

We Make It Easy!

- 1. We assemble the parts for you – saves you time and money.**
Includes LEDs and accessories
- 2. Easy to order – all options and accessories displayed in easy-to-follow ordering table.**
No complicated footnotes or vague rules; straightforward navigation in one view
- 3. All of our switches are shipped complete, just as ordered.**
No incomplete or partial deliveries of subcomponents and accessories
- 4. Support – talk to our product specialists to discuss your needs.**
- 5. Easy to request samples.**

EASY SAMPLES		
Part Number for Sample		Standard Part Number
YB2-Red	is equivalent to	YB215CWCKW01/CUL-5C24-CB
YB2-Amber		YB215CWCKW01/CUL-5D24-EB
YB2-Green		YB215CWCKW01/CUL-5F24-FB

Note: Samples are available in all configurations using standard part numbers. See the following pages for many more options for the YB2.

EASY SAMPLE DESCRIPTION

YB2-Red



Normally Open & Normally Closed Contacts
cULus Marking on Switch

Distinctive Characteristics

22mm pushbutton with the shortest above-panel dimension (1.8mm) in the industry for splashproof design.

Meets IP65 of IEC60529 standards (similar to NEMA 4 and 13), providing dust tight and splashproof panel seal protection.

Tamper resistant 19mm diameter actuator.

Short body of .965" (24.5mm) conserves behind-panel space.

Distinctive long stroke and light touch actuation for clear indication of circuit status.

Choice of cap colors includes clear, red, green, amber, or metallic silver for enhanced panel appearance.

Metallic silver cap option has bright ring illumination.

Brilliant illumination with multiple LED colors.

Bezel color options in silver or black.

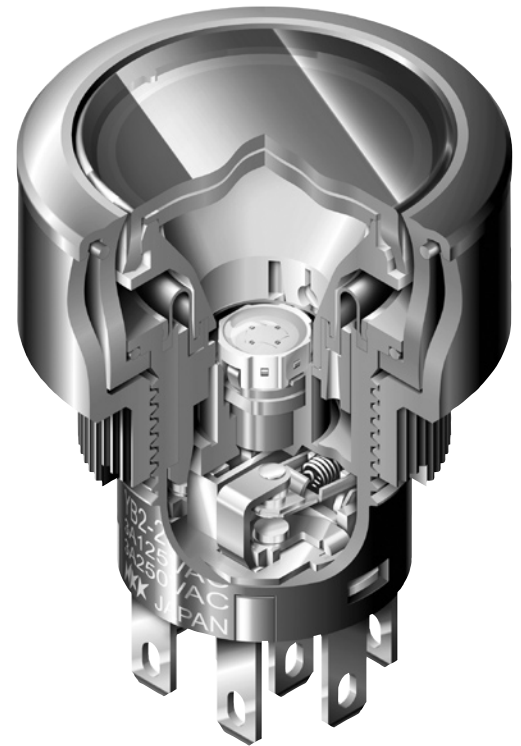
Available in momentary and alternate action with latchdown.

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

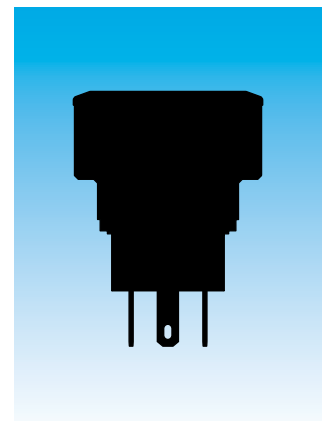
Combination solder lug and .110" quick connect terminals. Terminals are epoxy sealed to lock out flux, dust, solvents, and other contaminants, as well as to secure terminals and improve contact stability.

Custom legends on actuator available.

Nonilluminated models available.



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)

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: 1.5N
 Double pole: 3.0N
Contact Timing: Nonshorting (break-before-make)
Travel: Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)

Materials & Finishes

Bezel: Black: Glass fiber reinforced polyamide (UL94V-0); Silver: Polycarbonate
Housing: Glass fiber reinforced polyamide (UL94V-0)
Base: Diallyl phthalate resin (UL94V-0)
Movable Contactor: Phosphor bronze with silver or gold plating
Movable Contacts: Phosphor bronze & silver alloy
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) for illuminated models;
 -25°C through +70°C (-13°F through +158°F) for nonilluminated models
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

Installation

Mounting Torque: 0.785Nm (6.95 lb•in) maximum
Soldering Time & Temperature: Manual Soldering: 390°C maximum for 4 seconds maximum

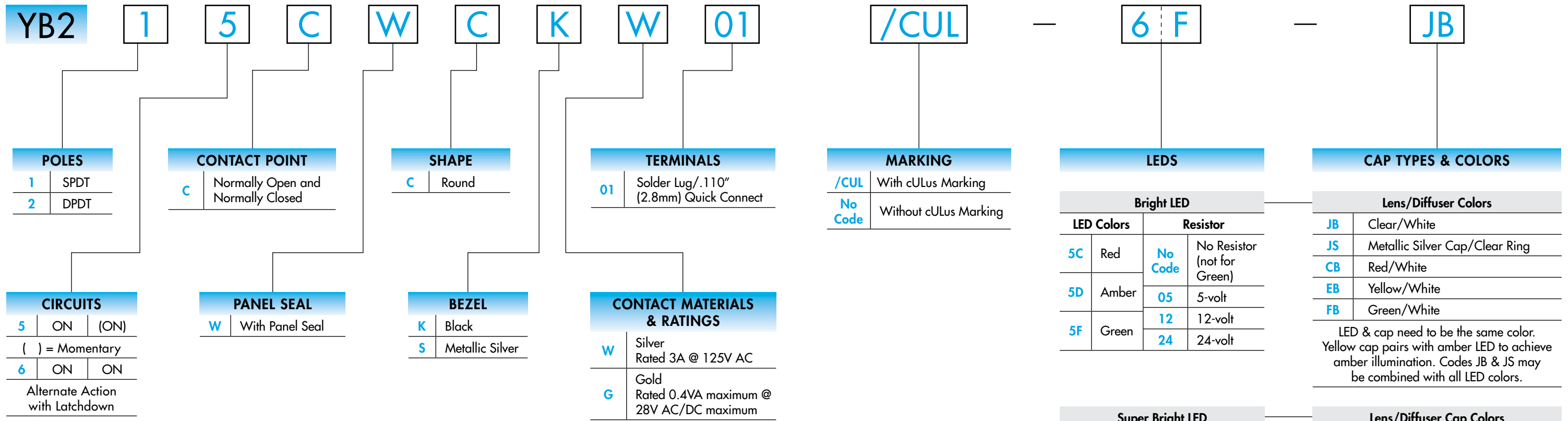
Standards & Certifications



Flammability Standards: UL94V-0 housing, base & black bezel
cULus Recognized: All solder lug models recognized at 3A @ 125/250V AC or 0.4VA @ 28V AC/DC maximum;
 UL File No. E44145
 Note: YB2 switch with metallic silver bezel option is UL pending

RoHS compliant

TYPICAL SWITCH ORDERING EXAMPLE



DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

YB215CWCKW01/CUL-6F-JB






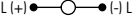
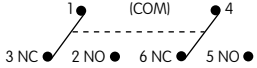
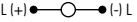


IMPORTANT:



YB2 Series Pushbuttons with metallic silver bezel option are UL pending.

POLES & CIRCUITS

		Plunger Position () = Momentary		Connected Terminals		Throw & Switch/Lamp Schematics
Pole	Model	Normal 	Down 	Normal 	Down 	
SP	YB215 YB216	ON ON	(ON) ON	1-3	1-2	Notes: Switch is marked with NC, NO, COM, L+, L-. Lamp circuit is isolated and requires an external power source.  
DP	YB225 YB226	ON ON	(ON) ON	1-3 4-6	1-2 4-5	 

CONTACT POINT

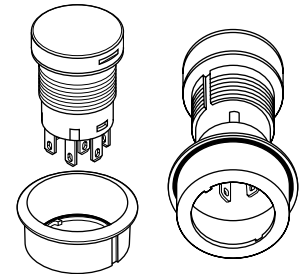
C Normally Open and Normally Closed

Contact points are both Normally Open and Normally Closed.

PANEL SEAL

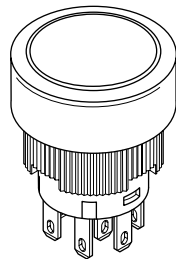
W Panel Seal

Two o-rings provide panel seal protection meeting IP65 of IEC60529 standards.



SHAPE

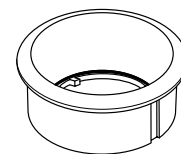
C Round



BEZEL

K Black

S Metallic Silver



CONTACT MATERIALS & RATINGS

W Silver Contacts

Power Level: 3A @ 125/250V AC

Switch base is green

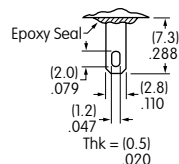
G Gold Contacts

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

Switch base is red

TERMINALS


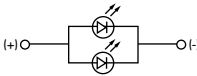
01 Solder Lug/
.110" (2.8mm) Quick Connect




BRIGHT & SUPER BRIGHT LEDs

The electrical specifications shown are determined at a basic temperature of 25°C. LED circuit is isolated and requires an external power source. If the source voltage exceeds the rated voltage, a ballast resistor is required. Base of AT634 and AT636 is Black for 5V, Light Blue for 12V and Gray for 24V.

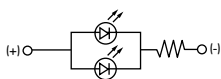
Electrical Specifications for Bright LED without Resistor

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

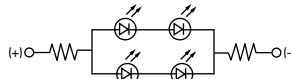
Electrical Specifications for Bright Red & Amber LED with Resistor

Bright AT634  T-1 ¼ Bi-pin	Colors Available: 5C Red 5D Amber 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	

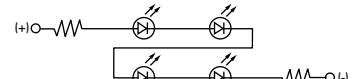
AT634
5-volt,
2-element
with Resistor




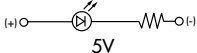
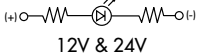

AT634
12-volt,
4-element
with Resistor






AT634
24-volt,
4-element
with Resistor



Electrical Specifications for Bright Green LED with Resistor

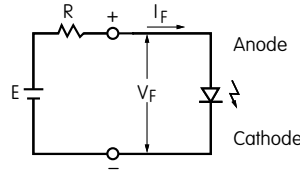
Bright AT636  T-1 ¼ Bi-pin  5V  12V & 24V	Colors Available:  5F Green 05 12 24		Unit			
	Forward Peak Current	I_{FM}	—	—	—	mA
	Continuous Forward Current	I_F	11	9.5	8.7	mA
	Forward Voltage	V_F	5	12	24	V
	Reverse Peak Voltage	V_{RM}	5	5	5	V
	Current Reduction Rate Above 25°C	ΔI_F	—	—	—	mA/°C
Ambient Temperature Range			-25 ~ +50	°C		

Electrical Specifications for Super Bright LED

Super Bright AT625G Blue AT631B White AT632F Green  T-1 Bi-pin	 	Colors: 6B White 6F Green 6G Blue	Unit			
	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	

BALLAST RESISTOR CALCULATION FOR LEDS

If the source voltage is greater than the rated voltage of a lamp or LED, a ballast resistor must be connected in series with the lamp. This circuit diagram and formula will assist in calculating the value of the required ballast resistor.



$$R = \frac{E - V_F}{I_F}$$

Where: R = Resistor Value (Ohms)
 E = Source Voltage (V)
 V_F = Forward Voltage (V)
 I_F = Forward Current (A)

CAPS & CAP COLORS

AT3017 Cap for Bright LED

AT3018 Cap for Super Bright LED

AT3019 Cap for Nonilluminated

AT3020 Cap with Illumination Ring for Bright or Super Bright LED

Lens/Diffuser Colors Available:

Lens/Diffuser Colors Available:

Cap Color Available:

Cap Color Available:

- JB** Clear/White
- CB** Red/White
- EB** *Yellow/White
- FB** Green/White

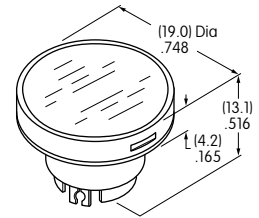
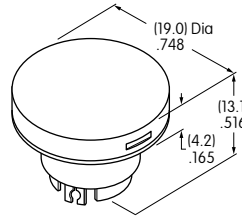
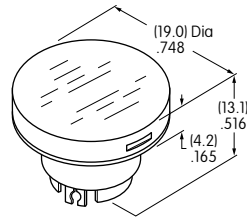
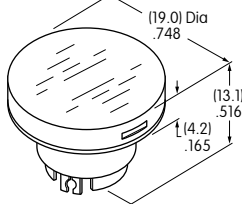
- JB** Clear/White

- S** Metallic Silver

- JS** Metallic Silver with Clear Ring

Note: AT3017 Cap can also be used without illumination.

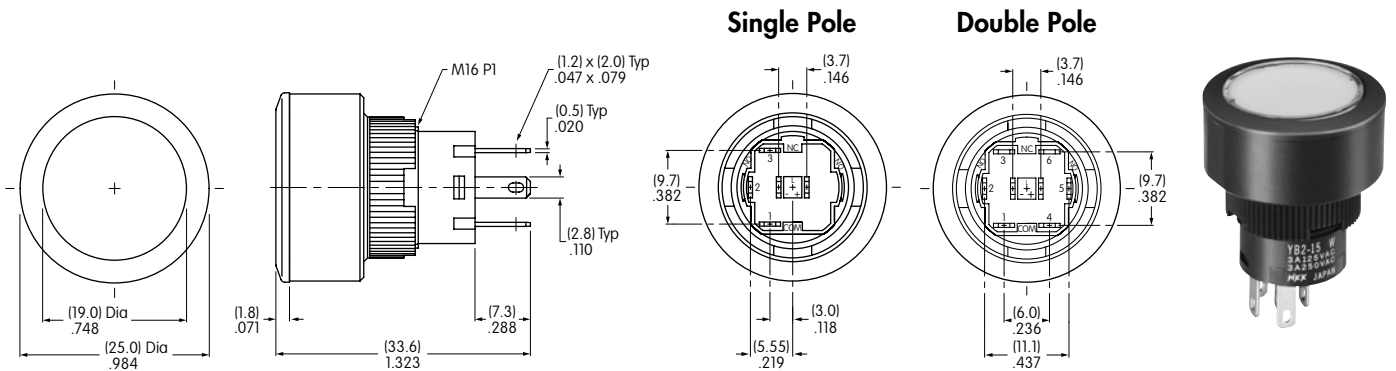
*Yellow cap pairs with amber LED to achieve amber illumination.



Material for Lens & Diffuser: Polycarbonate

Materials
 Lens: Polycarbonate
 Insert: Polyester

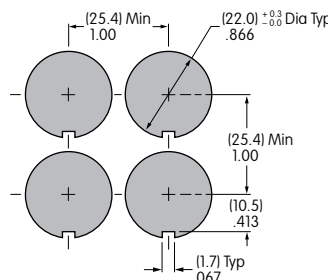
TYPICAL SWITCH DIMENSIONS



YB215CWCW01/CUL-6F-JB

PANEL THICKNESS & CUTOUT

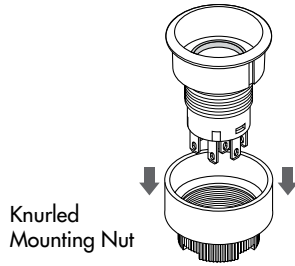
Panel Thickness
 .020" ~ .197"
 (0.5mm ~ 5.0mm)



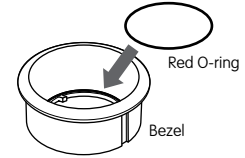
Side-by-side Mounting

ASSEMBLY INSTRUCTIONS

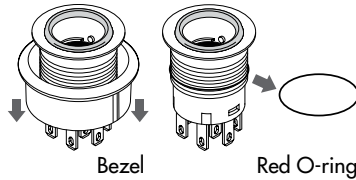
1. Remove knurled mounting nut.



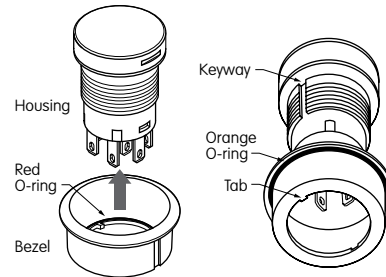
5. Install the red o-ring which was removed in step 2 at the inside bottom of the bezel.



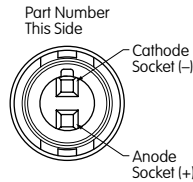
2. Remove bezel and red o-ring from housing. There are two o-rings in this assembly: one is red, one is orange.



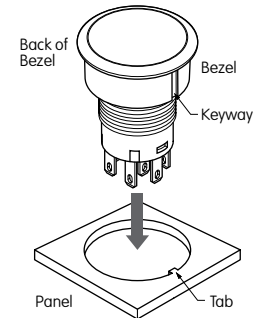
6. Align tab inside of the bezel with keyway on housing and bring bezel back into its original position.



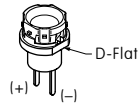
3. Install LED.



7. Before installing into panel, make sure that the orange o-ring is present at the back of the bezel. Align keyway on bezel with tab in panel and push switch all the way into the panel.



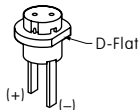
LEDs
AT634 & AT636



Align D-flat on LED with Part Number on switch for appropriate polarity and insert LED into base.



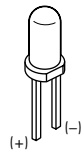
LED AT628



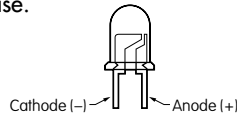
Align D-flat on LED with Part Number on switch for appropriate polarity and insert LED into base.



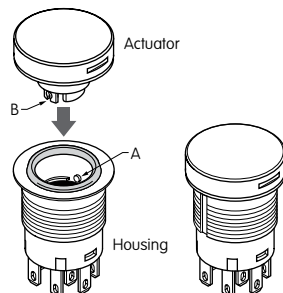
LED AT625



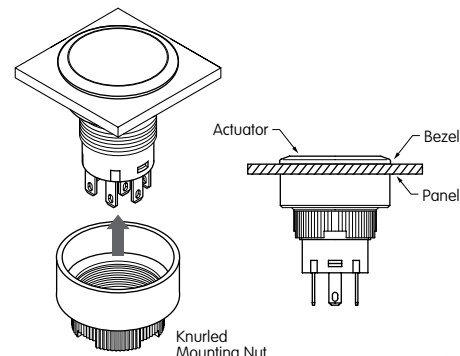
The larger metal part within the LED represents the cathode (-). Align LED for appropriate polarity and insert LED into base.



4. Align tabs (B) on both sides of actuator with the projections (A) inside of the housing and push actuator firmly down to snap in.



8. Attach mounting nut behind panel and tighten. Make sure that bezel and actuator fit properly and that there is no space between bezel and panel. Do not overtighten. Mounting torque: 0.785Nm (6.95 lb•in) maximum. Optional socket wrench AT106 available.



AT106 Socket Wrench

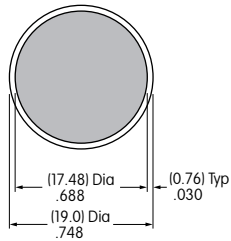


LEGENDS

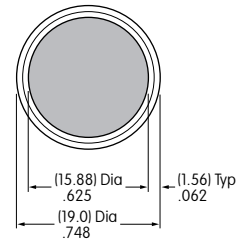
General information and basic specifications are presented here for customers who want to do their own legends.

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

**Shaded Area is Printable Area for Caps
AT3017, AT3018 and AT3019**



**Shaded Area is Printable Area for Cap
AT3020 (with clear ring for illumination)**



Additional Methods

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

HANDLING & PRECAUTIONS



LEDs are electrostatic sensitive devices. When installing and handling LEDs, use an electrostatic protected work station to prevent LED damage.