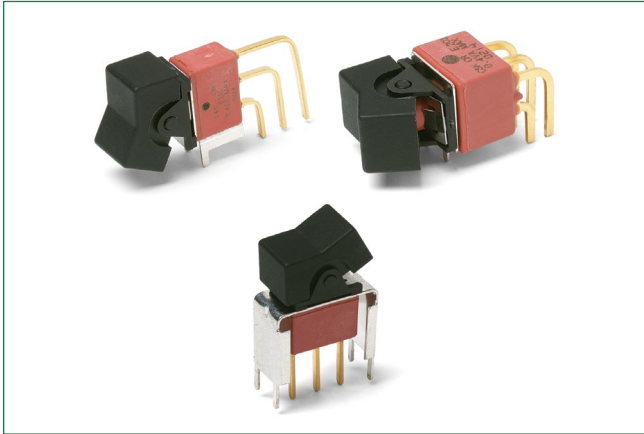


E Series

Sealed Miniature Rocker and Lever Handle Switches



Agency Approvals

Agency	Agency File Number
	E42363

Specifications

Contact Rating	B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material (E1XX & E2XX models): 7.5 amps @125 V AC or 28 V DC; 3 amps @ 250 V AC. (E3XX models): 5 amps @ 125 V AC or 28 V DC; 2 amps @ 250 V AC. See page 12 for additional ratings.
Electrical Life	E1XX and E2XX models: 40,000 make-and-break cycles at full load. E3XX models: 30,000 cycles.
Contact Resistance	Below 10 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.
Insulation Resistance	10 ⁹ Ω min.
Electrostatic Discharge (ESD) Option	All actuator options: 15,000 V DC max. @ sea level, actuator to terminals.
Dielectric Strength	1000 Vrms min. @ sea level.
Operating Temperature	-30°C to 85°C
Solderability	Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

Description

Telecommunications, instrumentation and computer and peripheral product designers need resilient, long-lasting switches that can be held to a high-performance standard. The E series sealed miniature rocker and lever handle switches are sealed against solder and cleaning process contaminants, feature ESD Resistance for all actuator options and its rocker, case and bushing are UL 94 V-0 rated.

Features & Benefits

- Sealed against solder and cleaning process contaminants
- ESD Resistance—all actuator options
- Rocker, case & bushing UL 94 V-0
- RoHS compliant

Applications

- Telecommunications
- Instrumentation
- Computers & peripherals

Materials

Case & Bushing	Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0).
Actuator	Nylon, black standard, internal o-ring seal standard with all actuators.
Frame	Spring steel, black standard
Switch Support	Brass or steel, matte-tin plated.
Actuator Pivot & Mounting Bracket	Nylon
Actuator Pivot Retainer	Stainless steel
Contacts & Terminals	B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Copper alloy, silver plated. See page 12 for additional contact materials.
Terminal Seal	Epoxy.
Hardware	Nut, Screw & Lockwasher: Stainless steel. Standoff: Nylon standard, aluminum available, consult Customer Service Center.

Notes:

Any models supplied with Q, B, G, S, P & R 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.

E Series

Sealed Miniature Rocker and Lever Handle Switches



Ordering Number

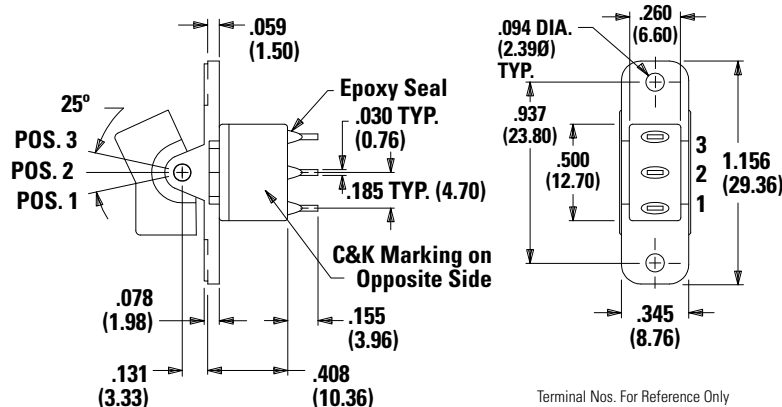
To order, simply select desired option from each category and place in the appropriate box. **For additional options not shown in catalog, consult Customer Service Center.** All models are process sealed to withstand machine soldering temperatures and pressure wash cleaning methods.

Exxx - xxx - xxx - x - E - x - x

<p>Switch Function</p> <p>E101: SP On-None-On E103: SP On-Off-On E105: SP Mom.-Off-Mom. E107: SP On-Off-Mom. E108: SP On-None-Mom. E201: DP On-None-On E203: DP On-Off-On E205: DP Mom.-Off-Mom. E207: DP On-Off-Mom. E208: DP On-None-Mom. E211: DP On-On-On E213: DP On-On-Mom. E215: DP Mom.-On-Mom. E301: 3P On-None-On</p>	<p>Actuator</p> <p>J1: 0.531 long rocker J2: Lever J3: 0.906" long rocker J11: Rocker with frame J21: Lever with frame J50: .362" long rocker J60: Lever J90: Lever</p>	<p>Terminations</p> <p>A: Right angle, PC thru-hole AV2: Vertical right angle, PC thru-hole C: PC Thru-hole Z: Solder lug A3: Right angle, snap-in, PC thru-hole AV3: Vertical right angle, snap-in, PC thru-hole V3: 0.460" high, V-bracket V4: 0.630" high, V-bracket V5: Vertical right angle, PC thru-hole V6: 0.460" high, V-bracket V7: 0.630" high, V-bracket V8: 0.953" high, V-bracket V21: 0.555" high, V-bracket, snap-in V31: 0.460" high, V-bracket, snap-in</p>	<p>Actuator Color</p> <p>2: Black 3: Red</p> <p>Seal</p> <p>E: Epoxy</p> <p>Contact Material</p> <p>B: Gold P: Gold, matte-pin Q: Silver S: Silver, matte-pin G: Gold over silver R: Gold over silver, matte-pin</p>	<p>Frame Color</p> <p>2: Black NONE: No frame color required</p> <p>Metal Frame Color</p> <p>2: Black (J11, J21 Actuators)</p>
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Switch Function SPDT

No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		C&K marking on opposite side						
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	E101	ON	NONE	ON		N/A		<p>2 (COMM) 1 3</p>
	E103							
	E105	MOM	OFF	MOM.	2-3	OPEN	2-1	
	E107							
	E108	ON	NONE	MOM.		N/A		



Notes: Part number shown: E101J1ZBE2

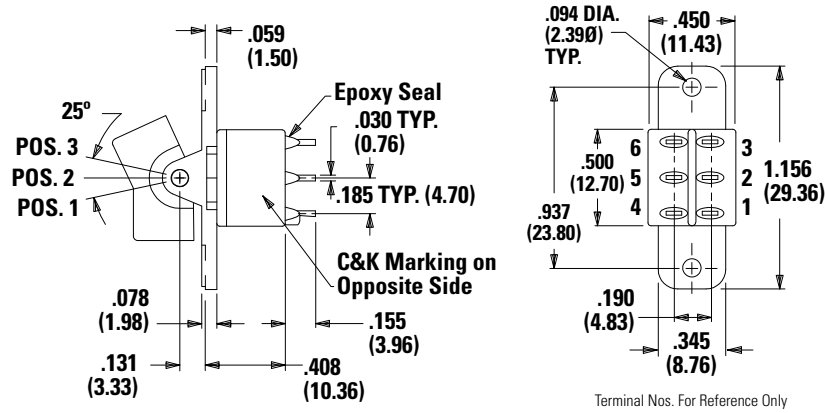
E Series

Sealed Miniature Rocker and Lever Handle Switches



DPDT

No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		C&K marking on opposite side						
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
DP	E201	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	
	E203		OFF			OPEN		
	E205	MOM	MOM.	N/A				
	E207	ON	NONE	ON		2-3,5-4		
	E208		ON	MOM.				
	E211 ¹		ON	MOM.				
	E213 ¹	MOM.	ON	MOM.		2-3,5-4		
	E215 ¹		MOM.	MOM.				



Notes: MOM. = Momentary, Part number shown: E201J1ZBE2. All models us with all options when ordered with G, Q, R or S contact material.
 1. Wiring for 3-way switch. Hardware available separately, see Technical Data section of this catalog.

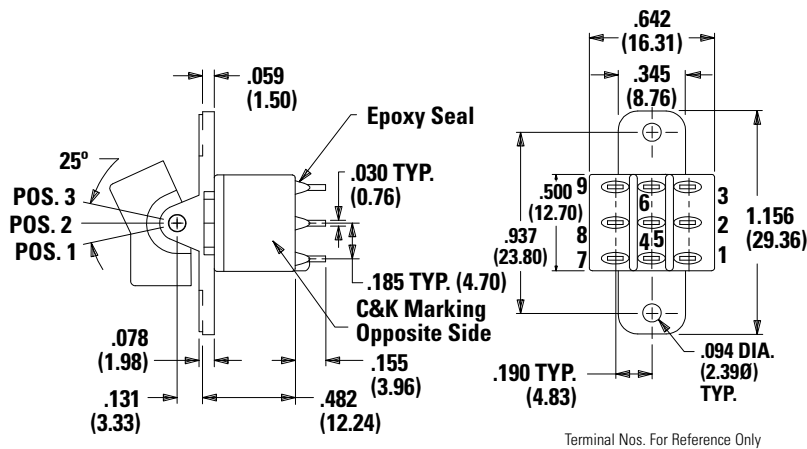
E Series

Sealed Miniature Rocker and Lever Handle Switches



3PDT

No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		C&K marking on opposite side						
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
3P	E301	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	



Terminal Nos. For Reference Only

Notes: MOM. = Momentary, Part number shown: E301J1ZQE2. All models c us with all options when ordered with G, Q, R or S contact material.
1. Wiring for 3-way switch. Hardware available separately, see Technical Data section of this catalog.

E Series

Sealed Miniature Rocker and Lever Handle Switches



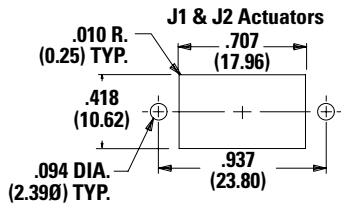
Actuator-Panel Rear Mount

Option Code	Actuator Color
2	Black
3	Red

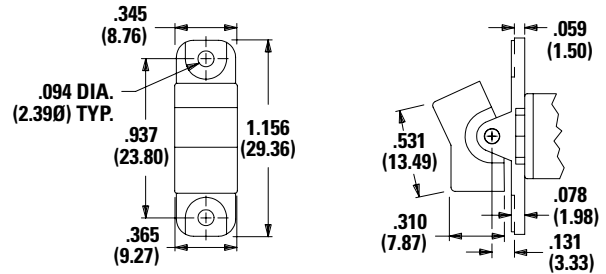
Finish: Matte. Other colors, custom actuator markings and legends available, consult Customer Service Center.

Notes: Hardware: two each—mounting screws, nuts, lock-washers and standoffs for 1/8 inch thick panel are supplied standard on switches with panel mounting bracket. Internal o-ring actuator seal standard. Actuators available separately, see page 13. Hardware available separately, see Technical Data section of this catalog. J1, J2 actuators available with C, Z or Z3 terminations.

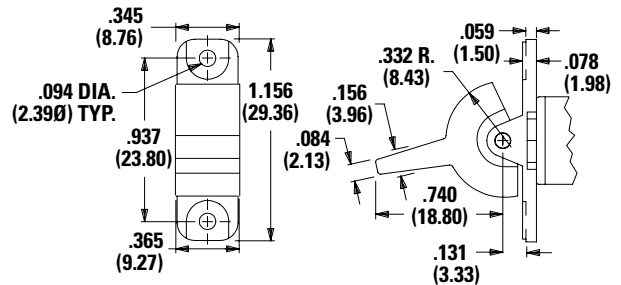
Panel Mounting



J1 Level



J2 Level



Actuator-Rear Mount

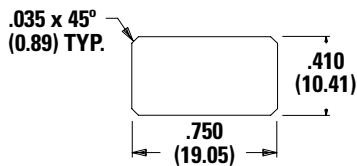
Option Code	Actuator Color
2	Black
3	Red

Option Code	Frame Color
2	Black

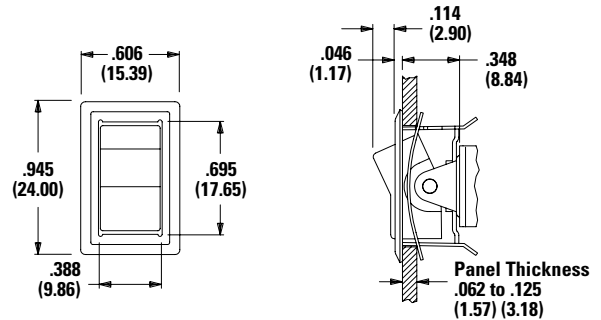
Finish: Matte. Matte, frame finish: gloss. Other colors, custom actuator markings and legends available, consult Customer Service Center.

Notes: Internal o-ring actuator seal standard. Actuators & frames available separately, see page 13. Hardware available separately, see Technical Data section of this catalog. J11 & J21 actuators available with C, Z & Z3 terminations available with C, Z or Z3 terminations.

Panel Mounting

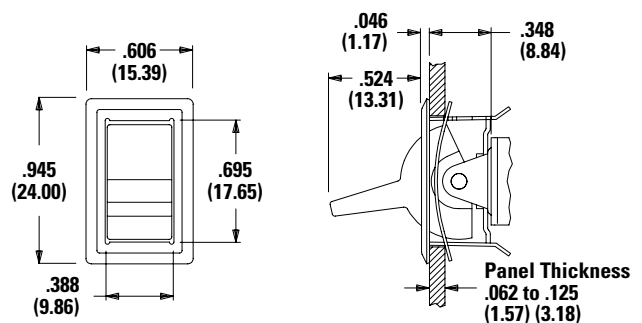


J11 Rocker with Frame



Notes: This option has reduced anti-static capability.

J21 Lever with Frame



Notes: This option has reduced anti-static capability.

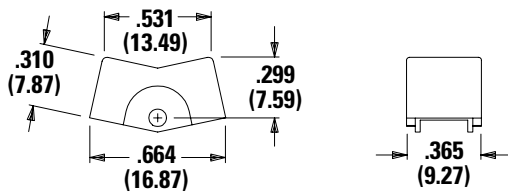
E Series

Sealed Miniature Rocker and Lever Handle Switches

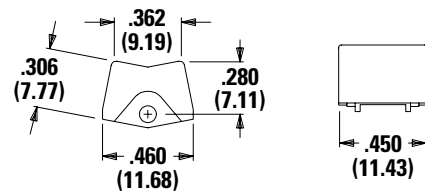


Actuator-PC Mount

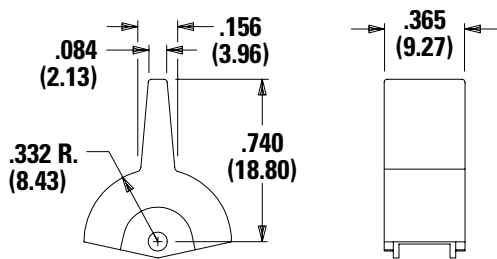
J1 Rocker



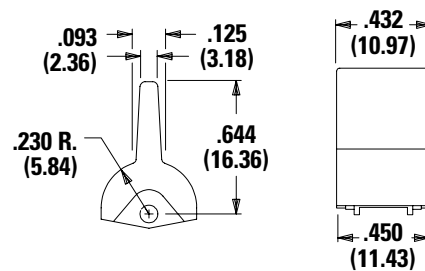
J50 Rocker



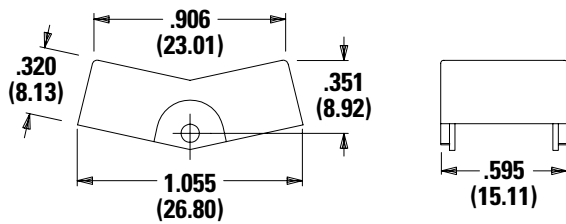
J2 Lever



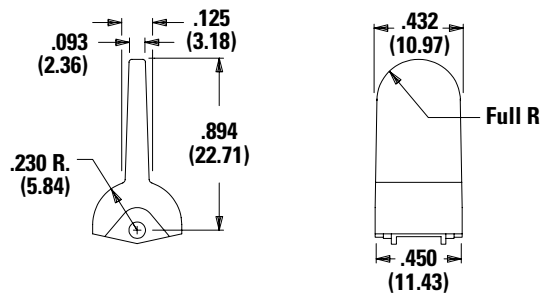
J60 Lever



J3 Rocker



J90 Lever



Option Code	Actuator Color
2	Black
3	Red

Finish: Matte. Other colors, custom actuator markings and legends available, consult Customer Service Center.

Notes: Hardware: two each—mounting screws, nuts, lock-washers and standoffs for 1/8 inch thick panel are supplied standard on switches with panel mounting bracket. Internal o-ring actuator seal standard. Actuators available separately, see page 13. Hardware available separately, see Technical Data section of this catalog.

J1, J2 actuators available with A, A3, AV2, AV3, V2-V61 terminations. J3 actuators available with AV2, AV3 & V2-V61 terminations. Some permissible actuator/termination combinations may lack clearance between actuator and PC board, and care must be exercised to accommodate this condition.

J50, J60 & J90 actuators available with A, AV2, AV3, V2 – V61 terminations.

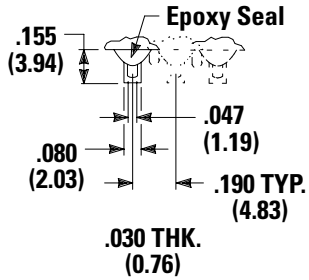
E Series

Sealed Miniature Rocker and Lever Handle Switches

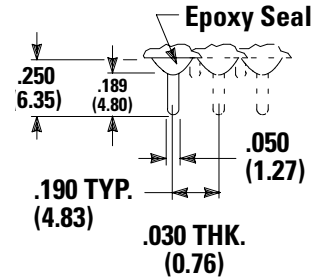


Terminations

Z Solder Lug
SPDT thru 3PDT

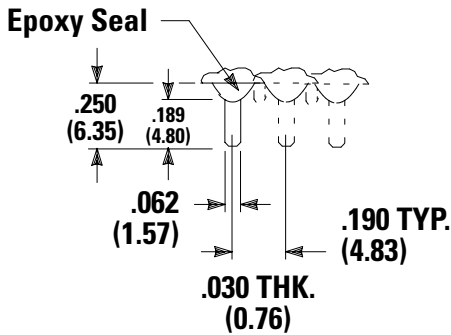


C PC Thru-hole
SPDT thru 3PDT

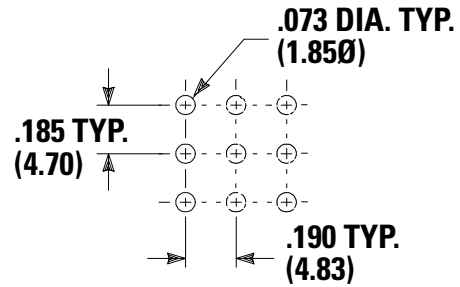


Notes: Not available with P, S, & R contact materials. Available actuators, see page 4-5.

Z3 Quick Connect
SPDT thru 3PDT

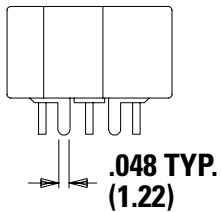


PC Mounting

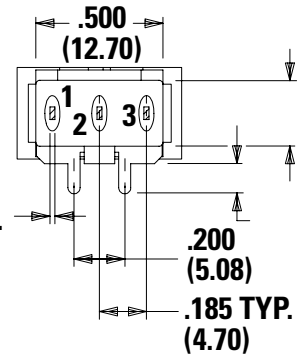
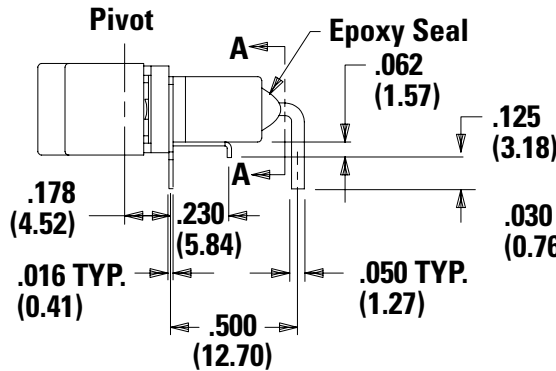


Notes: Not available with P, S, & R contact materials. Available actuators, see pages 4-5. Mating quick connector available; order part number 530100000, page 13.

A Right Angle, PC Thru-hole
E101J1ABE2 Horizontal Actuation SPDT



Actuator Shown In Pos. 1



Section A-A

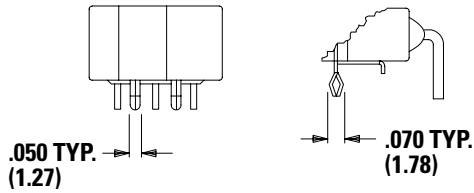
E Series

Sealed Miniature Rocker and Lever Handle Switches



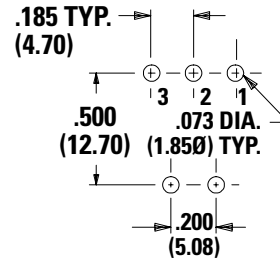
A3 Right Angle, Snap-in, PC Thru-hole

Dimensions



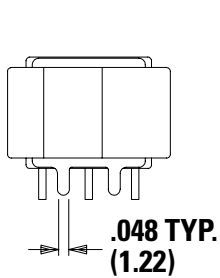
Notes: Not available with J3, J50, J60 and J90 actuators. Available actuators, see pages 4-5. Terminal bend radii and lead-in manufacturing option.

PC Mounting

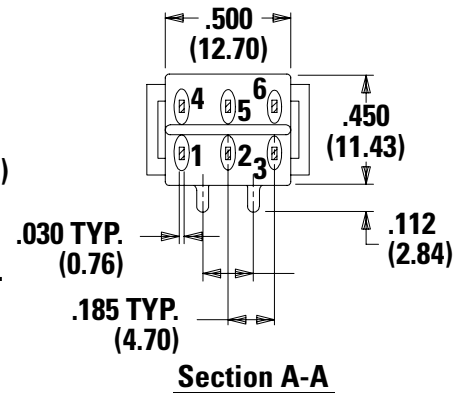
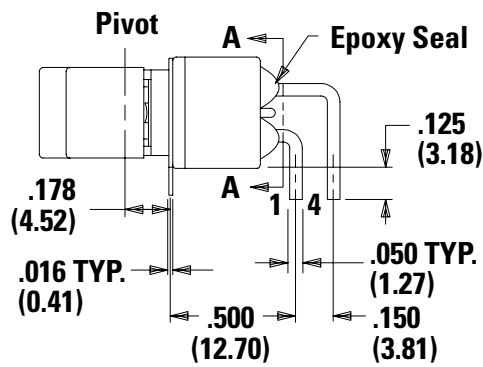


Notes: PC mounting pattern must clear switch support leg.

A Right Angle, PC Thru-hole E201J1ABE2 Horizontal Actuation DPDT

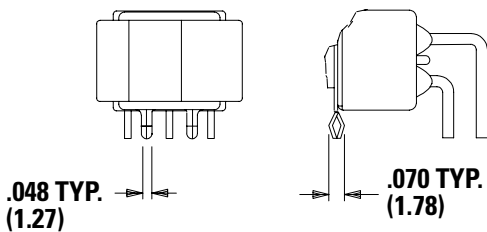


Actuator Shown In Pos. 1



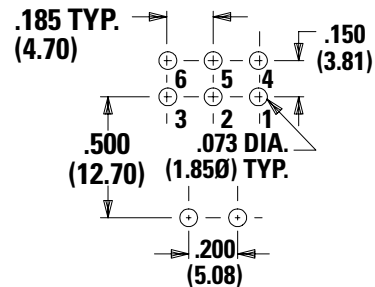
A3 Right Angle, Snap-in, PC Thru-hole

Dimensions



Notes: Not available with J3 actuator. Available actuators, see pages 4-5. Terminal bend radii and lead-in manufacturing option.

PC Mounting

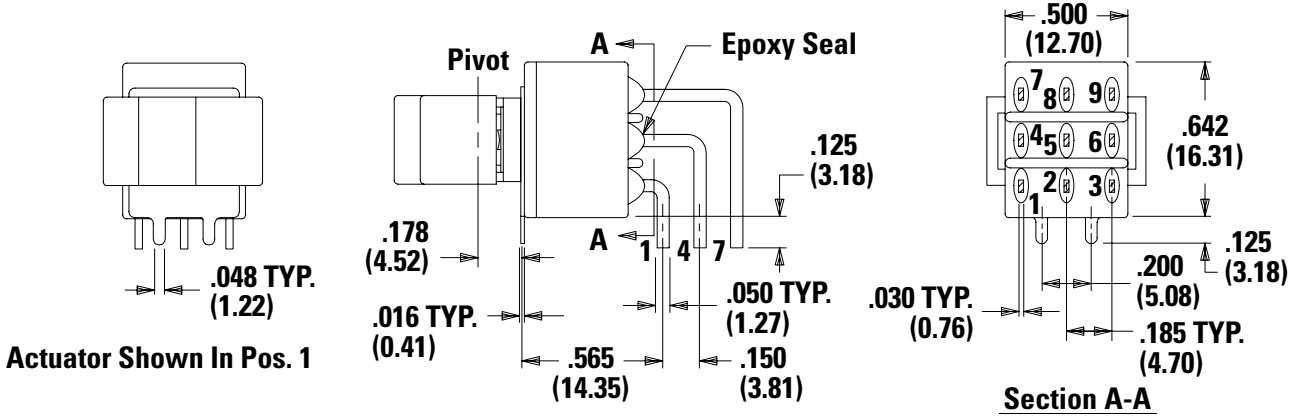


E Series

Sealed Miniature Rocker and Lever Handle Switches

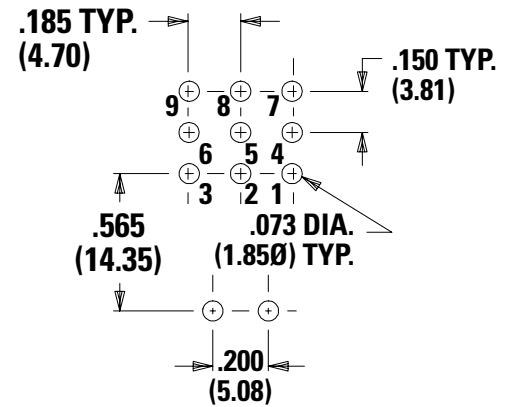


A Right Angle, PC Thru-hole
E301J1ABE2 Horizontal Actuation 3PDT

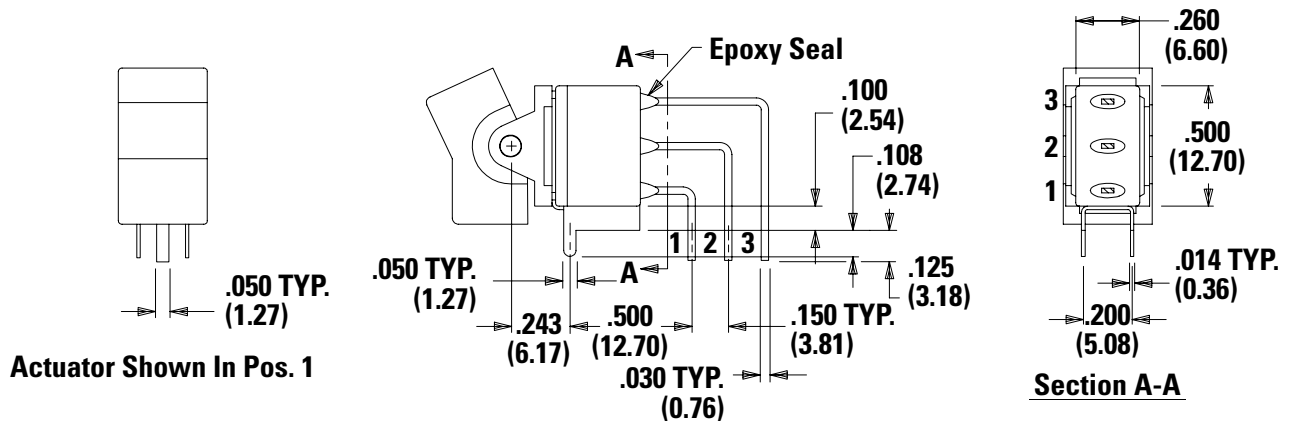


Notes: Terminal bend radii and lead-in manufacturing option. Available actuators, see pages 4-5.

PC Mounting



AV2 Vertical Right Angle, PC Thru-hole, 0.150" Pitch
E101J1AV2BE2 Vertical Actuation SPDT



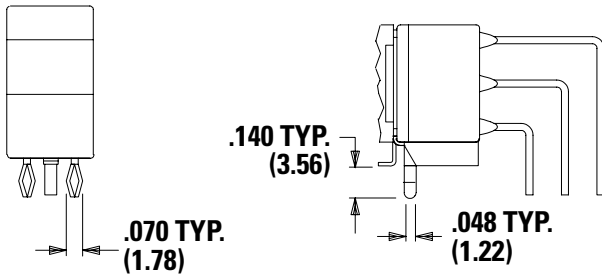
E Series

Sealed Miniature Rocker and Lever Handle Switches

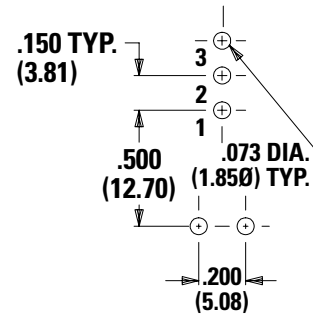


AV3 Vertical Right Angle, Snap-in PC Thru-hole, 0.150" Pitch

Dimensions

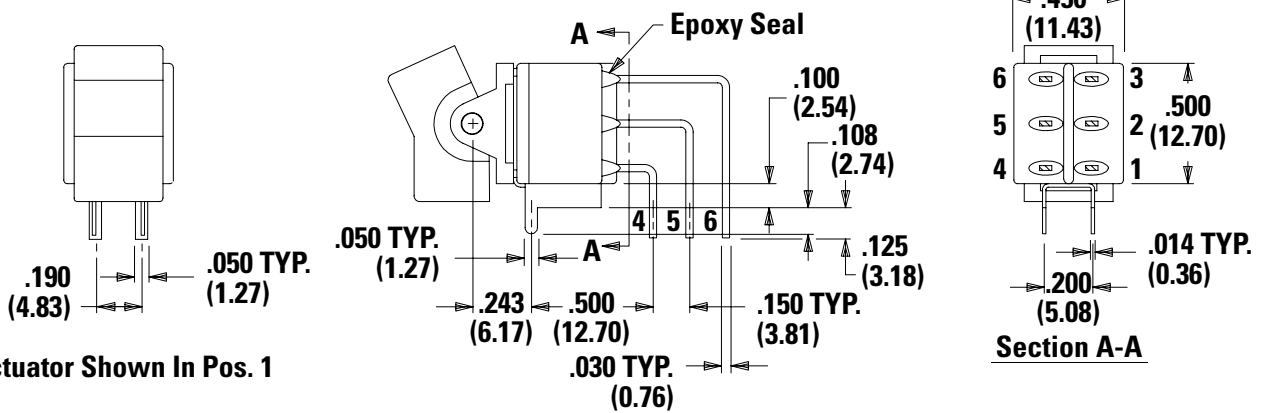


PC Mounting



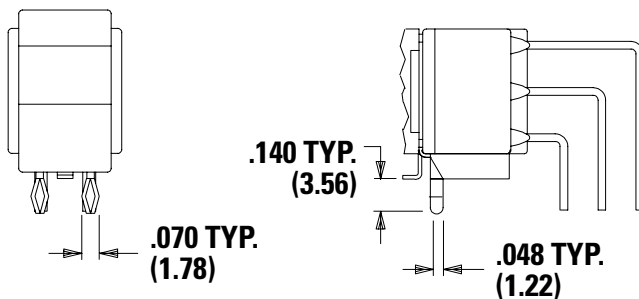
Notes: Terminal bend radii and lead-in manufacturing option. Available actuators, see pages 4-5.

AV2 Vertical Right Angle, PC Thru-hole, 0.150" Pitch E201J1AV2BE2 Vertical Actuation DPDT

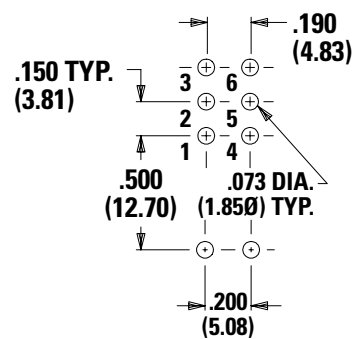


AV3 Vertical Right Angle, Snap-in PC Thru-hole, 0.150" Pitch

Dimensions



PC Mounting



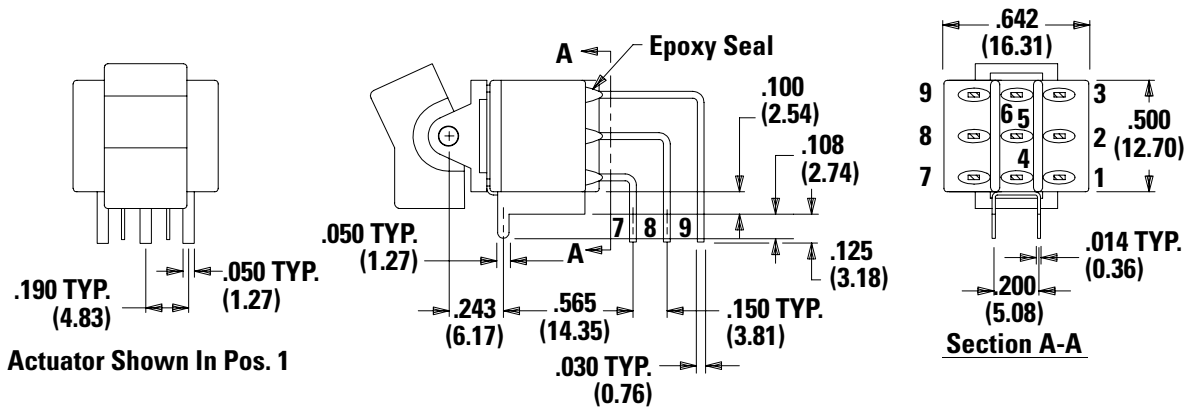
Notes: Terminal bend radii and lead-in manufacturing option. Available actuators, see pages 4-5.

E Series

Sealed Miniature Rocker and Lever Handle Switches

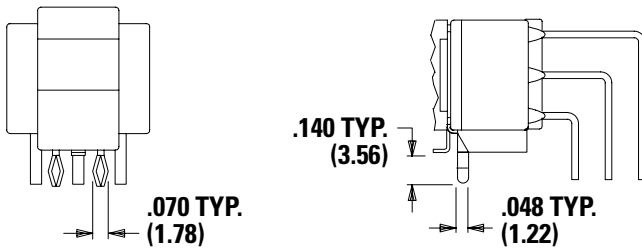


AV2 Vertical Right Angle, PC Thru-hole, 0.150" Pitch
E301J1AV2BE2 Vertical Actuation 3PDT

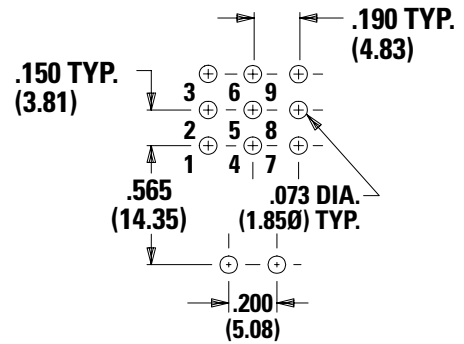


AV3 Vertical Right Angle, Snap-in PC Thru-hole, 0.150" Pitch

Dimensions



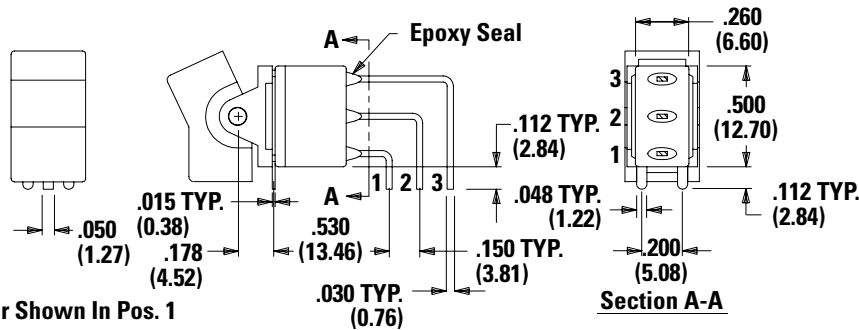
PC Mounting



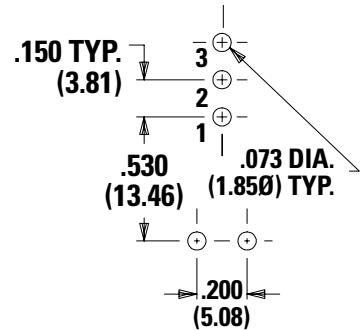
Notes: Terminal bend radii and lead-in manufacturing option. Available actuators, see pages 4-5.

V5 Vertical Right Angle, PC Thru-Hole, 0.150" Pitch
E101J1V5BE2 Vertical Actuation SPDT

Dimensions



PC Mounting



Notes: Terminal bend radii and lead-in manufacturing option. Available actuators, see pages 4-5.

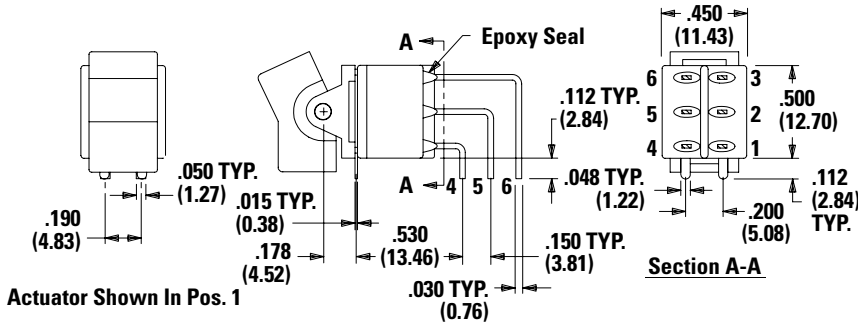
E Series

Sealed Miniature Rocker and Lever Handle Switches

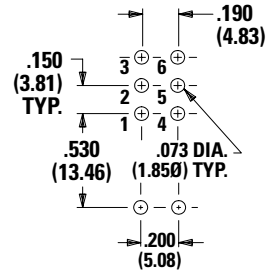


V5 Vertical Right Angle, PC Thru-Hole, 0.150" Pitch E201J1V5BE2 Vertical Actuation DPDT

Dimensions



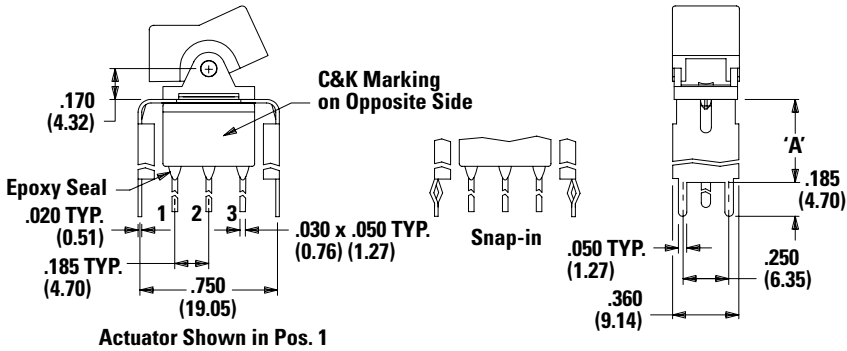
PC Mounting



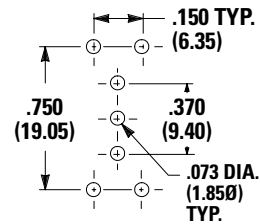
Notes: Terminal bend radii and lead-in manufacturing option. Available actuators, see pages 4-5.

V6, V7, V8 Vertical Mount, V Bracket V21 Vertical Mount, V Bracket, Snap-in E101J1_BE2 SPDT

Dimensions



PC Mounting



Notes: Available actuators, see pages 4-5.

Option Code	DIM 'A'
V21	0.555 (14.10)
V6	0.460 (11.68)
V7	0.630 (16.00)
V8	0.958 (24.21)

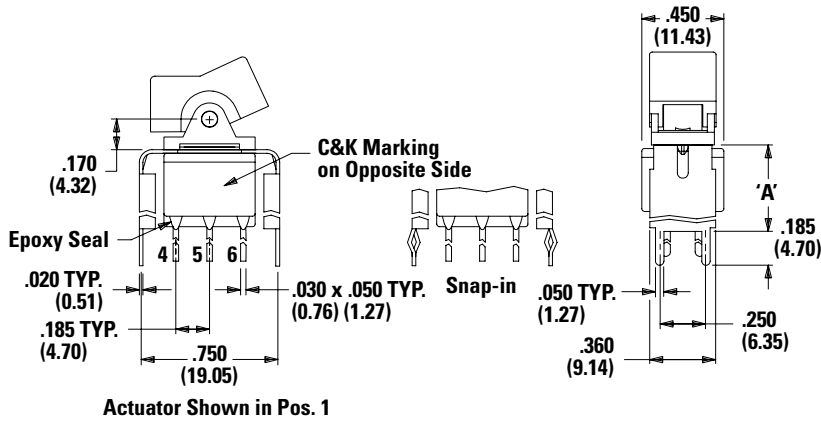
E Series

Sealed Miniature Rocker and Lever Handle Switches

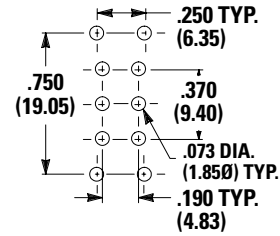


V6, V7, V8 Vertical Mount, V Bracket V21 Vertical Mount, V Bracket, Snap-in E201J1_BE2 DPDT

Dimensions



PC Mounting

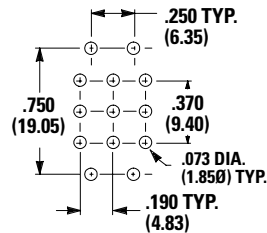
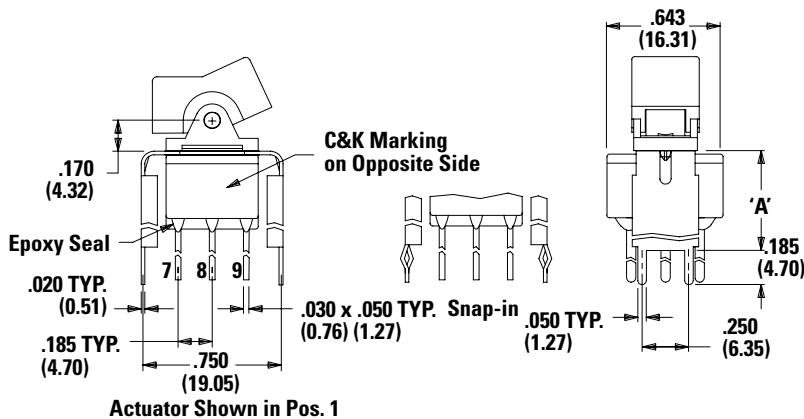


Notes: Available actuators, see pages 4-5.

Option Code	DIM 'A'
V21	0.555 (14.10)
V6	0.460 (11.68)
V7	0.630 (16.00)
V8	0.953 (24.21)

V7, V8 Vertical Mount, V Bracket V21 Vertical Mount, V Bracket, Snap-in E301J1_BE2 3PDT

PC Mounting



Notes: Available actuators, see pages 4-5.

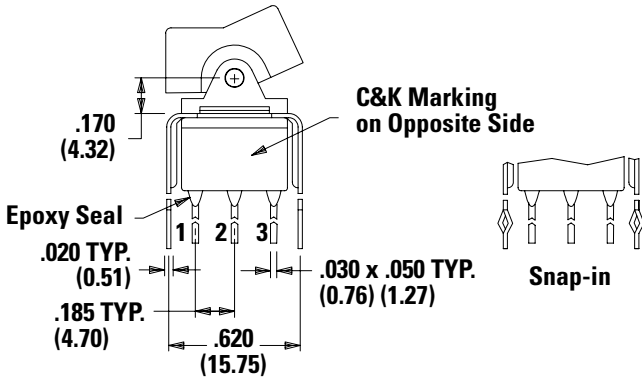
Option Code	DIM 'A'
V21	0.555 (14.10)
V7	0.630 (16.00)
V8	0.958 (24.21)

E Series

Sealed Miniature Rocker and Lever Handle Switches

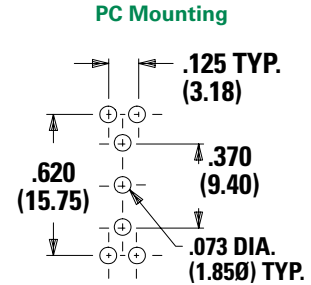
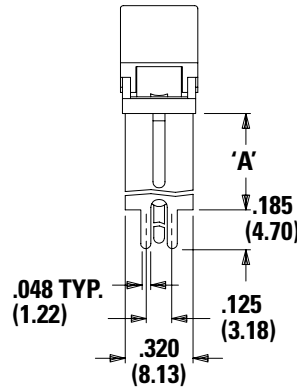


V3, V4 Vertical Mount, V Bracket V31 Vertical Mount, V Bracket, Snap-in E101J1_BE2 SPDT



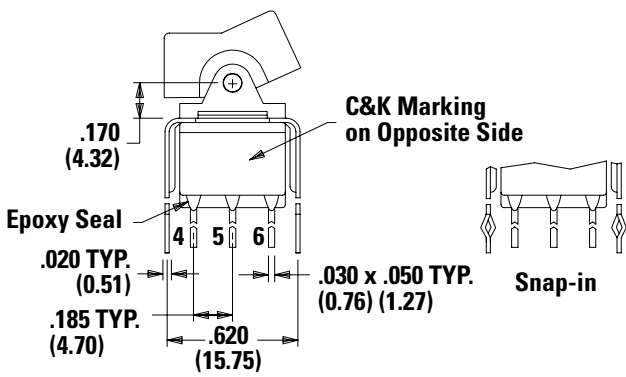
Actuator Shown in Pos. 1

Notes: Available actuators, see pages 4-5.



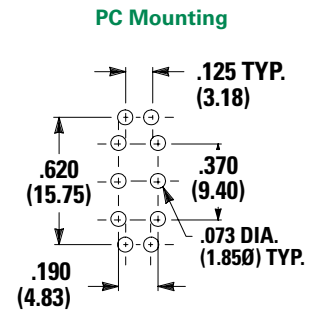
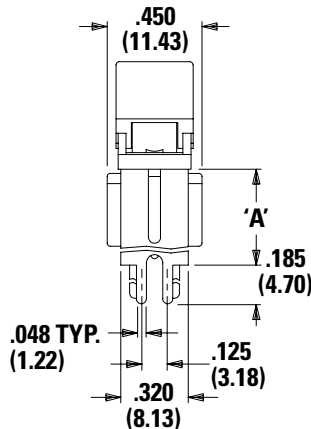
Option Code	DIM 'A'
V3, V31	0.460 (11.68)
V4	0.630 (16.00)

V3, V4 Vertical Mount, V Bracket V31 Vertical Mount, V Bracket, Snap-in E201J1_BE2 DPDT



Actuator Shown in Pos. 1

Notes: Available actuators, see pages 4-5.



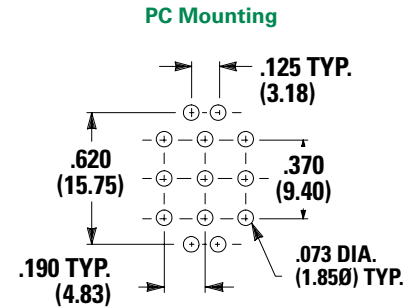
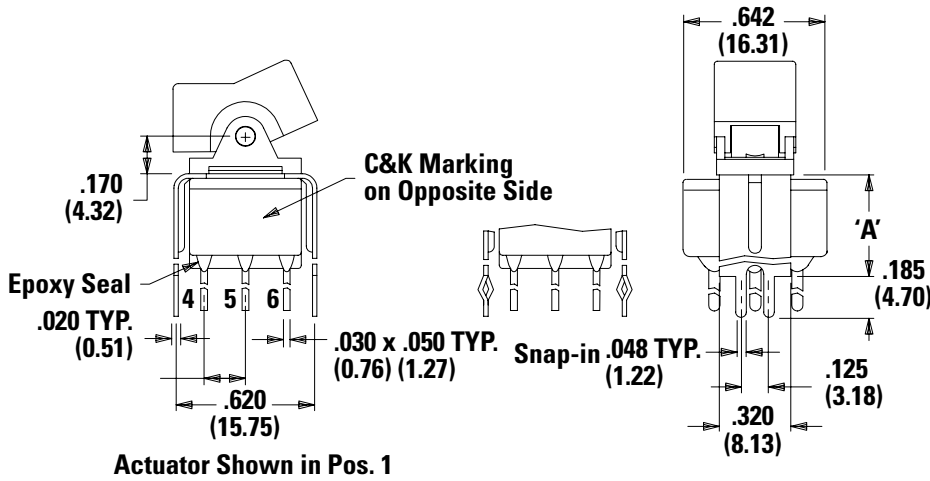
Option Code	DIM 'A'
V3, V31	0.460 (11.68)
V4	0.630 (16.00)

E Series

Sealed Miniature Rocker and Lever Handle Switches



V4 Vertical Mount, V Bracket Vertical Mount, V Bracket, Snap-in E301J1_BE2 3PDT



Notes: Available actuators, see pages 4-5.

Option Code	DIM 'A'
V41	0.630 (16.00)

Contact Material

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 ⁷		
Q	Silver ^{4,5}	Silver ⁵	Power	E1XX & E2XX models: 7.5 amps @125 V AC OR 28 V DC; 3 amps @ 250 V AC. E3XX models: 5 amps @ 125 V AC or 28 V DC; 2 amps @ 250 V AC.
S		Matte-Tin ⁶		
G	Gold over Silver ^{2,3}	Gold ³	Low Level/ Dry Circuit or Power	E1XX & E2XX models: 0.4 VA max. @20 V AC or DC max. O or R 7.5 amps @125 V AC or 28 V DC; 3 amps @ 250 V AC. DC E3XX models: 0.4 VA max. @ 20 V AC or DC max. or 5 amps @125 V AC or 28 V DC; 2 amps @ 250 V AC.
R		Matte-Tin ⁶		

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 Contact & All Terminals:** Copper alloy, with gold plate over nickel plate.

4. **End Contacts:** Coin silver, silver plated.

5. **Center Contact & All Terminals:** Copper alloy, with gold flash over silver plate. Or copper alloy, silver plated.

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

Any models supplied with Q, B, G, S P & R contact material are RoHS compliant.

All models comply with all options when ordered with G, Q, S & R contact material.

B contact material standard with all terminations.

P R & S contact materials not available with Z terminations.

Seal inches (mm) E Epoxy Seal



E Series

Sealed Miniature Rocker and Lever Handle Switches



Available Hardware

J2, J21 Actuators



Part No.
760502263 Black
760503000 Red
Material: Nylon
Finish: Matte

J3 Actuator



Part No.
766602263 Black
766603000 Red
Material: Nylon
Finish: Matte

J1, J11 Actuators



Part No.
776A02263 Black
776A03000 Red
Material: Nylon
Finish: Matte

J50 Actuator



Part No.
775A02263 Black
775A03000 Red
Material: Nylon
Finish: Matte

J60 Actuator



Part No.
613802263 Black
598103000 Red
Material: Nylon
Finish: Matte

J90 Actuator



Part No.
598002263 Black
598003000 Red
Material: Nylon
Finish: Matte

Notes: Additional nuts, screws and lockwashers available separately, see Technical Data section of this catalog. Other colors available, consult Customer Service Center.

Fits Z3 Termination female connector



Part No. 530100000
Available in loose pieces.

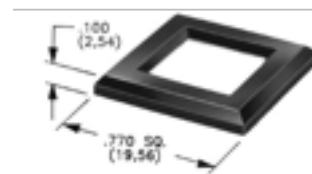
Frame for J11 & J21 Actuators



Part No.
764500746 Black Enamel
764601106 Retaining Spring
Material: Spring Steel



Frame for J50, J60 & J90 Actuators



Matte Part No. 486702000
Gloss Part No. 486802000
Material: Nylon
Finish: Matte or Gloss

Notes: Additional nuts, screws and lockwashers available separately, see Technical Data section of this catalog. Other colors available, consult Customer Service Center.

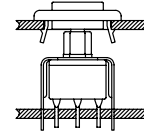
E Series

Sealed Miniature Rocker and Lever Handle Switches



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 0.047-0.125 in. Material: Nylon. Finish: Matte.

Typical Applications



J1 & J2 Actuators



0.047" (1.19) Panel THK. Part No. 452902263 452903000	0.062" (1.57) Panel THK. Part No. 452702263 452703000	0.090" (2.29) Panel THK. Part No. 452802263 452803000	0.125" (3.18) Panel THK. Part No. 452602263 Black 452603000 Red
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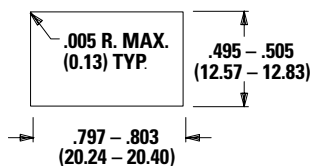
J50, J60 & J90 Actuators



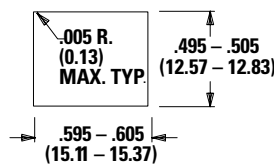
0.047" (1.19) Panel THK. Part No. 432502263 432503000	0.062" (1.57) Panel THK. Part No. 432602263 432603000	0.090" (2.29) Panel THK. Part No. 432702263 432703000	0.125" (3.18) Panel THK. Part No. 432802263 Black 432803000 Red
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Panel Mounting

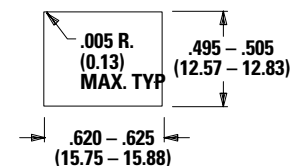
For part numbers
4529xxxxx. 4527xxxxx.
4528xxxxx. 4526xxxxx



For part numbers
4325xxxxx. 4326xxxxx

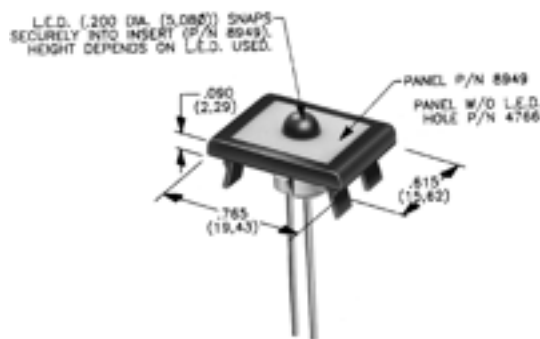


For part numbers
4327xxxxx. 4328xxxxx



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 Inserts



Panel Insert with
Hole for LED
Part No.
894902000
894903000

Blank Panel Insert
without Hole for LED
Part No.
476602000 Black
476603000 Red

Notes: Special colors, custom markings available, consult Customer Service Center. Will fit separate snap-in frames for J50, J60 & J90 actuators

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