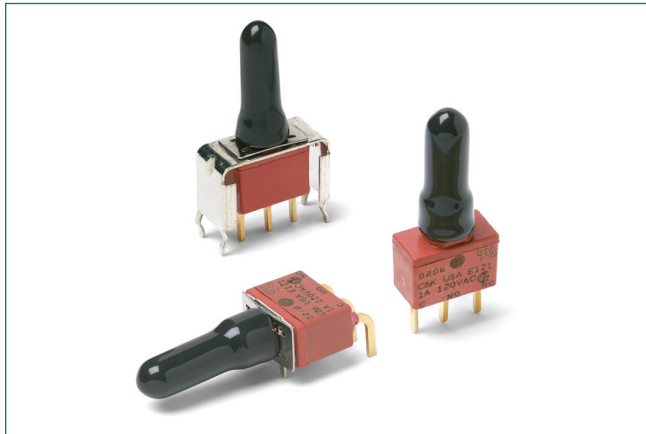



# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches



### Agency Approvals

Agency	Agency File Number
	E42363

### Specifications

<b>Contact Rating</b>	B contact material (EX25): 0.4VA max. @ 20VAC or DC max. G contact material (EX21): 1A @ 120VAC or 28VDC or 0.4VA max @20VAC or DC max. Note: break-before-make contacts. Multip-pole contacts do not make and break simultaneously.
<b>Electrical Life</b>	60,000 make-and-break cycles at full load.
<b>Contact Resistance</b>	Below 50 m Ω typ. initial @ 2–4 V DC, 100 mA, for both silver and gold plated contacts.
<b>Insulation Resistance</b>	10 <sup>9</sup> Ω min.
<b>Dielectric Strength</b>	1000 Vrms min. @ sea level.
<b>Operating Temperature</b>	* –30°C to 75°C
<b>Cap Installation Force</b>	10 lbs. Max. permissible
<b>Solderability</b>	Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

#### Notes:

- Any models supplied with P, R, B or G contact material are RoHS compliant. Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.
- UL cURus maximum temperature is 65 deg. cel.

### Description

The E020 series are sealed snap-acting momentary pushbutton switches, built for use in instrumentation and the networking and telecommunications industries. The E020 features a long-life contact design and is process-sealed with a disposable, splash proof boot. The switches also come with an optional snap-fitting plunger.

### Features & Benefits

- Process sealed with disposable splashproof boot
- Long life contact design
- Snap-fitting plunger available
- RoHS compliant models available

### Applications

- Instrumentation
- Telecommunications and networking equipment
- Computers and peripherals

### Materials

<b>Case &amp; Bushing</b>	Glass filled nylon 6/6, flame retardant (UL 49 V-0).
<b>Plunger</b>	Glass filled nylon or glass filled polyester (PBT) (UL 49 V-0).
<b>Switch Support</b>	Brass or steel, matte-tin
<b>Switch Support Retainer</b>	Stainless steel
<b>N.O. &amp; N.C. Contacts</b>	EX25 models: B contact material: Copper alloy, with gold plate over nickel plate. EX21 models: G contact material: Coin silver, with gold plate over nickel plate.
<b>Common Contacts &amp; All Terminals</b>	Copper alloy, with gold plate over nickel plate.
<b>Terminal Seal</b>	Epoxy
<b>Disposable Boot</b>	Vinyl splashproof boot supplied standard. Remove and discard only after soldering and cleaning processes are complete.

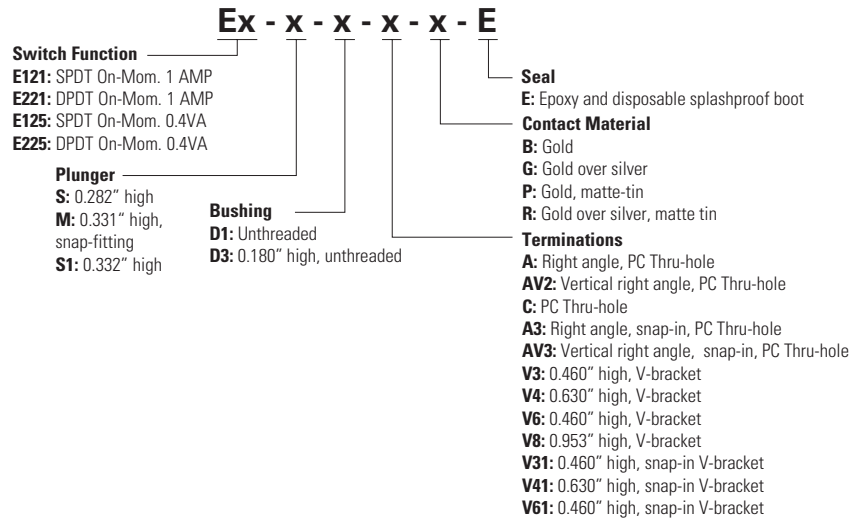
# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches



### Ordering Number

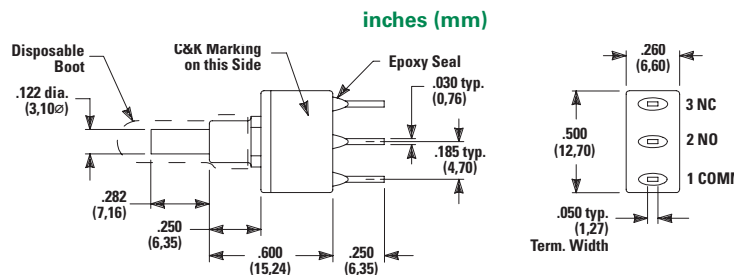
To order, simply select desired option from each category and place in the appropriate box. For additional options not shown in catalog, consult our Customer Service Center. All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.



### Switch Function

#### SPDT

No. Poles	Mo. Poles	Switch Function		Connected Terminals		Schematic
		POS. 1	POS. 2	POS. 1	POS. 2	
		C&K marking on opposite side				
SP	E121	ON	MOM.	1-3	1-2	
	E125					



Part Number Shown: E121SD1CGE

Terminal Nos. For Reference Only

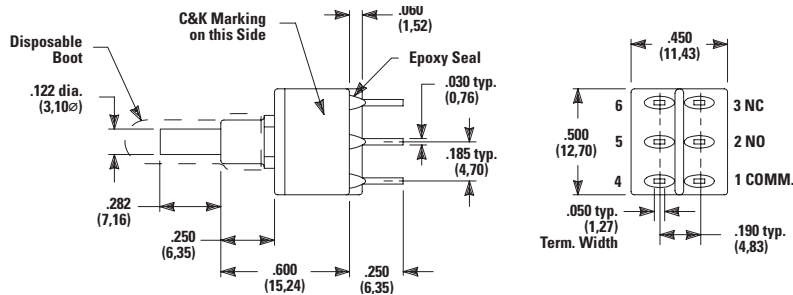
# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches



### DPDT

No. Poles	Model No.	Switch Function		Connected Terminals		Schematic
		POS. 1	POS. 2	POS. 1	POS. 2	
C&K marking on opposite side						
DP	E221	ON	MOM.	1-3, 4-6	1-2,4-5	
	E225					



Part Number Shown: E221SD1CBE

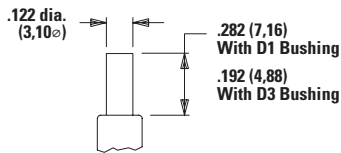
MOM. = Momentary All models **C&K** switches with all options when ordered with G or R contact material.

EX25 models must be ordered with B or P contact material. EX21 models must be ordered with G or R contact material.

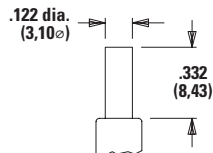
Terminal Nos. For Reference Only

### Plunger

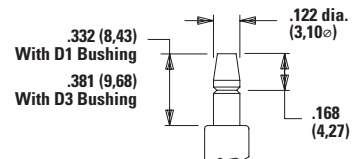
#### S 0.282" High



#### S1 0.332" High



#### M 0.332" High Snap-Fitting

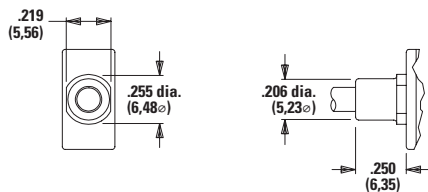


**Notes:**

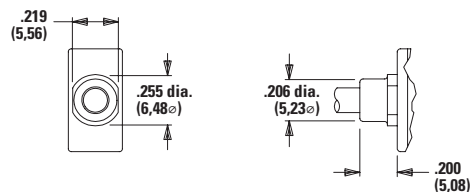
Not Available with D1 bushing. Caps available for all plunger options, see page A-27.

### Bushing

#### D1 Unthreaded



#### D3 0.180" High Unthreaded



**Notes:**

Not Available with S1 actuator. Disposable splashproof vinyl over actuator and bushing supplied std., see page A-26.

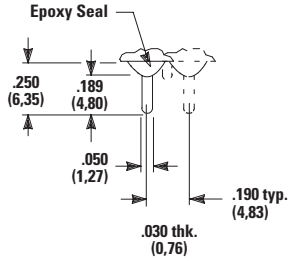
# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches

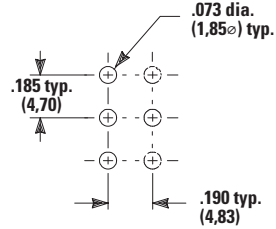


### Terminations

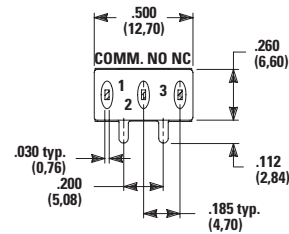
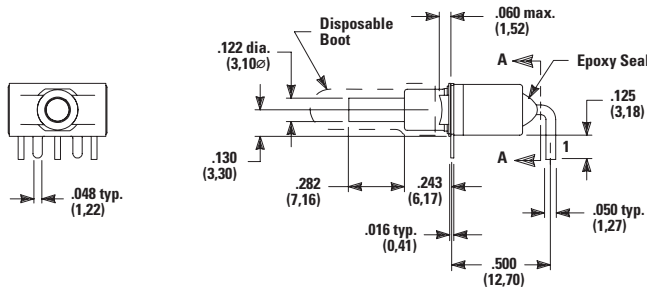
#### C PC Thru-hole SPDT and DPDT



#### PC Mounting

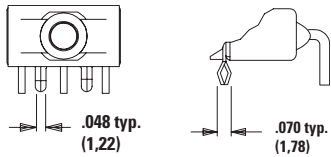


#### A Right Angle, PC Thru-hole E121SD1AGE SPDT

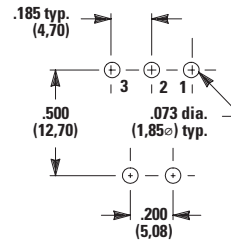


Section A-A

#### A3 Right Angle, Snap-in, PC Thru-hole

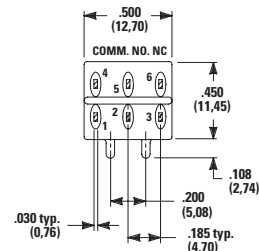
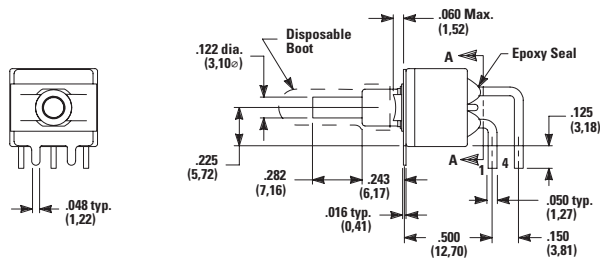


#### PC Mounting



**Notes:**  
Terminal bend radii and lead-in manufacturing option.

#### A Right Angle, PC Thru-hole E221SD1AGE DPDT



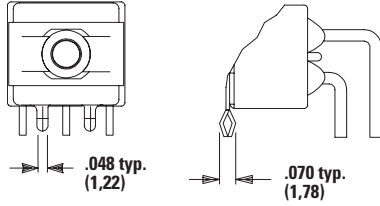
Section A-A

# E020 Series

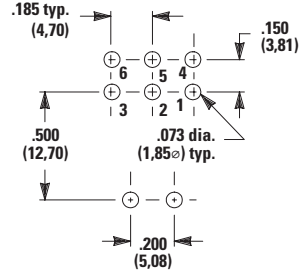
## Sealed Snap-acting Momentary Pushbutton Switches



### A3 Right Angle, Snap-in, PC Thru-hole

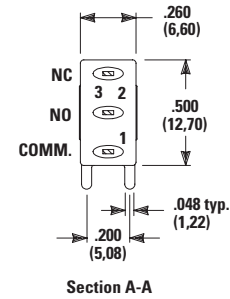
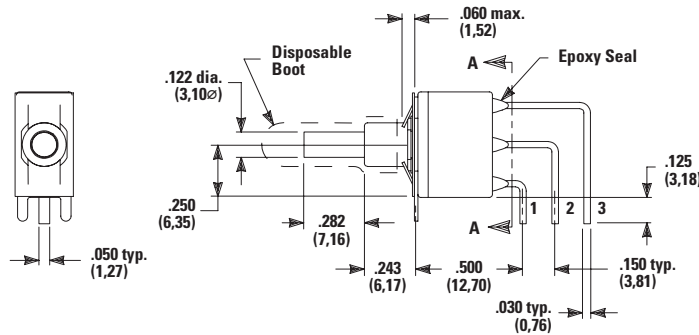


### PC Mounting

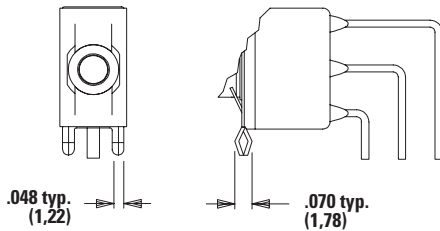


**Notes:**  
Terminal bend radii and lead-in manufacturing option.

### AV2 Vertical Right Angle, PC Thru-hole, 0.150" Pitch E121SD1AV2GE SPDT

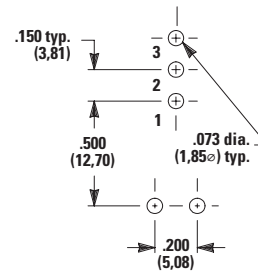


### AV3 Vertical Right Angle, Snap-in, PC Thru-hole, 0.150" Pitch

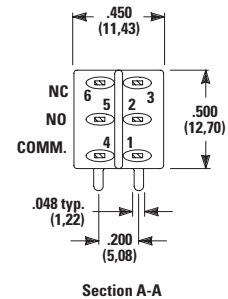
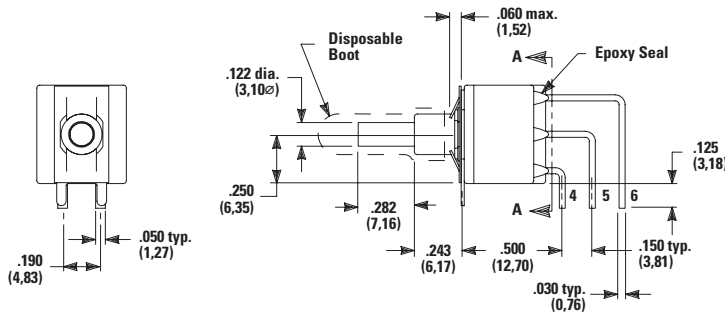


**Note:** Terminal bend radii and lead-in manufacturing option.

### PC Mounting



### AV2 Vertical Right Angle, PC Thru-hole, 0.150" Pitch E221SD1AV2GE DPDT

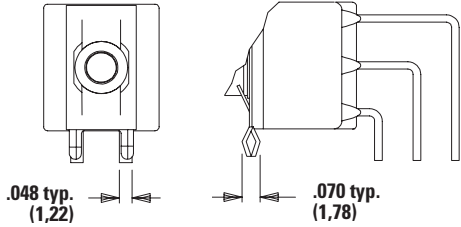


# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches

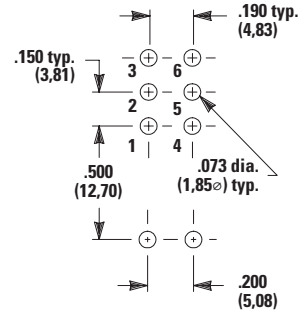


### AV3 Vertical Right Angle, Snap-in, PC Thru-hole, 0.150" Pitch

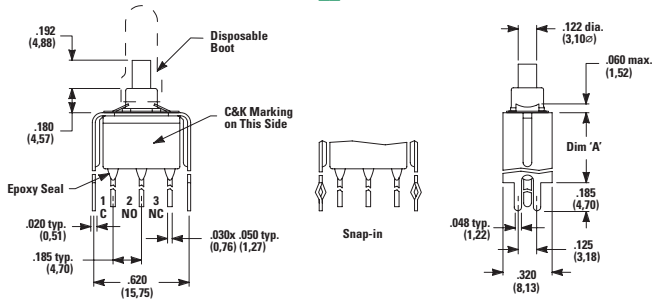


Note: Terminal bend radii and lead-in manufacturing option.

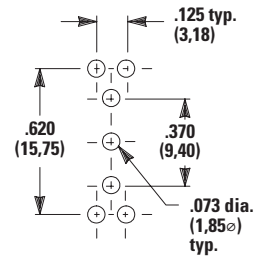
### PC Mounting



### V3, V4 Vertical Mount, V-Bracket V31, V41 Vertical Mount, V-Bracket, Snap-in E121SD3\_GE SPDT



### PC Mounting



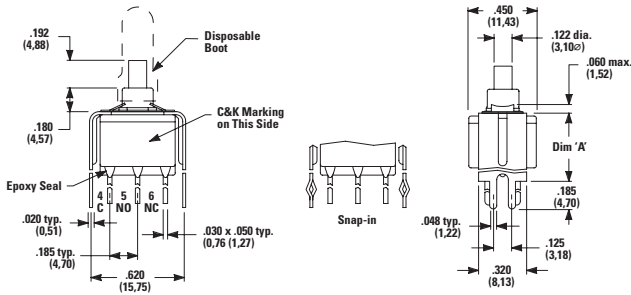
Option Code	DIM 'A'
V3, V31	0.460 (11.68)
V4, V41	0.630 (16.00)

# E020 Series

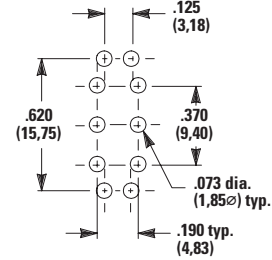
## Sealed Snap-acting Momentary Pushbutton Switches



### V3, V4 Vertical Mount, V-Bracket V31, V41 Vertical Mount, V-Bracket, Snap-in E221SD3\_GE DPDT

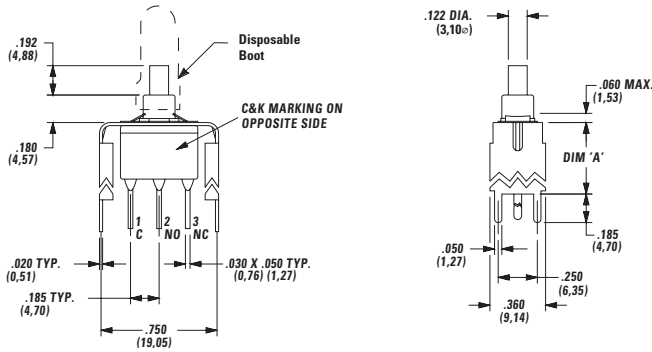


### PC Mounting

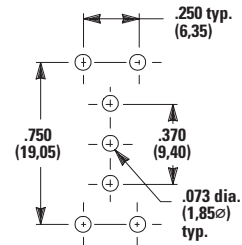


Option Code	DIM 'A'
V3, V31	0.460 (11.68)
V4, V41	0.630 (16.00)

### V6, V8 Vertical Mount, V-Bracket V61, V81 Vertical Mount, V-Bracket, Snap-in E121SD3\_GE SPDT

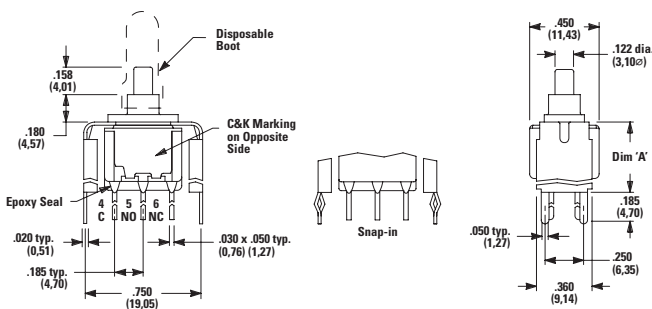


### PC Mounting

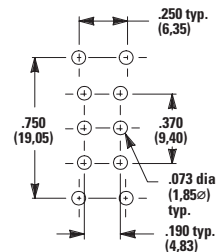


Option Code	DIM 'A'
V6, V61	0.460 (11.68)
V8, V81	0.953 (24.21)

### V6, V8 Vertical Mount, V-Bracket V61, V81 Vertical Mount, V-Bracket, Snap-in E221SD3V6GE DPDT



### PC Mounting



Option Code	DIM 'A'
V6, V61	0.460 (11.68)
V8, V81	0.953 (24.21)

# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches



### Contact Material

Option Code	Contact Material	Terminal Plating	Ratings	
B	Gold <sup>1</sup>	Gold <sup>1</sup>	Low Level/Dry Circuit	EX25 Models Only: 0.4 VA Max. @ 20 V AC or DC Max.
P		Matte-Tin <sup>6</sup>		
G	Gold over Silver <sup>2,3</sup>	Gold <sup>3</sup>	Low Level/Dry Circuit or Power	EX21 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 <sup>6</sup>		

**Notes:**

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.

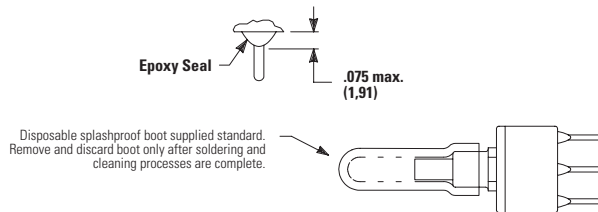
6. Terminals: Copper alloy, with matte tin over nickel plate.

Any models supplied with P, R, Q, B or G contact material are RoHS compliant. All models ~~are~~ with all options when ordered with R or G contact material. B contact material standard with A, AV, V3 & W terminations.

Q contact material standard with C & Z terminations. P, R contact materials not available with Z terminations.

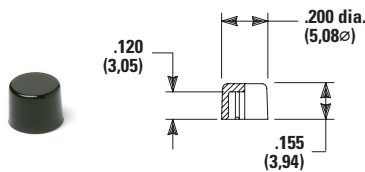
### Seal

#### E Epoxy Seal and Disposable Splashproof Boot



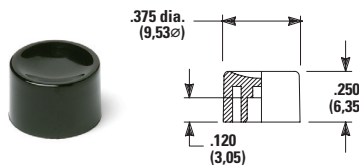
### Available Hardware

#### Cap



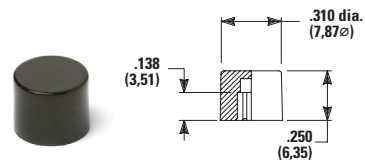
**PART NO.**  
708901000 WHITE  
708902000 BLACK  
708903000 RED  
**Material:** Nylon  
**Finish:** Gloss

#### Cap



**PART NO.**  
752701000 WHITE  
752702000 BLACK  
752703000 RED  
**Material:** Nylon  
**Finish:** Gloss

#### Cap



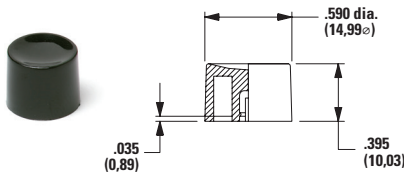
**PART NO.**  
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801802000 BLACK  
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**Material:** Nylon  
**Finish:** Gloss

# E020 Series

## Sealed Snap-acting Momentary Pushbutton Switches

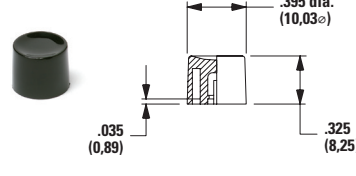


### Cap, Snap Fitting Plunger



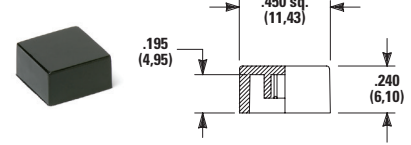
**PART NO.**  
 452D01000 WHITE  
 452D02000 BLACK  
 452D03000 RED  
**Material:** Nylon  
**Finish:** Gloss

### Cap, Snap Fitting Plunger



**PART NO.**  
 894101000 WHITE  
 894102000 BLACK  
 894103000 RED  
**Material:** Nylon  
**Finish:** Gloss

### Cap



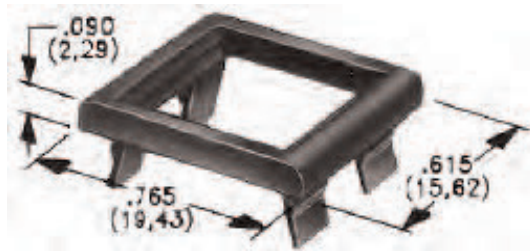
**PART NO.**  
 484601000 WHITE  
 484602000 BLACK  
 484603000 RED  
**Material:** Nylon  
**Finish:** Gloss

**PART NO.**  
 798201000 WHITE  
 798202263 BLACK  
 798203000 RED  
**Material:** Nylon  
**Finish:** Gloss

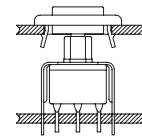
**Note:** Other cap colors available, consult Customer Service Center.

### Frame

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.



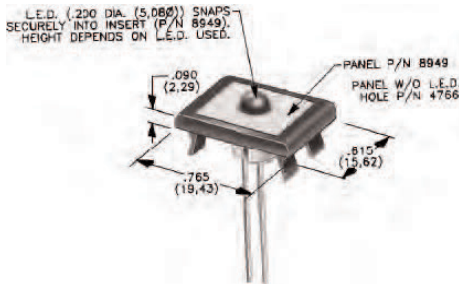
### Typical Application



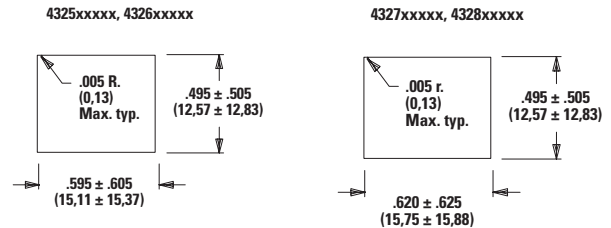
.090" (2,29) PANEL THK.  
**PART NO.** 432702263

.125" (3,18) PANEL THK.  
**PART NO.** 432802263  
 BLACK

### Panel Inserts



### Panel Mounting



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  
**PART NO.** 894902000

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

**Note:** Special colors, custom markings available, consult Customer Service Center.

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