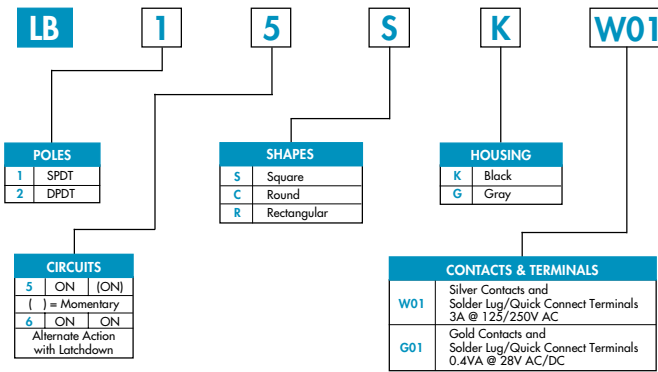
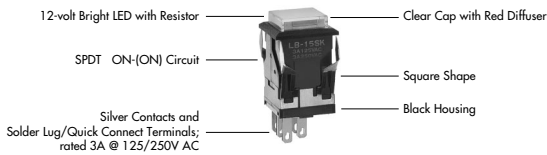


TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
LB155KW01-5C12-JC



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

LAMPS		CAP TYPES & COLORS	
Incandescent Lamp used with Solid Cap		Solid Cap: Lens/Filter Colors	
00	No Lamp	BJ	White/Clear
05	5-volt	CJ	Red/Clear
12	12-volt	EJ	Yellow/Clear
28	28-volt	FJ	Green/Clear
		GJ	Blue/Clear
Incandescent or Neon used w/Insert Cap		Insert Cap: Lens/Filter Colors	
00	No Lamp	JB	Clear/White
01	110-volt Neon	JC	Clear/Red
05	5-volt Incandescent	JE	Clear/Yellow
12	12-volt Incandescent	*JF	Clear/Green
28	28-volt Incandescent	*JG	Clear/Blue
		* JF & JG not suitable with neon.	
Standard LED used w/LED Cap		LED Cap: Lens/Diffuser Colors	
C	Red	JB	Clear/White
D	Amber	JC	Clear/Red
F	Green	JD	Clear/Amber
		JF	Clear/Green
Bright LED used w/LED Cap		LED Cap: Lens/Diffuser Colors	
Colors		Resistor	
5C	Red	No Code	No Resistor
5D	Amber	05	5-volt
5F	Green	12	12-volt
		24	24-volt
Super Bright LED used w/LED Cap		LED Cap: Lens/Diffuser Colors	
6B	White	JB	Clear/White
6F	Green		
6G	Blue		
LED used with Spot Illuminated Cap		Spot Illuminated Cap Colors	
1C	Red Single Color	A	Black
1D	Amber Single Color	B	White
1F	Green Single Color	C	Red
CF	Red/Green Bicolor	F	Green
		Available in square and round only.	
Nonilluminated		Nonilluminated Cap Colors	
00	No Lamp	A	Black
		B	White
		E	Yellow
		F	Green
		G	Blue
		H	Gray
		C	Red

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	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	

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

SHAPES & PANEL CUTOUTS

<p>S .622" Square</p> <p>Cutout for 1 switch: .638" x .638" Cutout for 1 switch with barriers: .638" x .815"</p>	<p>C .854" Dia. Round</p>	<p>R .622" x .866" Rectangular</p> <p>Cutout for 1 switch: .638" x .882" Cutout for 1 switch with barriers: .638" x 1.059"</p>
---	----------------------------------	---

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:



CONTACT MATERIALS, RATINGS, & TERMINALS

W01 Silver Contacts	Power Level 3A @ 125V AC & 250V AC	<p>Solder Lug/Quick Connect</p> <p>The .047" x .079" oblong hole accommodates one solid 18-gauge wire or two solid or stranded 20-gauge wires.</p>
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

<p>AT607 & AT607N</p> <p>T-1 Bi-pin</p>	AT607 Incandescent 5-, 12-, 28-volt; AT607N Neon 110-volt	05	12	28 *	01 **	<p>* Lamp life is significantly reduced in applications with DC current, high shock, vibration, or continuous illumination.</p> <p>** Recommended Resistors: 33K ohms for 110V AC; 100K ohms for 220V AC.</p>	
	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


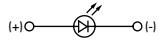
Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation. Single color LEDs are colored in OFF state. Bicolor LED is translucent white in OFF state.

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](#).

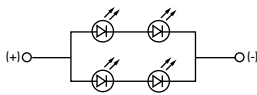
Standard Single Element LED

AT614   T-1 Bi-pin	Color	C Red	D Amber	F 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		

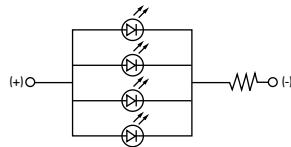
Bright Quad Element LED

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	26mA	13mA
	Forward Voltage	V_F	3.8V	4.0V	4.4V	5V	12V	24V
Reverse Peak Voltage	V_{RM}	8V	8V	8V	4V	8V	16V	
Current Reduction Rate Above 25°C	ΔI_F	0.50mA/°C			0.50mA/°C			

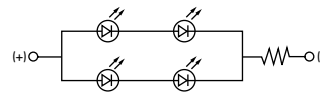
AT626 4-Element without Resistor



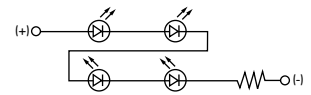
AT627 5 volt, 4-Element with Resistor




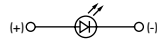

AT627 12 volt, 4-Element with Resistor



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			

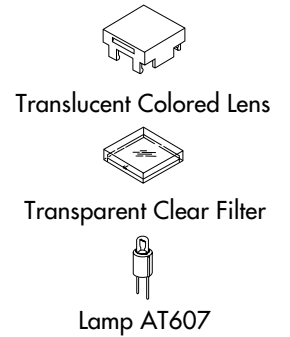
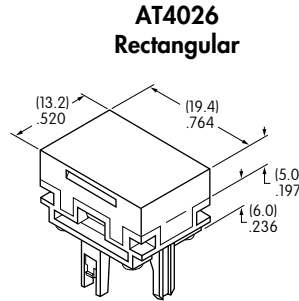
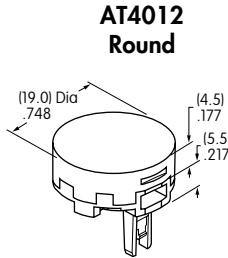
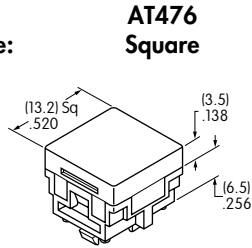
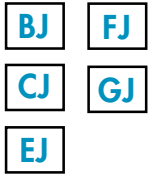
00 **No Lamp** Code 00 indicates that no lamp is used.

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

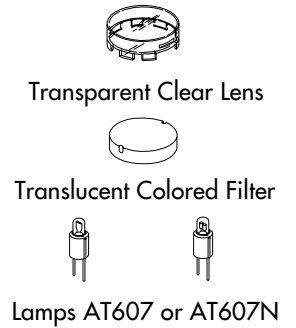
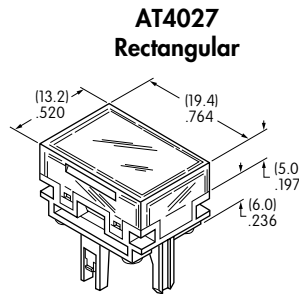
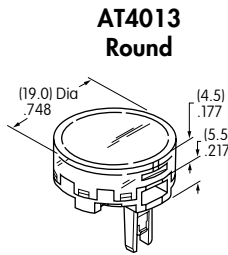
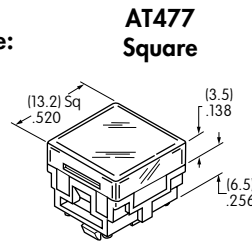
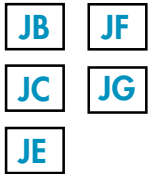
Lens/Filter
Colors Available:



Material: Polycarbonate Finish: Glossy

Insert Cap for Incandescent or Neon Lamp

Lens/Filter
Colors Available:

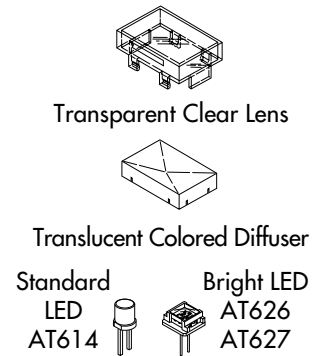
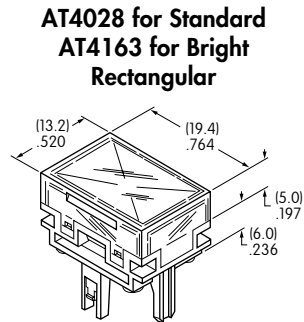
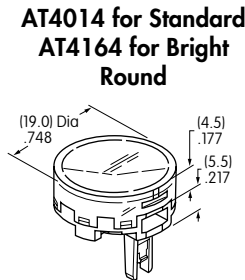
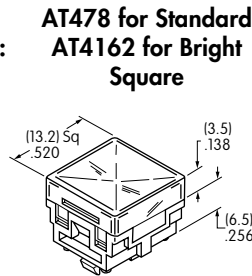


JF & JG not suitable with neon.

Material: Polycarbonate Finish: Glossy

LED Cap for Standard & Bright LEDs

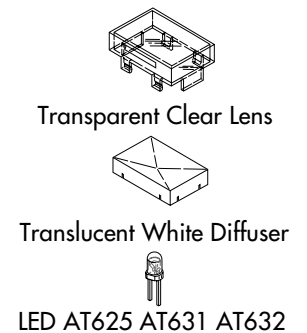
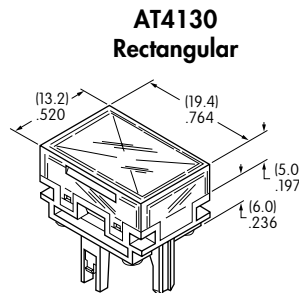
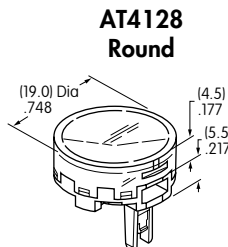
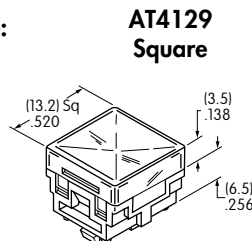
Diffuser
Colors Available:



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


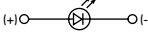
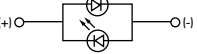
Spot Illuminated Cap with LED

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](#).

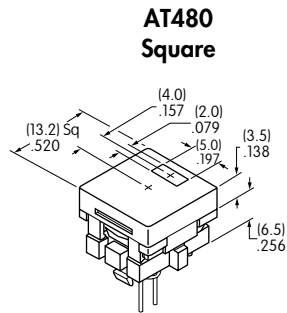
If the source voltage is greater than rated voltage, a ballast resistor is required.

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

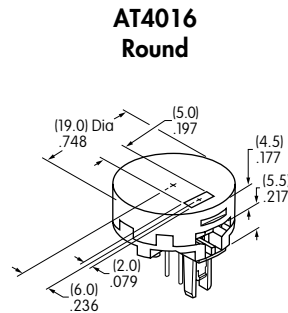
LED Specifications						
	Single Color LED with 1 Element	Bicolor LED with 2 Elements	Single Color			Bicolor
	Not Available Separately			1C Red	1D Amber	1F Green
Forward Peak Current		I_{FM}	10mA	30mA	30mA	30mA
Continuous Forward Current		I_F	8mA	24mA	24mA	25mA
Forward Voltage		V_F	1.9V	2.0V	2.1V	2.1V
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:

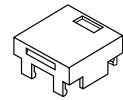
- A**
- B**
- C**
- F**



AT480 Square



AT4016 Round



Cap with Window



Factory Assembled LED

Material: Polycarbonate Finish: Glossy

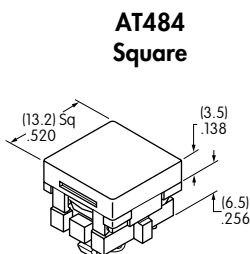
When ordering spot illuminated cap separately, LED color must be specified.

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

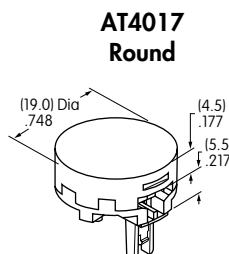
Nonilluminated Cap

Cap Colors Available:

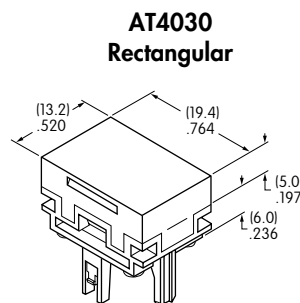
- A**
- B**
- C**
- E**
- F**
- G**
- H**



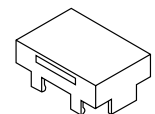
AT484 Square



AT4017 Round



AT4030 Rectangular



Cap

No Lamp

Material: Polycarbonate Finish: Glossy

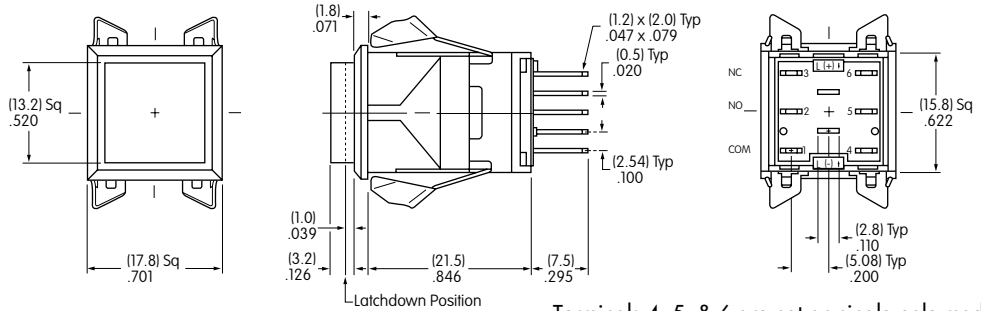
TYPICAL SWITCH DIMENSIONS

Square



LB15KW01-12-CJ

Single & Double Pole



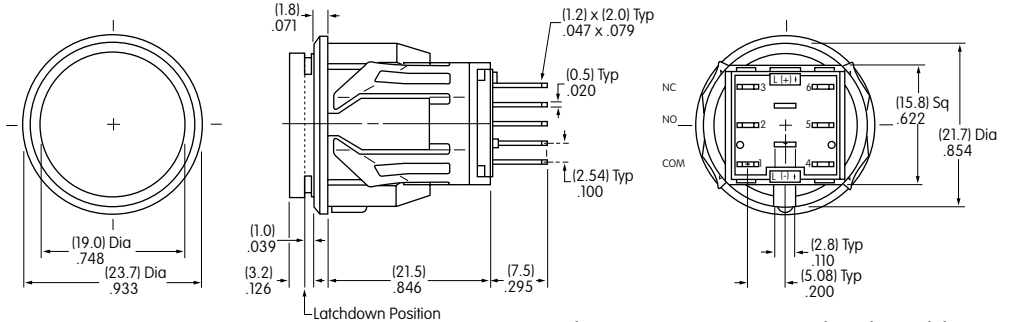
Terminals 4, 5, & 6 are not on single pole models.

Round



LB16CKW01-12-CJ

Single & Double Pole



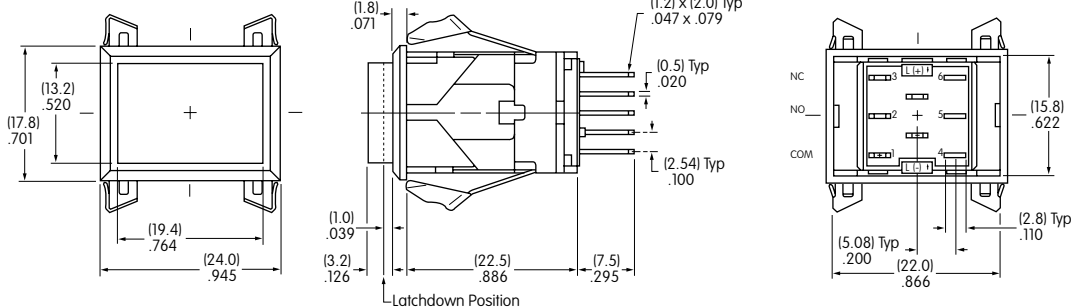
Terminals 4, 5, & 6 are not on single pole models.

Rectangular



LB26RGW01-12-CJ

Single & Double Pole

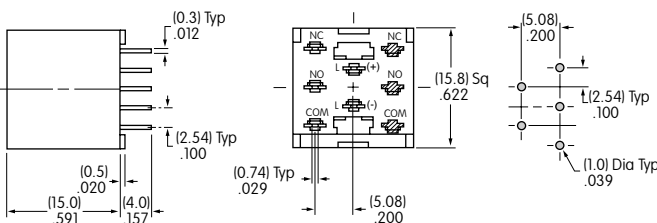


Terminals 4, 5, & 6 are not on single pole models.

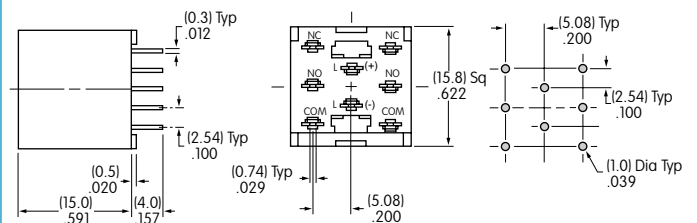
OPTIONAL ACCESSORIES

PCB Adaptors

AT711 Single Pole • Straight PC Terminals



AT712 Double Pole • Straight PC Terminals

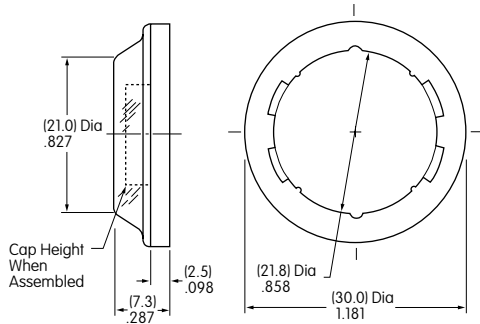


Note: Order adaptors separately.

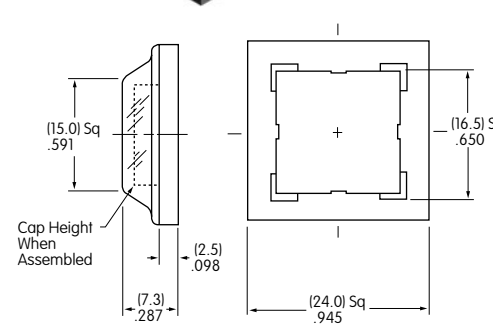
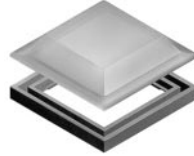
OPTIONAL ACCESSORIES

Splash Covers

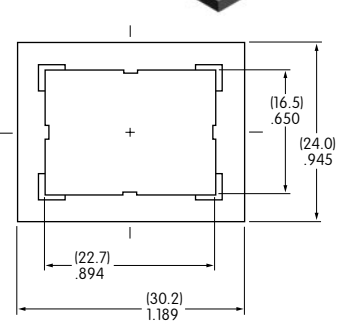
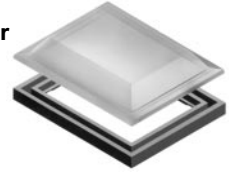
AT4002 Round



AT4001 Square



AT4011 Rectangular

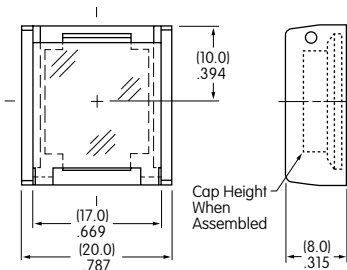


Material: PVC with polyethylene gasket
PVC loses pliability below 0°C (32°F).

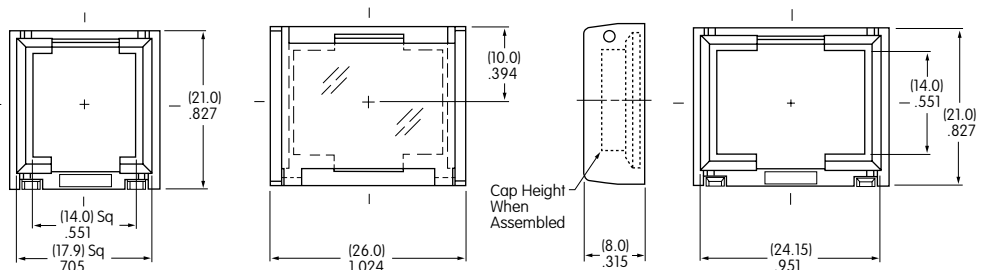
Splash Covers reduce depth of switch behind panel by .020".

Protective Guards

AT499 Square



AT4057 Rectangular



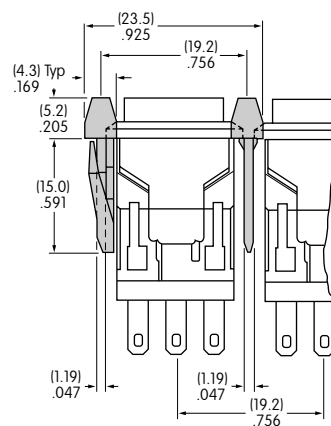
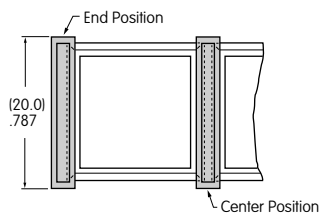
Material: Polyamide

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

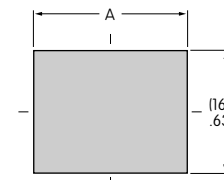
Barriers

AT497 End

AT498 Center



Cutouts for More Than 1 Switch



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

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

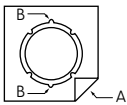
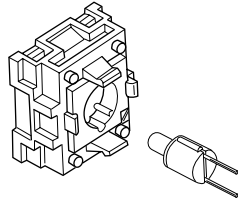
Material: Polyamide

ASSEMBLY INSTRUCTIONS

Lamp Installation & LED Orientation

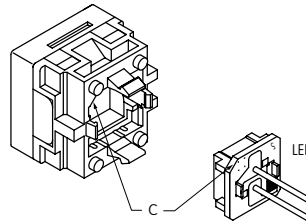
Incandescent & Neon Lamps AT607 & AT607N

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).



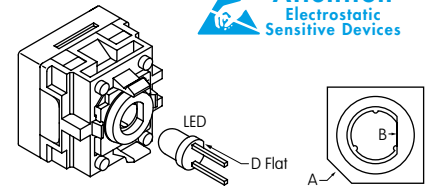
Bright LEDs AT626, AT627

Align cut corners (C) when inserting the LED.

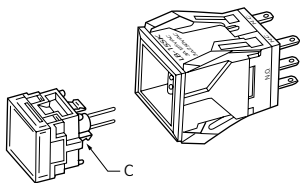
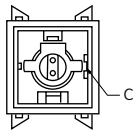


Super Bright LEDs AT625, AT631, AT632

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).

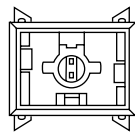
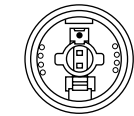


Switch & Cap Assembly



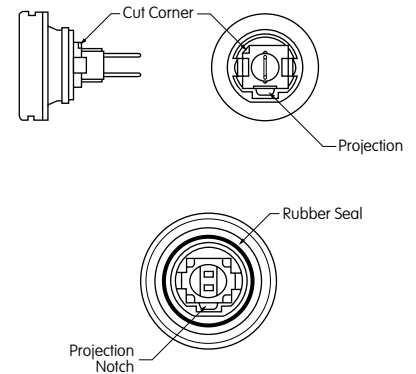
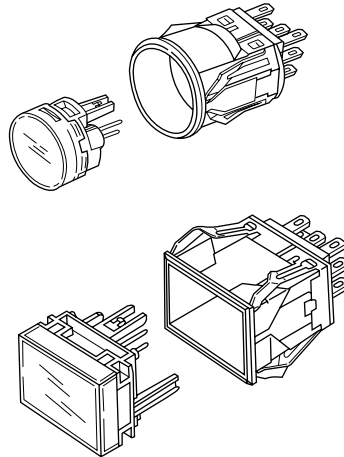
Square

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



Round & Rectangular

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



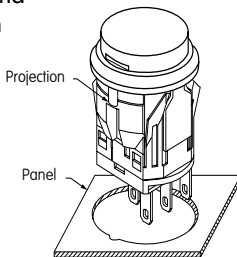
Round Panel Seal

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

Installation & Maintenance

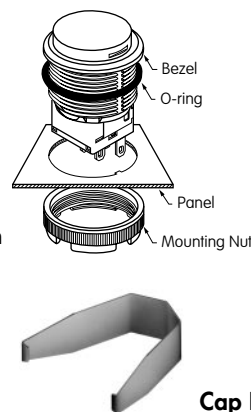
Snap-in Mount

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.



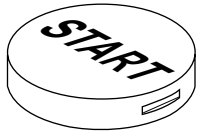
AT109
Cap Extractor

AT112
Socket Wrench

LEGENDS

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

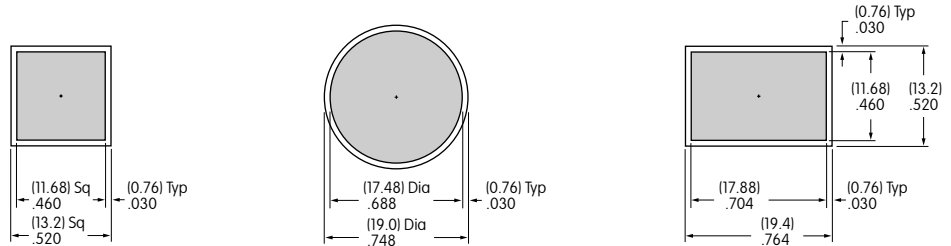
Suggested Printable Area for Lens



Recommended Print Method:

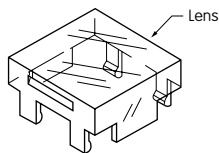
Screen Print or Pad Print

Epoxy based ink is recommended.



Shaded areas are printable areas.

Suggested Printable Area for Film Insert

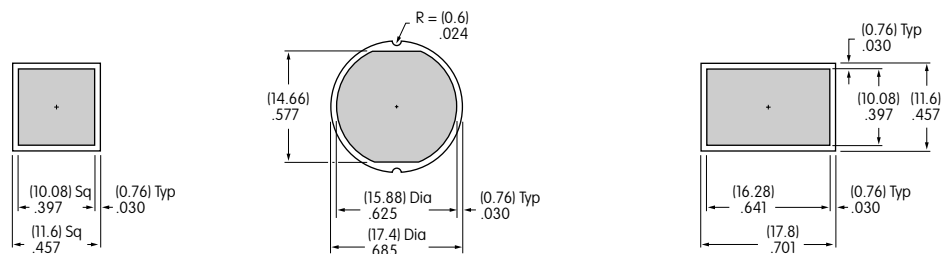
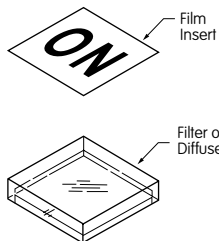


Film Material and Thickness:

Clear Polyester, 4 mil max.

Recommended Print Method:

Screen Print
Epoxy based ink is recommended.

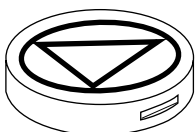


Shaded areas are printable areas.

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.