

Distinctive Characteristics

Bright or super bright LEDs (an integral part of the switch) of red, amber, green, blue, or white, in full face or spot illumination plus square or rectangular models.

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; quick-make, quick-break characteristic limits arcing and prolongs electrical life.

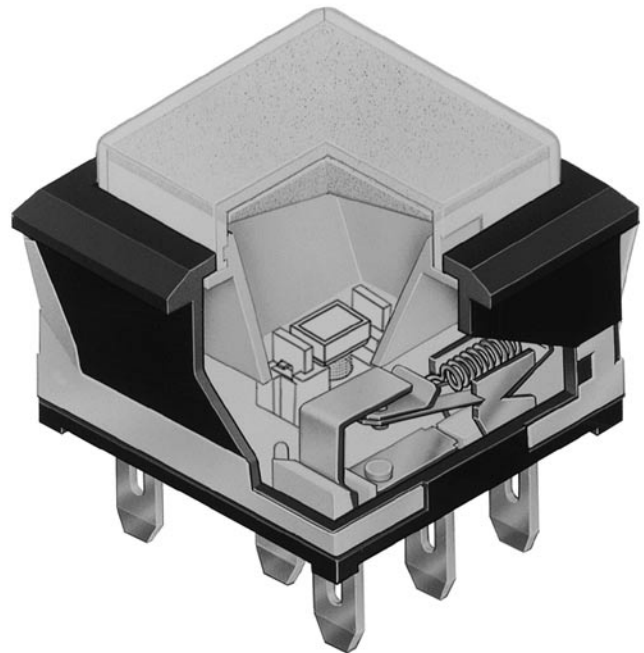
Latchdown mechanism, independent of switching mechanism, gives visible and tactile indication of circuit status.

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

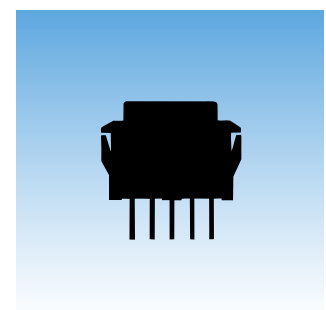
Momentary and alternate action circuits available in the same space-saving body size.

Nonilluminated models available and shown in 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 of operating range 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; 100,000 operations minimum for silver with resistive load of 3A @ 125V AC 200,000 operations minimum for gold
Nominal Operating Force:	Single Pole: 1.9N for Square & 1.9N for Rectangular Double Pole: 2.55N for Square & 3.1N for Rectangular
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
Switch Terminals:	Phosphor bronze with silver or gold plating
Lamp Terminals:	Brass with silver plating
Base:	Glass fiber reinforced liquid crystal polymer (UL94V-0)

Environmental Data

Operating Temp Range:	-25°C through +50°C (-13°F through +122°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 ²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Installation

Cap Installation Force:	7.55N (1.70 lbf) maximum downward force on cap
Soldering Time & Temp:	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; 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 single & double pole models certified at 5A @ 125/250V AC or 5A @ 30V DC or 0.4VA maximum @ 28V AC/DC maximum; CSA File No. 023535-0-000; add "/C" to end of part number to order CSA mark on switch.



TYPICAL SWITCH ORDERING EXAMPLE

UB

1

5

SK

G

03

5C

—

CC

POLES

1	SPDT
2	DPDT

CIRCUITS

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

MOUNTING TYPES

PCB Mounting	
SK	Square
RK	Rectangular
* Snap-in Mounting	
KK	Square
NK	Rectangular
NBK	Rectangular with Side Barriers
* Standard with Solder Lug terminals	

CONTACTS & RATINGS

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

TERMINALS

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

LEDS

Bright LED	
5C	Red
5D	Amber
5F	Green
Super Bright LED	
6B	White
6F	Green
6G	Blue
Available with Square only	

CAP TYPES & COLORS

Full Face Illuminated Cap for Bright LED

Lens/Diffuser Colors			
CB	Red/White	FF	Green/Green
CC	Red/Red	*FJ	Green/Clear
*CJ	Red/Clear	JB	Clear/White
DB	Amber/White	JC	Clear/Red
DD	Amber/Amber	JD	Clear/Amber
*DJ	Amber/Clear	JF	Clear/Green
FB	Green/White	*JJ	Clear/Clear
* Not available with Rectangular cap			

Full Face Illuminated Cap for Super Bright LED

JB	Clear Lens/White Diffuser
For Square only; see cap detail page	

Spot Illuminated Cap for Bright & Super Bright LEDs

AB	Black with White Window
Rectangular available for Bright only	

IMPORTANT:

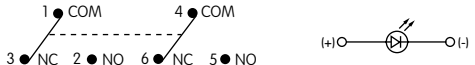
Switches are supplied without UL, C-UL, & CSA markings unless specified. Specific models & ratings noted on General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

UB15SKG035C-CC



POLES & CIRCUITS

Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch/Lamp Schematics
		Normal 	Down 	Normal 	Down 	
SP	UB15 *UB16	ON ON	(ON) ON	1-3	1-2	SPDT 
DP	UB25 *UB26	ON ON	(ON) ON	1-3 4-6	1-2 4-5	DPDT 

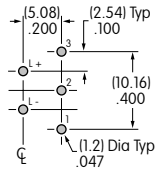
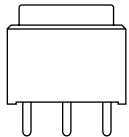
* When in latchdown position for the alternate circuit, cap position is .039" (1.0mm) above the housing.

MOUNTING TYPES & SHAPES

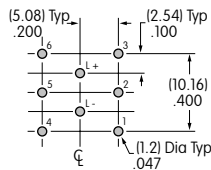
PCB Mounting

SK

Square



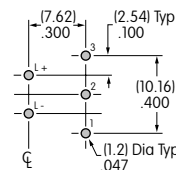
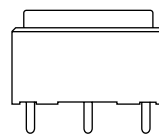
Single Pole



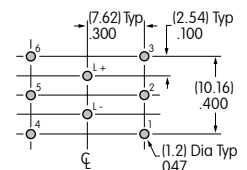
Double Pole

RK

Rectangular



Single Pole

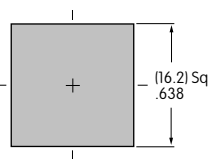
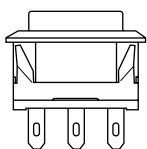


Double Pole

Snap-in Mounting (Solder Lug)

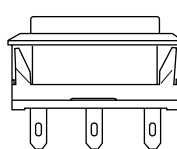
KK

Square with Built-in Bezel



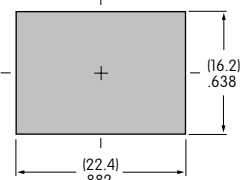
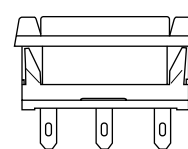
NK

Rectangular with Built-in Bezel



NBK

Rectangular with Built-in Side Barriers



Snap-in Mounting with Solder Lug terminals is the standard combination. 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

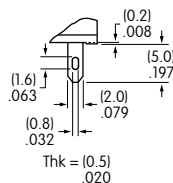
0.4VA maximum @ 28V AC/DC maximum

Complete explanation of operating range in Supplement section.

TERMINALS

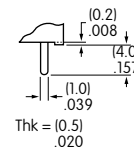
01

Solder Lug



03

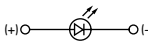
Straight PC



LED COLORS & SPECIFICATIONS

The electrical specifications shown are determined at a basic temperature of 25°C.
LED circuit is isolated and requires external power source. Polarity marks are on the bottom of the switch.
If the source voltage exceeds the rated voltage, a ballast resistor is required.
The resistor value can be calculated by using the formula in the Supplement section.

The LED is an integral part of the switch and not available separately.

Super Bright LEDs are Electrostatic Sensitive 		Bright			Super Bright			Unit
		5C	5D	5F	6B	6F	6G	
	Color	Red	Amber	Green	White	Green	Blue	
Forward Peak Current	I_{FM}	30	30	25	25	25	25	mA
Continuous Forward Current	I_F	20	20	20	20	20	20	mA
Forward Voltage	V_F	1.85	2.0	2.1	3.8	3.8	3.8	V
Reverse Peak Voltage	V_{RM}	5	5	5	5	5	5	V
Current Reduction Rate Above 25°C	ΔI_F	0.40	0.42	0.46	0.47	0.47	0.47	mA/°C
Ambient Temperature Range		-25° ~ +50°C			-25° ~ +50°C			

CAP TYPES & COLOR COMBINATIONS

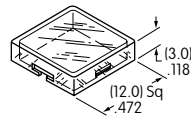
Full Face Illuminated Cap for Bright LED

Lens/Diffuser

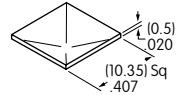
Colors Available for Square Cap:

CB	DJ	JC
CC	FB	JD
CJ	FF	JF
DB	FJ	JJ
DD	JB	

AT4074
Lens



AT4075
Diffuser

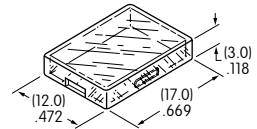


Lens/Diffuser

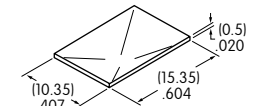
Colors Available for Rectangular Cap:

CB	FB	JD
CC	FF	JF
DB	JB	
DD	JC	

AT4117
Lens



AT4118
Diffuser



Lens & Diffuser Material: Polycarbonate

Lens Finish: Glossy

Diffuser Finish: Textured

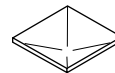
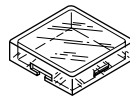
Full Face Illuminated Cap for Super Bright LED

Lens/Diffuser

Colors Available for Square Cap:

JB

AT4074 Lens & AT4075 Diffuser
(Dimensioned above)



Rectangular lens & diffuser are not available for combining with super bright LED.

Lens & Diffuser Material: Polycarbonate

Lens Finish: Glossy

Diffuser Finish: Textured

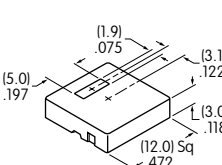
Spot Illuminated Caps

AB

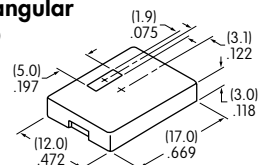
Black Cap with Translucent White Window for LED Display

Material: Polycarbonate
Finish: Matte

AT4119 Square
for Bright and
Super Bright LED



AT4120 Rectangular
for Bright LED



Color Codes:

A Black

B White

C Red

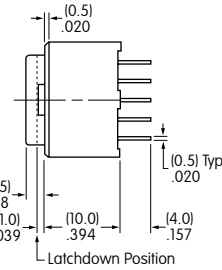
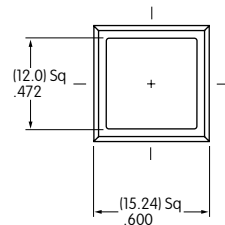
D Amber

F Green

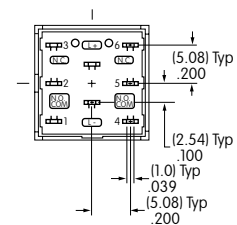
J Clear

TYPICAL SWITCH DIMENSIONS

Square • PCB Mount



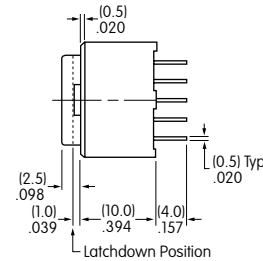
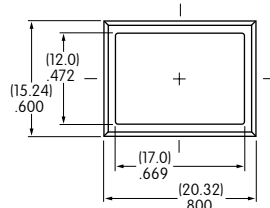
Single & Double Pole



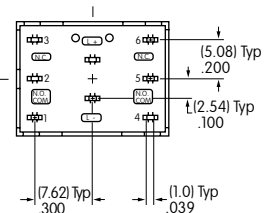
Single pole models do not have terminals 4, 5, & 6.

UB15SKG035C-CB

Rectangular • PCB Mount



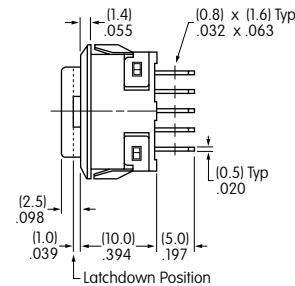
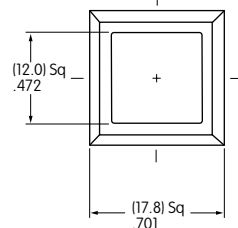
Single & Double Pole



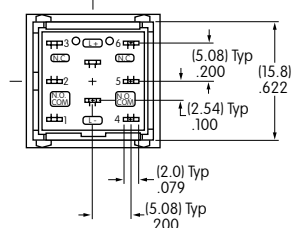
Single pole models do not have terminals 4, 5, & 6.

UB26RKG035D-DD

Square • Snap-in Mount • Built-in Bezel



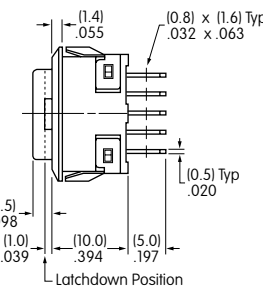
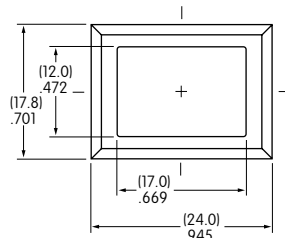
Single & Double Pole



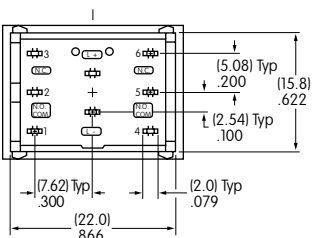
Single pole models do not have terminals 4, 5, & 6.

UB25KKW015C-CB

Rectangular • Snap-in Mount • Built-in Bezel



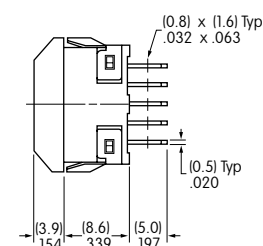
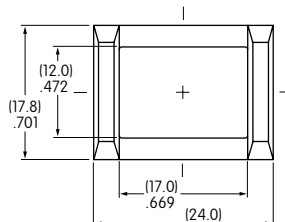
Single & Double Pole



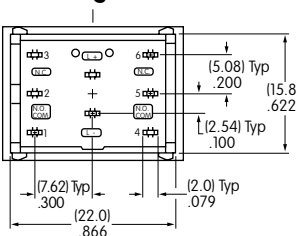
Single pole models do not have terminals 4, 5, & 6.

UB26NKG015F-FF

Rectangular • Snap-in Mount • Built-in Side Barriers



Single & Double Pole



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

UB25NBKW015F-FB

OPTIONAL ACCESSORIES

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

AT4173

**Square Protective Guard/
Snap-in Frame**

Opens 180°
Closes automatically

Materials:

Cover: Clear Polycarbonate

Base: Black Polyamide

Coil Spring: Stainless Steel

Recommended

Panel Thickness:

.039" ~ .126"

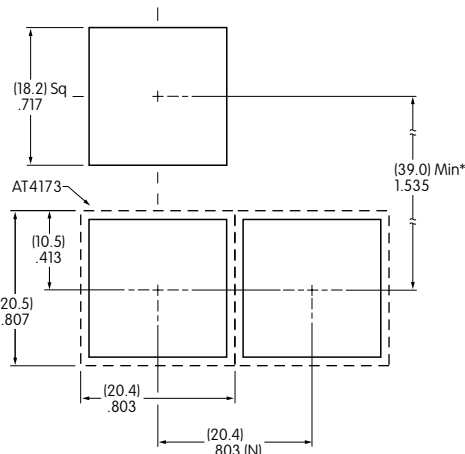
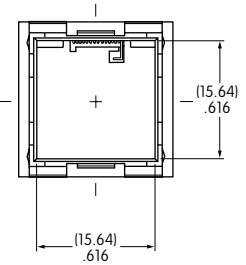
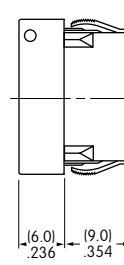
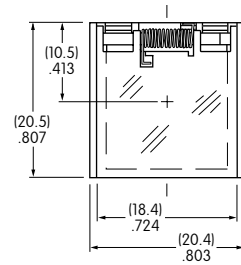
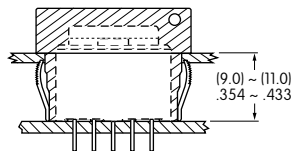
(1.0mm ~ 3.2mm)

Recommended

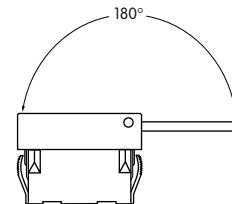
Panel-to-PCB Range:

.354" ~ .433"

(9.0mm ~ 11.0mm)

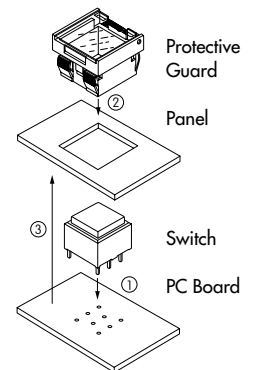


(N) = Number of switches
* Minimum dimension allows opening of cover to 180°



Installation

- ① Install switch onto PC board.
- ② Snap protective guard into panel.
- ③ Join the two assemblies.

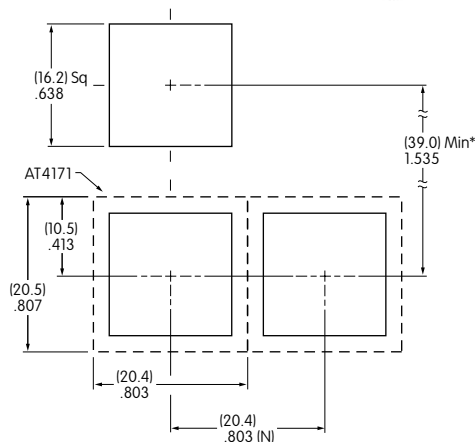
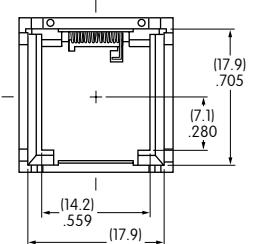
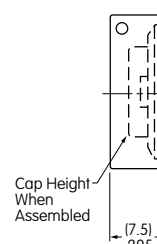
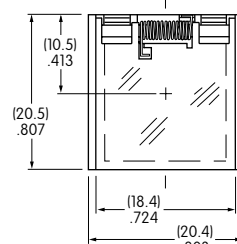
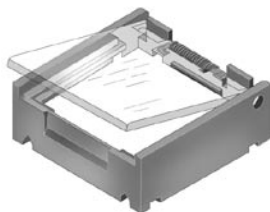


Spring Loaded Protective Guard for Square Snap-in Model

AT4171

**Square
Protective Guard**

Opens 180°
Closes automatically



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

Materials:

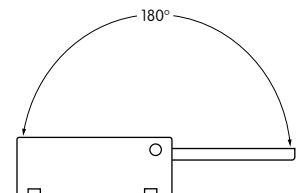
Cover: Clear Polycarbonate

Base: Black GFR Polyamide

Coil Spring: Stainless Steel

Recommended Panel Thickness:

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



OPTIONAL ACCESSORIES

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

AT4174

Rectangular Protective Guard/ Snap-in Frame

Opens 180°
Closes automatically

Materials:

Cover: Clear Polycarbonate

Base: Black Polyamide

Coil Spring: Stainless Steel

Recommended

Panel Thickness:

.039" ~ .126"

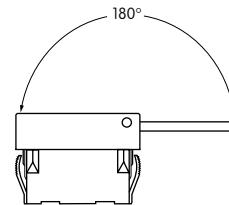
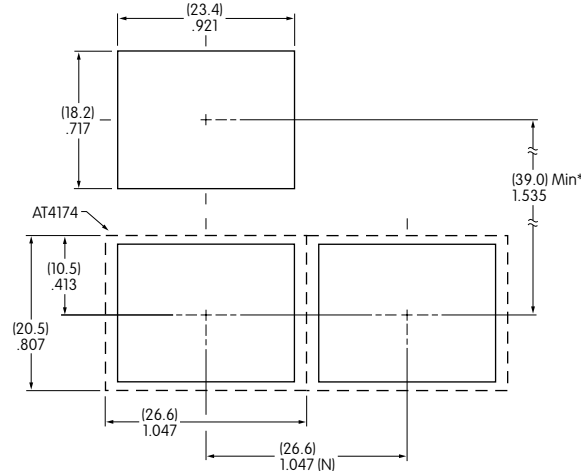
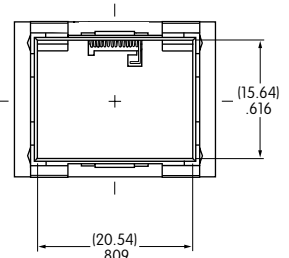
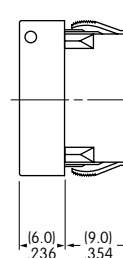
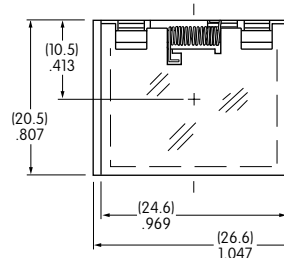
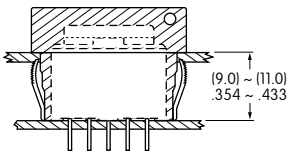
(1.0mm ~ 3.2mm)

Recommended

Panel-to-PCB Range:

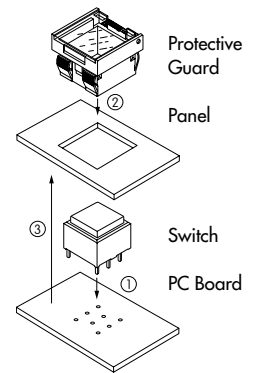
.354" ~ .433"

(9.0mm ~ 11.0mm)



Installation

- ① Install switch onto PC board.
- ② Snap protective guard into panel.
- ③ Join the two assemblies.



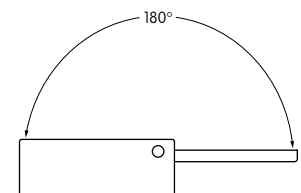
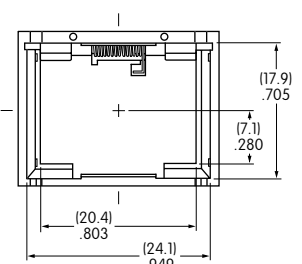
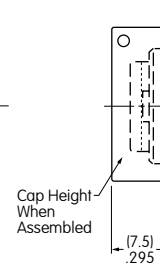
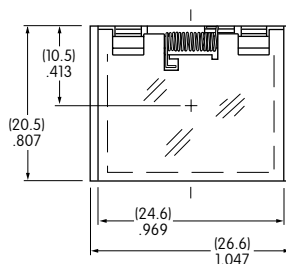
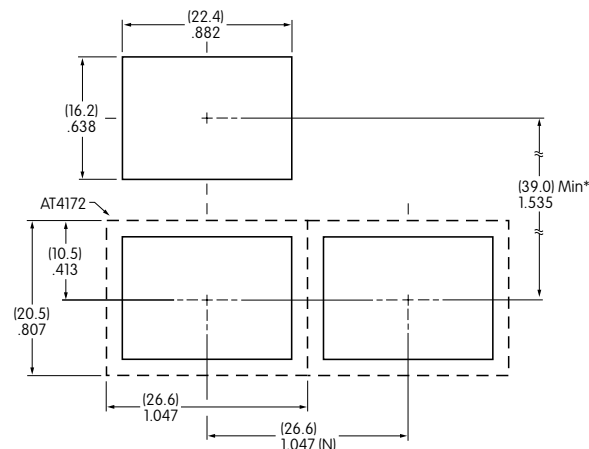
(N) = Number of switches * Minimum dimension allows opening of cover to 180°

Spring Loaded Protective Guard for Rectangular Snap-in Model

AT4172

Rectangular Protective Guard

Opens 180°
Closes automatically



Materials:

Cover: Clear Polycarbonate

Base: Black GFR Polyamide

Coil Spring: Stainless Steel

Recommended Panel Thickness:

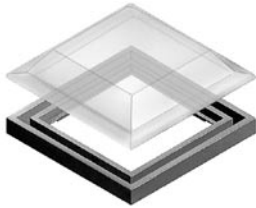
.039" ~ .106" (1.0mm ~ 2.7mm)

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

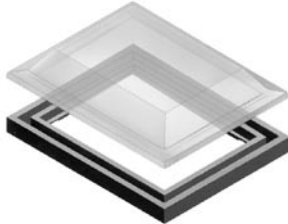
OPTIONAL ACCESSORIES

Dust Covers

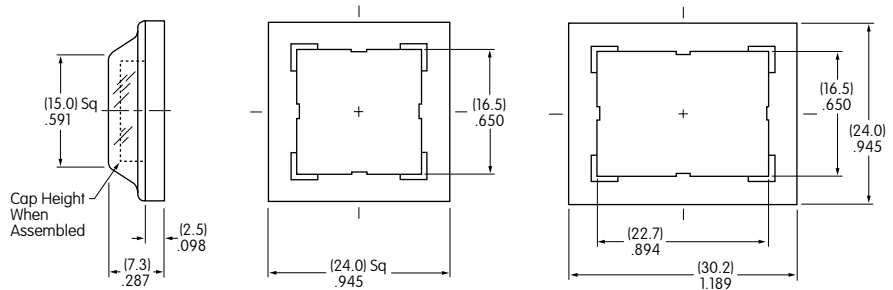
AT4001
Square



AT4011
Rectangular



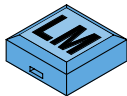
Not for use with barrier type models (mounting code NBK)



Materials:
PVC with polyethylene gasket
(PVC loses pliability below 0°C (32°F).)

Recommended Panel Thickness: .039" ~ .098" (1.0mm ~ 2.5mm)

LEGENDS



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

Visit 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 & Film Insert

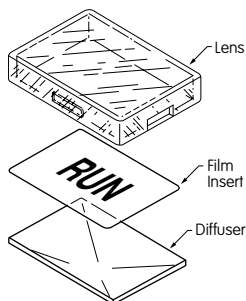
Recommended Methods: Laser Etch on clear lens, Screen Print or Pad Print on lens; Screen Print on film insert.
Epoxy based ink is recommended.

Square Cap

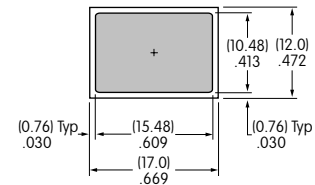
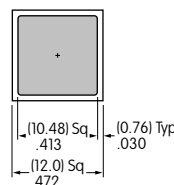


Shaded areas are printable areas.

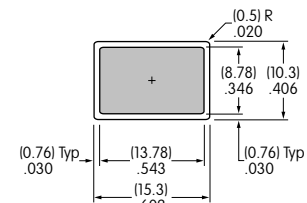
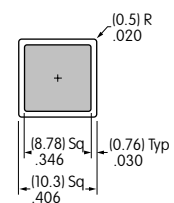
Rectangular Cap



Lens



Film Insert



Film Insert: Clear Polyester 4 mil max. thickness