

## 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

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 $20 \mathrm{~m} \Omega$ typ. initial @
2-4 V DC, 100 mA , for both silver and gold plated contacts.
INSULATION RESISTANCE: $10^{9} \Omega \mathrm{~min}$.
DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.
OPERATING TEMPERATURE: $-30^{\circ} \mathrm{C}$ to $65^{\circ} \mathrm{C}$
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.



MOM. $=$ Momentary
All models with all options when ordered with $G$ or $Q$ contact material.

## ACTUATOR-SNAP-IN FRONT MOUNT

( OPTION

| OODE | 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.


J82
SNAP-IN WITH BLACK FRAME FOR LED


Available with $\mathrm{C}, \mathrm{W}, \mathrm{Z}$ or Z 3 terminations.


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

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 <br> CODE | CAP COLOR |
| :---: | :--- |
| 2 | BLACK |
| 1 | WHITE |
| 3 | RED |
| 4 | ORANGE |
| 5 | YELLOW |
| 9 | GRAY |

## CAP COLOR LED COLOR

## ACTUATOR-SNAP-IN FRONT MOUNT



8161J86ZQE223 SPDT


* 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 <br> CODE | CAP COLOR |
| :---: | :--- |
| 2 | BLACK |
| 1 | WHITE |
| 3 | RED |
| 4 | ORANGE |
| 5 | YELLOW |
| 9 | GRAY |


| OPTION <br> CODE | LED COLOR |
| :---: | :---: |
| 3 | RED |

For LED information, see page A-61.


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

|  | BUSHING | $\square \square \square$ |  |  |
| :---: | :---: | :---: | :---: | :---: |
| H .300" HIGH THREADED, fLAT <br> H9 . 300 " high unthreaded, flat | NONE | NO BUSHING CHOICE REQUIRED (JXX ACTUATORS) | Y3 | 7.6 mm THREADED, KEYWAY |



H bushing standard with C, W, Z or Z3 terminations. H9 bushing standard with A, A3, AV2, AV3, or V3-V31 terminations.
Withstands $12 \mathrm{in} . / \mathrm{lbs}$. of torque with no distortion.



Withstands $12 \mathrm{in} . / \mathrm{lbs}$. 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.


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 Additional Hardware".

GRK


A right angle, pc thru-
hole


A3
RIGHT ANGLE, SNAP-IN, PC THRU-HOLE


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


A3 right angle, snap-in, pc thru-hole


Not available with I seal.
Terminal bend radii and lead-in manufacturing option.
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, . 150 " PITCH


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


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

## TERMINATIONS 두두||-무붑

AV2 vertical right angle, pc thru-hole, .150" pith


Not available with I seal.
V6 vertical mount, v-bracket

V21 VERTICAL MOUNT, V-bRACKET, SNAP-IN


Not available with I seal.

PC MOUNTING





| OPTION CODE | CONTACT MATERIAL | TERMINAL PLATING | RATINGS |  |
| :---: | :---: | :---: | :---: | :---: |
| B | GOLD ${ }^{1}$ | GOLD ${ }^{1}$ | LOW LEVEL/DRY CIRCUIT | 0.4 VA MAX. @ 20 V AC OR DC MAX. |
| P |  | MATTE-TIN ${ }^{6}$ |  |  |
| Q | SILVER 4,5 | SILVER ${ }^{5}$ | POWER | 6 AMPS @ 120 V AC OR 28 V DC; 3 AMPS @ 250 V AC. |
| S |  | MATTE-TIN ${ }^{6}$ |  |  |
| G | GOLD OVER SILVER ${ }^{2,3}$ | GOLD ${ }^{3}$ | LOW LEVEL/DRY CIRCUIT OR POWER | 0.4 VA MAX @ 20 V AC OR DC MAX. OR 6 AMPS @ 120 V AC OR 28 V DC; 3 AMPS @ 250 V AC. |
| R |  | MATTE-TIN ${ }^{6}$ |  |  |

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.
${ }^{1}$ CONTACTS \& TERMINALS: Copper alloy, with gold plate over nickel plate.
${ }^{2}$ END CONTACTS: Coin silver, with gold plate over nickel plate.
${ }^{3}$ CENTER CONTACTS \& ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
${ }^{4}$ END CONTACTS: Coin silver, silver plated.
${ }^{5}$ CENTER CONTACT \& ALL TERMINALS: Copper alloy, silver plated.
${ }^{6}$ TERMINALS: Copper alloy, with matte-tin over nickel plate.
NOTE: Any models supplied with P, S, R,Q, B or G contact material are RoHS compliant.

All models cith all options when ordered with $\mathrm{S}, \mathrm{R}, \mathrm{G}$, or Q contact material.
$B$ contact material standard with all terminations except $C, Z \& Z 3$.
$Q$ contact material standard with $\mathrm{C}, \mathrm{Z}$ \& $\mathrm{Z3}$ terminations.
$P, S \& R$ contact materials not available with $Z \& Z 3$ terminations.

## 

E epoxy seal
| EPOXY Potted base

length is same as switch body
NOTE: Available with C, W, Z, Z3 terminations only.

## AVAILABLE HARDWARE



PART NO.


PART NO.


PART NO.
459701000 459702000 459703000 459704000 459705000 459709000

Material: Nylon
Finish: Matte


PART No.
752701000 WHITE
752702000 BLACK
752703000 RED
752704000 ORANGE
752705000 YELLOW
752709000 GRAY
Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger



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

Material: Nylon
Finish: Gloss

Frame


PART NO.
615602263 BLACK
Material: Nylon
Finish: Matte

Cap


PART No.
801801000 WHITE
801802000 BLACK
801803000 RED
801804000 ORANGE
801805000 YELLOW
801809000 GRAY
Material: Nylon
Finish: Gloss
Cap, J80, J81 \& J82 options only


PART NO. PART NO.
484601000 WHITE 798201000 WHITE
484602000 BLACK 798202263 BLACK

484603000 RED 798203000 RED $\begin{array}{lll}484604000 & \text { ORANGE } 798204000 & \text { ORANGE } \\ 484605000 & \text { YELLOW } & 798205000 \\ \text { YELOW }\end{array}$ 484609000 GELLO 798205000 YELLO

Material: Nylon
Finish: Gloss
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.

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 Inserts


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:


Process Information: Soldering to LED leads must be completed within 5 seconds at $500^{\circ} \mathrm{F}\left(260^{\circ} \mathrm{C}\right)$ maximum.

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

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


## X-ON Electronics

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