8020 Series
Snap-acting Momentary Pushbutton Switches

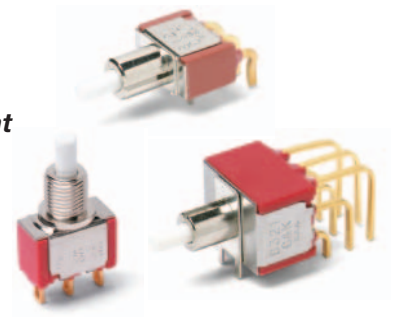
Features/Benefits

- **Positive tactile feel**
- **Multi-positions available**
- **Wide variety of termination options**
- **Epoxy terminal seal compatible with bottom wash cleaning**
- **RoHS compliant models available**

Models Available

Typical Applications

- **Instrumentation**
- **Computer peripherals**
- **Telecommunications equipment**



Specifications

CONTACT RATING: B contact material (8X25 Models): 0.4 VA max. @ 20 V AC or DC maximum. G contact material (8X21, U8X1 Models): 1 AMP @ 120 V AC or 28 V DC or 0.4 VA max. @ 20 V AC or DC max. Note: Break-before-makecontacts. Multi-pole contacts do not make and break simultaneously. See page A-43 for additional ratings.

ELECTRICAL LIFE: 60,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 50 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: 8X2X MODELS: –30°C to 75°C. U8X1 MODELS: –30°C to 65°C.

CAP INSTALLATION FORCE: 10 lbs. max. permissible.

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

NOTE: Any models supplied with B, P, R, 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: Glass filled nylon or glass filled polyester (PBT) (UL 94V-0).

CAP & FRAME: Nylon, black, standard.

BUSHING: Brass or zinc, nickel plated.

HOUSING: Stainless steel.

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

N.O. & N.C. CONTACTS: 8X21, U8X1 MODELS: G contact material: Coin silver, with gold plate over nickel plate. See page A-43 for additional contact materials.
8X25 MODELS: B contact material: Copper alloy, with gold plate over nickel plate. See page A-43 for additional contact materials.

COMMON CONTACT & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

TERMINAL SEAL: Epoxy. Refer to soldering and cleaning 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-30 thru A-45. 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

- **8121** SPDT On-Mom. 1 Amp
- **8125** SPDT On-Mom. 0.4VA
- **8221** DPDT On-Mom. 1 Amp
- **8225** DPDT On-Mom. 0.4VA
- **8321** 3PDT On-Mom. 1 Amp
- **8325** 3PDT On-Mom. 0.4VA
- **8421** 4PDT On-Mom. 1 Amp
- **8425** 4PDT On-Mom. 0.4VA

Note: UL/CSA models available, see page A-30 and A-31.

Actuator or Plunger

- **S** Plunger
- **NONE** Snap-in
- **J80** Snap-in
- **J81** Snap-in w/frame
- **J82** Snap-in w/frame for LED
- **J83** Snap-in w/frame & flush cap
- **J84** Snap-in w/frame for LED, flush cap
- **J85** Snap-in w/frame & LED
- **J95** PC w/V-bracket & LED
- **L** Plunger
- **M** Snap-fitting plunger

Bushing

- **D9** .280" high, keyway
- **H** .250" high, flat
- **NONE** No bushing choice required
- **D** .280" high, keyway
- **D2** .288" high, flat
- **D3** .180" high
- **D8** .288" high, flat
- **H9** .250" high, flat, hi torque
- **Y** .350" high, keyway
- **Y3** 6.35mm high, keyway, hi torque
- **Y4** .378" high, flat, hi torque
- **Y9** .350" high, keyway

Contact Material

- **B** Gold
- **P** Gold, matte-tin
- **G** Gold over silver
- **R** Gold over silver, matte-tin

Seal

- **E** Epoxy
- **I** Epoxy potted base

Cap Color

- **2** Black
- **NONE** Models without caps
- **1** White
- **3** Red
- **4** Orange
- **5** Yellow
- **6** Green
- **7** Blue
- **9** Gray

Frame Color

- **2** Black
- **NONE** Models without frame
- **1** White
- **3** Red
- **5** Yellow
- **6** Green
- **9** Gray

LED Color

- **3** Red
- **NONE** Models without LED
- **5** Yellow
- **6** Green

Terminations

- **A** Right angle, PC thru-hole
- **AV2** Vertical right angle, PC thru-hole
- **C** PC Thru-hole
- **Z** Solder lug
- **A2** Right angle, PC thru-hole
- **A3** Right angle, snap-in, PC thru-hole
- **A4** Right angle, PC thru-hole, reversed terminals
- **A6** Right angle, PC thru-hole
- **AV** Vertical right angle, PC thru-hole
- **AV1** Vertical right angle, PC thru-hole
- **AV3** Vertical right angle, snap-in, PC thru-hole
- **R** Right angle with PCB
- **R2** Right angle with PCB, reversed terminals
- **V2** .555" high, V-bracket
- **V3** .460" high, V-bracket
- **V4** .630" high, V-bracket
- **V6** .460" high, V-bracket
- **V7** .630" high, V-bracket
- **V8** .953" high, V-bracket
- **V9** 1.150" high, V-bracket
- **V31** .460" high, snap-in V-bracket
- **V61** .460" high, snap-in V-bracket
- **W** .750" long, wire wrap
- **W1** .964" long, wire wrap
- **W3** .425" long, wire wrap
- **W4** 1.062" long, wire wrap
- **Z3** Quick connect

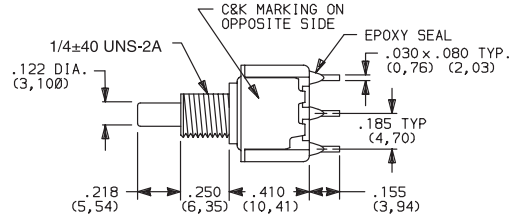
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

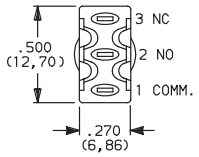
8020 Series
Snap-acting Momentary Pushbutton Switches

SWITCH FUNCTION

NO. POLES	MODEL NO.	UL/CSA* MODEL NO.	SWITCH FUNCTION POS. 1	SWITCH FUNCTION POS. 2	CONNECTED TERMINALS POS. 1	CONNECTED TERMINALS POS. 2	SCHEMATIC
			C&K marking on opposite side		C&K marking on opposite side		
SP	8121	U811	ON	MOM.	1-3	1-2	SPDT
	8125		ON	MOM.			

SPDT



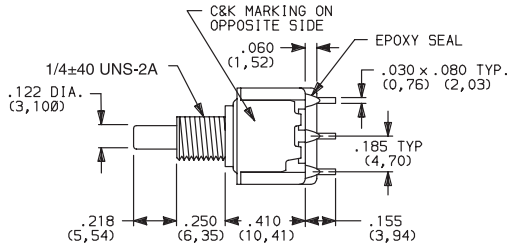


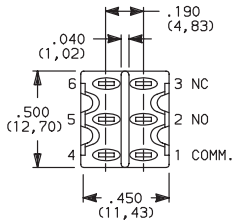
Part number shown: 8121SHZGE

Terminal Nos. For Reference Only

NO. POLES	MODEL NO.	UL/CSA* MODEL NO.	SWITCH FUNCTION POS. 1	SWITCH FUNCTION POS. 2	CONNECTED TERMINALS POS. 1	CONNECTED TERMINALS POS. 2	SCHEMATIC
DP	8221	U821	ON	MOM.	1-3,4-6	1-2,4-5	DPDT
	8225		ON	MOM.			

DPDT



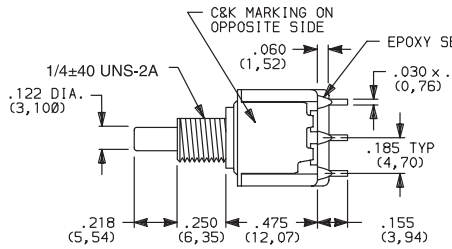


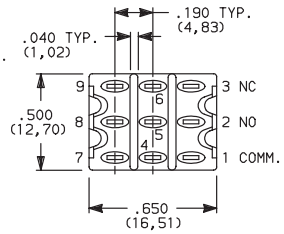
Part number shown: 8221SHZGE

Terminal Nos. For Reference Only

NO. POLES	MODEL NO.	UL/CSA* MODEL NO.	SWITCH FUNCTION POS. 1	SWITCH FUNCTION POS. 2	CONNECTED TERMINALS POS. 1	CONNECTED TERMINALS POS. 2	SCHEMATIC
3P	8321	U831	ON	MOM.	1-3,4-6,7-9	1-2,4-5,7-8	3PDT
	8325		ON	MOM.			

3PDT





Part number shown: 8321SHZGE

Terminal Nos. For Reference Only

MOM. = Momentary

*U811 thru U841 model numbers with all options (except R, R2 terminations) when ordered with G or R contact material.

8X25 models must be ordered with B or P contact material.

8X21 and U8X1 models must be ordered with G or R contact material.

Third Angle Projection

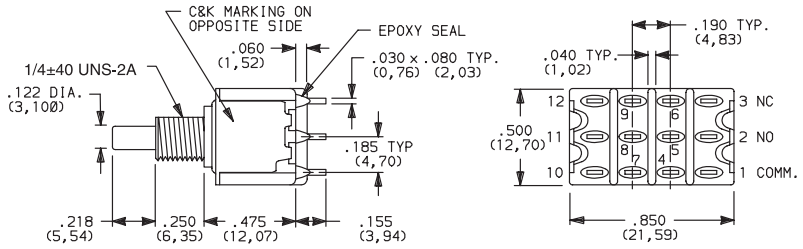
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

8020 Series
Snap-acting Momentary Pushbutton Switches

SWITCH FUNCTION

NO. POLES	MODEL NO.	UL/CSA* MODEL NO.	SWITCH FUNCTION POS. 1	SWITCH FUNCTION POS. 2	CONNECTED TERMINALS POS. 1	CONNECTED TERMINALS POS. 2	SCHEMATIC
			C&K marking on opposite side		C&K marking on opposite side		
4P	8421	U841	ON	MOM.	1-3,4-6,7-9,10-12	1-2,4-5,7-8,10-11	4PDT
	8425		ON	MOM.			

4PDT



Part number shown: 8421SHZGE

Terminal Nos.
For Reference Only

MOM. = Momentary

* U811 thru U841 model numbers with all options (except R, R2 terminations) when ordered with G or R contact material.

8X25 models must be ordered with B or P contact material.

8X21 and U8X1 models must be ordered with G or R contact material.

ACTUATOR—SNAP-IN FRONT MOUNT

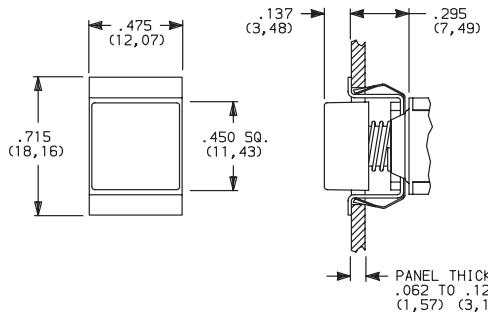


OPTION CODE	CAP AND FRAME COLOR
2	BLACK
NONE	No Frame Color (J80 option)
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

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

NOTE: Caps and frames available separately, see pages A-44 and A-45.

J80 SNAP-IN

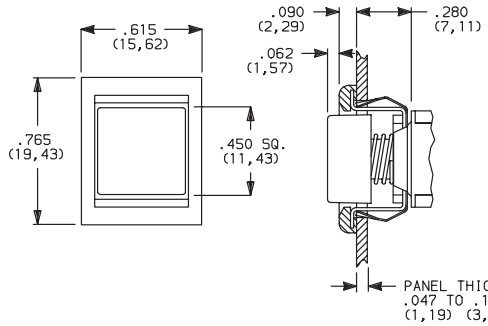




NOTE: No frame color choice required.

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

J81 SNAP-IN WITH FRAME





NOTE: Available with C, W-W4, Z or Z3 terminations and SPDT and DPDT models only.

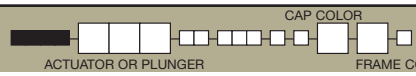
** Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

Third Angle Projection

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

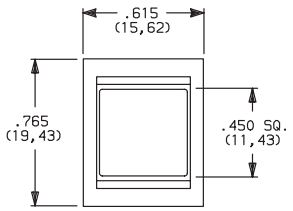
8020 Series
Snap-acting Momentary Pushbutton Switches

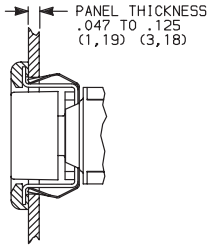
ACTUATOR—SNAP-IN FRONT MOUNT



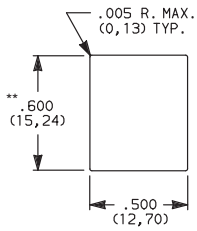
J83 SNAP-IN WITH FRAME AND FLUSH CAP





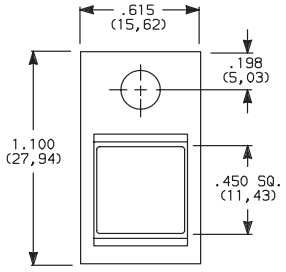


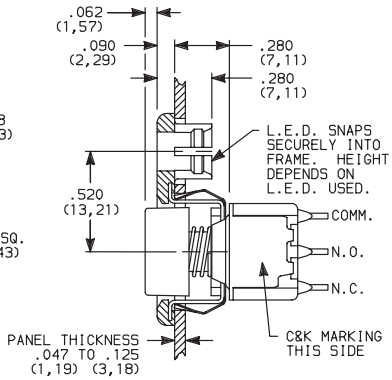
PANEL MOUNTING



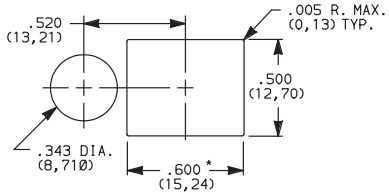
J82 SNAP-IN WITH FRAME FOR LED







PANEL MOUNTING

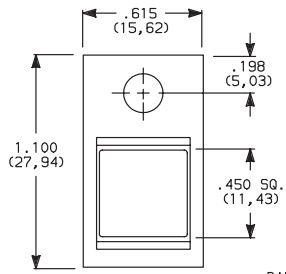


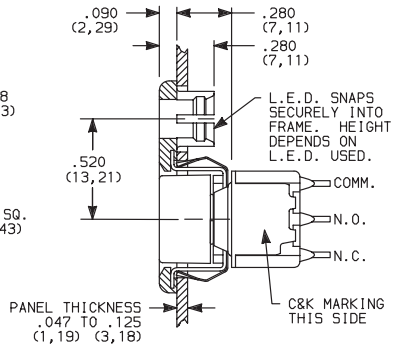
* Increase this dim. to .620/.625 (15,75/15,88) for .091/.125 (2,31/3,18) thk. panels.

LED not included.
For LED information, see page A-45.

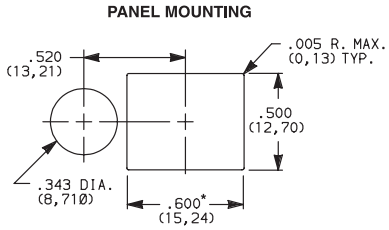
J84 SNAP-IN WITH FRAME FOR LED, FLUSH CAP







PANEL MOUNTING



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

LED not included.
For LED information, see page A-45.

OPTION CODE	CAP AND FRAME COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

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

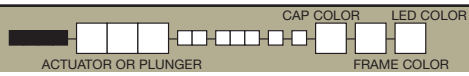
Available with C, W-W4, Z or Z3 terminations and SPDT and DPDT models only.

NOTE: Caps and frames available separately, see pages A-44 and A-45.

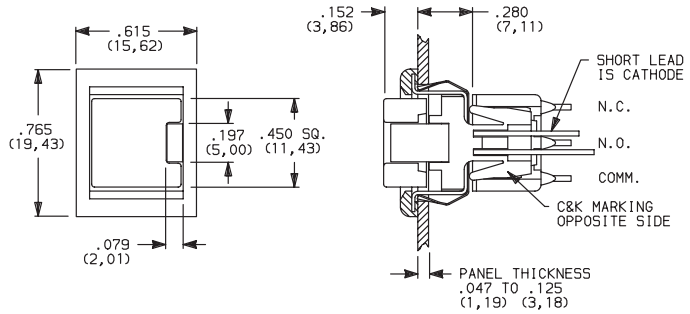
Third Angle Projection

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

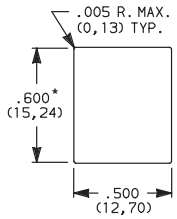
ACTUATOR—SNAP-IN FRONT MOUNT



J85 SNAP-IN WITH FRAME AND LED



PANEL MOUNTING



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



8121J85ZGE223
SPST

Available with C, W-W4, Z or Z3 terminations and SPDT models only.
For LED information see page A-45.

NOTE: Caps & frames available separately, see pages A-44 and A-45.

OPTION CODE	CAP AND FRAME COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

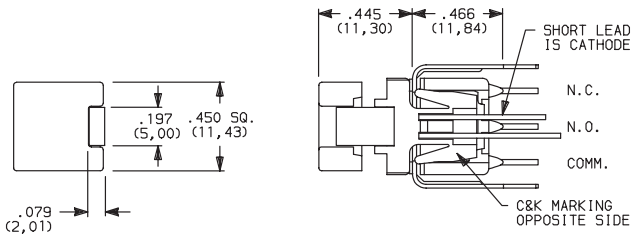
OPTION CODE	LED COLOR
3	RED
5	YELLOW
6	GREEN

For LED information see page A-45.

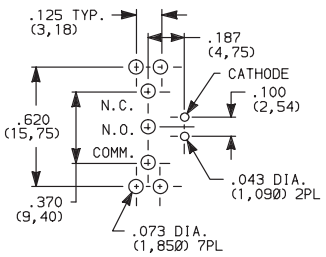
ACTUATOR—PC MOUNT



J95 PC WITH V-BRACKET AND LED



PC MOUNTING





8121J95V3GE23
SPST

OPTION CODE	CAP AND FRAME COLOR
2	BLACK
1	WHITE
3	RED
4	ORANGE
5	YELLOW
6	GREEN
7	BLUE
9	GRAY

OPTION CODE	LED COLOR
3	RED
5	YELLOW
6	GREEN

For LED information see page A-45.

NOTE: Caps available separately, see page A-44.
Available with V3 terminations and SPDT models only.

Third Angle Projection

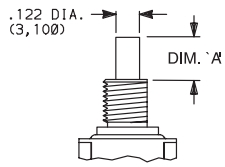
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

8020 Series
Snap-acting Momentary Pushbutton Switches

PLUNGER

ACTUATOR OR PLUNGER

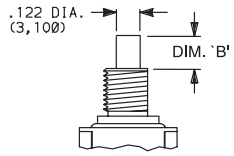
S PLUNGER



NONE NO PLUNGER CHOICE REQUIRED (JXX ACTUATORS)

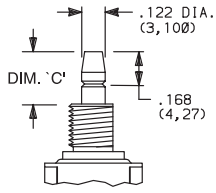
AVAILABLE BUSHINGS	DIM. 'A' FOR C, W-W4, Z & Z3 TERMINATIONS	DIM. 'A' FOR A, A2, A3, A4, A6, AV-A3, R & R2 TERMINATIONS	DIM. 'A' FOR V3-V61 TERMINATIONS
D, D9	.244 (6,20)	.228 (5,79)	.224 (5,69)
H, H9	.218 (5,54)	.202 (5,13)	.198 (5,03)
Y, Y9	.203 (5,16)	.187 (4,75)	.183 (4,65)
Y3	(5,54)	(5,13)	(5,03)
Y4	.185 (4,70)	.169 (4,29)	.165 (4,19)
D2, D8	N/A	.232 (5,89)	.228 (5,79)
D3	N/A	.162 (4,11)	.158 (4,01)

L PLUNGER



AVAILABLE BUSHINGS	DIM. 'B' FOR C, W-W4, Z & Z3 TERMINATIONS	DIM. 'B' FOR A, A2, A3, A4, A6, AV-A3, R & R2 TERMINATIONS	DIM. 'B' FOR V3-V61 TERMINATIONS
Y, Y9	.178 (4,52)	.162 (4,11)	.158 (4,01)
Y4	.090 (2,29)	.074 (1,88)	.070 (1,78)

M SNAP-FITTING PLUNGER



AVAILABLE BUSHINGS	DIM. 'C' FOR C, W-W4, Z & Z3 TERMINATIONS	DIM. 'C' FOR A, A2, A3, A4, A6, AV-A3, R & R2 TERMINATIONS	DIM. 'C' FOR V3-V61 TERMINATIONS
D, D9	.297 (7,54)	.281 (7,14)	.277 (7,04)
H, H9	.267 (6,78)	.251 (6,38)	.247 (6,27)
Y, Y9	.259 (6,58)	.243 (6,17)	.239 (6,07)
Y3	(6,78)	(6,37)	(6,27)
Y4	.259 (6,58)	.243 (6,17)	.239 (6,07)
D2, D8	N/A	.273 (6,93)	.269 (6,83)
D3	N/A	.361 (9,17)	.357 (9,07)

N/A = NOT AVAILABLE

NOTE: When selecting plunger option, bushing selection must also be made, see next page. No plunger option is required when any JXX actuator option is selected. Additional plunger lengths are available on SPDT and DPDT models, consult Customer Service Center. Not all plunger lengths sufficient for use with caps, see page A-44.

BUSHING

NONE NO BUSHING CHOICE REQUIRED (JXX ACTUATORS)

D .280" HIGH THREADED, KEYWAY

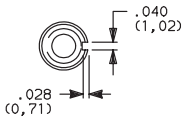
D9 .280" HIGH UNTHREADED, KEYWAY

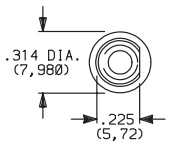
H .250" HIGH THREADED, FLAT

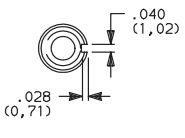
H9 .250" HIGH UNTHREADED, FLAT

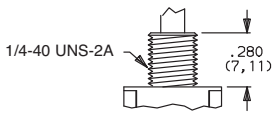
Y .350" HIGH THREADED, KEYWAY

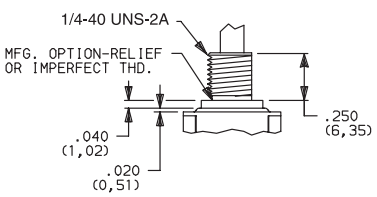
Y9 .350" HIGH UNTHREADED, KEYWAY

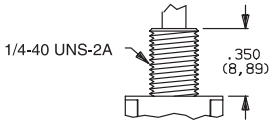












D9 bushing standard with A-A6, R, R2 AV-AV3 terminations.

H bushing standard with C, W-W4, Z or Z3 terminations. H, H9 bushings not available on single pole models with A3-A6, R, R2 terminations.

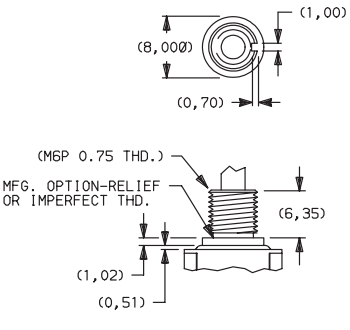
Will withstand 12 in./lbs. of torque with no distortion.

Third Angle Projection

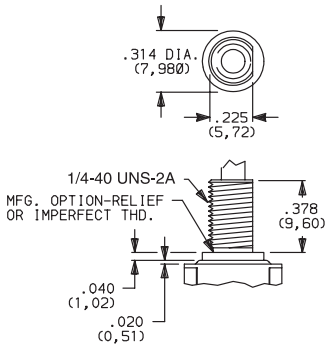
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

BUSHING

Y3 6.35mm THREADED, KEYWAY

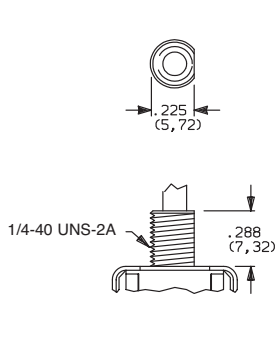


Y4 .378" HIGH THREADED, FLAT



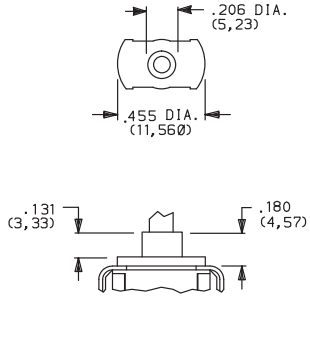
Y3 & Y4 bushings not available on single pole models with A3-A6, R, R2 terminations. Will withstand 12 in./lbs. of torque with no distortion.

D2 .288" HIGH THREADED, FLAT
D8 .288" HIGH UNTHREADED, FLAT



D2, D8 bushings not available with C, W-W4, Z, Z3 terminations.

D3 .180" HIGH UNTHREADED

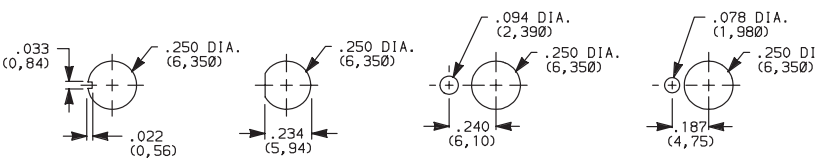


D3 bushing available with A, A2, A3, AV, AV2, AV3 and V2-V61 terminations only.

NOTE: No bushing option choice required when JXX actuator option is selected. When selecting bushing option, plunger selection must also be made, see previous page. Plunger lengths vary with bushing and termination options selected.

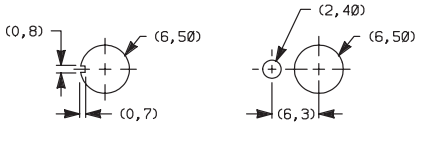
PANEL MOUNTING

1/4 INCH BUSHING



Without locking ring | With standard locking ring | With small locking ring

METRIC BUSHING

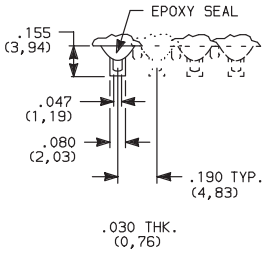


Without locking ring | With locking ring

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

TERMINATIONS

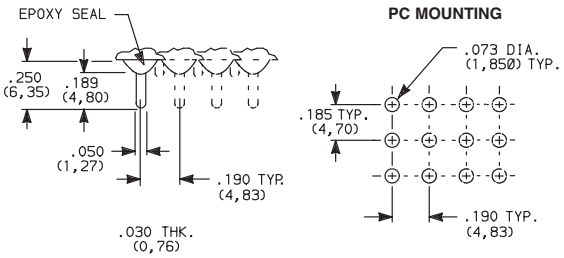
Z SOLDER LUG



SPDT thru 4PDT

Not available with J95 actuator, P or R contact material.

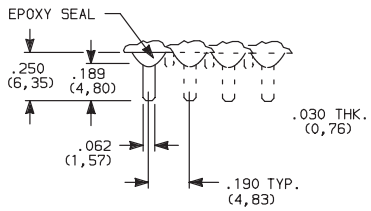
C PC THRU-HOLE



SPDT thru 4PDT

Not available with J95 actuator option.

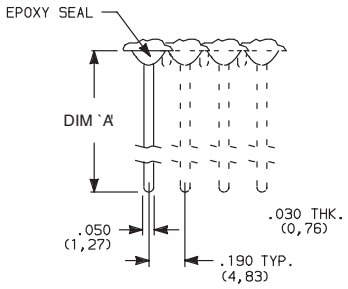
Z3 QUICK CONNECT



SPDT thru 4PDT

Not available with J95 actuator, P or R contact material. Mating quick connector available, order part number 530100000, page A-44.

W W1, W3, W4 WIRE WRAP



OPTION CODE	DIM 'A'
W	.750 (19,05)
W1	.964 (24,49)
W3	.425 (10,80)
W4	1.062 (26,97)

Not available with J95 actuator option.

SPDT thru 4PDT

Third Angle Projection

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

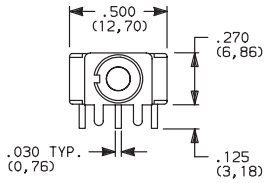
8020 Series
Snap-acting Momentary Pushbutton Switches

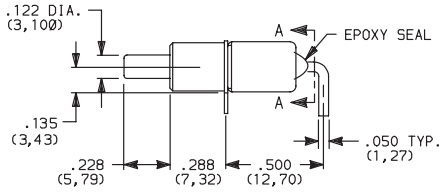
TERMINATIONS

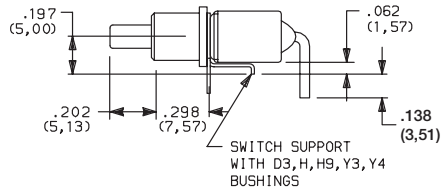
A RIGHT ANGLE, PC THRU-HOLE

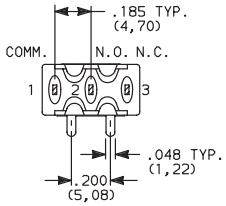


8121SD9AGE
SPDT







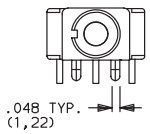


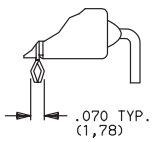
SECTION A-A

Terminal Nos.
For Reference Only.

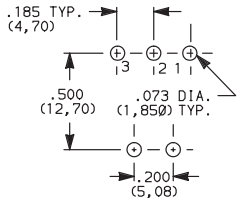
Part Number 8121SH9AGE

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





PC MOUNTING

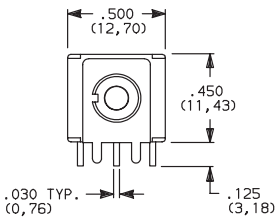


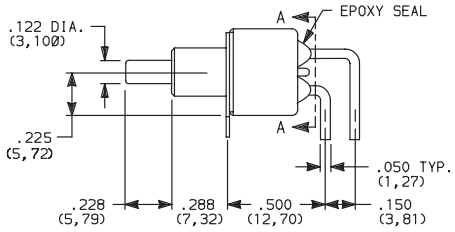
Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

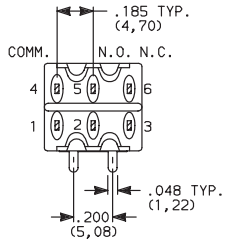
A RIGHT ANGLE, PC THRU-HOLE



8221SD9AGE
DPDT

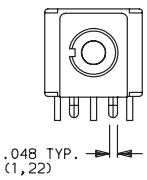


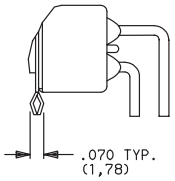




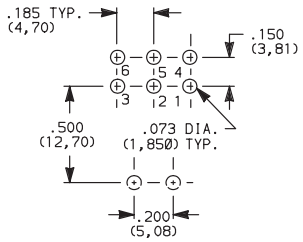
SECTION A-A

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





PC MOUNTING



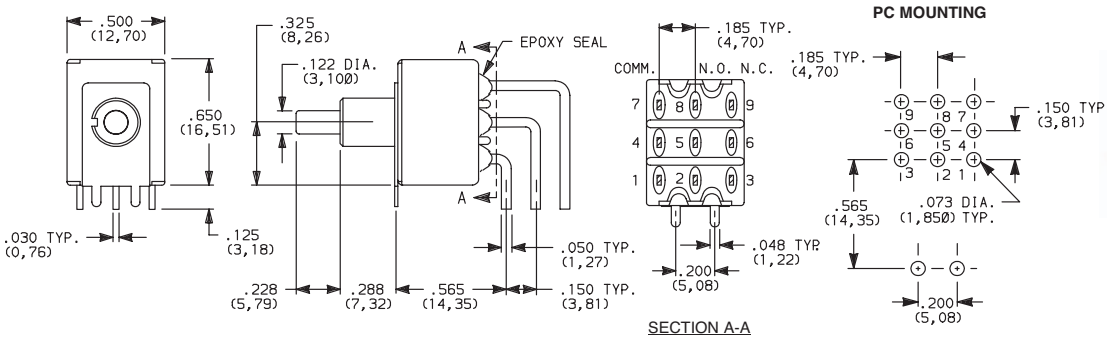
Not available with JXX actuators and I seal option.
Terminal bend radii and lead-in manufacturing option.

Third Angle Projection

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

TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE

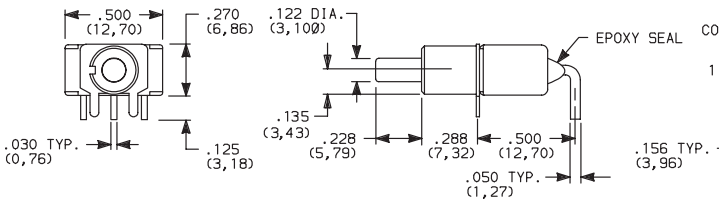




8321SD9AGE
3PDT

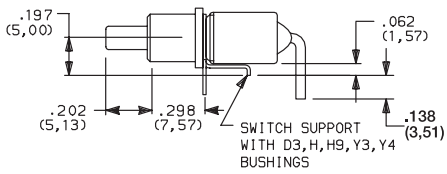
Not available with JXX actuators and I seal option.
Terminal bend radii and lead-in manufacturing option.

A2 RIGHT ANGLE, PC THRU-HOLE





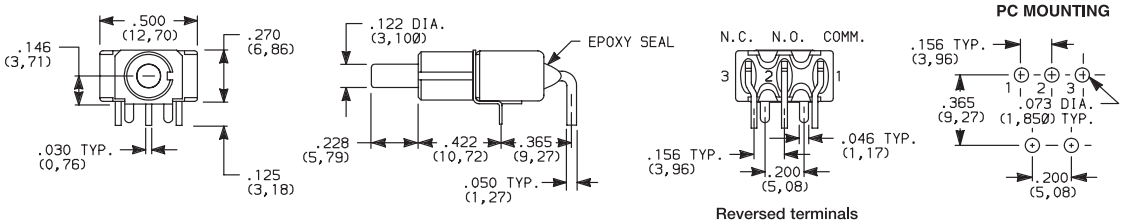
8121SD9A2GE
SPDT



Part Number 8121SH9A2GE

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

A4 RIGHT ANGLE, PC THRU-HOLE, REVERSED TERMINALS





8121SD9A4GE
SPDT

Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings and I seal.
Terminal bend radii and lead-in manufacturing option.

The A4 and R2 termination options are functionally identical and fit the same PC mounting pattern. The switches, however, are shifted relative to the mounting holes. The PC pattern must clear the switch support legs. Unlike the R2, the A4 option is available with UL/CSA.

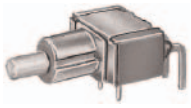
Third Angle Projection

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

8020 Series
Snap-acting Momentary Pushbutton Switches

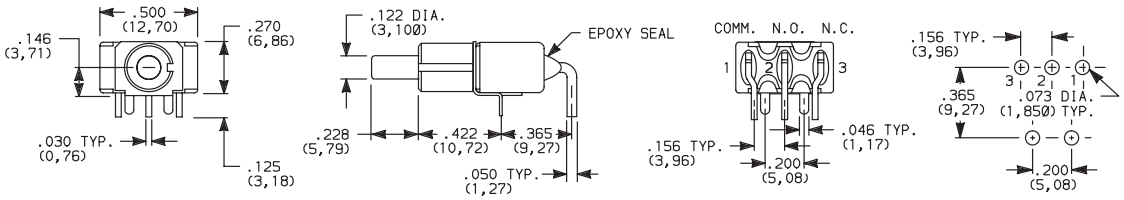
TERMINATIONS

A6 RIGHT ANGLE, PC THRU-HOLE



8121SD9A6GE
SPDT

PC MOUNTING



Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings and I seal.
Terminal bend radii and lead-in manufacturing option.

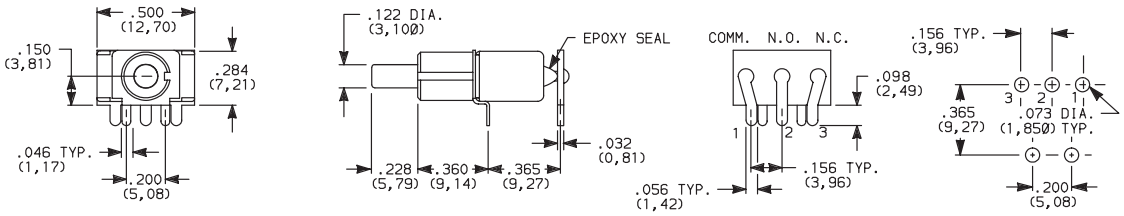
The A6 and R termination options are functionally identical and fit the same PC mounting pattern, The switches, however, are shifted relative to the mounting holes. The PC pattern must clear the switch support legs. Unlike the R, the A6 option is available with UL/CSA.

R RIGHT ANGLE WITH PCB



8121SD9RGE
SPDT

PC MOUNTING



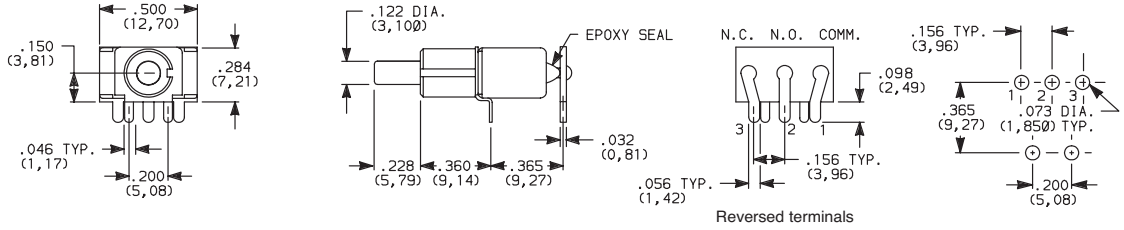
Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings, I seal option.
R termination not UL/CSA approved.

R2 RIGHT ANGLE WITH PCB, REVERSED TERMINALS



8121SD9R2GE
SPDT

PC MOUNTING

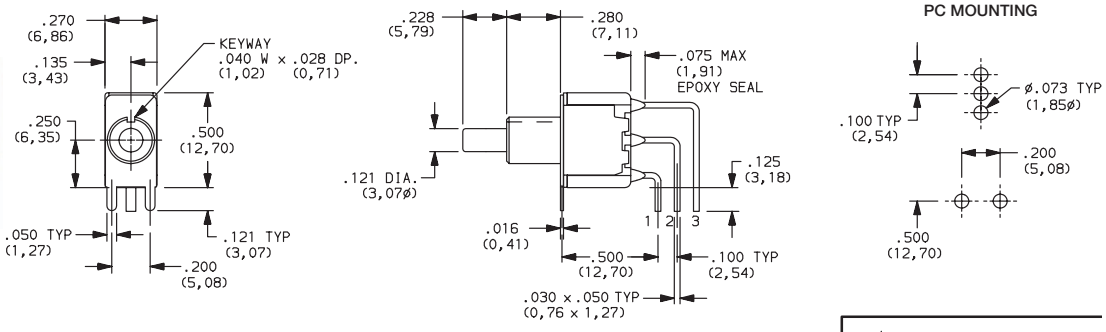


Not available with JXX actuators, D3, H, H9, Y3, Y4 bushings, I seal option.
R2 termination not UL/CSA approved.

AV VERTICAL RIGHT ANGLE, PC THRU-HOLE, .100" PITCH



8121SD9AVGE
SPDT

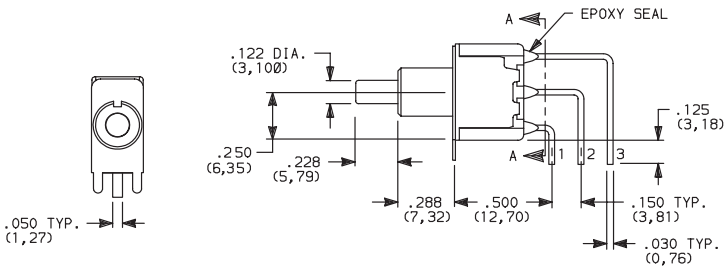


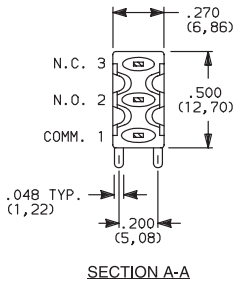
Third Angle Projection

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

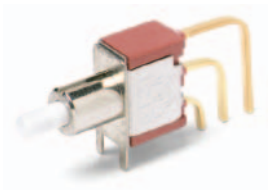
TERMINATIONS

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



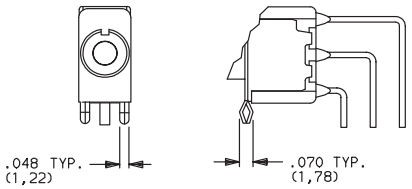


SECTION A-A

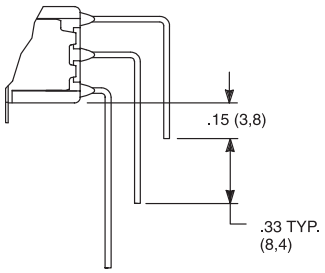


8121SD9AV2GE
SPDT

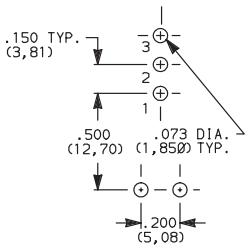
AV3 VERTICAL RIGHT ANGLE, SNAP-IN,, PC THRU-HOLE, .150" PITCH



AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH

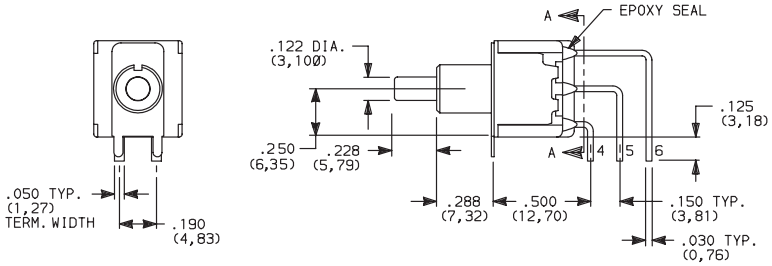


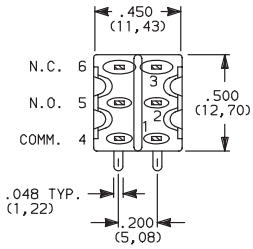
PC MOUNTING



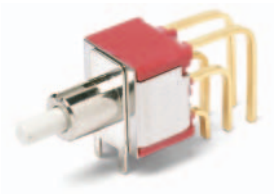
Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



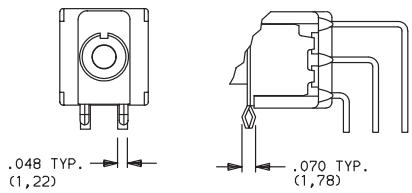


SECTION A-A

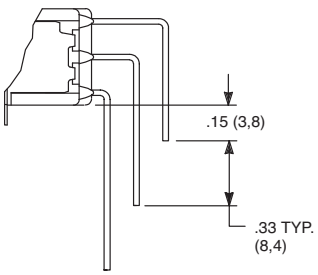


8221SD9AV2GE
DPDT

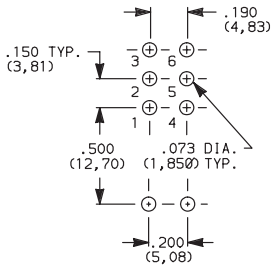
AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH



AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH



PC MOUNTING



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

Third Angle Projection

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

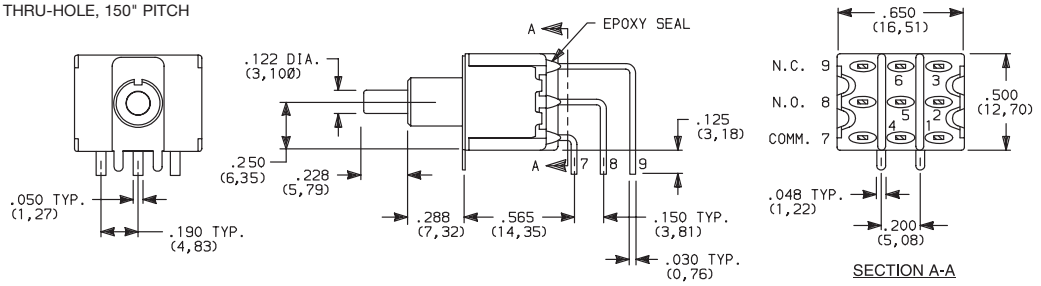
8020 Series
Snap-acting Momentary Pushbutton Switches

TERMINATIONS

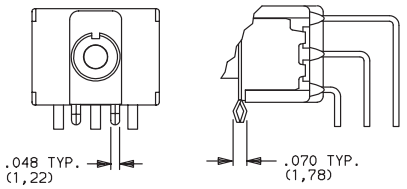
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, 150" PITCH



8321SD9AV2GE
3PDT

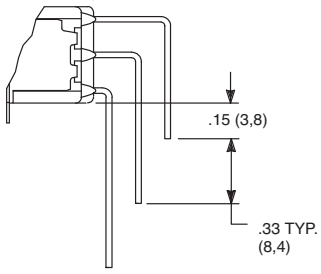


AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH

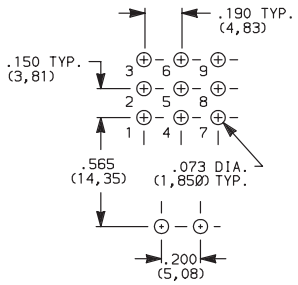


Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH



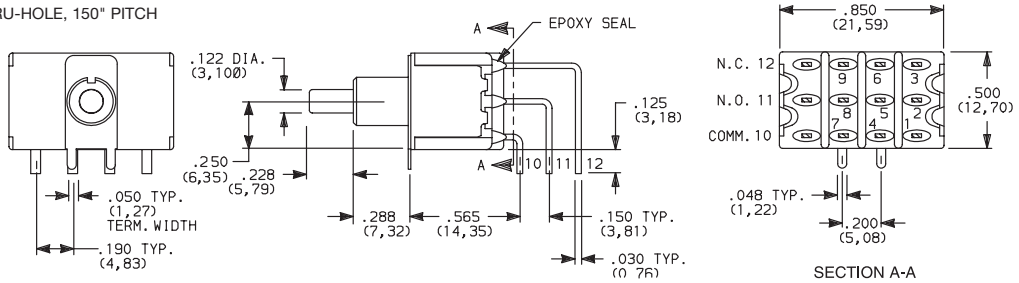
PC MOUNTING



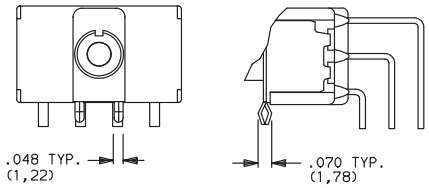
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, 150" PITCH



8421SD9AV2GE
4PDT

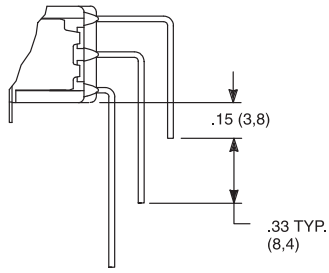


AV3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH

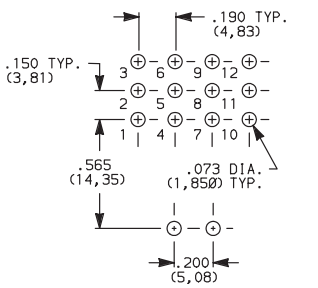


Not available with JXX actuators and I seal.
Terminal bend radii and lead-in manufacturing option.

AV1 VERTICAL RIGHT ANGLE, EXTENDED, PC THRU-HOLE, .150" PITCH

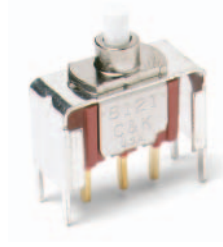


PC MOUNTING

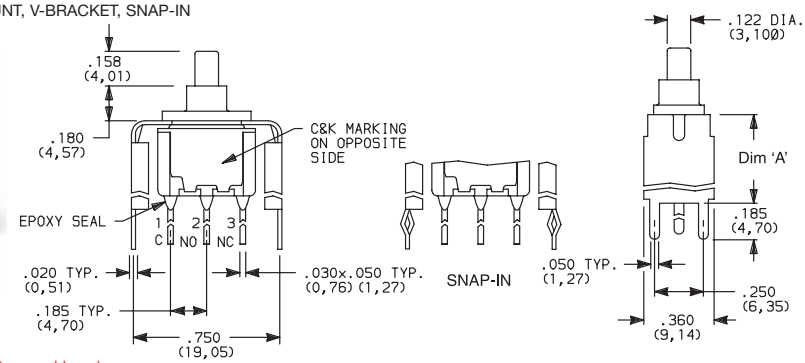


V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN

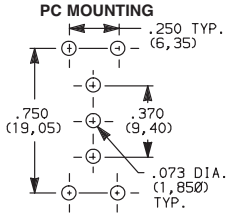


8121SD3__GE
SPDT



Not available with JXX actuators and I seal.

PC MOUNTING



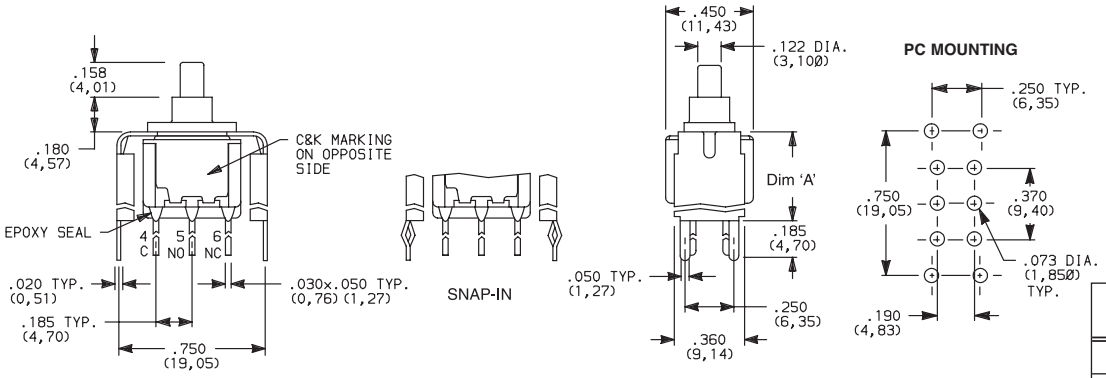
OPTION CODE	DIM 'A'
V2	.555 (14,10)
V6, V61	.460 (11,68)
V7	.630 (16,00)
V8	.953 (24,21)

Third Angle Projection

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

TERMINATIONS

V2, V6, V7, V8 VERTICAL MOUNT, V-BRACKET
V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



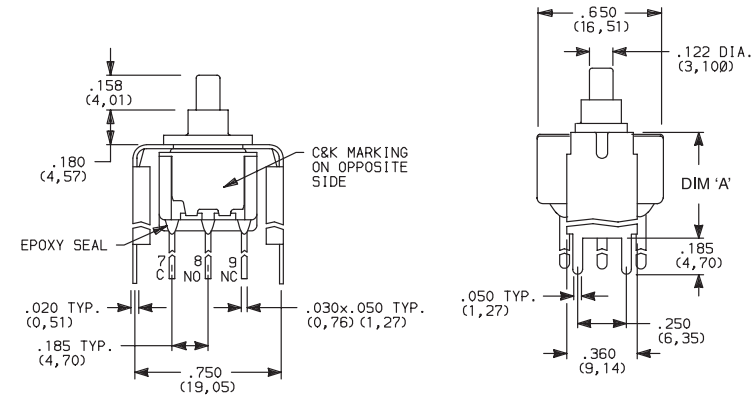


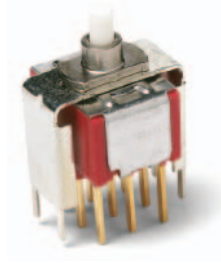
8221SD3__GE
DPDT

OPTION CODE	DIM 'A'
V2	.555 (14,10)
V6, V61	.460 (11,68)
V7	.630 (16,00)
V8	.953 (24,21)

Not available with JXX actuators and I seal.

V2, V7, V8 VERTICAL MOUNT, V-BRACKET



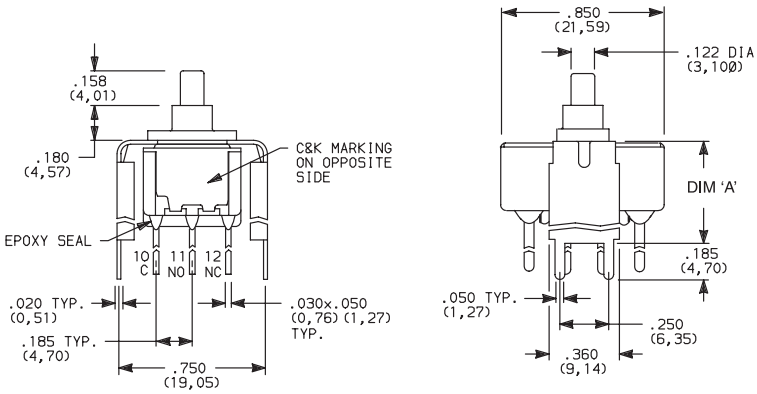


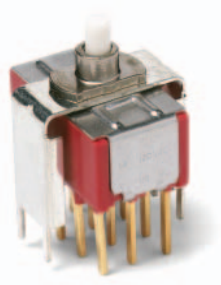
8321SD3__GE
3PDT

OPTION CODE	DIM 'A'
V2	.555 (14,10)
V7	.630 (16,00)
V8	.953 (24,21)

Not available with JXX actuators and I seal.

V2, V7, V8 VERTICAL MOUNT, V-BRACKET





8421SD3__GE
4PDT

OPTION CODE	DIM 'A'
V2	.555 (14,10)
V7	.630 (16,00)
V8	.953 (24,21)

Not available with JXX actuators and I seal.

Third Angle Projection

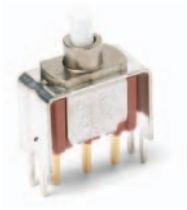
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

8020 Series
Snap-acting Momentary Pushbutton Switches

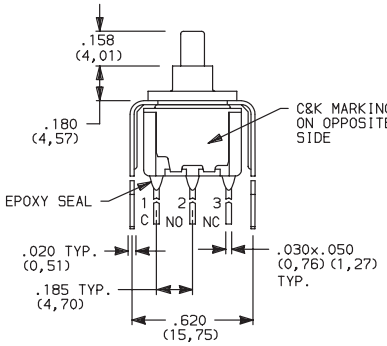
TERMINATIONS

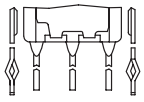
V3, V4, V9 VERTICAL MOUNT, V-BRACKET

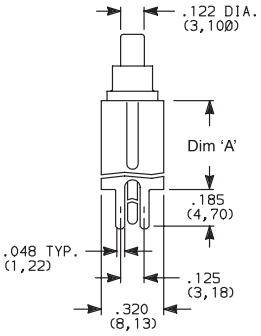
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



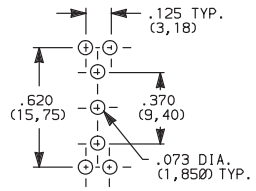
8121SD3__GE
SPDT







PC MOUNTING



OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)
V9	1.150 (29,21)

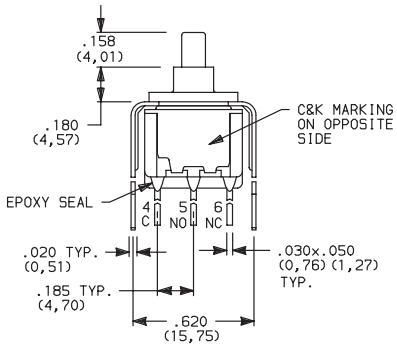
Not available with J8X actuators and I seal.

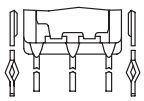
V3, V4, V9 VERTICAL MOUNT, V-BRACKET

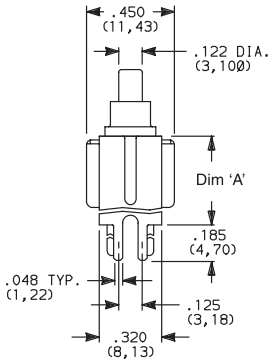
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN



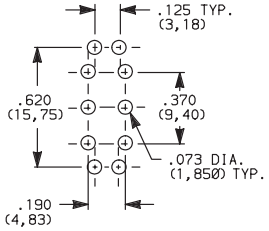
8221SD3__GE
DPDT







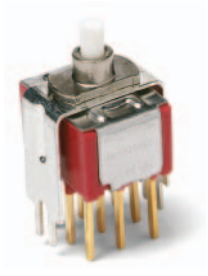
PC MOUNTING



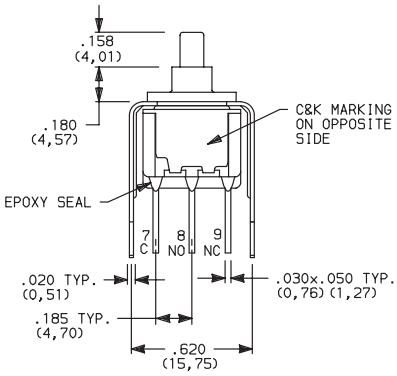
OPTION CODE	DIM 'A'
V3, V31	.460 (11,68)
V4	.630 (16,00)
V9	1.150 (29,21)

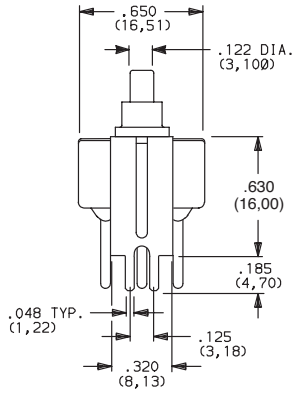
Not available with J8X actuators and I seal.

V4, V9 VERTICAL MOUNT, V-BRACKET

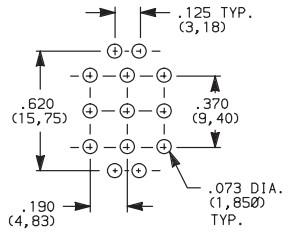


8321SD3V4GE
3PDT





PC MOUNTING



OPTION CODE	DIM 'A'
V4	.630 (16,00)
V9	1.150 (29,21)

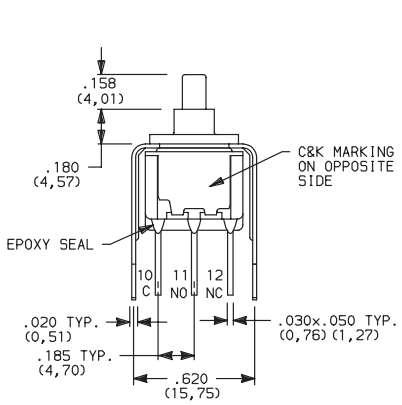
Not available with JXX actuators and I seal.

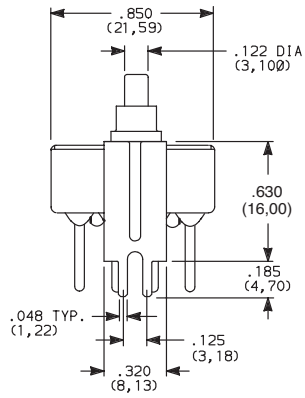
Third Angle Projection

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

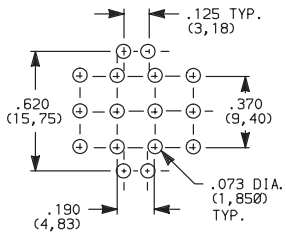
TERMINATIONS

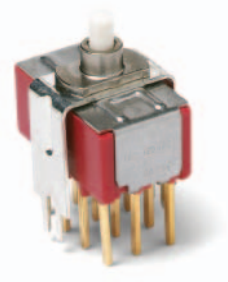
V4, V9 VERTICAL MOUNT, V-BRACKET





PC MOUNTING





8421SD3V4GE
4PDT

OPTION CODE	DIM 'A'
V4	.630 (16,00)
V9	1.150 (29,21)

Not available with JXX actuators and I seal.

CONTACT MATERIAL

OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATINGS	
B	GOLD [1]	GOLD [1]	LOW LEVEL/DRY CIRCUIT	8x25 MODELS ONLY: 0.4 MAX. @ 20 V AC OR DC MAX.
P		MATTE-TIN [4]		
G	GOLD OVER SILVER [2,3]	GOLD [3]	LOW LEVEL/DRY CIRCUIT OR POWER	8X21, U8X1 MODELS ONLY: 0.4 VA MAX @ 20 V AC OR DC MAX. OR 1 AMP @ 120 V AC OR 28 V DC.
R		MATTE-TIN [4]		

* Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

[1] ALL CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.

[2] N.O. AND N.C. CONTACTS: Coin silver, with gold plate over nickel plate.

[3] COMMON CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

[4] TERMINALS: Copper alloy, with matte-tin over nickel plate.

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

U811-U841 models with all options (except R, R2 terminations) when ordered with mandatory G or R contact material.

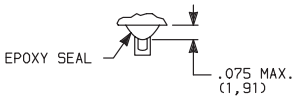
B or P contact material must be ordered with 8X25 models.

G or R contact material must be ordered with 8X21, U8X1 models.

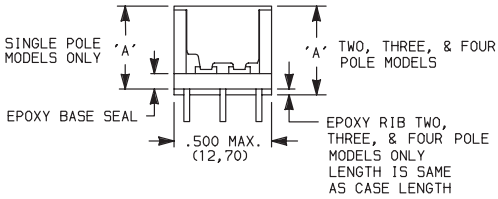
P or R contact material not available with Z, Z3 terminations.

SEAL

E EPOXY SEAL



I EPOXY POTTED BASE



NO. POLES	DIM 'A'
SP	.410 (10,41)
DP	.440 (11,18)
3P	.505 (12,83)
4P	.505 (12,83)

NOTE: Available with C, W-W4, Z, Z3 terminations only.

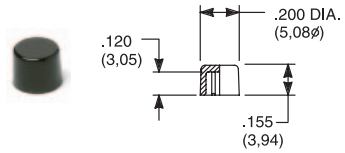
Third Angle Projection

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

8020 Series
Snap-acting Momentary Pushbutton Switches

AVAILABLE HARDWARE

Cap

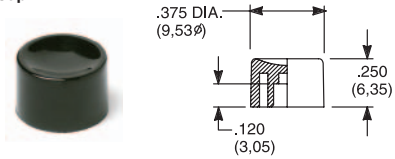


PART NO.

708901000	WHITE
708902000	BLACK
708903000	RED
708904000	ORANGE
708905000	YELLOW
708906000	GREEN
708907000	BLUE
708909000	GRAY

Material: Nylon
Finish: Gloss

Cap

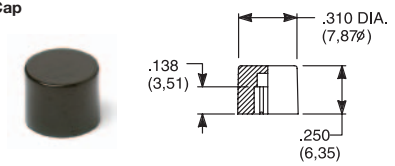


PART NO.

752701000	WHITE
752702000	BLACK
752703000	RED
752704000	ORANGE
752705000	YELLOW
752706000	GREEN
752707000	BLUE
752709000	GRAY

Material: Nylon
Finish: Gloss

Cap

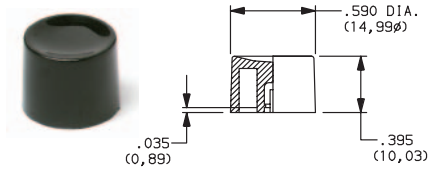


PART NO.

801801000	WHITE
801802000	BLACK
801803000	RED
801804000	ORANGE
801805000	YELLOW
801806000	GREEN
801807000	BLUE
801809000	GRAY

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

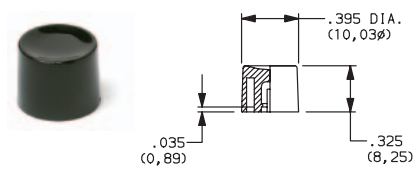


PART NO.

452D01000	WHITE
452D02000	BLACK
452D03000	RED
452D04000	ORANGE
452D05000	YELLOW
452D06000	GREEN
452D07000	BLUE
452D09000	GRAY

Material: Nylon
Finish: Gloss

Cap, Snap-fitting plunger

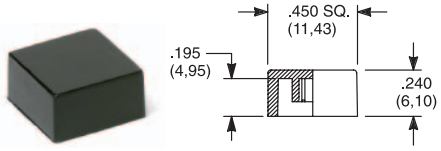


PART NO.

894101000	WHITE
894102000	BLACK
894103000	RED
894104000	ORANGE
894105000	YELLOW
894106000	GREEN
894107000	BLUE
894109000	GRAY

Material: Nylon
Finish: Gloss

Cap, J80, J81, J82, J83 & J84 options only



PART NO.

484601000	WHITE
484602000	BLACK
484603000	RED
484604000	ORANGE
484605000	YELLOW
484606000	GREEN
484607000	BLUE
484609000	GRAY

Material: Nylon
Finish: Gloss

PART NO.

798201000	WHITE
798202263	BLACK
798203000	RED
798204000	ORANGE
798205000	YELLOW
798206000	GREEN
798207000	BLUE
798209000	GRAY

Material: Nylon
Finish: Matte

Frame



PART NO.

615602263	BLACK

Material: Nylon
Finish: Matte

Frame

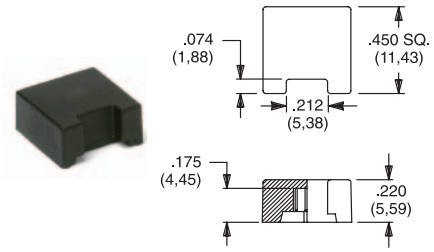


PART NO.

613302263	BLACK

Material: Nylon
Finish: Matte

Cap, J85 & J95 options only



PART NO.

459701000	WHITE
459702000	BLACK
459703000	RED
459704000	ORANGE
459705000	YELLOW
459706000	GREEN
459707000	BLUE
459709000	GRAY

Material: Nylon
Finish: Gloss

PART NO.

476801000	WHITE
476802000	BLACK
476803000	RED
476804000	ORANGE
476805000	YELLOW
476806000	GREEN
476807000	BLUE
476809000	GRAY

Material: Nylon
Finish: Matte

Fits Z3 Termination female connector



PART NO.
530100000

Available in loose pieces.

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.

Third Angle Projection

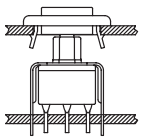
Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

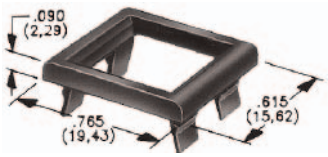


AVAILABLE HARDWARE

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

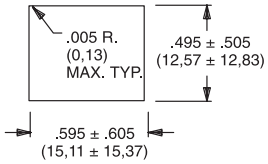




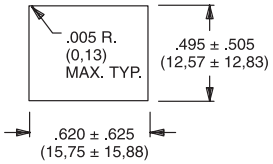
.047" (1,19) PANEL THK.	.062" (1,57) PANEL THK.	.090" (2,29) PANEL THK.	.125" (3,18) PANEL THK.
PART NO.	**PART NO.**	**PART NO.**	**PART NO.**
432502263	432602263	432702263	432802263 BLACK

PANEL MOUNTING

For part numbers
4325xxxxx, 4326xxxxx

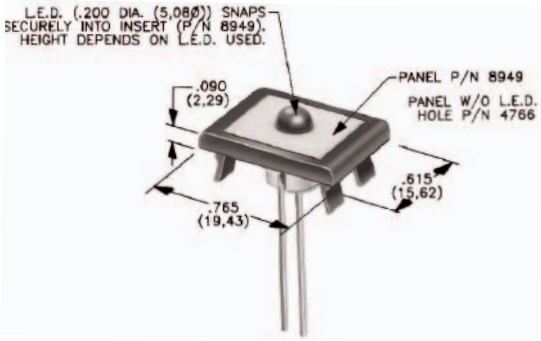


For part numbers
4327xxxxx, 4328xxxxx



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.**



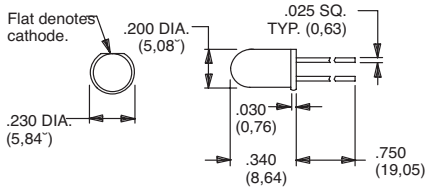
PANEL INSERT WITH HOLE FOR LED	BLANK PANEL INSERT WITHOUT HOLE FOR LED
PART NO.	**PART NO.**
894902000	476602000 BLACK

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

LED INFORMATION

SWITCHES WITH LED SUPPLIED: J85, J95 OPTIONS:
Rectangular LEDs are supplied on 8020 Series pushbutton switches with J85 and J95 options. These LEDs are factory installed and are not replaceable. The following specifications apply:

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



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

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



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