

Distinctive Characteristics

Carefully designed light diffusion and filtering system produces bright, full surface illumination with front panel relamping.

Spot illumination available in single and bicolor LEDs.

Choice of super bright LEDs in white, green, and blue in addition to standard or bright red, amber, and green LEDs.

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.

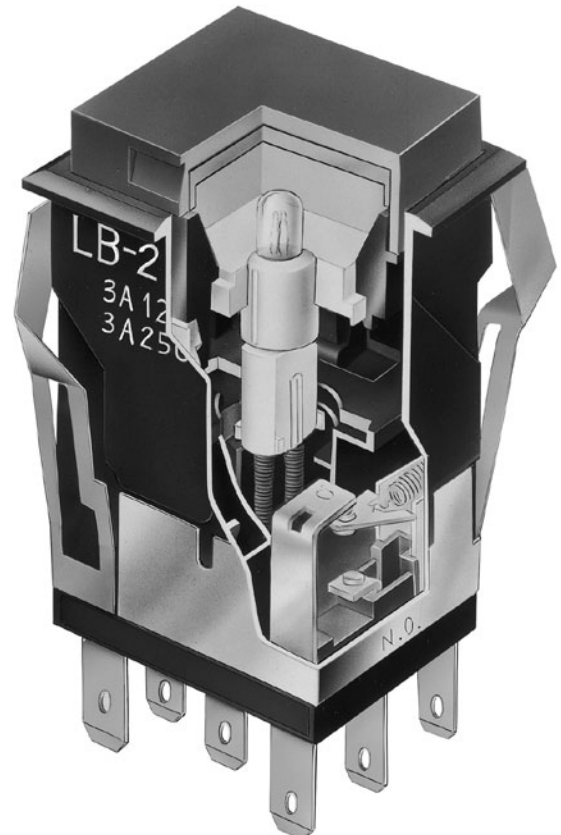
Snap-action contact mechanism gives long electrical life and sensitivity of actuation.

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

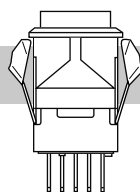
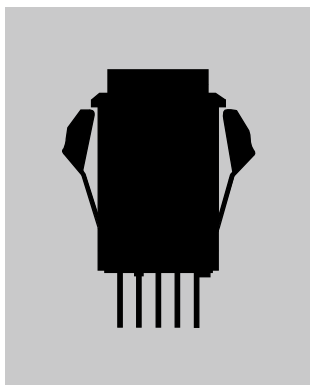
Panel sealed model meets IP65 of IEC60529 specifications (similar to NEMA 4 & 13).

Compact switch design minimizes behind panel depth.

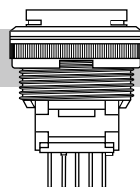
Matching indicators available.



Actual Size



Snap-in Mount Page D46



Panel Seal Page D57

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 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 circuit 200,000 operations minimum for maintained circuit
Electrical Life:	100,000 operations minimum
Nominal Operating Force:	5.39N
Contact Timing:	Nonshorting (break-before-make)
Travel:	Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)

Materials & Finishes

Housing:	Glass fiber reinforced polyamide (UL94V-0)
O-ring:	Nitrile butadiene rubber
Inner Seal:	Silicone rubber
Movable Contact:	Silver alloy or copper with gold plating
Stationary Contacts:	Silver alloy or copper with gold plating
Base:	Liquid crystal polymer (UL94V-0)
Switch Terminals:	Phosphor bronze with silver or gold plating
Lamp Terminals:	Brass with silver plating

Environmental Data

Operating Temperature 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:	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)
Sealing:	IP65 of IEC60529 standard (similar to NEMA 4 & 13)

Installation

Mounting Torque:	1.96Nm (17.35 lb•in) maximum
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:	File No. E44145 - Recognized only when ordered with marking on switch. Add "/U" or "/CUL" before first dash in part number to order UL recognized switch. All models recognized at 3A @ 125V or 250V AC or 0.4VA @ 28V AC/DC maximum.
CSA:	File No. 023535_0_000 - Certified only when ordered with marking on switch. Add "/C" before first dash in part number to order CSA certified switch. All models certified at 3A @ 125V or 250V AC or 0.4VA @ 28V AC/DC maximum.

Toggles

Rockers

Pushbuttons

D
Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

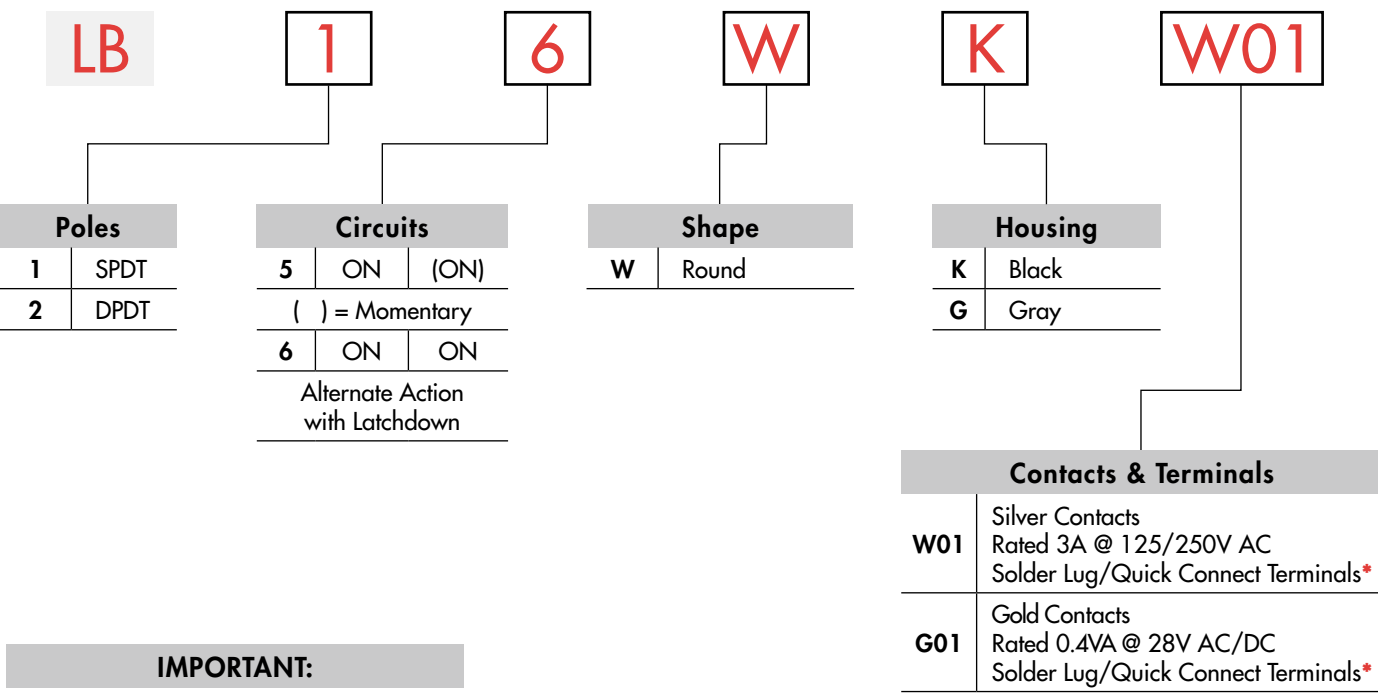
Touch

Indicators

Accessories

Supplement

TYPICAL SWITCH ORDERING EXAMPLE



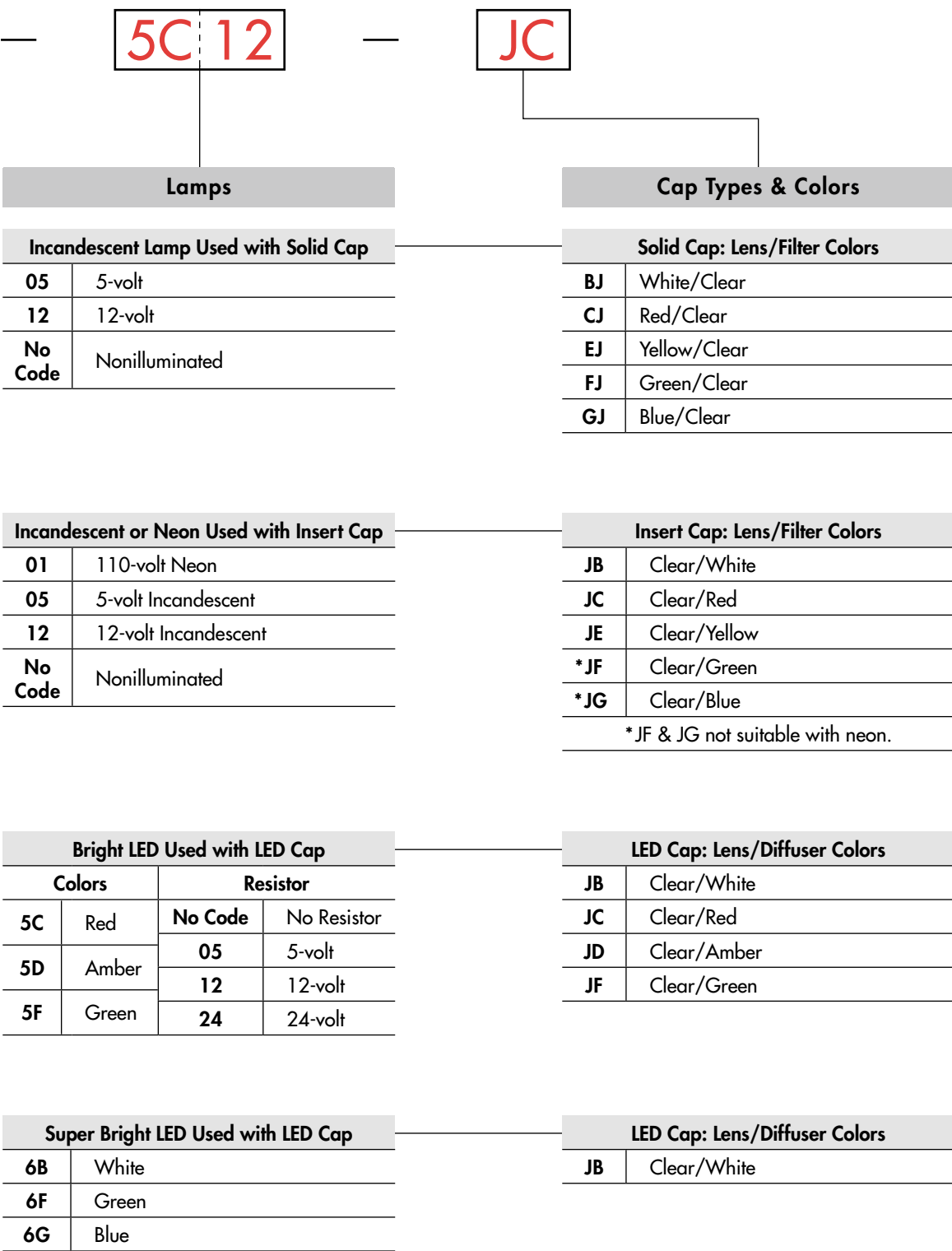
IMPORTANT:

Switches are supplied without UL, cULus & CSA marking unless specified. **UL, cULus & CSA recognized only when ordered with marking on the switch.** Specific models, ratings, & ordering instructions are noted on General Specifications page.

* Wire harness & cable assemblies offered only in Americas

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

LB16WKW01-5C12-JC



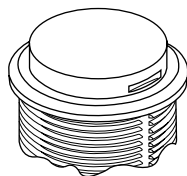
POLES & CIRCUITS

Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch/Lamp Schematics
		Normal	Down	Normal	Down	
SP	LB15 *LB16	ON ON	(ON) ON	1-3	1-2	SPDT Notes: Switch is marked with NC, NO, COM, L+, L-. Lamp circuit is isolated and 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 .039" (1.0mm) above the built-in bezel.

SHAPE & PANEL CUTOUT

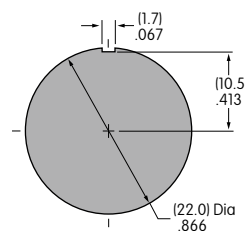
W .866" (22.0mm)
Round



Recommended Panel Thickness:
.039" ~ .157" (1.0mm ~ 4.0mm)

Recommended Panel Thickness with Splash Cover:
.039" ~ .138" (1.0mm ~ 3.5mm)

Overtightening the mounting nut AT074
may damage the switch housing.



HOUSING

Housing Colors Available:

K Black

G Gray

CONTACT MATERIALS, RATINGS & TERMINALS

W01 Silver Contacts

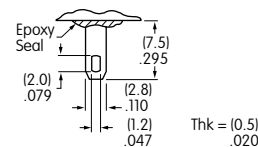
Power Level
3A @ 125V AC & 250V AC

Solder Lug/Quick Connect

G01 Gold Contacts

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

Optional PCB adaptors AT711
& AT712 available; illustrated
in previous snap-in subsection.



Complete explanation of operating range in Supplement section.

INCANDESCENT & NEON LAMP CODES & SPECIFICATIONS

AT607 & AT607N



T-1 Bi-pin

AT607 Incandescent 5-volt or
12-volt; AT607N Neon 110-volt

05

12

01 *

Voltage	V	5V AC	12V AC	110V AC
Current	I	115mA	60mA	1.5mA
Endurance	Avg. Hours	10,000		10,000
Ambient Temp. Range		-25°C ~ +50°C		

The electrical specifications shown are
determined at a basic temperature of
25°C. Lamp circuit is isolated and
requires external power source.

* Recommended Resistors for Neon:
33K ohms for 110V AC;
100K ohms for 220V AC

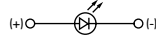
LED COLORS & SPECIFICATIONS

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 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.
Additional lamp detail is shown in the Accessories & Hardware section.

Bright LED without Resistor

AT635

LEDs are colored in OFF state.

T-1½ Bi-pin

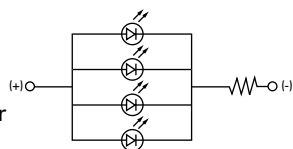
	Red	Amber	Green	No Code No Resistor		
Color Codes	5C	5D	5F	Red	Amber	Green
Forward Peak Current			I _{FM}	30mA	30mA	30mA
Continuous Forward Current			I _F	20mA	20mA	20mA
Forward Voltage			V _F	1.9V	2.0V	2.1V
Reverse Peak Voltage			V _{RM}	5V	5V	5V
Current Reduction Rate Above 25°C			ΔI _F	0.42mA/°C		
Ambient Temperature Range				-25° ~ +50°C		

Bright LED with Resistor

AT627 with Resistor  T-1 Bi-pin	Color Codes:			Resistor Codes			
	Red	Amber	Green				
	5C	5D	5F	05	12	24	
	Forward Peak Current			I _{FM}	—	—	—
	Continuous Forward Current			I _F	52mA	26mA	13mA
	Forward Voltage			V _F	5V	12V	24V
	Reverse Peak Voltage			V _{RM}	4V	8V	16V
	Current Reduction Rate Above 25°C			ΔI _F	0.50mA/°C		
	Ambient Temperature Range			-25° ~ +50°C			

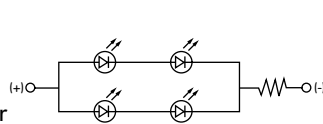
AT627

5-volt
4-element
with Resistor



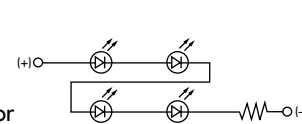
AT627

12-volt
4-element
with Resistor



AT627

24-volt
4-element
with Resistor



Super Bright Single Element LED

AT625G Blue AT631B White AT632F Green   T-1 Bi-pin	 ATTENTION ELECTROSTATIC SENSITIVE DEVICES	6B	6F	6G	
	Color	White	Green	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	3.6V
	Reverse Peak Voltage	V_{RM}	5V	5V	5V
	Current Reduction Rate Above 25°C	ΔI_F	0.50mA/°C		
	Ambient Temperature Range		-25° ~ +50°C		

No Code

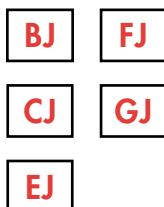
No Lamp

CAP TYPES & COLOR COMBINATIONS

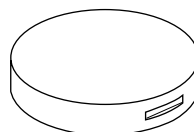
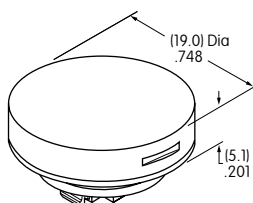
Color Codes: B White C Red D Amber E Yellow F Green G Blue J Clear

Solid Cap for Incandescent Lamp & Nonilluminated

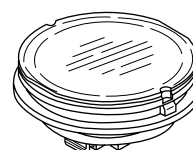
Lens/Filter
Colors Available:



AT4054



Translucent
Colored Lens



Transparent
Clear Filter

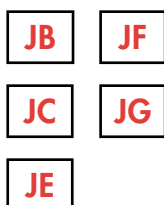


Lamp
AT607

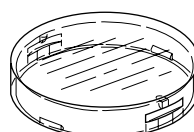
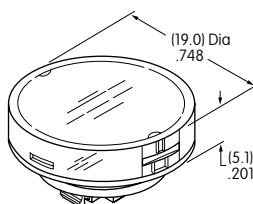
Material: Polycarbonate Finish: Glossy

Insert Cap for Incandescent or Neon Lamp & Nonilluminated

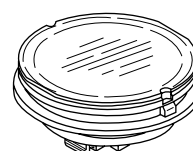
Lens/Filter
Colors Available:



AT4055



Transparent
Clear Lens



Translucent
Colored Filter



Lamp
AT607



Lamp
AT607N

JF and JG not suitable
with neon lamp.

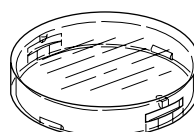
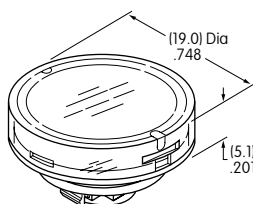
Material: Polycarbonate Finish: Glossy

Cap for Bright LED without Resistor

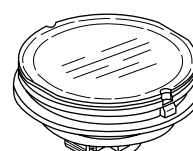
Lens/Diffuser
Colors Available:



AT4179



Transparent
Clear Lens



Translucent
Colored Diffuser



Bright LED
AT635

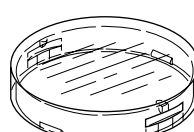
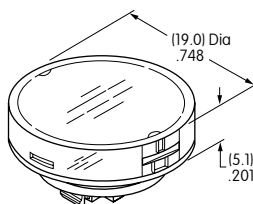
Material: Polycarbonate Finish: Glossy

Cap for Bright LED with Resistor

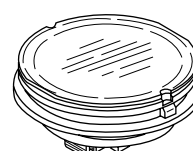
Lens/Diffuser
Colors Available:



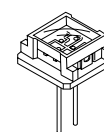
AT4165



Transparent
Clear Lens



Translucent
Colored Diffuser



Bright LED
AT627

Material: Polycarbonate Finish: Glossy

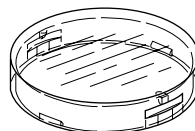
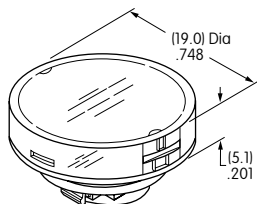
CAP TYPES & COLOR COMBINATIONS



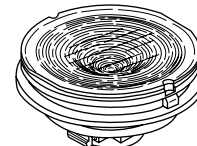
**Clear Lens
White Diffuser**

Material:
Polycarbonate
Finish: Glossy

AT4131



Transparent
Clear Lens



Translucent
Colored Diffuser

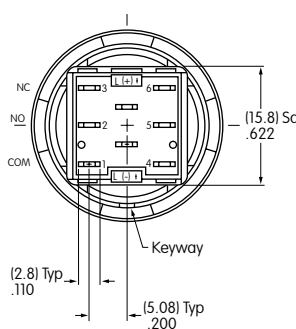
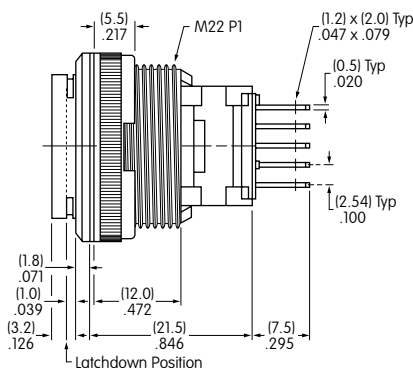
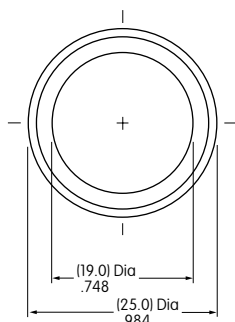


LEDs
AT625
AT631
AT632

TYPICAL SWITCH DIMENSIONS

Single & Double Pole

Panel Seal



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

LB25WKW01-12-JC

OPTIONAL ACCESSORIES

AT9410 Splash Cover for Panel Seal

Materials:

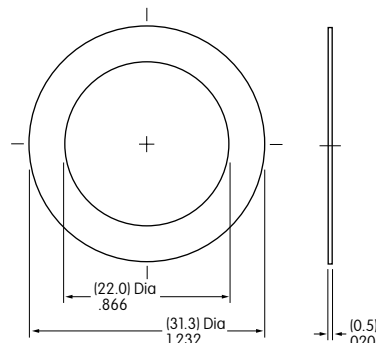
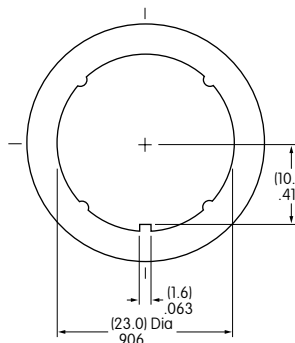
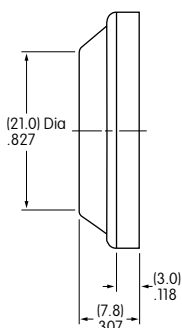
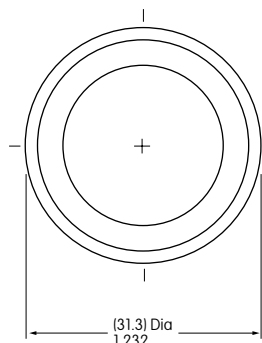
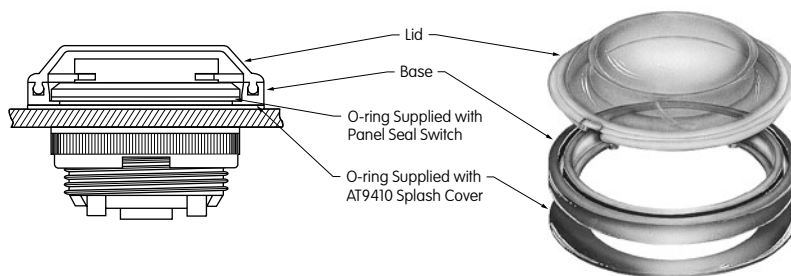
Lid: PVC (loses pliability below 0°C/32°F)

Base: Polyethylene

O-ring: NBR

Recommended Panel Thickness:

.039" ~ .138" (1.0mm ~ 3.5mm)

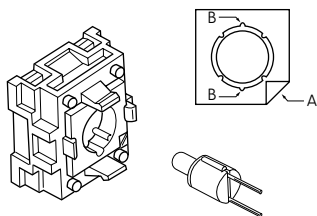


ASSEMBLY INSTRUCTIONS

Lamp Installation & LED Orientation

Incandescent & Neon Lamps AT607 & AT607N

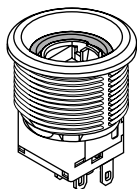
Align projections on lamp with grooves (B) in holder when inserting lamp. To correctly join the lamp holder and cap base, match the cut corners (A).



Bright LED AT627

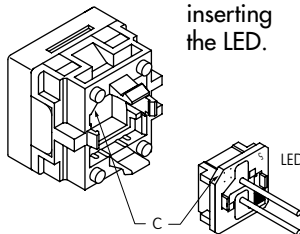
Panel Seal Models

For panel seal models, Bright LED must first be inserted into the lamp socket which is built into the switch. The cap can then be placed on the switch.



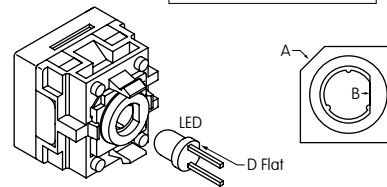
Snap-in Models

For snap-in models, Bright LED must be inserted into the cap first. Align cut corners (C) when inserting the LED.



Bright & Super Bright LEDs AT625, AT631, AT632, AT635

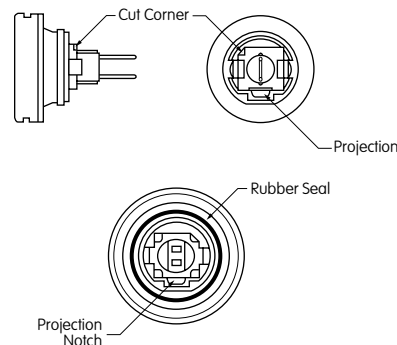
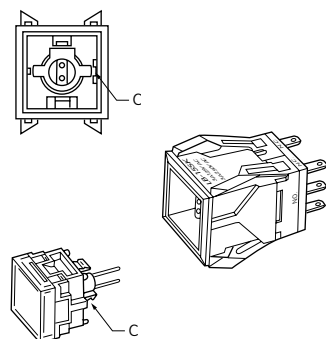
Align D-flat on LED with flat (B) in holder when inserting the LED. To correctly join the lamp holder and cap base, match the cut corners (A).



Switch & Cap Assembly

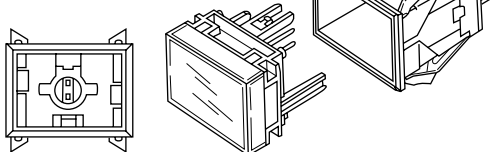
Round & Rectangular

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.



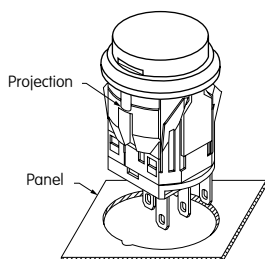
Panel Seal

With Lamps AT607, AT607N, and LEDs AT614, AT625, AT631, AT632: Match projection on cap assembly with notch inside switch. Lamp terminals will then be aligned correctly with lamp socket.

Installation & Maintenance

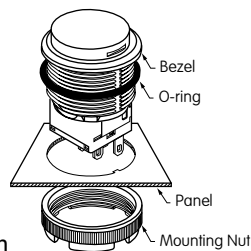
Snap-in Mount

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.



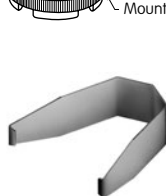
Panel Seal Bushings Mount

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.



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



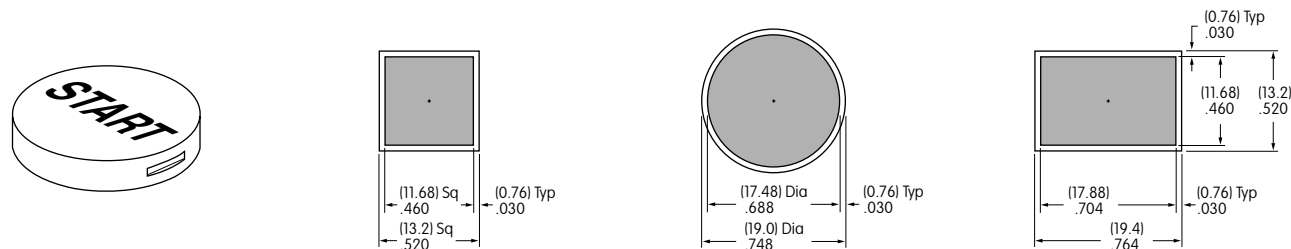
AT112
Socket Wrench

LEGENDS

NKK Switches can provide custom legends for caps. Contact factory for more information.

Suggested Printable Area for Lens

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

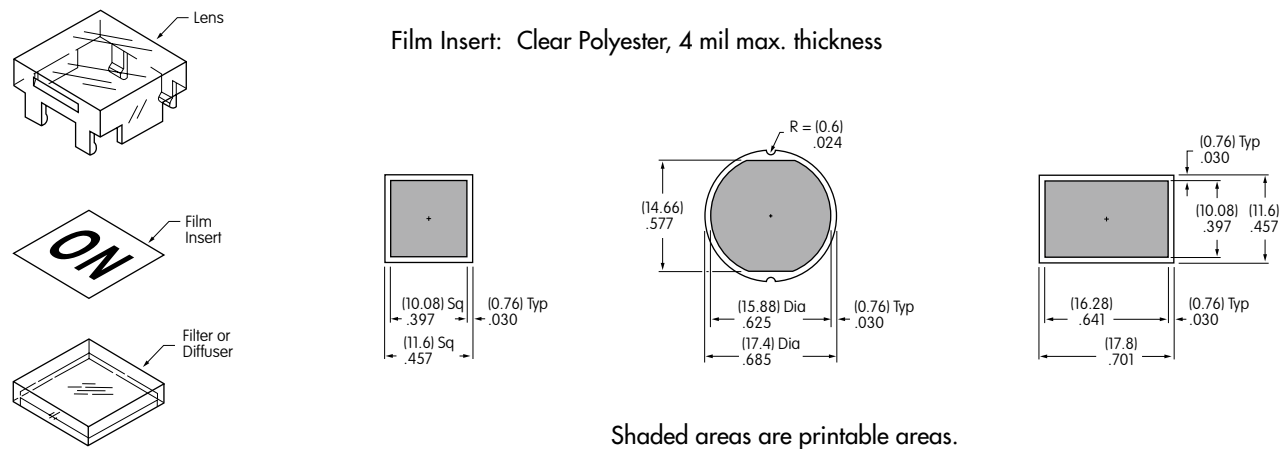


Shaded areas are printable areas.

Suggested Printable Area for Film Insert

Recommended Print Method: Laser Print or Screen Print with Epoxy based ink

Film Insert: Clear Polyester, 4 mil max. thickness



Shaded areas are printable areas.