

Distinctive Characteristics

Full face or spot illumination with incandescent lamps or multi-element LEDs, with or without resistors.

Choice of super bright LEDs in white, green, and blue as well as bright LEDs in red, amber, and green.

Combination bezel-barrier is an integral part of the switch and prevents accidental actuation.

Unique thermoplastic elastomer seal inside caps plus rolled sleeve of nitrile butadiene rubber at joining of housing and inner case, all for added protection to interior mechanism.

Dust and oil tight as well as splashproof panel seal models qualify to IP65 of IEC60529 Standards (similar to NEMA 4 and 13). Panel seal models provided with exterior o-ring.

Distinctive design of snap-action contacts for shock resistance, long life, and sensitive actuation.

High density design to give behind panel depth of less than one inch.

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

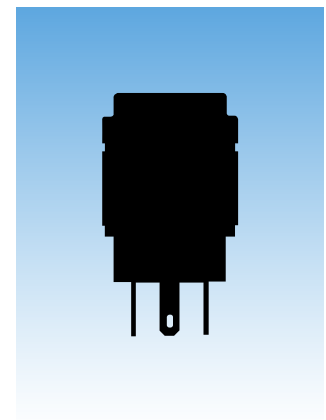
Latchdown for indication of circuit status, plus audible, tactile feedback with smooth, responsive operation.

Nonilluminated models available and shown in the Pushbutton section.

Matching indicators available and shown at the end of Section M.



Actual Size



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: Single pole: 1.47N for nonsealed; 1.67N for sealed
 Double pole: 2.75N for nonsealed; 2.94N for sealed
Contact Timing: Nonshorting (break-before-make)
Travel: Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)

Materials & Finishes

Housing/Bezel: Glass fiber reinforced polyamide (UL94V-0)
Snap-in Frame: Stainless steel
Base: Diallyl phthalate resin (UL94V-0)
Movable Contactor: Phosphor bronze with silver or gold plating
Movable Contacts: Silver alloy with silver plating or brass with gold plating
Stationary Contacts: Silver alloy or copper with gold plating
Switch Terminals: Phosphor bronze with tin plating
Lamp Terminals: Phosphor bronze with tin plating

Environmental Data

Operating Temp Range: -25°C through +50°C (-13°F through +122°F)
Humidity: 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock: 50G (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)
Sealing: IP65 of IEC60529 standard for panel seal models

Installation

Mounting Torque: 0.785Nm (6.95 lb•in) maximum
Soldering Time & Temperature: Manual Soldering: See Profile A in Supplement section.

Standards & Certifications

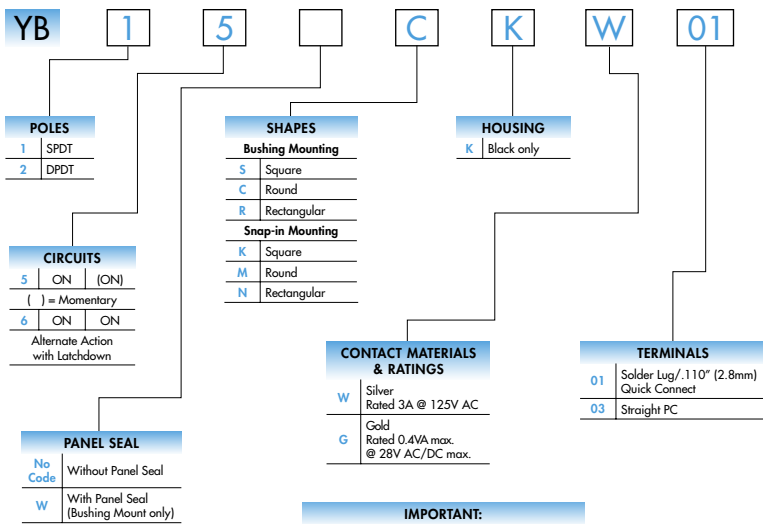


Flammability Standards: UL94V-0 housing & base
UL & C-UL Recognized: All solder lug models recognized at 3A @ 125/250V AC or 0.4VA @ 28V AC/DC maximum;
 UL File No. WOYR2.E44145; add "/U" to end of part number to order UL mark on switch;
 UL File No. WOYR8.E44145; add "/C-UL" to end of part number to order C-UL mark on switch.



CSA Certified: All solder lug models certified at 3A @ 125/250V AC or 0.4VA @ 28V AC/DC maximum;
 CSA File Nos. 023535-0-000; add "/C" to end of part number to order CSA mark on switch.

TYPICAL SWITCH ORDERING EXAMPLE



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

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
YB15CKW01-6F-JB



LAMPS	
Incandescent Lamp	
05	5-volt
12	12-volt

CAP TYPES & COLORS	
Solid Cap: Lens/Insert Colors	
BB	White/White
CB	Red/White
EB	Yellow/White
FB	Green/White
GB	Blue/White

LED for Spot Illuminated Cap	
LED Colors	
1C	Red
1D	Amber
1F	Green
1CF	Red/Green
Forward Voltage	
02	2-volt (no resistor)
05	5-volt
12	12-volt
24	24-volt

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

Super Bright LED	
LED Colors	
6B	White
6F	Green
6G	Blue


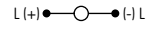
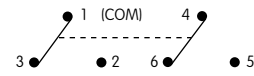
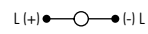
Bicolor LED for Full Face Illuminated	
LED Colors	
2CF	Red/Green
Forward Voltage	
02	2-volt (no resistor)
05	5-volt
12	12-volt
24	24-volt

LED Cap: Lens/Insert Colors	
JA	Clear/Black
JB	Clear/White
JC	Clear/Red
JE	Clear/Yellow
JF	Clear/Green

LED Cap: Lens/Insert Colors	
JB	Clear/White

LED Cap: Lens/Insert Colors	
JB	Clear/White

POLES & CIRCUITS

Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch/Lamp Schematics
		Normal	Down	Normal	Down	
SP	YB15 *YB16	ON ON	(ON) ON	1-3	1-2	Notes: Switch is marked with NC, NO, COM, L+, L-. Lamp circuit is isolated and requires external power source.  
DP	YB25 *YB26	ON ON	(ON) ON	1-3 4-6	1-2 4-5	 

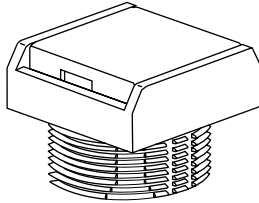
* When in latched position for the alternate circuit, cap position is .020" (0.5mm) above the built-in bezel.

PANEL SEAL

No Code

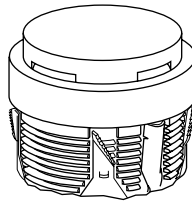
Without Panel Seal

Bushing
Mounting



Supplied with mounting nut.

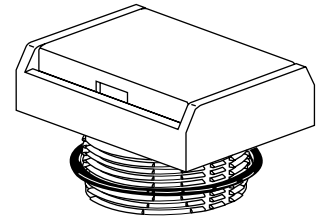
Snap-in
Mounting



W

With Panel Seal

Bushing
Mounting
only



Supplied with mounting nut and o-ring AT089.

SHAPES & MOUNTING TYPES

Bushing Mounting

Snap-in Mounting

S Square

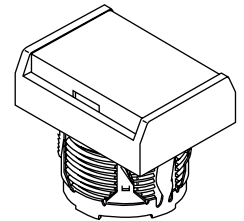
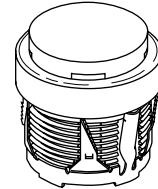
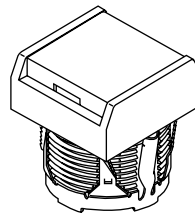
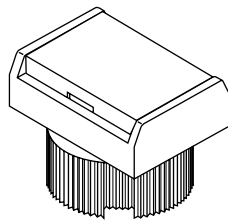
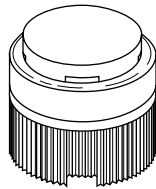
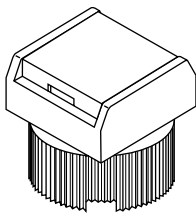
C Round

R Rectangular

K Square

M Round

N Rectangular



Bezel-barrier is an integral part of the switch body.

HOUSING

K Black

Housing available in black only. The 1-piece body and bezel-barrier have a matte finish.

CONTACT MATERIALS & RATINGS

W Silver Contacts

Power Level

3A @ 125/250V AC

G Gold Contacts

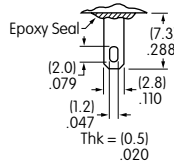
Logic Level

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

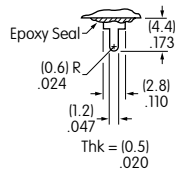
Complete explanation of operating range in Supplement section.

TERMINALS

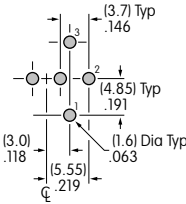
01 Solder Lug/
.110" (2.8mm) Quick Connect



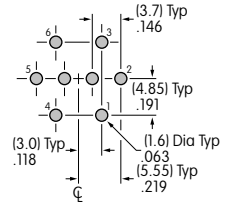
03 Straight PC



Single Pole




Double Pole



INCANDESCENT LAMP & SOLID CAP

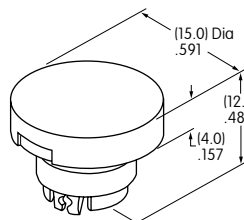
Electrical specifications are determined at a basic temperature of 25°C. Lamp circuit is independent of switch operation.
For dimension drawing of lamp see the Accessories & Hardware section.

AT611  T-1 Bi-pin		05	12	
	Voltage	V	5V AC	12V AC
	Current	I	115mA	60mA
	MSCP		.150	.150
	Endurance	Hours	7,000 average	
Ambient Temperature Range		-25°C ~ +50°C		

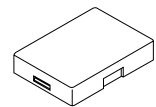
Solid Cap for Incandescent Lamp

Lens/Insert
Colors Available:

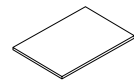
- BB** White/White
- CB** Red/White
- EB** Yellow/White
- FB** Green/White
- GB** Blue/White



AT3002
Round

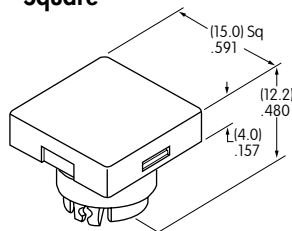


Translucent Colored Lens

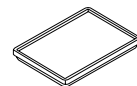
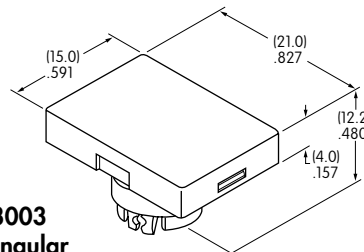


Translucent White Insert

AT3001
Square



AT3003
Rectangular



Translucent White Seal/Filter

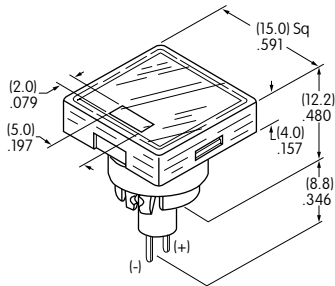


Incandescent Lamp AT611

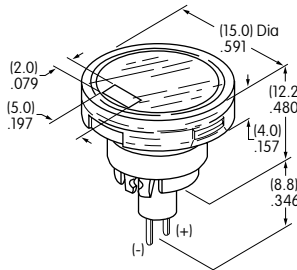
Materials: Polycarbonate (Lens & Insert)
Thermoplastic Elastomer (Seal/Filter)

SPOT ILLUMINATED CAP WITH BUILT-IN LED

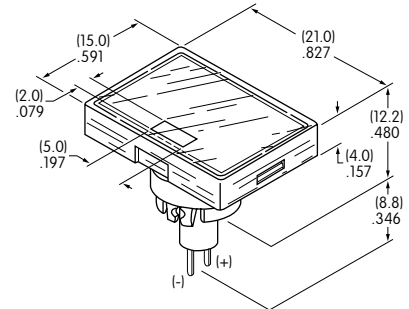
This spot-illuminated cap is factory assembled.



AT3010
Square



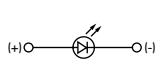
AT3011
Round



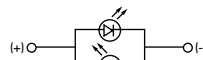
AT3012
Rectangular

Colors Available:					02	05	12	24		
1C	1D	1F	1CF		w/o Resistor	w/Resistor	w/Resistor	w/Resistor	Unit	
Red	Amber	Green	Red/Green							
Forward Peak Current					I_{FM}	20	15	15	12	mA
Continuous Forward Current					I_F	15	12.5	12.5	10	mA
Forward Voltage					V_F	2.1	5	12	24	V
Reverse Peak Voltage (not applicable to bicolor)					V_{RM}	5	5	5	5	V
Current Reduction Rate Above 25°C					ΔI_F	0.27	—	—	—	mA/°C
Ambient Temperature Range						-25 ~ +50			°C	

Without Resistor 2-volt

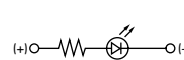


Single Color

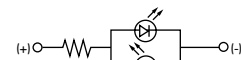


Bicolor

With Resistor 5, 12, 24-volt



Single Color



Bicolor

The electrical specifications shown are determined at a basic temperature of 25°C. LED circuit is isolated and requires external power source. Single color LEDs are colored in OFF state. Bicolor LED is translucent white in OFF state.

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.

Lens/Insert

Colors Available:

JA Clear/Black

JB Clear/White

JC Clear/Red

JE Clear/Yellow

JF Clear/Green



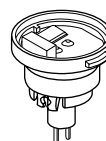
Clear Lens



Colored Insert



Seal



Built-in LED
(integral part
of the cap)


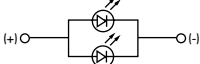
Example part number
when cap is ordered separate from
switch:
AT3010F02JA
for a
Square Spot Illuminated Cap
with Green 2-volt LED without resistor
Clear Lens and Black Insert

Materials: Polycarbonate (Lens & Insert) and Thermoplastic Elastomer (Seal)


BRIGHT LED & LED CAPS

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

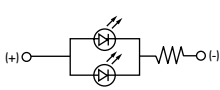
Electrical Specifications for Bright LED without Resistor

Bright AT628   T-1 Bi-pin	Colors Available: 5C Red 5D Amber 5F Green No Code No Resistor	Unit				
	LED Colors	Red	Amber	Green		
	Forward Peak Current	I_{FM}	40	40	40	mA
	Continuous Forward Current	I_F	26	26	26	mA
	Forward Voltage	V_F	1.9	2.0	2.2	V
	Reverse Peak Voltage	V_{RM}	4	4	4	V
	Current Reduction Rate Above 25°C	ΔI_F		0.50		mA/°C
	Ambient Temperature Range		-25 ~ +50			°C

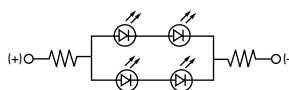
Electrical Specifications for Bright LED with Resistor

Bright AT634  T-1 ¼ Bi-pin	Colors Available: 5C Red 5D Amber 5F Green 05 12 24	Unit				
	Forward Peak Current	I_{FM}	—	—	—	mA
	Continuous Forward Current	I_F	25	20	10	mA
	Forward Voltage	V_F	5	12	24	V
	Reverse Peak Voltage	V_{RM}	4	8	16	V
	Current Reduction Rate Above 25°C	ΔI_F	—	—	—	mA/°C
	Ambient Temperature Range		-25 ~ +50			°C

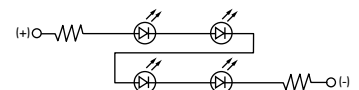
AT634
5-volt,
2-element
with Resistor



AT634
12-volt,
4-element
with Resistor



AT634
24-volt,
4-element
with Resistor

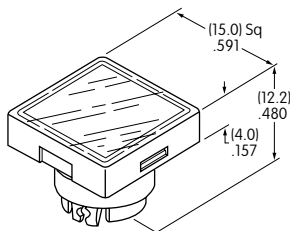


Cap for Bright LED

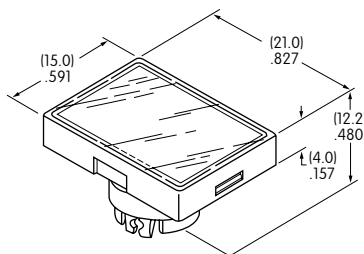
Lens/Insert
Colors Available:

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

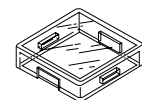
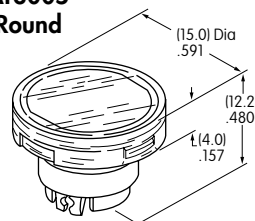
AT3004
Square



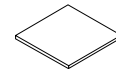
AT3006
Rectangular



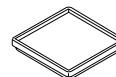
AT3005
Round



Transparent Clear Lens



Translucent Colored Insert



Translucent White Seal/Diffuser




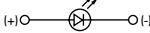

Bright LEDs
AT628 AT634

Materials: Polycarbonate (Lens & Insert)
Thermoplastic Elastomer (Seal/Diffuser)

SUPER BRIGHT LED & LED CAPS

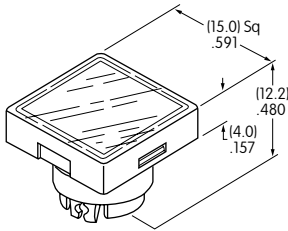
The electrical specifications shown are determined at a basic temperature of 25°C.
 LED circuit is isolated and requires external power source.
 If the source voltage exceeds the rated voltage, a ballast resistor is required.
 The resistor value can be calculated by using the formula in the Supplement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

Electrical Specifications for Super Bright LED

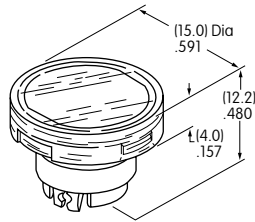
Super Bright AT625G Blue AT631B White AT632F Green	 	Colors:	6B	6F	6G	Unit
			White	Green	Blue	
 T-1 Bi-pin	Forward Peak Current	I_{FM}	30	30	30	mA
	Continuous Forward Current	I_F	20	20	20	mA
	Forward Voltage	V_F	3.6	3.5	3.6	V
	Reverse Peak Voltage	V_{RM}	5	5	5	V
	Current Reduction Rate Above 25°C	ΔI_F	0.50			mA/°C
	Ambient Temperature Range		-25 ~ +50			°C

Cap for Super Bright LED

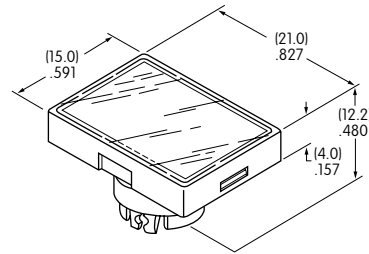
AT3014
Square



AT3015
Round

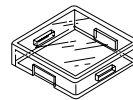


AT3016
Rectangular

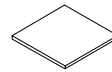


Lens/Insert
Colors Available:

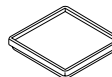
JB Clear/White



Transparent Clear Lens



Translucent White Insert



Translucent White Seal/Diffuser





Super Bright LEDs
AT625 AT631
AT632

Materials: Polycarbonate (Lens & Insert)
Thermoplastic Elastomer (Seal/Diffuser)

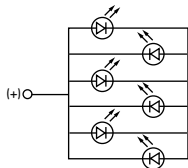
BICOLOR LED & LED CAPS

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

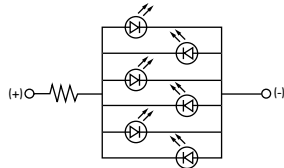
Electrical Specifications for Bicolor LED

Bicolor AT621  Red/Green  T-1 1/2 Bi-pin	Bicolor LED is translucent white in OFF state.	02	05	12	24	Unit	
	Forward Peak Current	I_{FM}	60	60	20	12	mA
	Continuous Forward Current	I_F	45	45	15	10	mA
	Forward Voltage	V_F	2.1	5	12	24	V
	Current Reduction Rate Above 25°C	ΔI_F	0.80	—	—	—	mA/°C
	Ambient Temperature Range		-25 ~ +50				°C

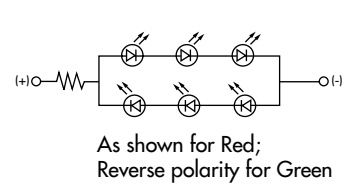
AT621
 Bicolor LED
 2-volt
 6-element
 w/o Resistor



AT621
 Bicolor LED
 5-volt
 6-element
 with Resistor

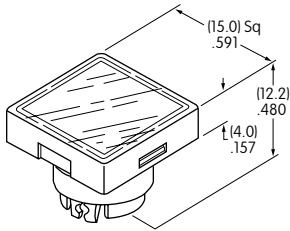


AT621
 Bicolor LED
 12 & 24-volt
 6-element
 with Resistor

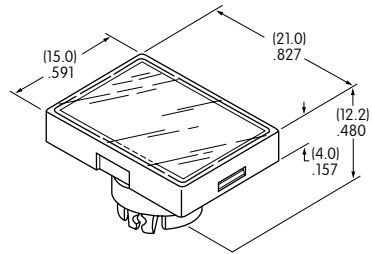


LED Caps

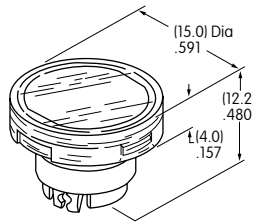
AT3004
 Square



AT3006
 Rectangular

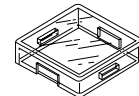


AT3005
 Round

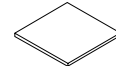


Lens/Insert
 Colors Available:

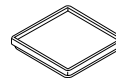
JB Clear/White



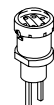
Transparent Clear Lens



Transparent White Insert



Translucent White Seal/Diffuser



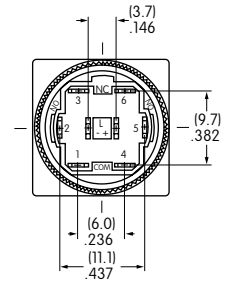
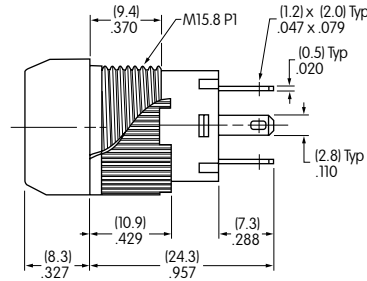
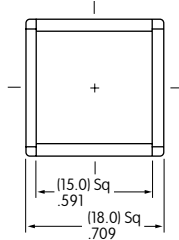
Bicolor LED AT621

Materials: Polycarbonate (Lens & Insert)
 Thermoplastic Elastomer (Seal/Diffuser)

TYPICAL SWITCH DIMENSIONS

Square • Bushing Mounting

Single & Double Pole

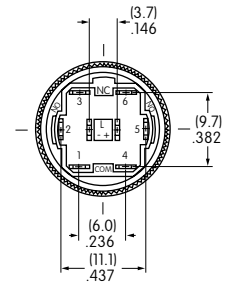
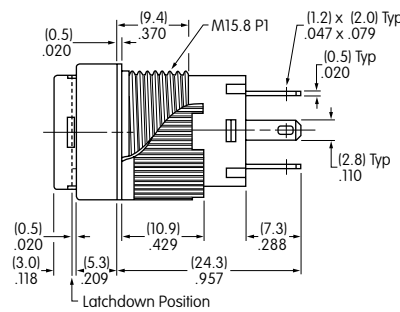
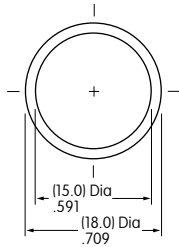


YB15KW01-12-CB

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

Round • Panel Seal

Single & Double Pole

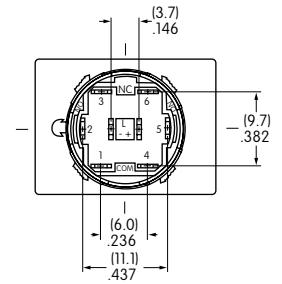
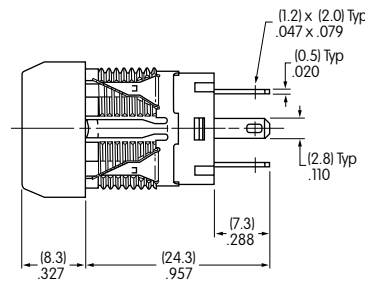
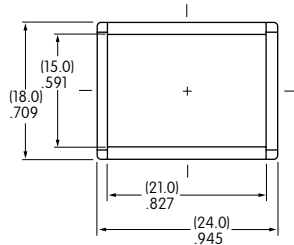


YB26WCKW01-12-EB

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

Rectangular • Snap-in Mounting

Single & Double Pole



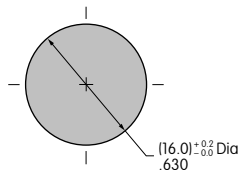
YB15NKW01-5C-JC

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

PANEL THICKNESS & CUTOUTS

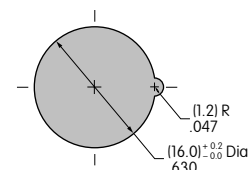
Bushing & Panel Seal Mount

Panel Thickness
.020" ~ .197"
(0.5mm ~ 5.0mm)



Snap-in Mount

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



OPTIONAL ACCESSORIES

Dust Covers and Protective Guards reduce depth of switch behind panel by .047" (1.2mm).

Panel Thickness Range with Dust Cover or Protective Guards:

Bushing Mounting
.020" ~ .150" (0.5mm ~ 3.8mm)

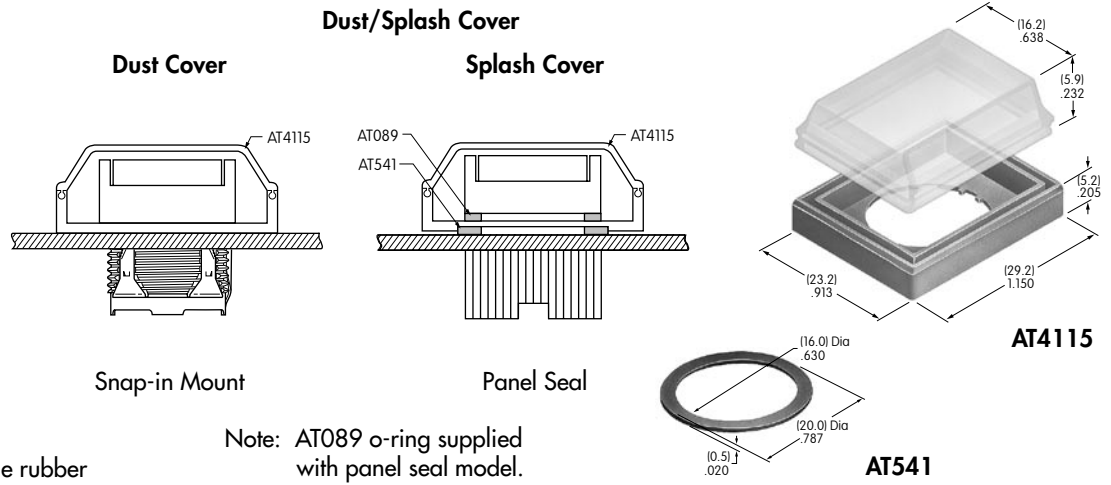
Snap-in Mounting
.020" ~ .091" (0.5mm ~ 2.3mm)

Panel Seal
.020" ~ .118" (0.5mm ~ 3.0mm)

AT4115 Dust Cover for Snap-in or Bushing Mount

AT4115 Splash Cover and AT541 O-ring for Bushing Mount

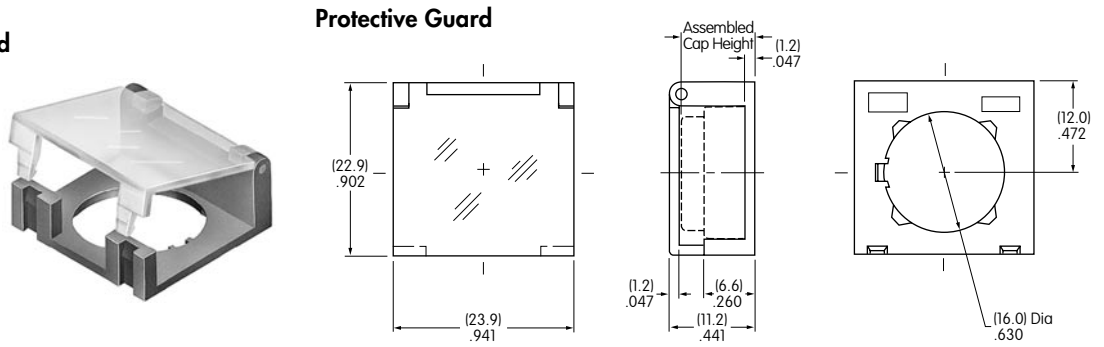
Materials:
Lid: Polyvinyl Chloride
Base: Polyamide
O-ring: Nitrile butadiene rubber



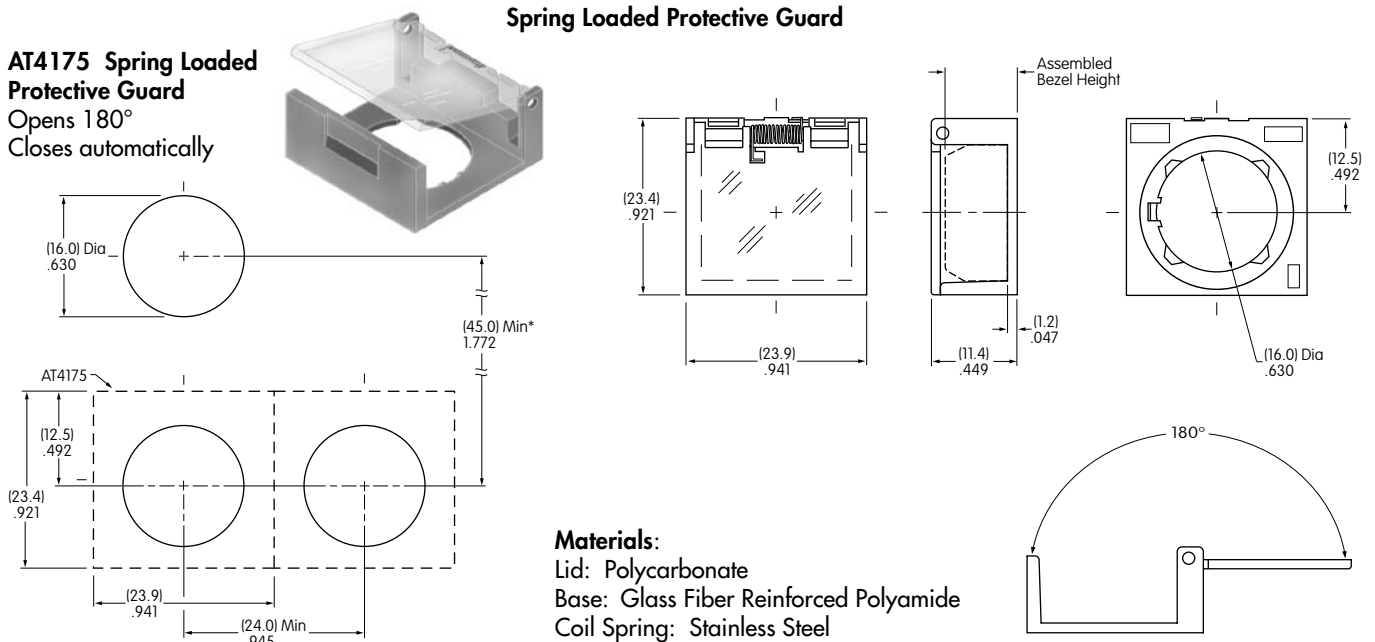
Note: AT089 o-ring supplied with panel seal model.

AT4072 Protective Guard
Opens 90°
Closes manually

Materials:
Lid: Polycarbonate
Base: Glass Fiber Reinforced Polycarbonate



AT4175 Spring Loaded Protective Guard
Opens 180°
Closes automatically

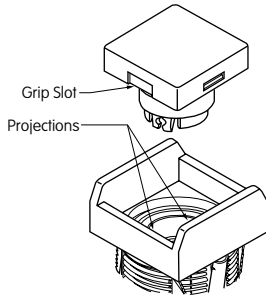


Materials:
Lid: Polycarbonate
Base: Glass Fiber Reinforced Polyamide
Coil Spring: Stainless Steel

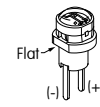
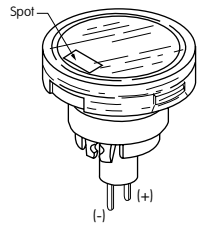
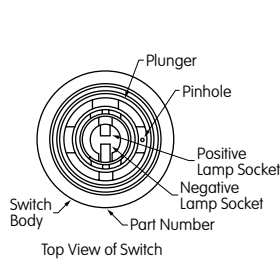
* Minimum dimension allows opening of cover to 180°

ASSEMBLY INSTRUCTIONS

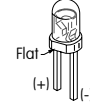
Cap Assembly



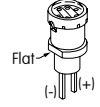
LED Polarity & Orientation in Lamp Socket



LED
AT628
AT634



LEDs
AT625G
AT631B AT632F

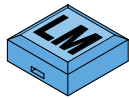


LED
AT621

Spot Illuminated Cap
with Built-in LED

The following installation tools are available: AT106 Socket Wrench for bushing mounting (Overtightening the mounting nut AT092 may damage the switch housing.); AT109 Cap Extractor; AT111 Lamping Tool.
Further details and dimensions are shown in the Accessories and Hardware section.

LEGENDS



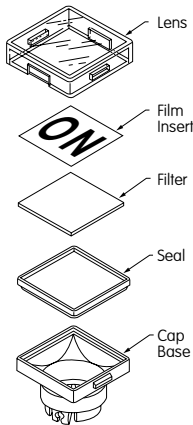
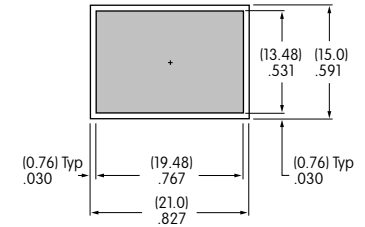
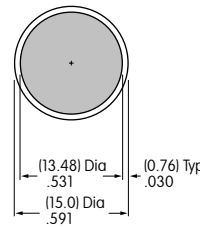
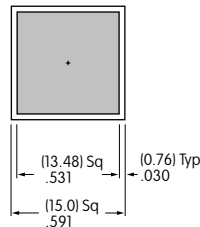
Easily create and submit your own legends using our new on-line Legend Maker.

Visit www.nkkswitches.com

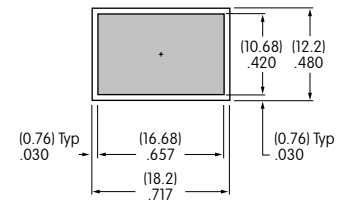
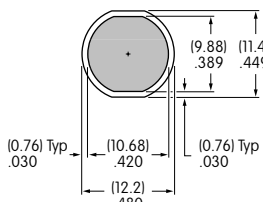
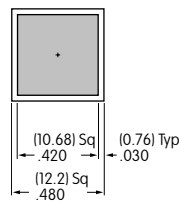
For other legend support options, customers may either contact the factory and request the YB Legend Packet, or utilize the general information and basic specifications presented below.

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

Shaded Areas Are Printable Areas for Lens



Shaded Areas Are Printable Areas for Film Insert



Film Material and Thickness:
Clear Polyester, 4 mil max.

Recommended Print Method:
Screen Print; Epoxy based ink is recommended.

Additional Methods

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