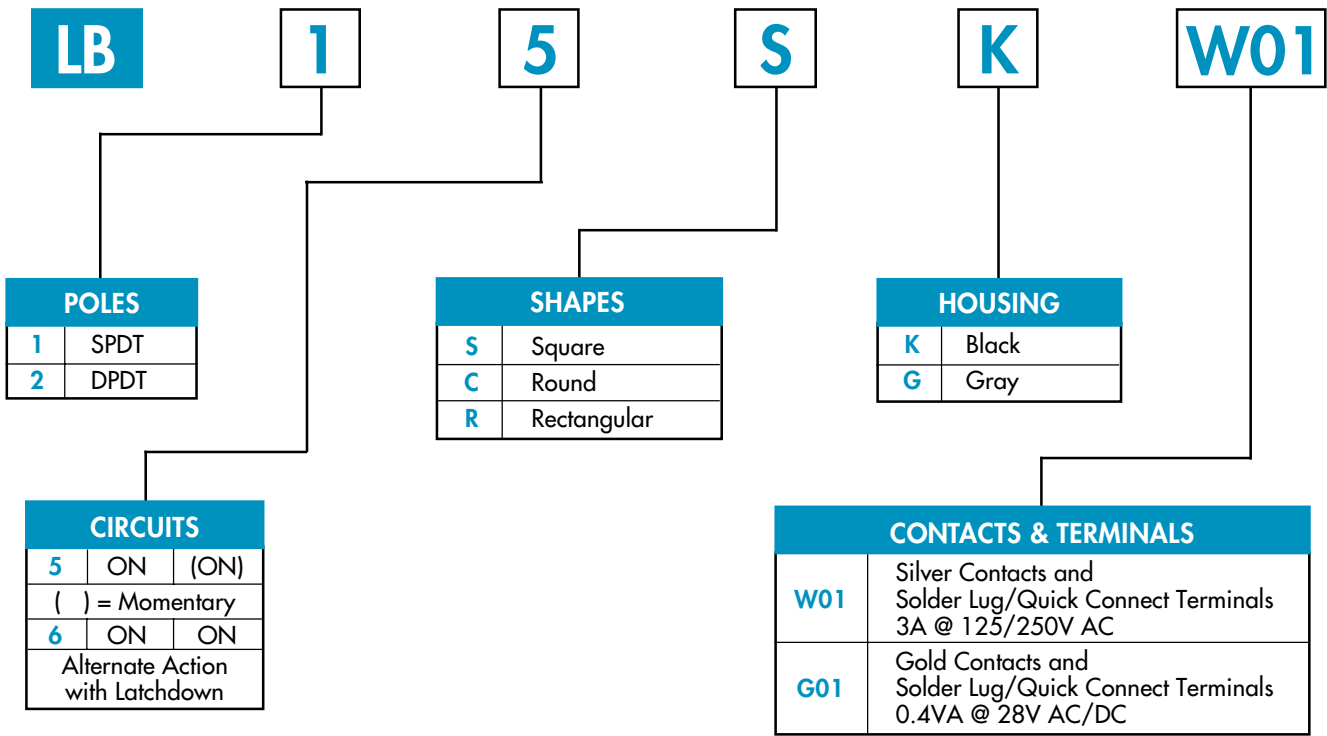


TYPICAL SWITCH ORDERING EXAMPLE



5C12

JC

LAMPS

CAP TYPES & COLORS

Incandescent Lamp used with Solid Cap

00	No Lamp
05	5-volt
12	12-volt
28	28-volt

Solid Cap: Lens/Filter Colors

BJ	White/Clear
CJ	Red/Clear
EJ	Yellow/Clear
FJ	Green/Clear
GJ	Blue/Clear

Incandescent or Neon used w/Insert Cap

00	No Lamp
01	110-volt Neon
05	5-volt Incandescent
12	12-volt Incandescent
28	28-volt Incandescent

Insert Cap: Lens/Filter Colors

JB	Clear/White
JC	Clear/Red
JE	Clear/Yellow
*JF	Clear/Green
*JG	Clear/Blue
* JF & JG not suitable with neon.	

Standard LED used w/LED Cap

C	Red
D	Amber
F	Green

LED Cap: Lens/Diffuser Colors

JB	Clear/White
JC	Clear/Red
JD	Clear/Amber
JF	Clear/Green

Bright LED used w/LED Cap

Colors		Resistor	
5C	Red	No Code	No Resistor
5D	Amber	05	5-volt
		12	12-volt
5F	Green	24	24-volt

LED Cap: Lens/Diffuser Colors

JB	Clear/White
JC	Clear/Red
JD	Clear/Amber
JF	Clear/Green

Super Bright LED used w/LED Cap

6B	White
6F	Green
6G	Blue

LED Cap: Lens/Diffuser Colors

JB	Clear/White
----	-------------

LED used with Spot Illuminated Cap

1C	Red Single Color
1D	Amber Single Color
1F	Green Single Color
CF	Red/Green Bicolor

Spot Illuminated Cap Colors

A	Black	Available in square and round only.
B	White	
C	Red	
F	Green	

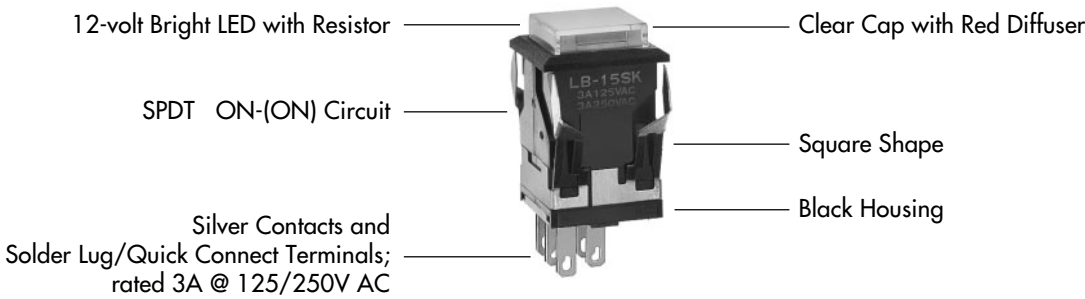
Nonilluminated

00	No Lamp
----	---------

Nonilluminated Cap Colors

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

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
LB15SKW01-5C12-JC



IMPORTANT:

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

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

Note: See [Supplement Index](#) to find explanation of operating range.

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; 1,500V AC minimum between contacts & case

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: 450 grams

Contact Timing: Nonshorting (break-before-make)

Travel for Momentary Circuit: 1.9mm (.075") pretravel; 1.1mm (.043") overtravel; 3.0mm (.118") total travel

Travel for Maintained Circuit: 2.2mm (.087") pretravel; 0.8mm (.031") overtravel; 3.0mm (.118") total travel

Materials & Finishes

Housing: Glass fiber reinforced polyamide

Snap-in Frame: Stainless steel

Movable Contact: Silver alloy or copper with gold plating over nickel plating

Stationary Contacts: Silver alloy or copper with gold plating over nickel plating

Base: Diallyl phthalate

Common Terminals: Phosphor bronze with silver or gold plating

End Terminals: Phosphor bronze with silver or gold plating

Lamp Terminals: Phosphor bronze with silver plating

Environmental Data

Operating Temp Range: -25°C through +50°C (-13°F through +122°F) for illuminated

-25°C through +70°C (-13°F through +158°F) for nonilluminated

Note: When used with a polyvinyl chloride splash cover, the lowest limit is 0°C (32°F)

Humidity: 93% 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 acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

Sealing: Not available for snap-in; see panel seal section.

Installation

Cap Installation Force: 0.4 kg (.88 lb) maximum downward force on actuator

Quick Connect Force: 5.4 kg (11.9 lbs) maximum downward force on connector

Soldering Time & Temperature: 3 seconds @ 350°C or 5 seconds @ 270°C

Process Seal: Not available

Standards & Certifications

Flammability Standards: UL94V-0 base

UL Recognized: All models recognized at 3A @ 125V or 250V AC or 0.4VA maximum @ 28V AC/DC maximum; UL File No. E44145

CSA Certified: All models certified at 3A @ 125V or 250V AC or 0.4VA maximum @ 28V AC/DC maximum; CSA File Nos. LR23535

POLES & CIRCUITS

		Plunger Position () = Momentary		Connected Terminals		Throw & Power/Lamp Schematics
Pole	Model	Normal	Down	Normal	Down	
SP	LB15 *LB16	ON ON	(ON) ON	1-3	1-2	SPDT Notes: (1) Switch is marked with NC, NO, COM, L+, L-. (2) Lamp circuit is isolated & requires external power source.
DP	LB25 *LB26	ON ON	(ON) ON	1-3 4-6	1-2 4-5	DPDT

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

SHAPES & PANEL CUTOUTS

S .622" Square

Cutout for 1 switch: .638" x .638"
Cutout for 1 switch with barriers: .638" x .815".

C .854" Dia. Round

R .622" x .866" Rectangular

Cutout for 1 switch: .638" x .882"
Cutout for 1 switch with barriers: .638" x 1.059".

Panel Thickness for Switches & Barriers: 1 ~ 4mm (.039" ~ .157")
Panel Thickness for Protective Guards & Splash Covers: 1 ~ 3.5mm (.039" ~ .138")

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 The .047" x .079" oblong hole accommodates one solid 18-gauge wire or two solid or stranded 20-gauge wires.
G01 Gold Contacts	Logic Level 0.4VA max. @ 28V AC/DC max.	

See [Supplement](#) for complete explanation of operating range.

INCANDESCENT & NEON LAMP CODES & SPECIFICATIONS

AT607 & AT607N T-1 Bi-pin	AT607 Incandescent 5-, 12-, 28-volt; AT607N Neon 110-volt	05	12	28 *	01 **	* Lamp life is significantly reduced in applications with DC current, high shock, vibration, or continuous illumination. ** Recommended Resistors: 33K ohms for 110V AC; 100K ohms for 220V AC.
	Voltage V	5V AC	12V AC	28V AC	110V AC	
	Current I	115mA	60mA	24mA	1.5mA	
	Endurance Avg. Hrs.	7,000			10,000	

Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation.

LED CODES & SPECIFICATIONS


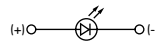
Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation. Single color LEDs are colored in OFF state. Bicolor LED is translucent white in OFF state.

For dimension drawings of lamps see [Accessories & Hardware Index](#).


If the source voltage is greater than rated voltage, a ballast resistor is required.

The ballast resistor calculation and more lamp detail are shown in the Supplement; see [Supplement Index](#).

Standard Single Element LED

<div>AT614</div> <div></div> <div></div> <div>T-1 Bi-pin</div>	Color	<div>C</div> Red	<div>D</div> Amber	<div>F</div> Green	
	Forward Peak Current	I_{FM}	50mA	50mA	50mA
	Continuous Forward Current	I_F	40mA	40mA	40mA
	Forward Voltage	V_F	1.75V	2.35V	2.35V
	Reverse Peak Voltage	V_{RM}	4V	4V	4V
	Current Reduction Rate Above 25°C	ΔI_F	0.67mA/°C		

Bright Quad Element LED

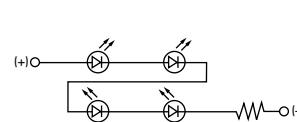
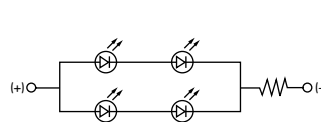
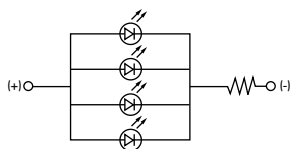
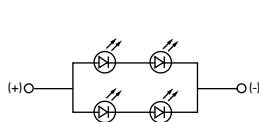
AT626 No Resistor AT627 with Resistor  T-1 Bi-pin	Color Codes	5C Red	5D Amber	5F Green			
		No Resistor (AT626)			With Resistor (AT627)		
		Red No Code	Amber No Code	Green No Code	05	12	24
	Forward Peak Current	I_{FM}	40mA	40mA	40mA	—	—
	Continuous Forward Current	I_F	26mA	26mA	26mA	52mA	13mA
	Forward Voltage	V_F	3.8V	4.0V	4.4V	5V	12V
	Reverse Peak Voltage	V_{RM}	8V	8V	8V	4V	8V
	Current Reduction Rate Above 25°C	ΔI_F	0.50mA/°C			0.50mA/°C	

AT626 4-Element without Resistor


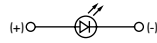

AT627 5 volt, 4-Element with Resistor

AT627 12 volt, 4-Element with Resistor

AT627 24 volt, 4-Element with Resistor



Super Bright Single Element LED

AT625 Blue AT631 White AT632 Green   T-1 Bi-pin		Color	6B White	6F Green	6G Blue
	Forward Peak Current	I_{FM}	30mA	30mA	30mA
	Continuous Forward Current	I_F	20mA	20mA	20mA
	Forward Voltage	V_F	3.6V	3.5V	3.6
	Reverse Peak Voltage	V_{RM}	5V	5V	5V
	Current Reduction Rate Above 25°C	ΔI_F	0.50mA/°C		

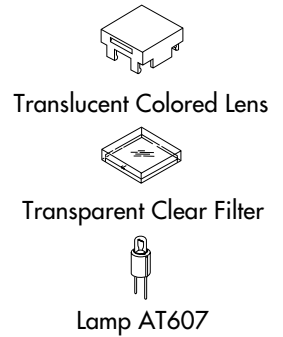
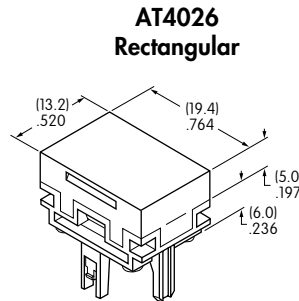
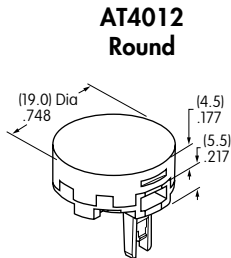
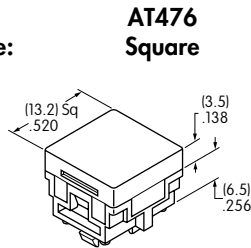
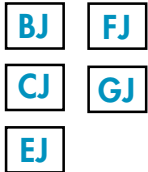
00 No Lamp Code 00 indicates that no lamp is used.

CAP TYPES & COLOR COMBINATIONS

Color Codes: **A** Black **B** White **C** Red **D** Amber **E** Yellow **F** Green **G** Blue **J** Clear

Solid Cap for Incandescent Lamp

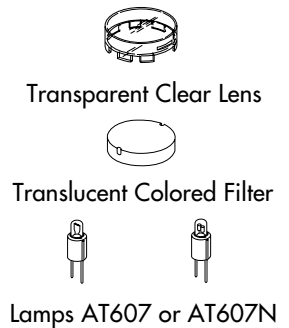
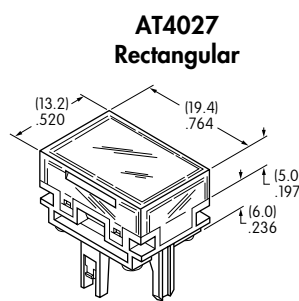
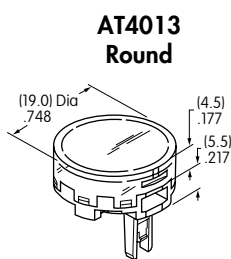
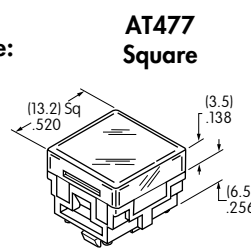
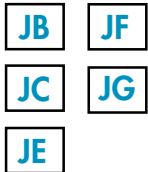
Lens/Filter
Colors Available:



Material: Polycarbonate Finish: Glossy

Insert Cap for Incandescent or Neon Lamp

Lens/Filter
Colors Available:

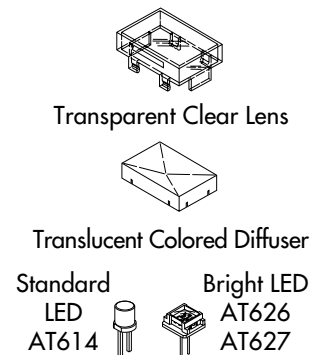
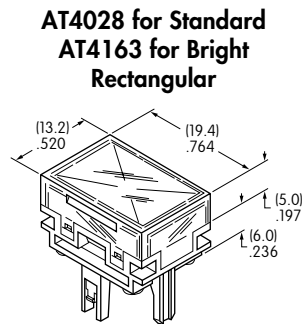
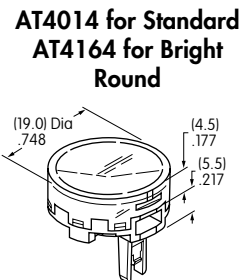
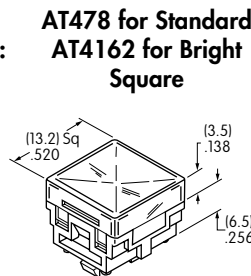


JF & JG not suitable with neon.

Material: Polycarbonate Finish: Glossy

LED Cap for Standard & Bright LEDs

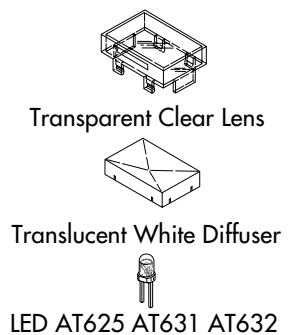
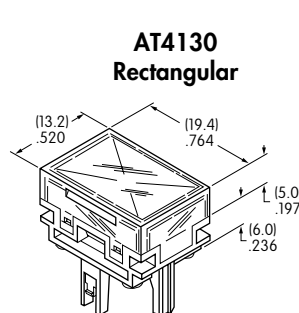
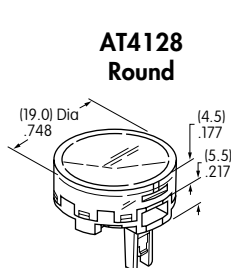
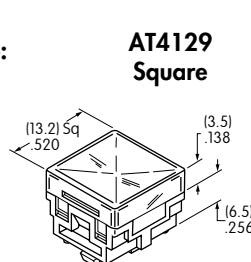
Diffuser
Colors Available:



Material: Polycarbonate Finish: Glossy

LED Cap for Super Bright LED

Lens/Diffuser
Colors Available:



Material: Polycarbonate Finish: Glossy

CAP TYPES & COLOR COMBINATIONS

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



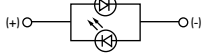
Spot Illuminated Cap with LED

Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation.
Single color LEDs are colored in OFF state. Bicolor LED is translucent white in OFF state.

For dimension drawings of lamps see [Accessories & Hardware Index](#).

If the source voltage is greater than rated voltage, a ballast resistor is required.

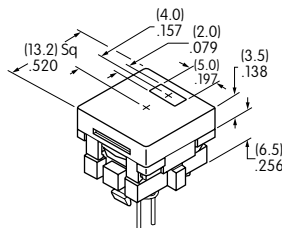
The ballast resistor calculation and more lamp detail are shown in the Supplement; see [Supplement Index](#).

LED Specifications						
 LED factory assembled in Spot Illuminated Caps Not Available Separately	Single Color LED with 1 Element	Bicolor LED with 2 Elements	Single Color			Bicolor
			1C Red	1D Amber	1F Green	CF Red/Green
	Forward Peak Current	I_{FM}	10mA	30mA	30mA	30mA
	Continuous Forward Current	I_F	8mA	24mA	24mA	25mA
	Forward Voltage	V_F	1.9V	2.0V	2.1V	2.1V
	Reverse Peak Voltage	V_{RM}	5V	5V	5V	—
	Current Reduction Rate Above 25°C	ΔI_F	0.13mA/°C	0.40mA/°C	0.40mA/°C	0.33mA/°C

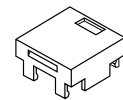
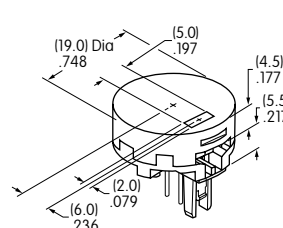
Cap Colors Available:



AT480 Square



AT4016 Round



Cap with Window



Factory Assembled LED

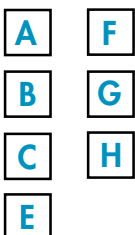
Material: Polycarbonate Finish: Glossy

When ordering spot illuminated cap separately, LED color must be specified.

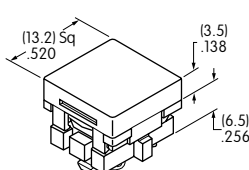
Examples: AT480CA (red LED, black cap); AT4016CFB (red/green bicolored LED, white cap)

Nonilluminated Cap

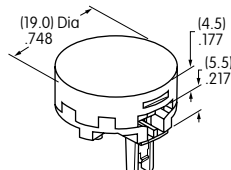
Cap Colors Available:



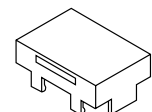
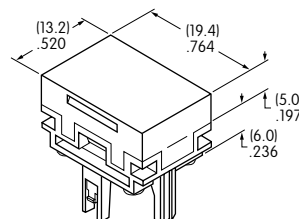
AT484 Square



AT4017 Round



AT4030 Rectangular



Cap

No Lamp

Material: Polycarbonate Finish: Glossy

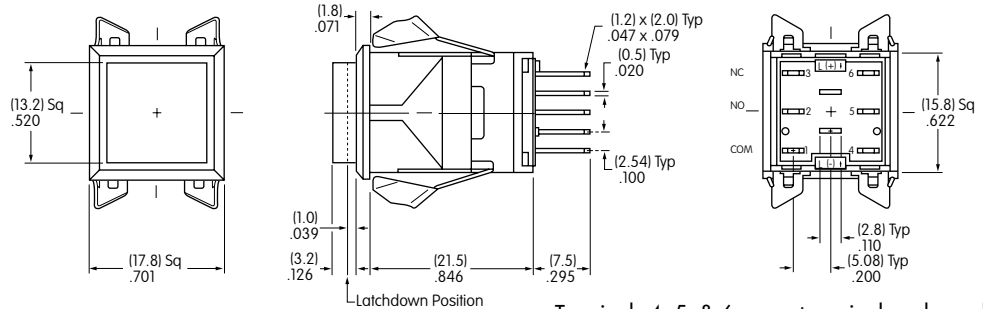
TYPICAL SWITCH DIMENSIONS

Square



LB15KW01-12-CJ

Single & Double Pole



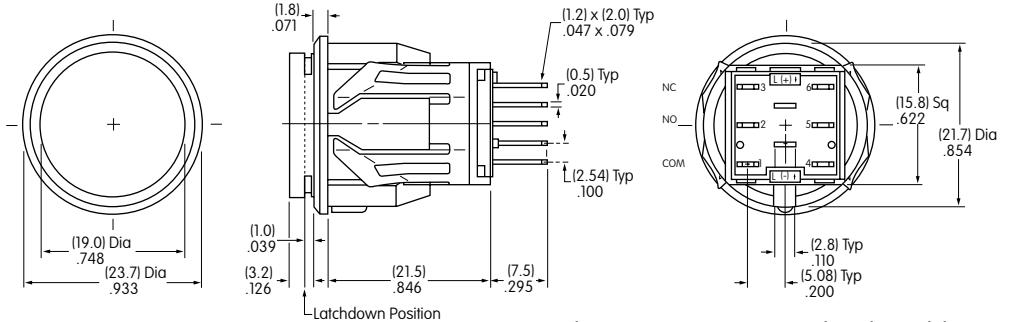
Terminals 4, 5, & 6 are not on single pole models.

Round



LB16CKW01-12-CJ

Single & Double Pole



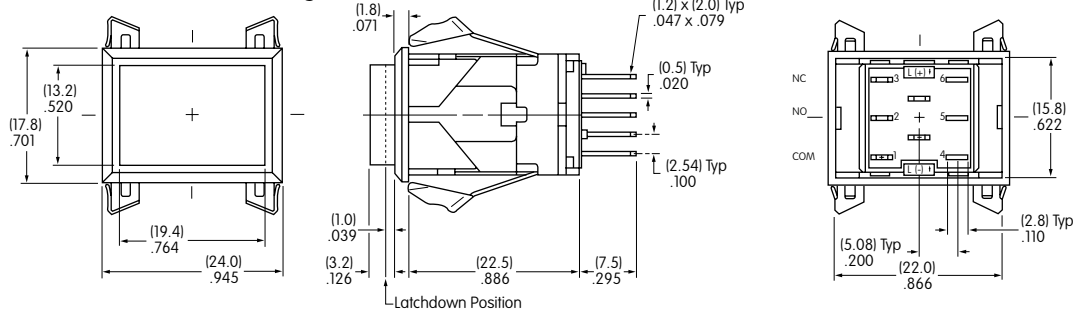
Terminals 4, 5, & 6 are not on single pole models.

Rectangular



LB26RGW01-12-CJ

Single & Double Pole

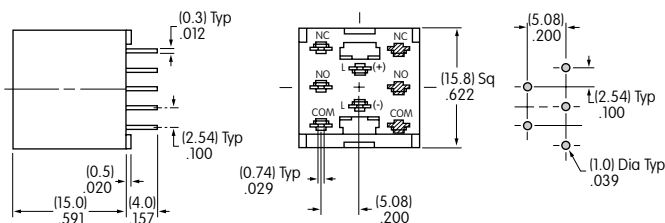


Terminals 4, 5, & 6 are not on single pole models.

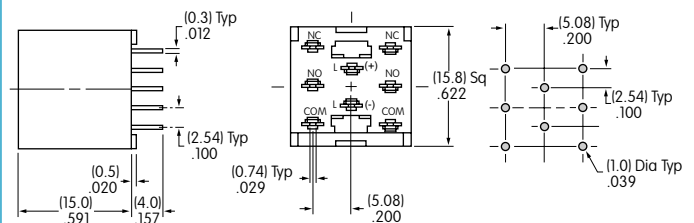
OPTIONAL ACCESSORIES

PCB Adaptors

AT711 Single Pole • Straight PC Terminals



AT712 Double Pole • Straight PC Terminals

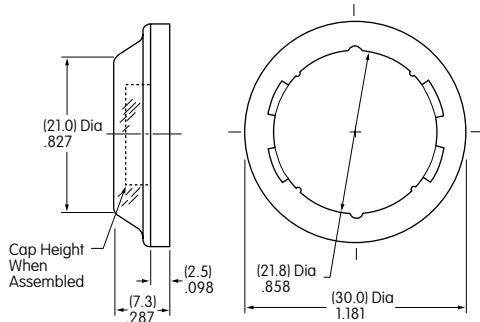


Note: Order adaptors separately.

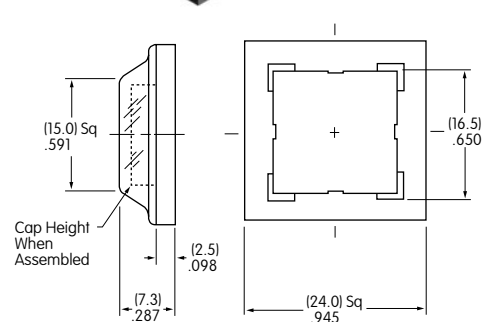
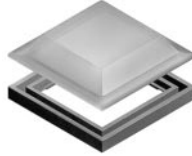
OPTIONAL ACCESSORIES

Splash Covers

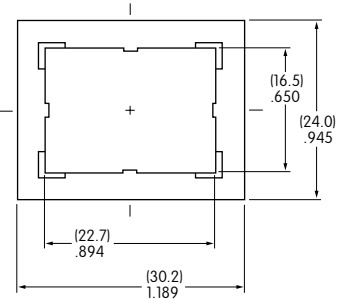
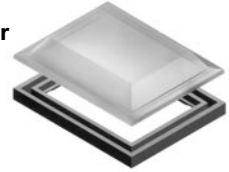
**AT4002
Round**



**AT4001
Square**



AT4011 Rectangular

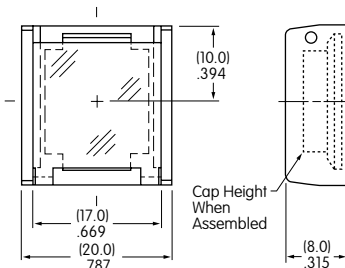


Material: PVC with polyethylene gasket
PVC loses pliability below 0°C (32°F).

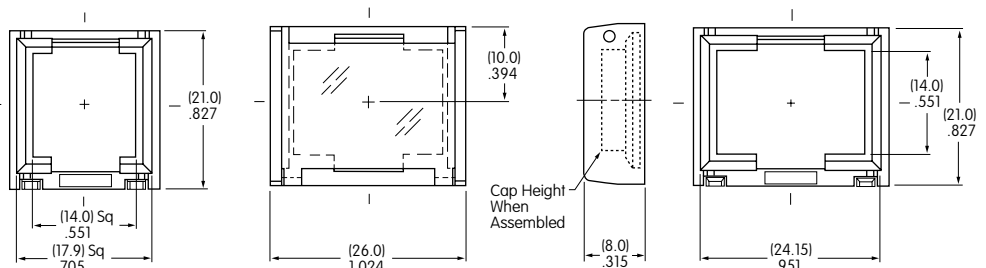
Splash Covers reduce depth of switch behind panel by .020".

Protective Guards

**AT499
Square**



**AT4057
Rectangular**



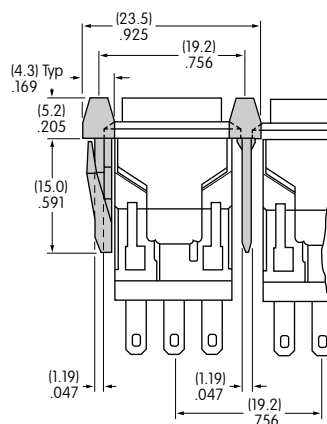
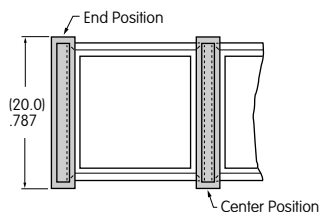
Material: Polyamide

Protective Guards reduce depth of switch behind panel by .020".

Barriers

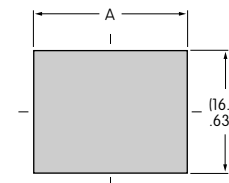
**AT497
End**

**AT498
Center**



Material: Polyamide

Cutouts for More Than 1 Switch



$$A = .752" \times \text{Number of Switches} + .051"$$

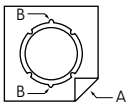
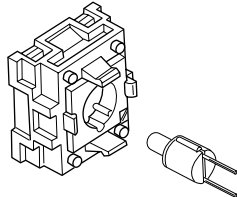
$$A = .996" \times \text{Number of Switches} + .051"$$

ASSEMBLY INSTRUCTIONS

Lamp Installation & LED Orientation

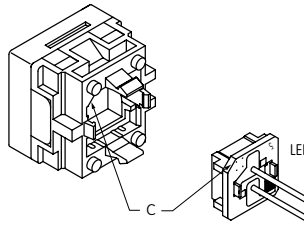
Incandescent & Neon Lamps AT607 & AT607N

Align projections on lamp with grooves (B) in holder when inserting lamp.
To correctly join the lamp holder and cap base, match the cut corners (A).



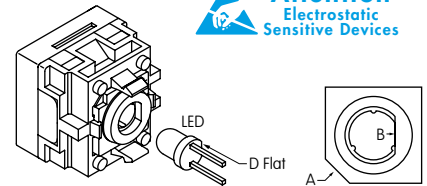
Bright LEDs AT626, AT627

Align cut corners (C) when inserting the LED.

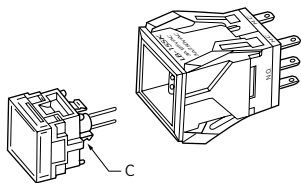
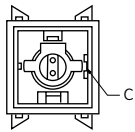


Super Bright LEDs AT625, AT631, AT632

Align D-flat on LED with flat (B) in holder when inserting the LED.
To correctly join the lamp holder and cap base, match the cut corners (A).

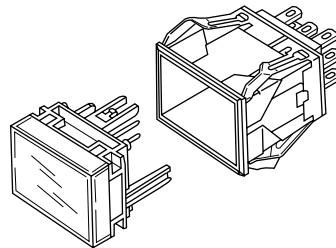
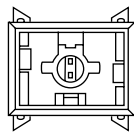
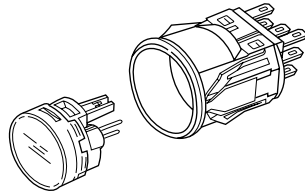
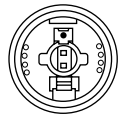


Switch & Cap Assembly



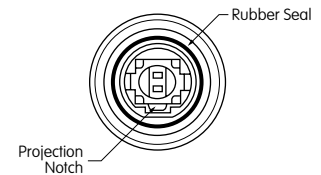
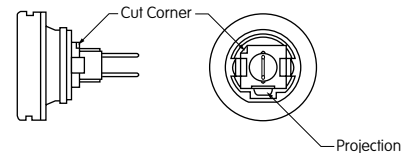
Round & Rectangular

Match clip on cap assembly with receptacle inside switch. Lamp terminals will then be aligned correctly with lamp socket.



Square

Match projection (C) on cap assembly with groove (C) inside switch. Lamp terminals will then be aligned correctly with lamp socket.



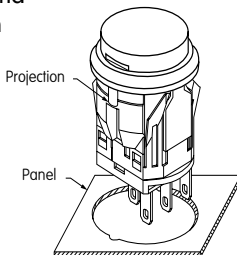
Round Panel Seal

Match projection on cap assembly with notch inside switch. Lamp terminals will then be aligned correctly with lamp socket.

Installation & Maintenance

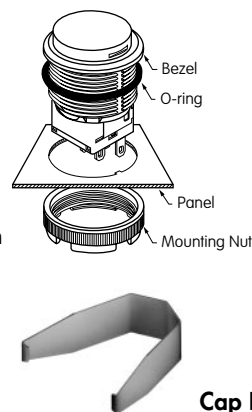
Snap-in Mount

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 AT074 (supplied with switch) from the rear of the panel.
Overtightening mounting nut may damage the switch housing.



Lamp Replacement

Actuator must be in Up position.
Pull off cap with cap extractor AT109.
Replace lamp and reassemble as shown above.



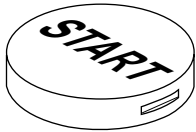
AT109
Cap Extractor

AT112
Socket Wrench

LEGENDS

General information and basic specifications are presented here for customers who want to do their own legends.

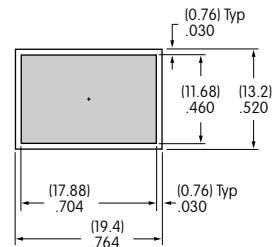
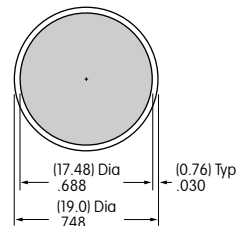
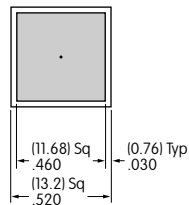
Suggested Printable Area for Lens



Recommended Print Method:

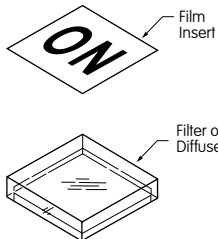
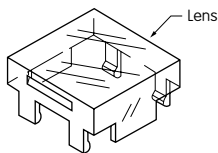
Screen Print or Pad Print

Epoxy based ink is recommended.



Shaded areas are printable areas.

Suggested Printable Area for Film Insert

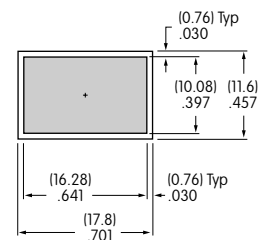
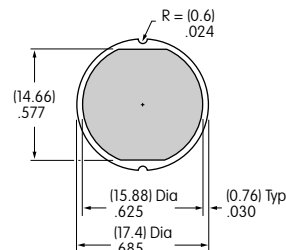
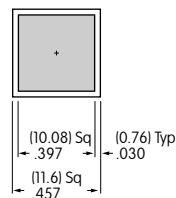


Film Material and Thickness:

Clear Polyester, 4 mil max.

Recommended Print Method:

Screen Print
Epoxy based ink is recommended.

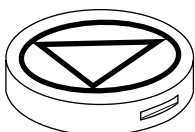


Shaded areas are printable areas.

Additional Methods

Additional methods for legends are engraving the lens and laser printing on film inserts.
Maximum depth for engraving is 0.3 mm (.012") on the cap lens.
Enamel paint is recommended to fill the engraved area.

LEGEND PACKET FOR ORDERING CAPS WITH LEGENDS



1. To order caps with legends, contact the factory and request the LB Legend Packet.
2. Once you determine your desired legend, fill out the ordering work sheet included in the packet.
3. Return the completed work sheet to receive a quotation.

Mouser Electronics

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NKK Switches:

[AT478JC](#) [AT478JF](#) [AT4028JF](#) [AT4028JC](#) [AT4014JF](#) [AT4014JC](#) [AT478JD](#) [AT4014JD](#) [AT4028JD](#) [AT4027Z](#)
[AT4027Y-B](#) [AT4027X-J](#)