

# General Specifications

## Electrical Capacity (Resistive Load)

**Power Level (silver):** 3A @ 125V AC or 3A @ 250V AC or 3A @ 30V DC

## Other Ratings

<b>Contact Resistance:</b>	50 milliohms maximum (DC2 ~ 4V 100mA)
<b>Insulation Resistance:</b>	200 megohms minimum @ 500V DC
<b>Dielectric Strength:</b>	1,000V AC minimum between contacts for 1 minute minimum 1,500V AC minimum between contacts and case for 1 minute minimum
<b>Mechanical Life:</b>	500,000 operations minimum
<b>Electrical Life:</b>	50,000 operations minimum for 3A @ 125V/250V AC & 3A @ 30V DC 100,000 operations minimum for 1A @ 125V/250V AC & 1A @ 30V DC
<b>Nominal Operating Force:</b>	1.5N ± 0.7N for Single Pole; 3.0N ± 1.2N for Double Pole
<b>Contact Timing:</b>	Nonshorting (break-before-make)
<b>Travel:</b>	Total Travel .118" (3.0mm)

## Materials & Finishes

<b>Actuator:</b>	Polycarbonate
<b>Housing:</b>	Bushing mount: Glass fiber reinforced polyamide (UL94V-0); Snap in mount: Polybutylene terephthalate (PBT) (UL94V-0)
<b>Base:</b>	Glass fiber reinforced polyamide (UL94V-0)
<b>Movable Contact:</b>	Phosphor bronze & silver with silver plating
<b>Stationary Contacts:</b>	Common terminal: Phosphor bronze with silver plating; Contact terminals: Phosphor bronze with tin plating
<b>Lamp Terminals:</b>	Phosphor bronze with tin plating

## Environmental Data

<b>Operating Temperature Range:</b>	-10°C through +50°C (+14°F through +122°F) for Illuminated -25°C through +70°C (+13°F through +158°F) for Nonilluminated
<b>Humidity:</b>	90 ~ 95% humidity for 240 hours @ 40°C (104°F)
<b>Vibration:</b>	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
<b>Shock:</b>	50G (490m/s <sup>2</sup> ) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)

## Installation

<b>Mounting Torque:</b>	0.8Nm (7.08 lb•in) maximum
<b>Soldering Time &amp; Temperature:</b>	Manual Soldering: See Profile A in Supplement section.
<b>Cleaning:</b>	Hand clean locally with alcohol based solution

## Standards & Certifications

<b>Flammability Standards:</b>	UL94V-0 housing & base
<b>UL:</b>	<b>File No. E44145 - Recognized only when ordered with marking on switch.</b> Add "/U" or "/CUL" to end of part number to order UL recognized switch. All single & double pole models recognized at 3A @ 125V/250V AC or 3A @ 30V DC.

Note: The spot illuminated switches do not have UL approved and cannot be ordered with the markings.

# Distinctive Characteristics

Environmentally friendly components and packaging materials meet RoHS Directive restricting use of hazardous materials. Suited for lead-free soldering because of heat resistant resin materials.

Smooth, slightly concave surface of cap designed to fit fingertip. Unique design and construction of cap prevents its removal and limits tampering.

Bright LED illumination in choice of red, green, or amber through translucent white cap. Spot illumination in red, green or amber enhanced by black cap.

Short body of .551" (14.0mm) conserves behind-panel space.

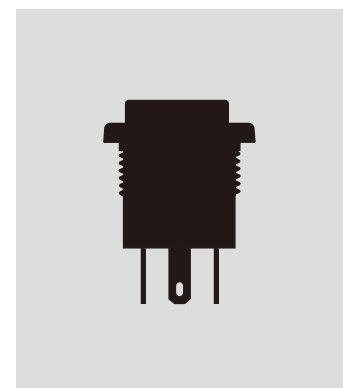
Installation options include 16.0mm bushing mount or 17.3mm snap-in mount.

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

Crisp actuation and clear circuit status provided by snap-action contact mechanism. Arc barrier between movable contacts protects against crossover.



Actual Size



### TYPICAL SWITCH ORDERING EXAMPLE

**LP01 1 5 C C K W01 5C B**

Poles	
1	SPDT
2	DPDT

Mounting Types	
C	Bushing
M	Snap-in

Contacts & Terminals	
W01	Silver Rated 3A @ 125V AC/250V AC Solder Lug/ Quick Connect Terminals

Circuit		
5	ON	(ON)
( ) = Momentary		

Housing	
K	Black

LEDs	
5C	Red
5D	Amber
5F	Green

Cap Color	
A	Black with Spot illumination
B	White

Nonilluminated	
No Code	Nonilluminated

Nonilluminated Cap Colors	
A	Black
C	Red
F	Green

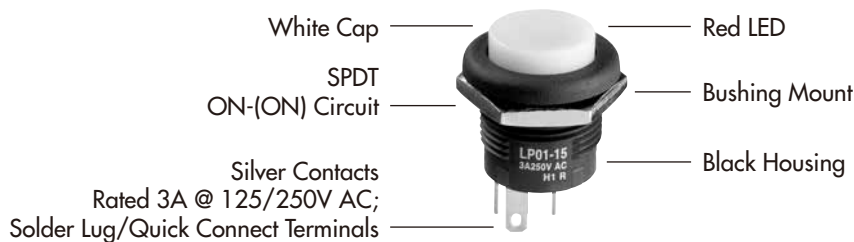
#### IMPORTANT:



Switches are supplied without UL & cULus markings unless specified. **UL & cULus recognized only when ordered with marking on switch.** Specific models, ratings, & ordering instructions are noted on the General Specifications page. Spot illuminated switches do not have UL approved and cannot be ordered with the markings.

#### DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

**LP0115CCKW015CB**



#### POLES & CIRCUIT

Pole	Model	Plunger Position ( ) = Momentary		Connected Terminals		Throw & Power/Lamp Schematics
		Normal	Down	Normal	Down	
SP	LP0115	ON	(ON)	1-3	1-2	Note: Terminal markings "COM, NO, NC, L, + and -" are actually on the switch; terminal numbers are not on the switch. SPDT
DP	LP0125	ON	(ON)	1-3 4-6	1-2 4-5	DPDT

## MOUNTING TYPES

**C**

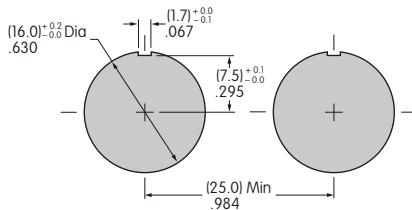
**Bushing**

.630" (16.0mm) Diameter

This mounting option is supplied with a steel hexagon nut with nickel plating.



Recommended Panel Thickness:  
.079" ~ .256"  
(2.0mm ~ 6.5mm)



Allow .984" (25.0mm) distance from center-to-center between switches when mounted side-by-side.

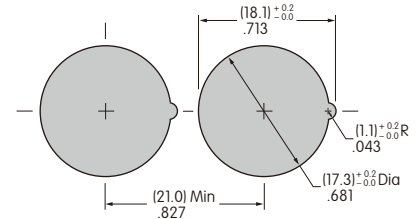
**M**

**Snap-in**

.681" (17.3mm) Diameter



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



Allow .827" (21.0mm) distance from center-to-center between switches when mounted side-by-side.

## HOUSING

**K**

**Black**

Housing available in black only. The one-piece body and bezel have a matte finish.

## CONTACT MATERIALS, RATINGS, & TERMINALS

**W01**

**Silver Contacts**

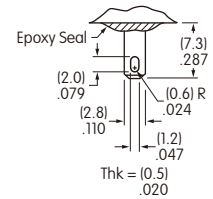
**Power Level**

**Solder Lug/**

**3A @ 125V AC/250V AC; 3A @ 30V DC**

**.110" (2.8mm) Quick Connect**

Note: If used at 1A @ 125V AC/250V AC or 1A @ 30V DC, electrical life will be 100,000 operations minimum.




## 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.

LEDs are an integral part of the switch and are not available separately.	Single Color LED with 1 Element		<b>5C</b>	<b>5D</b>	<b>5F</b>
		Colors	Red	Amber	Green
	Maximum Forward Current	$I_{FM}$	30mA	30mA	30mA
	Typical Forward Current	$I_F$	20mA	20mA	20mA
	Forward Voltage	$V_F$	1.95V	2.0V	2.1V
	Maximum Reverse Voltage	$V_{RM}$	5V	5V	5V
	Current Reduction Rate Above 25°C	$\Delta I_F$	0.41mA/°C	0.29mA/°C	0.39mA/°C
Ambient Temperature Range		-10°C ~ +50°C			

**No Code**

**No Lamp**

Toggles  
Rocker  
Pushbuttons  
Illuminated PB  
Programmable  
Keylocks  
Rotaries  
Slides  
Tactiles  
Tilt  
Touch  
Indicators  
Accessories  
Supplement

## CAP COLORS

**Spot Illuminated Cap**  
Cap Color Available:

**A** Black with Spot Illuminated



**Illuminated Cap**  
Cap color Available:

**B** White



**Nonilluminated Caps**  
Cap Colors Available:

**A** Black



**C** Red

**F** Green

Material: Polycarbonate  
Finish: Matte

Material: Polycarbonate  
Finish: Matte

Material: Polycarbonate  
Finish: Matte

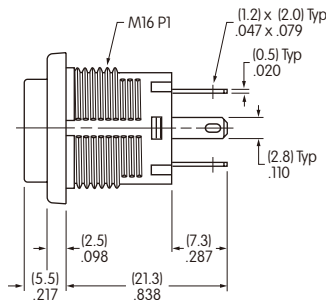
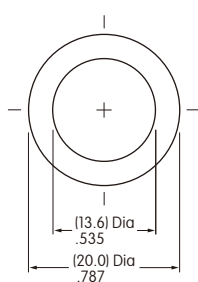
Spot illuminated, illuminated and nonilluminated caps are an integral part of the switch and are not available separately.

## TYPICAL SWITCH DIMENSIONS

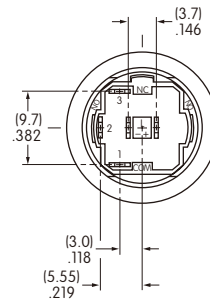
### Bushing Mount



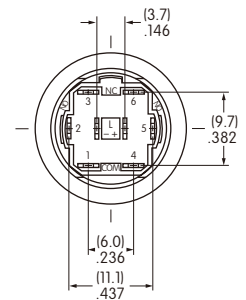
LP0115CCKW015CB



### Single Pole



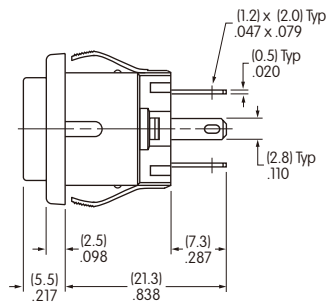
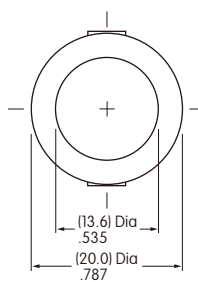
### Double Pole



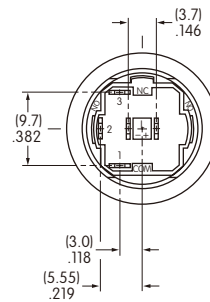
### Snap-in Mount



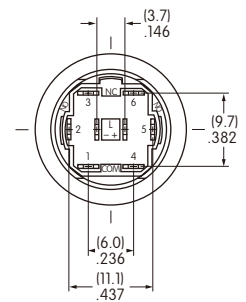
LP0115CMKW015CB



### Single Pole



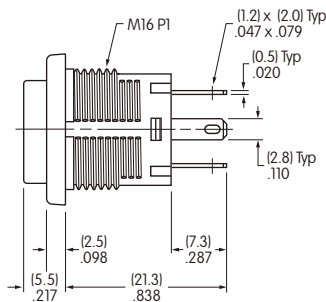
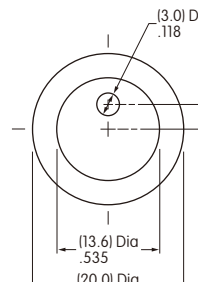
### Double Pole



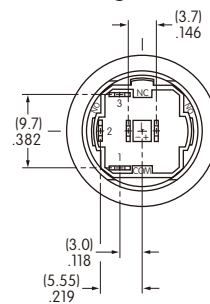
### Bushing Mount & Spot Illumination



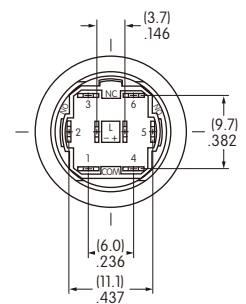
LP0115CCKW015CA



### Single Pole



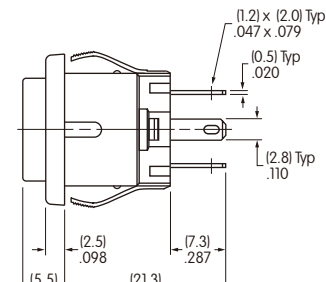
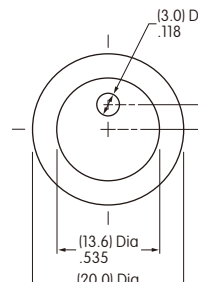
### Double Pole



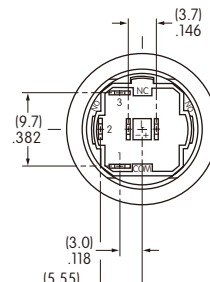
### Snap-in Mount & Spot Illumination



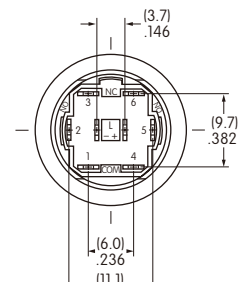
LP0115CMKW015CA



### Single Pole



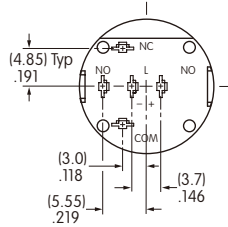
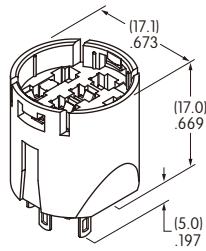
### Double Pole



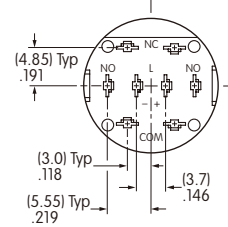
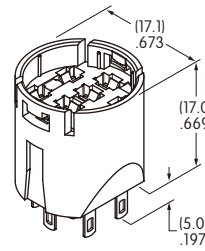
OPTIONAL ACCESSORIES

Adaptors

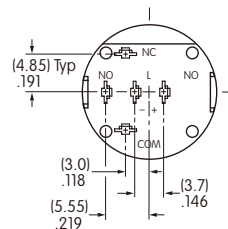
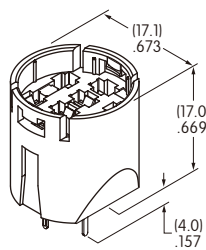
**AT716**  
Single Pole  
Solder Lug/  
Quick Connect  
Terminals



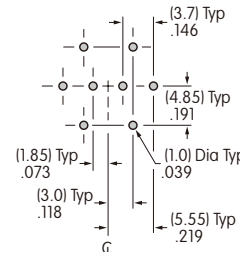
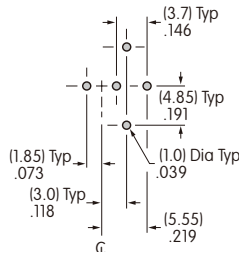
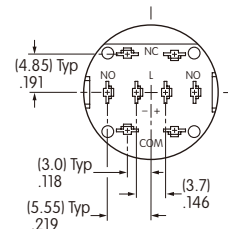
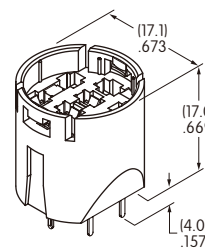
**AT717**  
Double Pole  
Solder Lug/  
Quick Connect  
Terminals



**AT718**  
Single Pole  
Straight PC  
Terminals



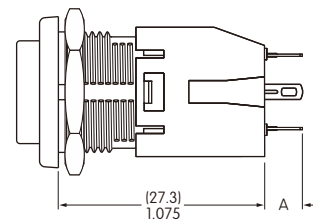
**AT719**  
Double Pole  
Straight PC  
Terminals



Material: Glass fiber reinforced polyamide Note: Order adaptors separately

Switch Dimensions Shown with Adaptor AT716

Dimension A: Solder Lug .197" (5.0mm); Straight PC .157" (4.0mm)  
Panel thickness for LP01 Bushing Mount: .079" ~ .256" (2.0mm ~ 6.5mm)



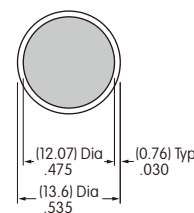
LEGENDS

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



Suggested Printable Area for LP01 Cap

**Recommended Methods:**  
Pad Print or Laser Etch on cap.  
Epoxy based ink is recommended.



Shaded area is printable area

Toggle  
Rockers  
Pushbuttons  
Illuminated PB  
Programmable  
Keylocks  
Rotaries  
Slides  
Tactiles  
Tilt  
Touch  
Indicators  
Accessories  
Supplement