

#### Features/Benefits

- Long travel
- Available with LED
- Long life contact design
- Epoxy terminal seal compatabile with bottom wash cleaning
- RoHS compliant models available

### Typical Applications

- Instrumentation
- Computers and peripherals
- Telecommunications and networking equipment



### **Specifications**

8060 Series

CONTACT RATING: Q contact material: 6 AMPS @ 120 V AC or 28 V DC; 3 AMPS @ 250 V AC. See page A-59 for additional ratings.

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 20 mΩ typ. initial @

2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE:  $10^9\Omega$  min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -30°C to 65°C

SOLDERABILITY: Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

CAP INSTALLATION FORCE: 10 lbs. maximum permissible.

NOTE: Any models supplied with P. R. S. Q. B or G contact material are RoHS compliant.

NOTE: Specifications and materials listed above are for switches with standard options For information on specific and custom switches, consult Customer Service Center.

#### **Materials**

CASE: Glass filled nylon 6/6 or diallyl phthalate (DAP), flame retardant (UL 94V-0).

PLUNGER: S, S1, S2 Options: Glass filled nylon or glass filled polyester (PBT) (UL 94V-0). L, L1 Options: Brass, nickel plated.

CAP & FRAME: Nylon, black standard.

BUSHING: Brass or zinc, nickel plated.

HOUSING: Stainless steel.

SWITCH SUPPORT: Brass or steel, matte-tin plated.

END CONTACTS: Q contact material: Coin silver, silver plated. See page A-59 for additional contact materials.

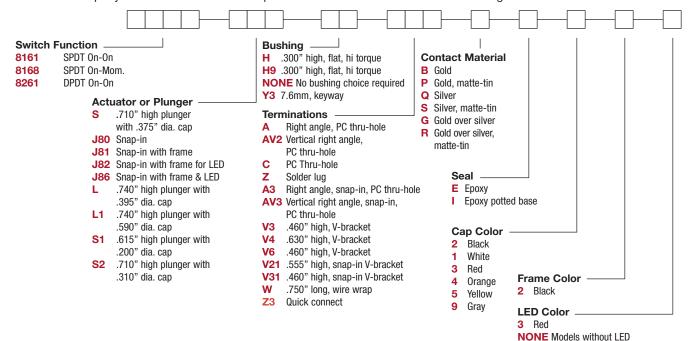
CENTER CONTACT & ALL TERMINALS: Q contact material: Copper alloy, silver plated. See page A-59 for additional contact materials.

TERMINAL SEAL: Epoxy. Refer to soldering and cleaning in Technical Data Chapter.

HARDWARE: Nut & Locking Ring: Brass, nickel plated; Lockwasher: Steel, nickel plated.

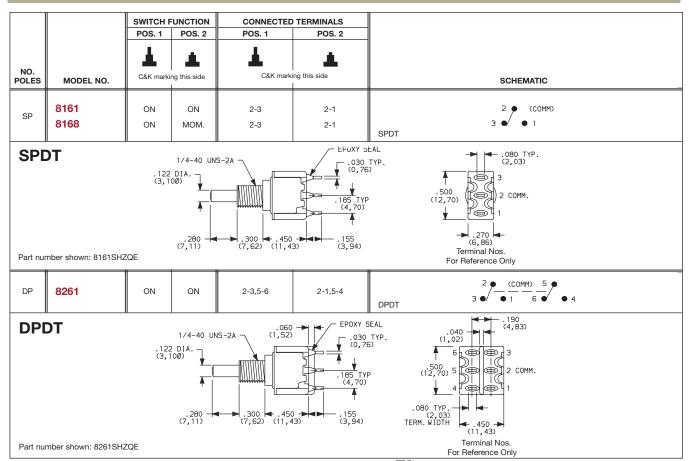
#### **Build-A-Switch**

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages A-53 thru A-61. For additional options not shown in catalog, consult Customer Service Center. All models have epoxy terminal seal and are compatible with all "bottom-wash" PCB cleaning methods.





#### ----**SWITCH FUNCTION**



MOM. = Momentary

All models c with all options when ordered with G or Q contact material.

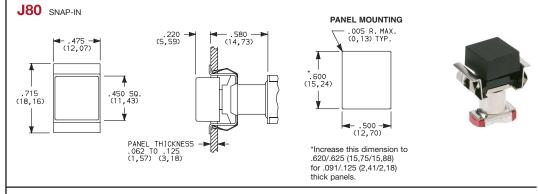
### **ACTUATOR—SNAP-IN FRONT MOUNT**

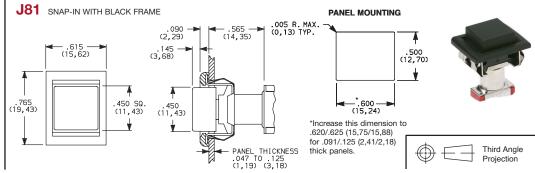
OPTION CODE	CAP COLOR			
2	BLACK			
1	WHITE			
3	RED			
4	ORANGE			
5	YELLOW			
9	GRAY			

Cap Finish: matte. Other colors available, consult Customer Service Center

Available with C, W, Z or Z3 terminations.

NOTE: Caps & frames available separately, see pages A-60 and A-61.







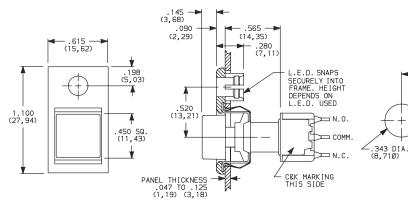
### 8060 Series

### **Alternate Action and Momentary Pushbutton Switches**

### ACTUATOR - SNAP-IN FRONT MOUNT -

**J82** SNAP-IN WITH BLACK FRAME FOR LED





Available with C. W. Z or Z3 terminations

### \* Increase this dimension to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thick panels.

- .600 <del>\*</del> (15,24)

PANEL MOUNTING

- .520 -(13,21)

.005 R. MAX. (0,13) TYP.

#### LED not included.

For LED information, see page A-61.

NOTE: Caps & frames available separately, see pages A-60 and A-61.

Other colors available, consult Customer Service Center.

OPTION CODE	CAP COLOR				
2	BLACK				
1	WHITE RED				
3					
4	ORANGE				
5	YELLOW				
9	GRAY				

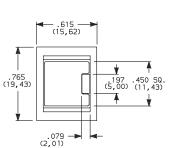
### **ACTUATOR -- SNAP-IN FRONT MOUNT**

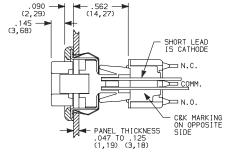


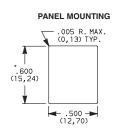
**J86** SNAP-IN WITH BLACK FRAME AND LED











\* Increase this dimension to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thick panels.

Available with C, W, Z or Z3 terminations and SPDT models only.

NOTE: Caps & frames available separately, see pages A-60 and A-61.

Other colors available, consult Customer Service Center.

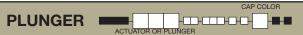
OPTION CODE	CAP COLOR			
2	BLACK			
1	WHITE			
3	RED			
4	ORANGE			
5	YELLOW			
9	GRAY			

OPTION CODE	LED COLOR		
3	RED		

For LED information, see page A-61.



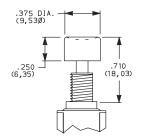


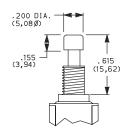


PLUNGER WITH CAP P/N 7527

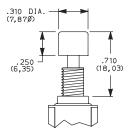
PLUNGER WITH CAP P/N 7089

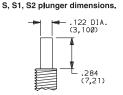
PLUNGER WITH CAP P/N 8018





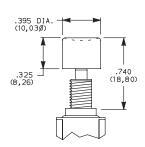
PLUNGER WITH CAP P/N 8940

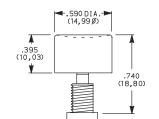




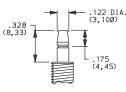
Plunger material: Glass filled nylon or glass filled polyester (UL 94V-0).







L, L1 plunger dimensions.



Plunger Material: Brass. chrome plated

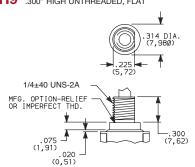
OPTION CODE CAP COLOR 2 BLACK 1 WHITE 3 RED 4 **ORANGE** 5 YELLOW 9 GRAY

Cap Finish: gloss. Cap supplied not installed. Other colors available, consult Customer Service Center.

NOTE: When selecting plunger and cap option, bushing selection must also be made, see below



.300" HIGH THREADED, FLAT .300" HIGH UNTHREADED, FLAT



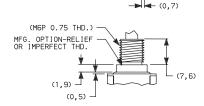
H bushing standard with C, W, Z or Z3 terminations. H9 bushing standard with A, A3, AV2, AV3, or V3-V31 terminations.

Withstands 12 in./lbs. of torque with no distortion.

**NONE** NO BUSHING CHOICE REQUIRED (JXX ACTUATORS)

(1.0)

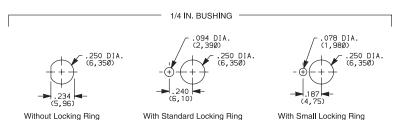
7.6mm THREADED, KEYWAY



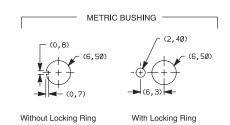
Withstands 12 in./lbs. of torque with no distortion.

NOTE: When selecting bushing option, plunger selection must also be made, see above. No bushing option choice required when any JXX actuator option is selected.

### PANEL MOUNTING



NOTE. Two mounting nuts, locking ring and lockwasher supplied standard with threaded bushings. Optional mounting nut and locking ring styles and finishes available, see section "Technical Data and



Third Angle Projection

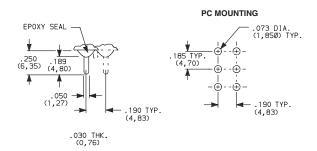


### 8060 Series

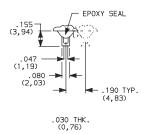
### **Alternate Action and Momentary Pushbutton Switches**



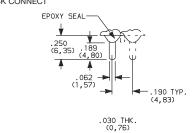
PC THRU-HOLE



SOLDER LUG



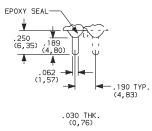
#### **SPDT and DPDT**



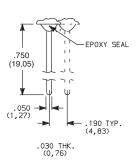
**SPDT and DPDT** 

Not available with P, S or R contact material.

QUICK CONNECT



W WIRE WRAP



**SPDT and DPDT** 

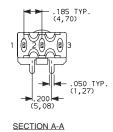
Not available with P, S or R contact material. Mating quick connector available; order part number 530100000, page A-61.

**SPDT and DPDT** 

RIGHT ANGLE, PC THRU-HOLE



.122 DIA. (3,100) EPOXY SEAL (3,3).138 ► .500 -(12,70) (7,11) (9,78) .050 TYP. →



8161SH9ABE2 **SPDT** 

RIGHT ANGLE, SNAP-IN, PC THRU-HOLE





PC MOUNTING

NOTE: PC pattern must clear switch support leg.

Not available with I seal. Terminal bend radii and lead-in manufacturing option.



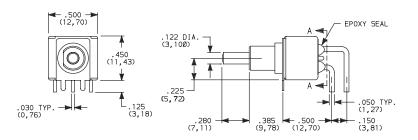
Dimensions are shown: Inches (mm) Specifications and dimensions subject to change

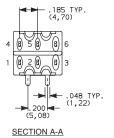


Third Angle Projection

#### TERMINATIONS -

RIGHT ANGLE, PC THRU-HOLE

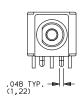


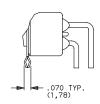


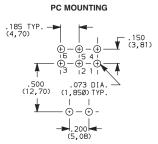


8261SH9ABE2 **DPDT** 

RIGHT ANGLE, SNAP-IN, PC THRU-HOLE

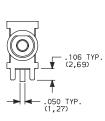


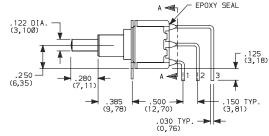


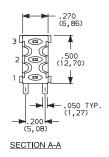


Not available with I seal. Terminal bend radii and lead-in manufacturing option.

VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



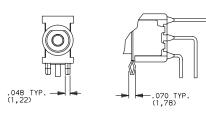


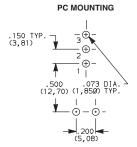




8161SH9AV2BE2 **SPDT** 

AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH

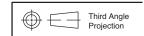




Not available with I seal. Terminal bend radii and lead-in manufacturing option.



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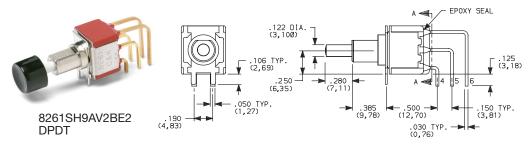


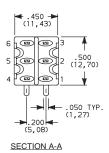
### 8060 Series

### **Alternate Action and Momentary Pushbutton Switches**

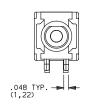
#### TERMINATIONS ----

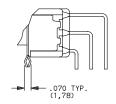
VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

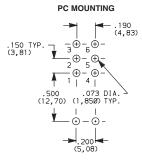




VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE,

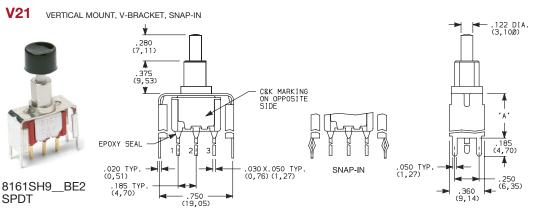




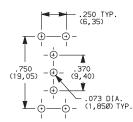


Not available with I seal. Terminal bend radii and lead-in manufacturing option.







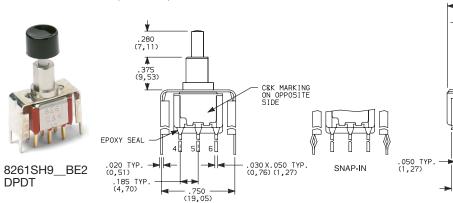


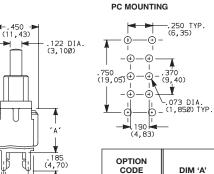
OPTION CODE	DIM 'A'		
V21	.555 (14,10)		
V6	.460 (11,68)		

Not available with I seal.



VERTICAL MOUNT, V-BRACKET, SNAP-IN





.360 (9,14)

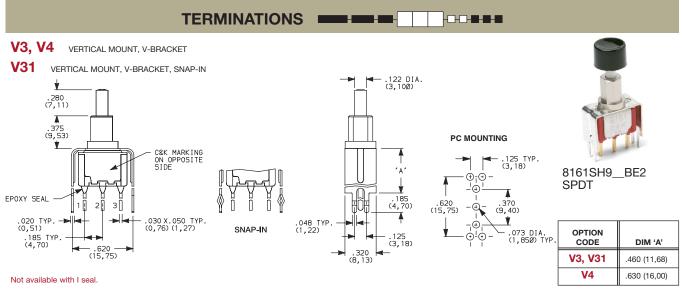
OPTION CODE	DIM 'A'		
V21	.555 (14,10)		
<b>V</b> 6	.460 (11,68)		

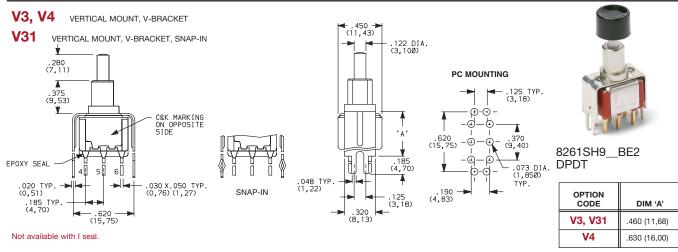
Third Angle Projection

Dimensions are shown: Inches (mm) Specifications and dimensions subject to change



Not available with I seal.



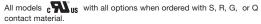


### **CONTACT MATERIAL**

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS			
В	GOLD <sup>1</sup>	GOLD <sup>1</sup>	LOWLEVEL (DDV OLDOLIIT	0.4 VA MAX. @ 20 V AC OR DC MAX.		
Р		MATTE-TIN <sup>6</sup>	LOW LEVEL/DRY CIRCUIT			
Q	SILVER 4,5	SILVER 5		6 AMPS @ 120 V AC OR 28 V DC; 3 AMPS @ 250 V AC.		
s	SILVER 4,0	MATTE-TIN <sup>6</sup>	POWER			
G	GOLD OVER	GOLD <sup>3</sup>		0.4 VA MAX @ 20 V AC OR DC MAX. OF		
R SILVER <sup>2,3</sup>	MATTE-TIN <sup>6</sup>	LOW LEVEL/DRY CIRCUIT OR POWER	6 AMPS @ 120 V AC OR 28 V DC; 3 AMPS @ 250 V AC.			

- \* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.
- <sup>1</sup> CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.
- <sup>2</sup> END CONTACTS: Coin silver, with gold plate over nickel plate.
- <sup>3</sup> CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
- <sup>4</sup> END CONTACTS: Coin silver, silver plated,
- <sup>5</sup> CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.
- <sup>6</sup> TERMINALS: Copper alloy, with matte-tin over nickel plate.

NOTE: Any models supplied with P, S, R,Q, B or G contact material are



- B contact material standard with all terminations except C, Z & Z3. Q contact material standard with C, Z & Z3 terminations.
- P. S & R contact materials not available with Z & Z3 terminations.



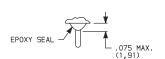
Dimensions are shown: Inches (mm)

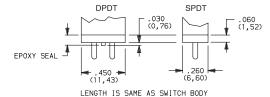


### SEAL MAN AND BE

**EPOXY SEAL** 

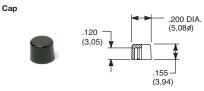
EPOXY POTTED BASE

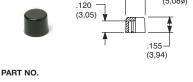




NOTE: Available with C, W, Z, Z3 terminations only.

### **AVAILABLE HARDWARE**





708901000 WHITE 708902000 BLACK 708903000 RED 708904000 ORANGE 708905000 YELL OW 708909000 GRAY Material: Nylon

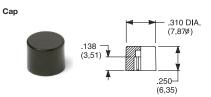
Finish: Gloss



PART NO. 752701000 WHITE 752702000 BLACK 752703000 RFD 752704000 ORANGE

752709000 Material: Nylon Finish: Gloss

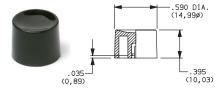
752705000



PART NO. 801801000 WHITE 801802000 BLACK 801803000 RFD 801804000 ORANGE 801805000 YELLOW 801809000 GRAY

Material: Nylon Finish: Gloss

Cap, Snap-fitting plunger



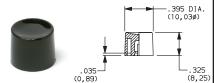
PART NO. 452D01000 WHITE 452D02000 BLACK 452D03000 RED 452D04000 ORANGE 452D05000 YELLOW 452D09000 GRAY

Material: Nvlon Finish: Gloss

Cap, Snap-fitting plunger

YELLOW

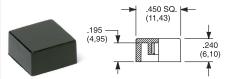
GRAY



PART NO. 894101000 WHITE 894102000 BLACK 894103000 894104000 ORANGE 894105000 YELLOW 894109000 GRAY

Material: Nylon Finish: Gloss

Cap, J80, J81 & J82 options only



PART NO. 484601000 WHITE 484602000 BLACK 484603000

484604000 ORANGE 484605000 YELLOW 484609000 GRAY

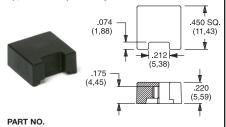
Material: Nylon Finish: Gloss

PART NO.

798201000 WHITE 798202263 **BLACK** 798203000 798204000 ORANGE 798205000 YELLOW 798209000 GRAY

Material: Nylon Finish: Matte

#### Cap, J86 & J96 options only



459709000 Material: Nylon Finish: Matte

Frame



PART NO. 615602263 BLACK

Material: Nylon Finish: Matte

Frame



PART NO. 613302263 BLACK

Material: Nylon Finish: Matte

NOTE: Additional nuts, locking rings and lockwashers available separately, see section 'Technical Data and Additional Hardware" Other cap & frame colors available, consult Customer Service Center.



Dimensions are shown: Inches (mm) Specifications and dimensions subject to change



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### **AVAILABLE HARDWARE**

Fits Z3 Termination female connector

#### PART NO. 530100000

Available in loose pieces.



Frames snap into panel opening and are independent from switch mounting. Accurate positioning of the PC mounted switch relative to the panel opening is necessary to provide proper clearance between actuator and frame. Available in two basic styles and four panel thicknesses .047-.125 in. Material: Nylon. Finish: Matte.

# TYPICAL APPLICATION

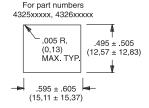


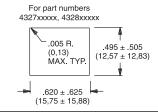
.090" (2,29) PANEL THK. .125" (3,18) PANEL THK.

PART NO. PART NO.

432702263 432802263 BLACK

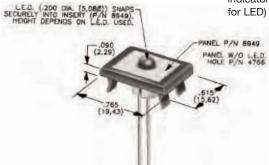
### PANEL MOUNTING





Panel Inserts

Above frames (part nos. 432XXXXXX) are also available with insert which accepts LED for indicator light assembly. Order insert separately from frame. Blank insert panel (without hole for LED) also available. **LED not included.** 



PANEL INSERT WITH HOLE FOR LED BLANK PANEL INSERT WITHOUT HOLE FOR LED

PART NO.

PART NO.

**894902000 476602000** BLACK

Special colors, custom markings available, consult Customer Service Center.

#### **LED INFORMATION**

SWITCHES WITH LED SUPPLIED: J86 OPTION:

Rectangular LEDs are supplied on 8060 Series pushbutton switches with J86 option. These LEDs are factory installed and are not replaceable. The following specifications apply:

			TYP.	TYP.	MAX RATINGS AT 25°C AMBIENT TEMPERATURE		
OPTION CODE	COLOR	TYP. INTENSITY	FORWARD VOLTAGE	FORWARD CURRENT	FORWARD VOLTAGE	CONTINUOUS FORWARD CURRENT	POWER DISSIPATION
6	Green	1.0 mcd		20 mA		50 mA	125 mW
3	Red*	0.5 mcd	2.1 V	10 mA	2.5 V	30 mA	75 mW
5	Yellow	4.0 mcd		20 mA		50 mA	125 mW

.230 DIA. (5,84°) .340 (9,64) .750 (19,05)

**Process Information:** Soldering to LED leads must be completed within 5 seconds at 500°F (260°C) maximum.

Suggested LED for J82 & J84 options. Dimensions for reference only.

Caution: Circuit elements must limit forward current of LED to 50mA max. continuous.

\* Extra-bright red LED available (typ. intensity 4.5 mcd), consult Customer Service Center.

LEDs are not supplied with J82 & J84 options. LED snaps into switch frame surrounding actuator and is wired externally.







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