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 Temperature Range: –25°C through +50°C (–13°F through +122°F) for Illuminated
–25°C through +70°C (–13°F through +158°F) for Nonilluminated
Humidity: 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock: 50G (490m/s^2) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)
Sealing: IP65 of IEC60529 standard

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 or metallic silver bezel
UL: File No. E44145
All solder lug models recognized at 3A @ 125/250V AC or 0.4VA @ 28V AC/DC maximum.
Add "/CUL" to end of part number to order cULus mark 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.

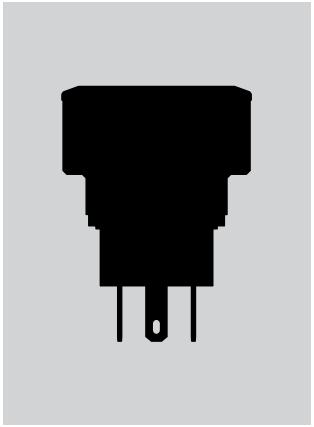
Crisp actuation and clear circuit status provided by snap-action contact mechanism. Arc barrier protects against crossover.

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.



Actual Size



TYPICAL SWITCH ORDERING EXAMPLE

YB2 [1] [5] [C] [W] [C] [K] [W] [01] — [6] [F] — [JB]

Poles

1	SPDT
2	DPDT

Contact Point

C	Normally Open and Normally Closed

Shape

C	Round

Terminals

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

Circuits

5	ON	(ON)
( ) = Momentary		
6	ON	ON
Alternate Action with Latchdown		

Panel Seal

W	With Panel Seal

Bezel

K	Black
S	Metallic Silver

Contact Materials & Ratings

W	Silver Rated 3A @ 125V AC
G	Gold Rated 0.4VA maximum @ 28V AC/DC maximum

LEDS

Bright LED

LED Colors		Resistor	
5C	Red	No Code	No Resistor (not for Green)
5D	Amber	05	5-volt
5F	Green	12	12-volt
		24	24-volt

Super Bright LED

6B	White
6F	Green
6G	Blue

Nonilluminated

N	No Lamp

Cap Types & Colors

Lens/Diffuser Colors

JB	Clear/White
JS	Metallic Silver Cap/Clear Ring
CB	Red/White
EB	Yellow/White
FB	Green/White

LED & cap need to be the same color. Yellow cap pairs with amber LED to achieve amber illumination. Codes JB & JS may be combined with all LED colors.

Lens/Diffuser Cap Colors

JB	Clear/White
JS	Metallic Silver Cap/Clear Ring

Cap Color

S	Metallic Silver
JB	Clear/White
CB	Red/White
EB	Yellow/White
FB	Green/White

IMPORTANT:

Switches are supplied without cULus marking unless specified. Specific models & ratings noted on General Specifications page.

* Wire harness & cable assemblies offered only in Americas

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

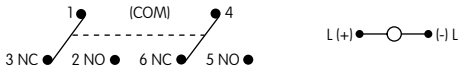
YB215CWCKW01-6F-JB



Series YB2

NEW → 22mm Panel Seal Pushbuttons

POLES & CIRCUITS

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

CONTACT POINT

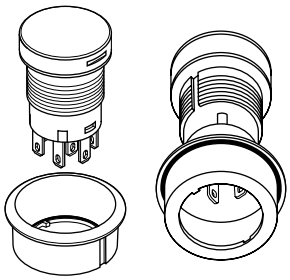
C **Normally Open and Normally Closed**

Contact points are both Normally Open and Normally Closed.

PANEL SEAL

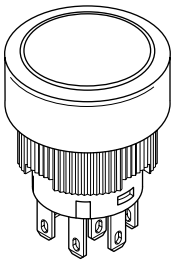
W **Panel Seal**

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



SHAPE

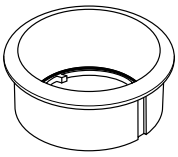
C **Round**



BEZEL

K **Black**

S **Metallic Silver**



CONTACT MATERIALS & RATINGS

W **Silver Contacts**

Power Level: 3A @ 125/250V AC

Switch base is green

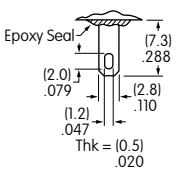
G **Gold Contacts**

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

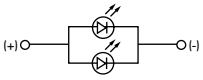
The electrical specifications shown are determined at a basic temperature of 25°C. LED circuit is isolated and requires an external power source. If the source voltage exceeds the rated voltage, a ballast resistor is required. Base of AT634 and AT636 is Black for 5V, Light Blue for 12V and Gray for 24V.

Electrical Specifications for Bright LED without Resistor

Bright AT628



T-1 Bi-pin



Colors Available: 5C Red, 5D Amber, No Code No Resistor

		LED Colors		Unit
		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

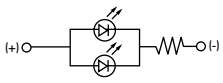


T-1¼ Bi-pin

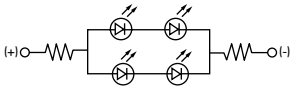
Colors Available: 5C Red, 5D Amber

		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

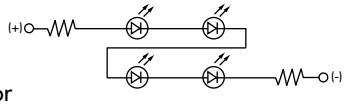
AT634 5-volt, 2-element with Resistor



AT634 12-volt, 4-element with Resistor



AT634 24-volt, 4-element with Resistor

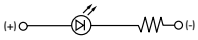


Electrical Specifications for Bright Green LED with Resistor

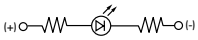
Bright AT636



T-1¼ Bi-pin



5V



12V & 24V

Colors Available: ATTENTION ELECTROSTATIC SENSITIVE DEVICES, 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

ATTENTION ELECTROSTATIC SENSITIVE DEVICES



Colors:

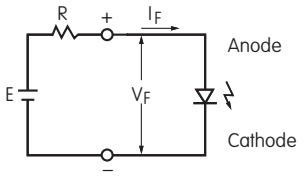
		6B White	6F Green	6G Blue	Unit
Forward Peak Current	I_{FM}	30	30	30	mA
Continuous Forward Current	I_F	20	20	20	mA
Forward Voltage	V_F	3.6	3.5	3.6	V
Reverse Peak Voltage	V_{RM}	5	5	5	V
Current Reduction Rate Above 25°C	ΔI_F	0.50			mA/°C
Ambient Temperature Range		−25 ~ +50			°C

Series YB2

NEW → 22mm Panel Seal Pushbuttons

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.



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

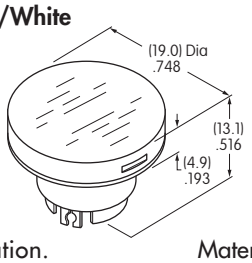
Where: R = Resistor Value (Ohms)
E = Source Voltage (V)
V_F = Forward Voltage (V)
I_F = Forward Current (A)

CAPS & CAP COLORS

AT3017 Cap for Bright LED

Lens/Diffuser Colors Available:

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

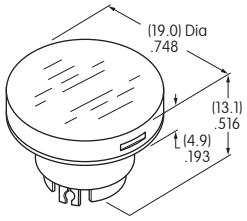


*Yellow cap pairs with amber LED to achieve amber illumination.

AT3018 Cap for Super Bright LED

Lens/Diffuser Colors Available:

- **JB** Clear/White

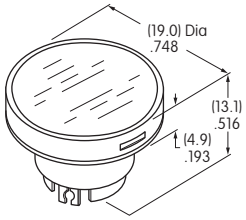


AT3019 Cap for Nonilluminated

Cap Color Available:

- **S** Metallic Silver

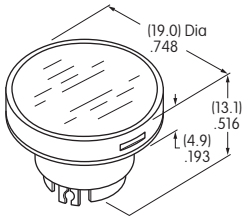
Note: AT3017 Cap can also be used without illumination.



AT3020 Cap with Illumination Ring for Bright or Super Bright LED

Cap Color Available:

- **JS** Metallic Silver with Clear Ring

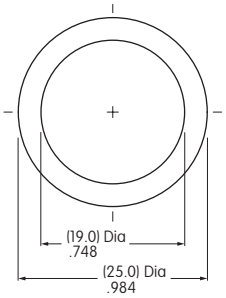


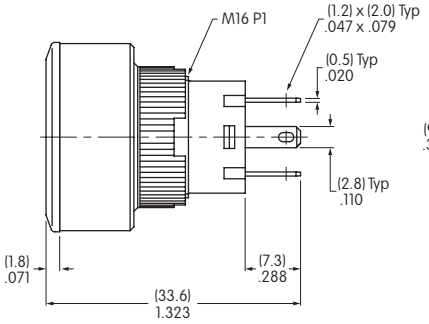
Material for Lens & Diffuser: Polycarbonate

Materials
Lens: Polycarbonate
Insert: Polyester

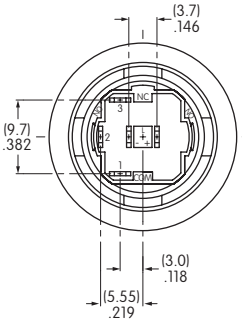
TYPICAL SWITCH DIMENSIONS



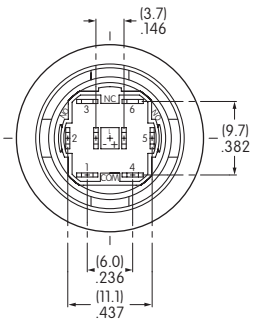




Single Pole



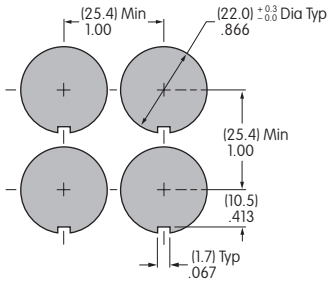
Double Pole



YB215CWCKW01-6F-JB

PANEL THICKNESS & CUTOUT

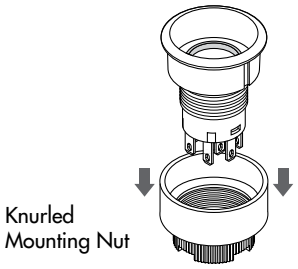
Panel Thickness
.020" ~ .197"
(0.5mm ~ 5.0mm)



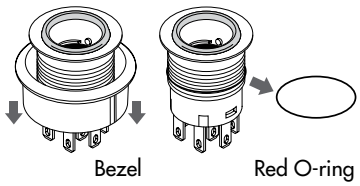
Side-by-side Mounting

ASSEMBLY INSTRUCTIONS

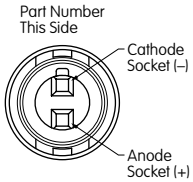
1. Remove knurled mounting nut.



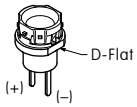
2. Remove bezel and red o-ring from housing. There are two o-rings in this assembly: one is red, one is orange.



3. Install LED.



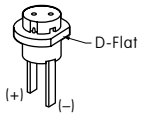
LEDs
AT634 & AT636



ATTENTION
ELECTROSTATIC
SENSITIVE DEVICES

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

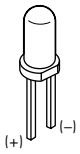
LED AT628



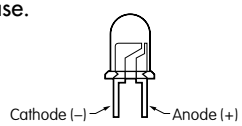
Align D-flat on LED with Part Number on switch for appropriate polarity and insert LED into base.

ATTENTION
ELECTROSTATIC
SENSITIVE DEVICES

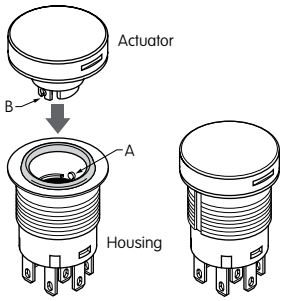
LEDs AT625G,
AT631B,
AT632F



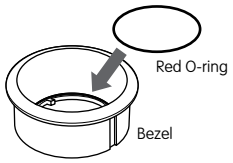
The larger metal part within the LED represents the cathode (–). Align LED for appropriate polarity and insert LED into base.



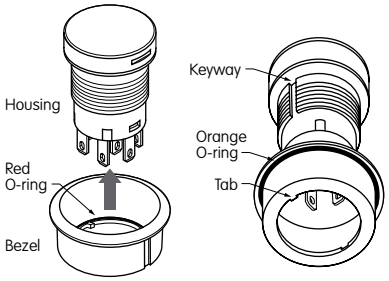
4. Align tabs (B) on both sides of actuator with the projections (A) inside of the housing and push actuator firmly down to snap in.



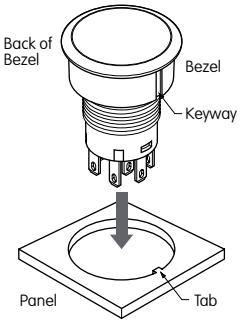
5. Install the red o-ring which was removed in step 2 at the inside bottom of the bezel.



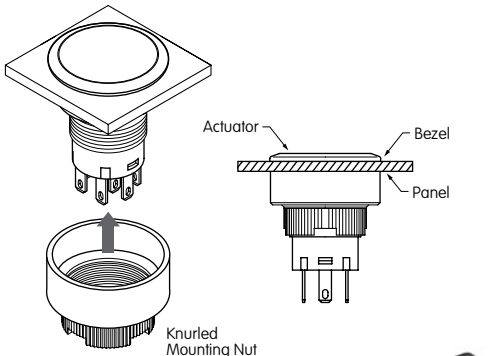
6. Align tab inside of the bezel with keyway on housing and bring bezel back into its original position.



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.



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.





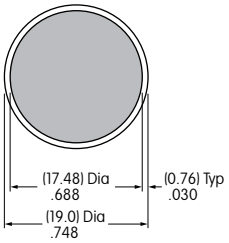
AT106 Socket Wrench

LEGENDS

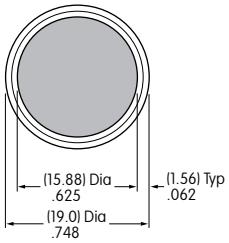
NKK Switches can provide custom legends for caps. Contact factory for more information.

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

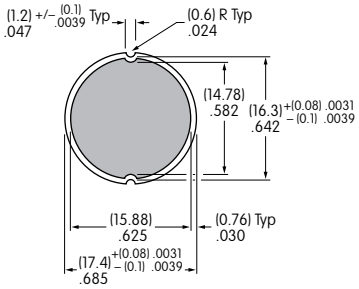
Shaded Area is Printable Area for Caps
AT3017, AT3018 and AT3019



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



Shaded Area is Printable Area for Film Inserts



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

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

HANDLING & PRECAUTIONS

ATTENTION
ELECTROSTATIC
SENSITIVE DEVICES

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