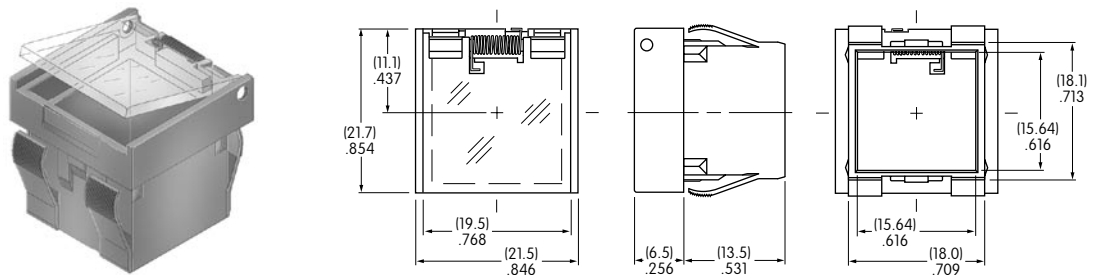
Cover: Clear Polycarbonate  
Base: Black Polyamide  
Coil Spring: Stainless Steel

#### Recommended Panel Thickness:

.039" ~ .126"  
(1.0mm ~ 3.2mm)

#### Recommended Panel-to-PCB Range:

.531" ~ .622"  
(13.5mm ~ 15.8mm)



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

### Spring Loaded Protective Guard for Snap-in Model

#### AT4142

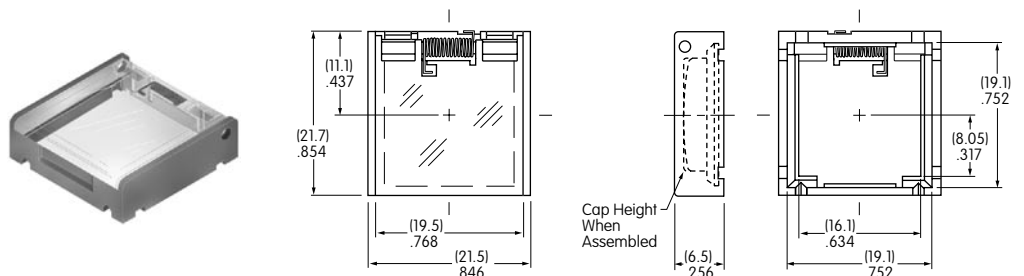
Opens 180°  
Closes automatically

#### Materials:

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

#### Recommended Panel Thickness:

.039" ~ .106" (1.0mm ~ 2.7mm)



## OPTIONAL ACCESSORIES

### Dust Cover

**AT4145** Not for use with barriers.

**Materials:**

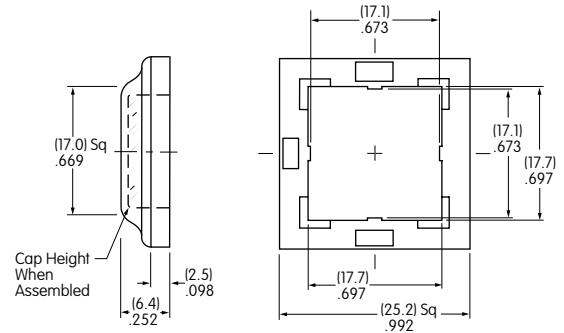
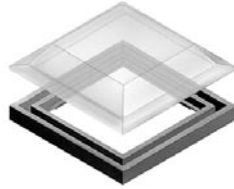
Lid: Clear PVC

Operating temperature range:  
0°C ~ +70°C (32°F ~ 158°C).

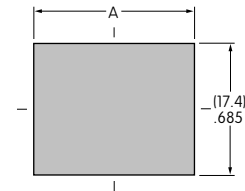
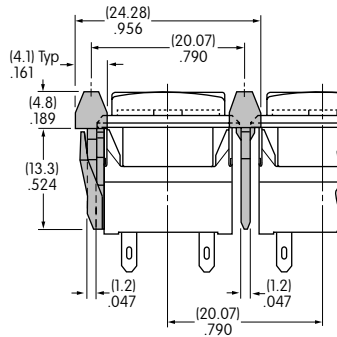
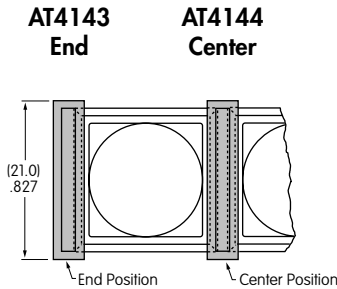
Gasket: Polyethylene

**Recommended Panel Thickness**

.039" ~ .098" (1.0mm ~ 2.5mm)



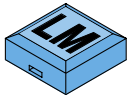
### Barriers for Snap-in Mount



Cutouts for more than 1 Switch:  
A = .799" (20.3mm) x Number of Switches +  
.051" (1.3mm)

**Material:**  
Polyamide

## LEGENDS



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

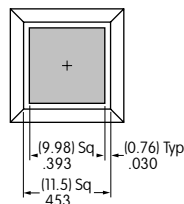
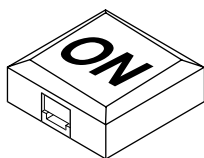
Visit [www.nkkswitches.com](http://www.nkkswitches.com)

For other legend support options, customers may either contact the factory and request the UB/UB2 Legend Packet, or utilize the general information and basic specifications presented below.

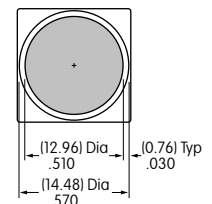
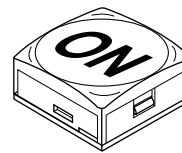
### Suggested Printable Area for UB Lens

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

#### Beveled Cap



#### Sculptured Cap



Shaded areas are printable areas.