

E Series

Sealed Miniature Rocker and Lever Handle Switches

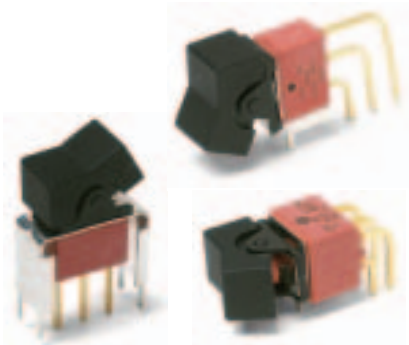
Features/Benefits

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



Typical Applications

- Telecommunications
- Instrumentation
- Computers & peripherals



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 H-37 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: 10⁹ 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).

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 G-37 for additional contact materials.

TERMINAL SEAL: Epoxy.

HARDWARE: Nut, Screw & Lockwasher: Stainless steel. Standoff: Nylon standard, aluminum available, consult Customer Service Center.

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

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 G-27 through G-39. 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.



Switch Function

- 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

Actuator

- J1** .531 long rocker
- J2** Lever
- J3** .906" long rocker
- J11** Rocker with frame
- J21** Lever with frame
- J50** .362" long rocker
- J60** Lever
- J90** Lever

Terminations

- 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** .460" high, V-bracket
- V4** .630" high, V-bracket
- V5** Vertical right angle, PC thru-hole
- V6** .460" high, V-bracket
- V7** .630" high, V-bracket
- V8** .953" high, V-bracket
- V21** .555" high, V-bracket, snap-in
- V31** .460" high, V-bracket, snap-in

Contact Material

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

Seal

- E** Epoxy

Actuator Color

- 2** Black
- 3** Red

Frame Color

- 2** Black
- NONE** No frame color required

Metal Frame Color

- (J11, J21 Actuators)
- 2** Black

Rocker

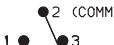


G

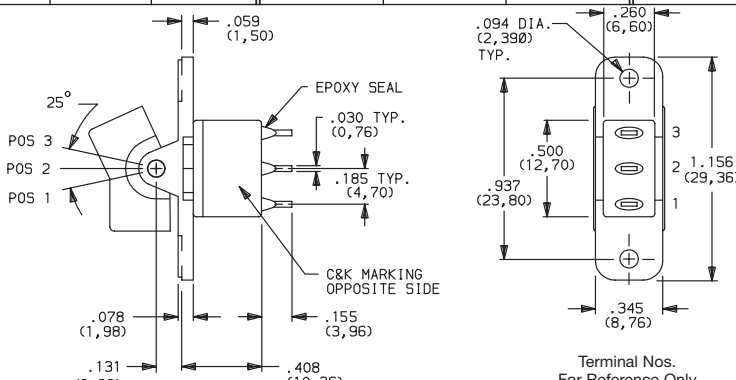


Dimensions are shown: Inches (mm)
Specifications and dimensions subject to change

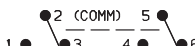
Sealed Miniature Rocker and Lever Handle Switches

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
								
		C&K marking on opposite side			C&K marking on opposite side			
SP	E101	ON	NONE	ON	2-3	N/A	2-1	
	E103	ON	OFF	ON		OPEN		
	E105	MOM.	OFF	MOM.				
	E107	ON	OFF	MOM.				
	E108	ON	NONE	MOM.		SPDT		

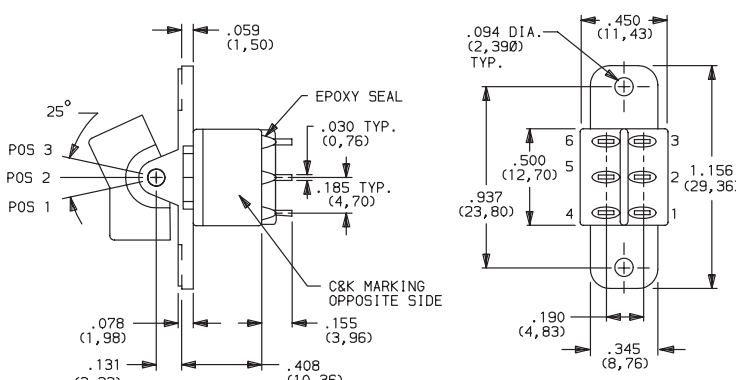
SPDT



Part number shown: E101J1ZBE2

DP	E201	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4	
	E203	ON	OFF	ON		OPEN		
	E205	MOM.	OFF	MOM.				
	E207	ON	OFF	MOM.				
	E208	ON	NONE	MOM.		2-3,5-4		
	E211**	ON	ON	ON				
	E213**	ON	ON	MOM.				
	E215**	MOM.	ON	MOM.		DPDT		

DPDT



Part number shown: E201J1ZBE2

** Wiring for 3-way switch, Hardware available seperately, see Technical Data section of this catalog.

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



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

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E Series

Sealed Miniature Rocker and Lever Handle Switches

SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
		C&K marking on opposite side			C&K marking on opposite side			
3P	E301	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	3PDT
3PDT Part number shown: E301J1ZBE2 MOM. = Momentary All models with all options when ordered with G, Q, R and S contact material. ** Wiring for 3-way switch, see Technical Data section of this catalog.								

ACTUATOR-PANEL REAR MOUNT

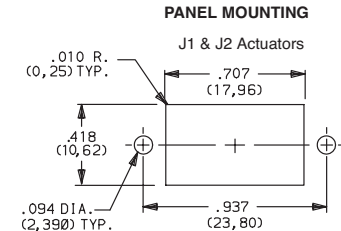
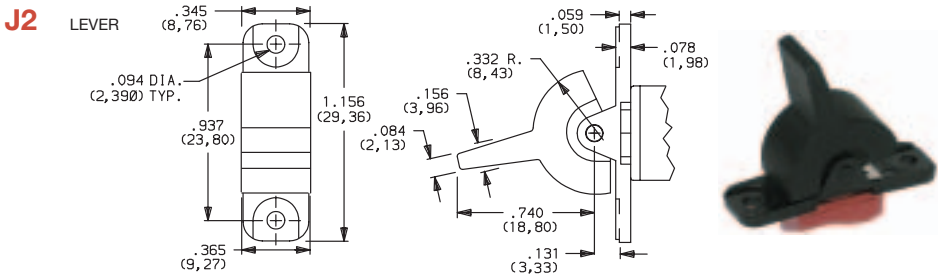
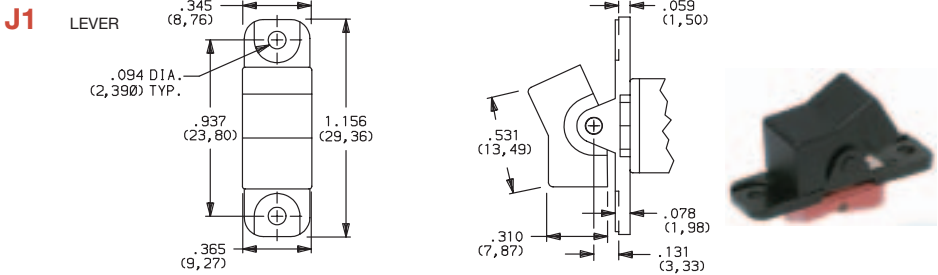
ACTUATOR COLOR

ACTUATOR

OPTION CODE	ACTUATOR COLOR
2	BLACK
3	RED

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

NOTE: Hardware: two each—mounting screws, nuts, lockwashers 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 G-37. Hardware available separately, see Technical Data section of this catalog. J1, J2 actuators available with C, Z or Z3 terminations.



Rocker

ACTUATOR-REAR MOUNT



E Series

Sealed Miniature Rocker and Lever Handle Switches

ACTUATOR-PC MOUNT



OPTION CODE	ACTUATOR COLOR
2	BLACK
3	RED

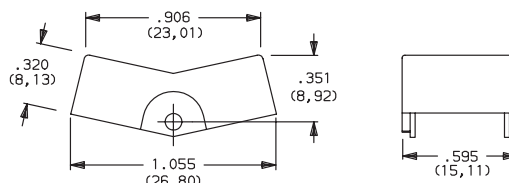
Finish: Matte. Other colors, custom actuator markings and legends available, consult Customer Service Center.

NOTE: Hardware: two each—mounting screws, nuts, lockwashers 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 G-37. Hardware available separately, see Technical Data section of this catalog.

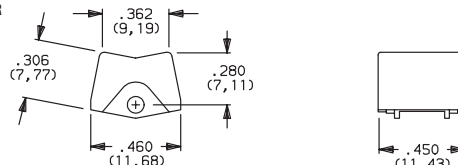
J3 actuators available with AV2, AV3 & V2-V61 terminations. Some permissible actuator/termination combinations may lack clearance between actuator and PC board, and care must be exercised to accommodate this condition.

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

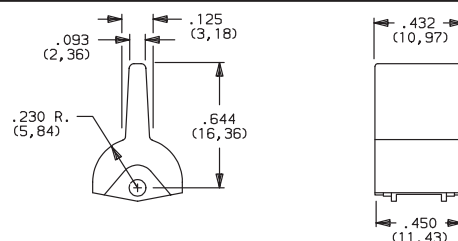
J3 ROCKER



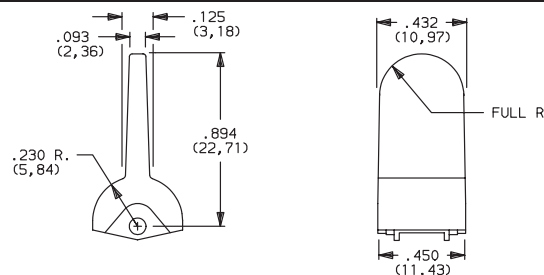
J50 **ROCKER**



J60 LEVER



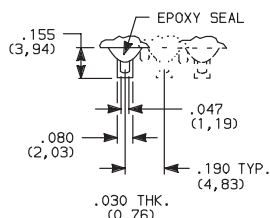
J90 LEVER



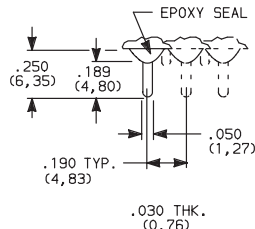
TERMINATIONS



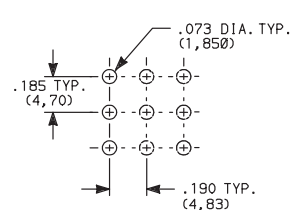
Z SOLDER LUG



C PC THRU-HOLE



PC MOUNTING



SPDT thru 3PDT

Not available with P, S, & R contact materials.
Available actuators, see page G-37.

SPDT thru 3PDT



Dimensions are shown: Inches (mm)

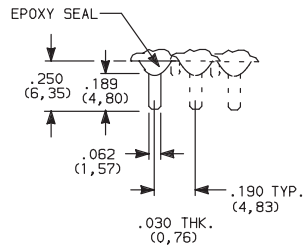
Specifications and dimensions subject to change



E Series Sealed Miniature Rocker and Lever Handle Switches

TERMINATIONS

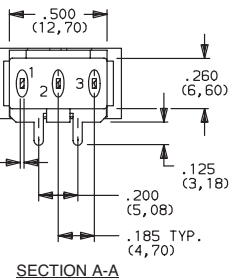
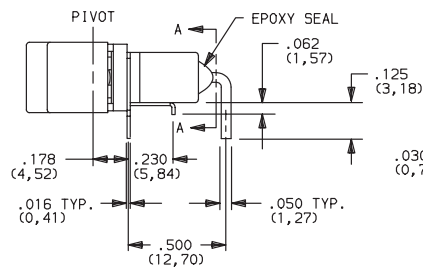
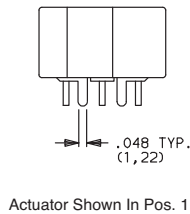
Z3 QUICK CONNECT



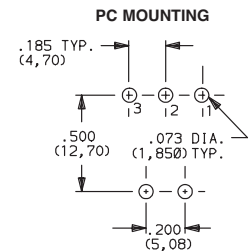
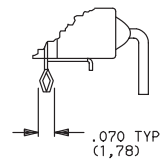
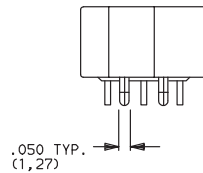
Not available with P, S, & R contact materials. Available actuators, see pages G-28 thru G-30. Mating quick connector available; order part number 530100000, page G-38.

SPDT thru 3PDT

A RIGHT ANGLE, PC THRU-HOLE



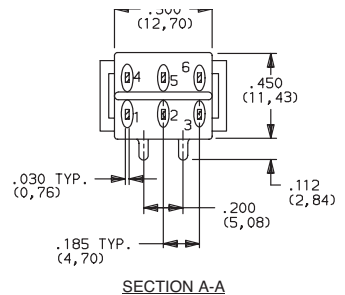
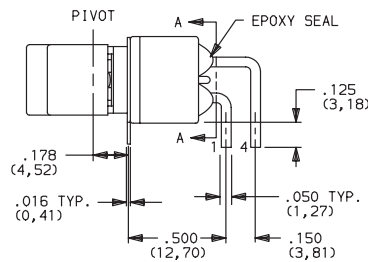
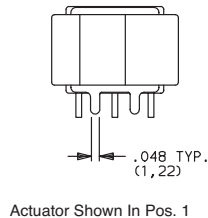
A3 RIGHT ANGLE, SNAP-IN, PC THRU-HOLE



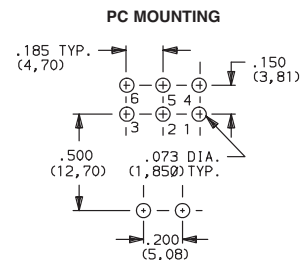
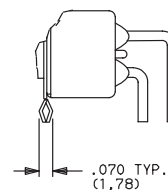
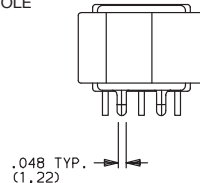
NOTE: Not available with J3, J50, J60 and J90 actuators. Available actuators, see pages G-28 thru G-30. Terminal bend radii and lead-in manufacturing option.

NOTE: PC mounting pattern must clear switch support leg.

A RIGHT ANGLE, PC THRU-HOLE



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



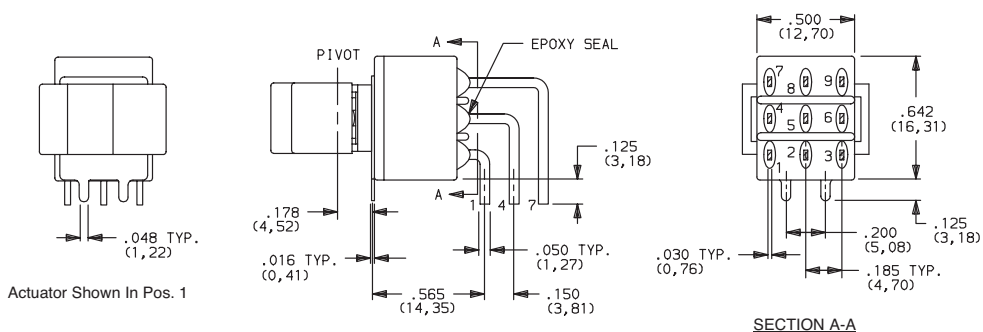
NOTE: Not available with J3 actuator. Available actuators, see pages G-28 and G-30. Terminal bend radii and lead-in manufacturing option.



E Series Sealed Miniature Rocker and Lever Handle Switches

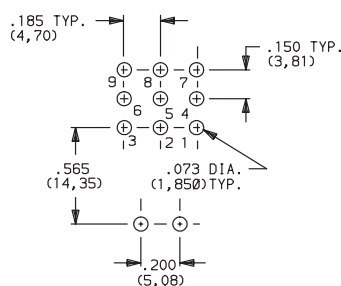
TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE



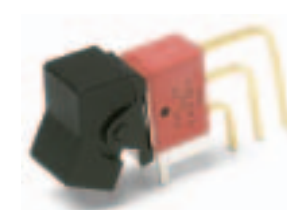
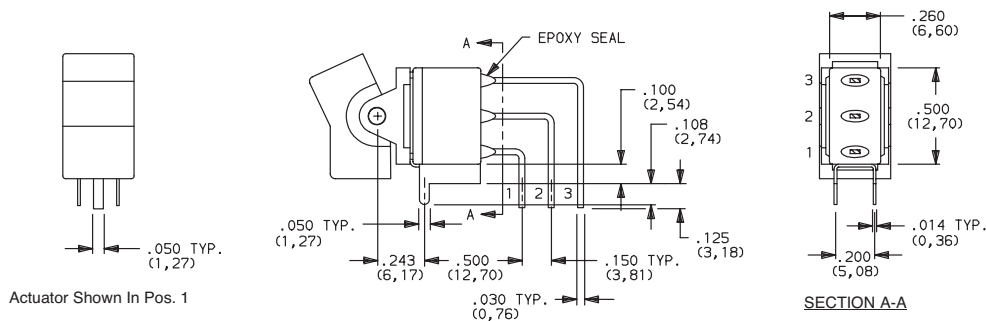
E301J1ABE2
Horizontal Actuation
3PDT

PC MOUNTING



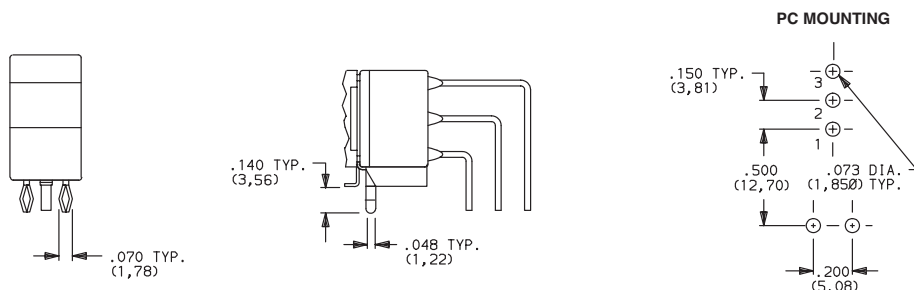
NOTE: Terminal bend radii and lead-in manufacturing option.
Available actuators, see pages G-28 and G-30.

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



E101J1AV2BE2
Vertical Actuation
SPDT

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



NOTE: Terminal bend radii and lead-in manufacturing option.
Available actuators, see pages G-28 and G-30.

Rocker



G

C&K



Third Angle
Projection

Dimensions are shown: Inches (mm)

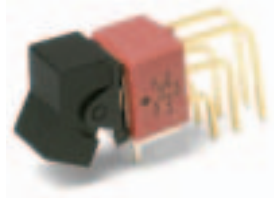
Specifications and dimensions subject to change

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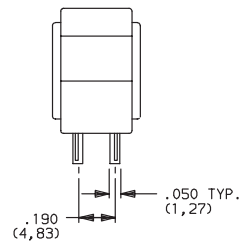
E Series Sealed Miniature Rocker and Lever Handle Switches

TERMINATIONS

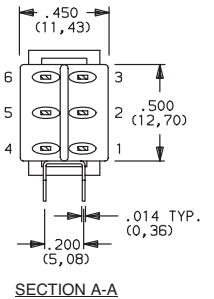
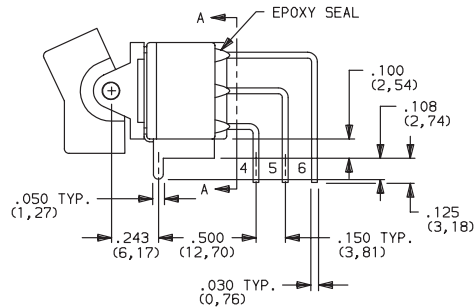
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



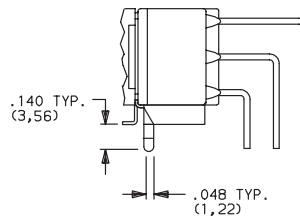
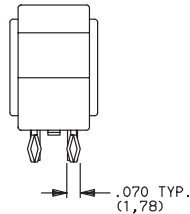
E201J1AV2BE2
Vertical Actuation
DPDT



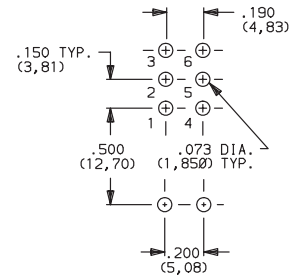
Actuator Shown In Pos. 1



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

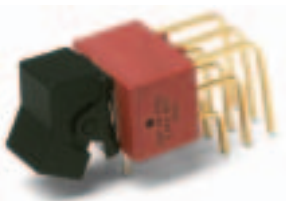


PC MOUNTING

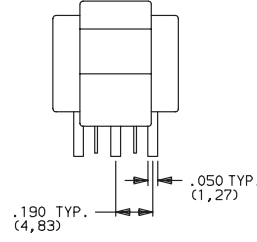


NOTE: Terminal bend radii and lead-in manufacturing option.
Available actuators, see pages G-28 and G-30.

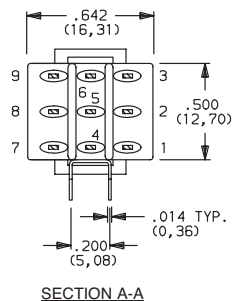
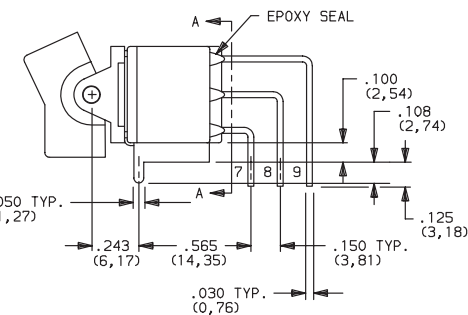
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



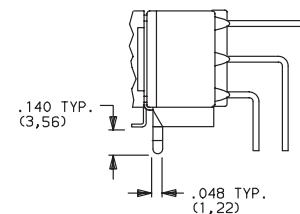
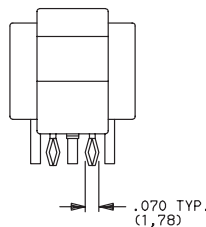
E301J1AV2BE2
Vertical Actuation
3PDT



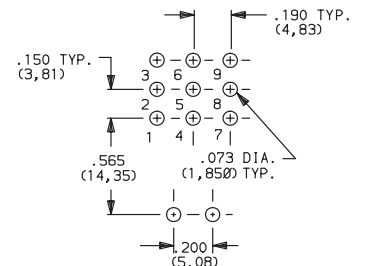
Actuator Shown In Pos. 1



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



PC MOUNTING



NOTE: Terminal bend radii and lead-in manufacturing option.
Available actuators, see pages G-28 and G-30.

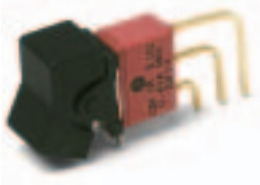
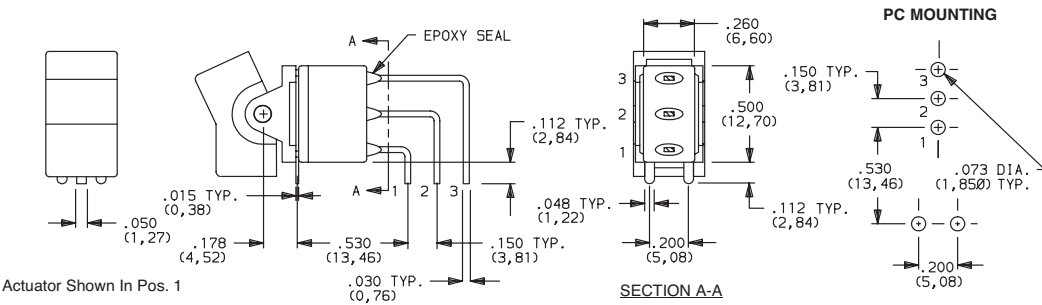


E Series

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TERMINATIONS

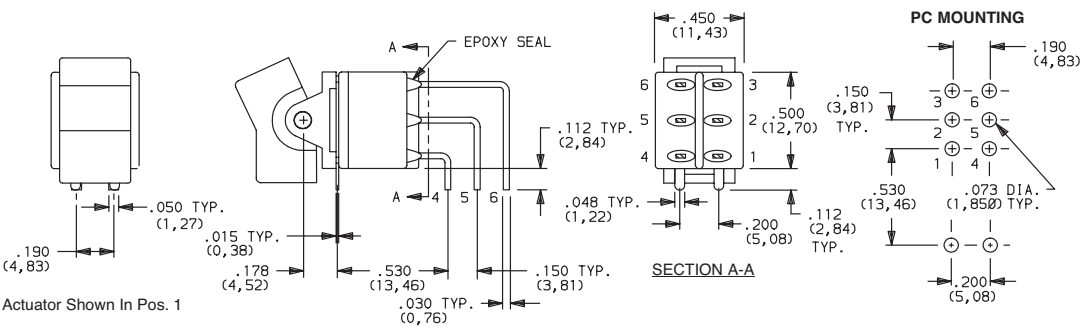
V5 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



E101J1V5BE2
Vertical Actuation
SPDT

NOTE: Terminal bend radii and lead-in manufacturing option.
Available actuators, see pages G-28 and G-30.

V5 VERTICAL RIGHT ANGLE, PC THRU-HOLE,
.150" PITCH



E201J1V5BE2
Vertical Actuation
DPDT

NOTE: Terminal bend radii and lead-in manufacturing option.
Available actuators, see pages G-28 and G-30.

Rocker



G

C&K



Third Angle Projection

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

E Series

Sealed Miniature Rocker and Lever Handle Switches

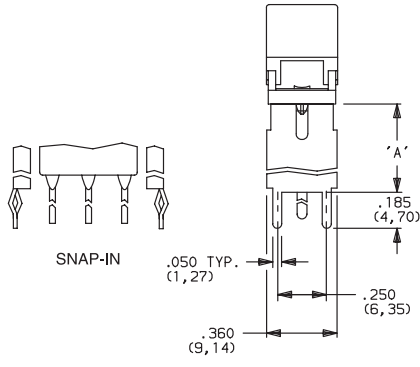
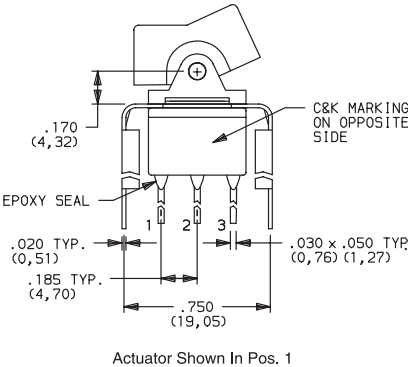
TERMINATIONS

V6, V7, V8 VERTICAL MOUNT, V-BRACKET

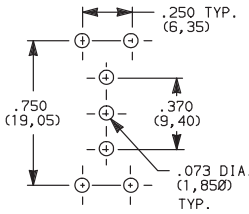
V21 VERTICAL MOUNT, V-BRACKET, SNAP-IN



E101J1_BE2
SPDT



PC MOUNTING



OPTION CODE	DIM 'A'
V21	.555 (14, 10)
V6	.460 (11, 68)
V7	.630 (16, 00)
V8	.953 (24, 21)

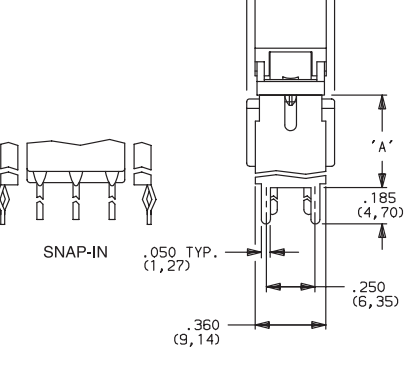
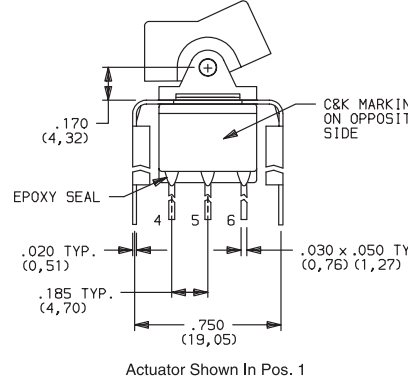
NOTE: Available actuators, see pages G-28 and G-30.

V6, V7, V8 VERTICAL MOUNT, V-BRACKET

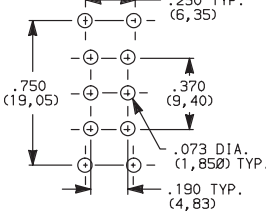
V21 VERTICAL MOUNT, V-BRACKET, SNAP-IN



E201J1_BE2
DPDT



PC MOUNTING



OPTION CODE	DIM 'A'
V21	.555 (14, 10)
V6	.460 (11, 68)
V7	.630 (16, 00)
V8	.953 (24, 21)

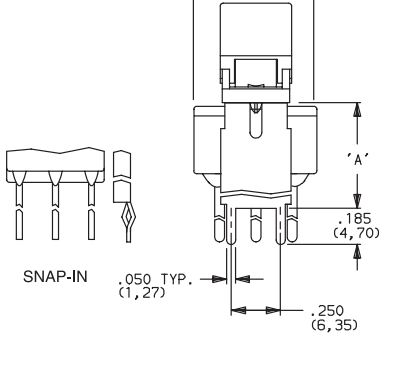
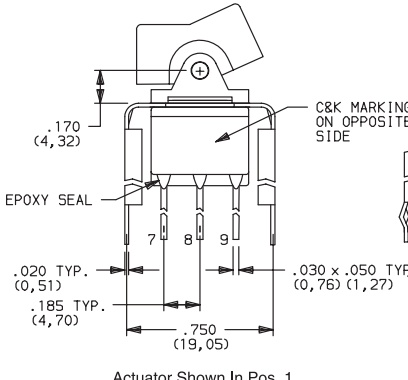
NOTE: Available actuators, see pages G-28 and G-30.

V7, V8 VERTICAL MOUNT, V-BRACKET

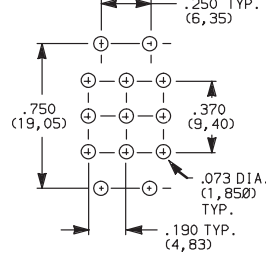
V21 VERTICAL MOUNT, V-BRACKET, SNAP-IN



E301J1_BE2
3PDT

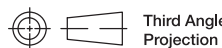


PC MOUNTING



OPTION CODE	DIM 'A'
V21	.555 (14, 10)
V7	.630 (16, 00)
V8	.953 (24, 21)

NOTE: Available actuators, see pages G-28 and G-30.



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

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E Series

Sealed Miniature Rocker and Lever Handle Switches

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 AND E2XX MODELS: 0.4 VA MAX @20 V AC OR DC MAX. OR 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		

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

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

² END CONTACTS: Coin silver, with gold plate over nickel plate.

³ CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.

⁴ END CONTACTS: Coin silver, silver plated.

⁵ CENTER CONTACT & ALL TERMINALS: Copper alloy, with gold flash over silver plate. Or copper alloy, silver plated.

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

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

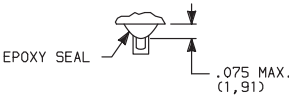
All models  with all options when ordered with G, Q, S & R contact material.

B contact material standard with all terminations.

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

SEAL

E EPOXY SEAL



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



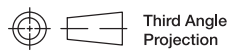
PART NO.
613802263 BLACK
598103000 RED
Material: Nylon
Finish: Matte

J90 Actuator



PART NO.
598002263 BLACK
598003000 RED
Material: Nylon
Finish: Matte

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



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

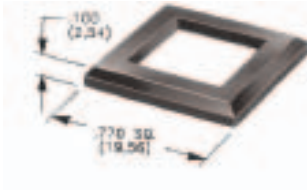
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E Series

Sealed Miniature Rocker and Lever Handle Switches

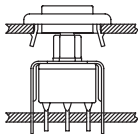
AVAILABLE HARDWARE

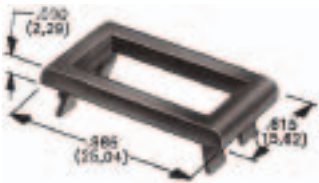
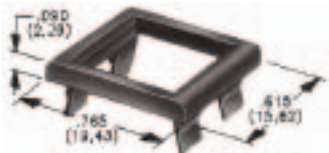
Fits Z3 Termination female connector  PART NO. 530100000 Available in loose pieces.	Frame for J11, J21 Actuators  PART NO. 764500746 BLACK ENAMEL 764601106 RETAINING SPRING Material: Spring Steel	J50, J60 & J90 Actuators  MATTE PART NO. 486702000 Material: Nylon Finish: Matte or Gloss GLOSS PART NO. 486802000 BLACK
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NOTE: Additional nuts, screws and lockwashers available separately, see Technical Data section of this catalog. Other colors available, consult Customer Service Center.

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

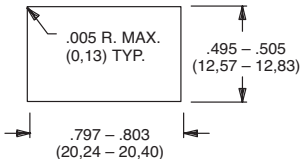
TYPICAL APPLICATION



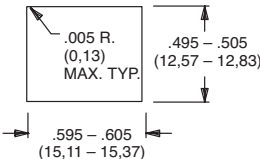
J1 & J2 Actuators				
	.047" (1,19) PANEL THK.	.062" (1,57) PANEL THK.	.090" (2,29) PANEL THK.	.125" (3,18) PANEL THK.
	PART NO. 452902263 452903000	PART NO. 452702263 452703000	PART NO. 452802263 452803000	PART NO. 452602263 BLACK 452603000 RED
J50, J60 & J90 Actuators				
	.047" (1,19) PANEL THK.	.062" (1,57) PANEL THK.	.090" (2,29) PANEL THK.	.125" (3,18) PANEL THK.
	PART NO. 432502263 432503000	PART NO. 432602263 432603000	PART NO. 432702263 432703000	PART NO. 432802263 BLACK 432803000 RED

PANEL MOUNTING

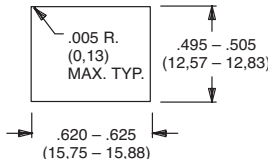
For part numbers
4529xxxxx, 4527xxxxx,
4528xxxxx, 4526xxxxx



For part numbers
4325xxxxx, 4326xxxxx



For part numbers
4327xxxxx, 4328xxxxx



Third Angle
Projection

Dimensions are shown: Inches (mm)

Specifications and dimensions subject to change

Rocker



G

C&K

E Series

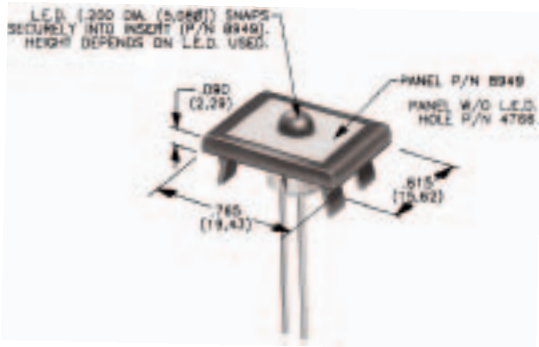
Sealed Miniature Rocker and Lever Handle Switches

AVAILABLE HARDWARE

Panel Inserts

Will fit separate snap-in frames for J50, J60, J90 actuators.

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.**



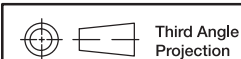
PANEL INSERT
WITH HOLE FOR LED

PART NO.
894902000
894903000

BLANK PANEL INSERT
WITHOUT HOLE FOR LED

PART NO.
476602000 BLACK
476603000 RED

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



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

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