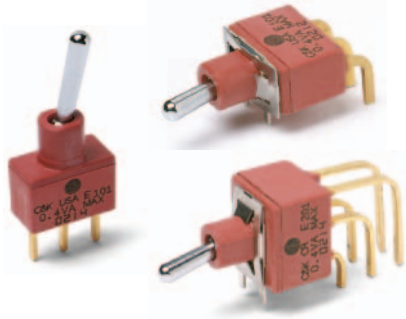


E Series Sealed Miniature Toggle Switches



Features/Benefits

- ***Sealed against solder and cleaning process contaminants***
- ***UL 94V-0 Nylon case and bushing***
- ***Multi-positions***
- ***ESD protection available***
- ***RoHS compliant models available***

Typical Applications

- **Telecommunications**
- **Instrumentation**
- **Medical equipment**



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 F-24 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 mΩ typ. initial @
2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: $10^9 \Omega \text{ min.}$

ELECTROSTATIC DISCHARGE (ESD) OPTION: F1 conductive bushing only. Dissipates up to 20,000 V DC from actuator to ground.

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).

DEGREE OF PROTECTION: IP57; Protection against harmful dust deposit, full-scale voltage protection, temporary immersion.

Materials

CASE & BUSHING: Glass filled nylon 6/6, flame retardant, heat stabilized (UL 94V-0). F1 conductive bushing option is impregnated with carbon fibers.

ACTUATOR: Brass, chrome plated with internal o-ring seal standard.

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

SWITCH SUPPORT 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 F-24 for additional contact materials.

TERMINAL SEAL: Epoxy.

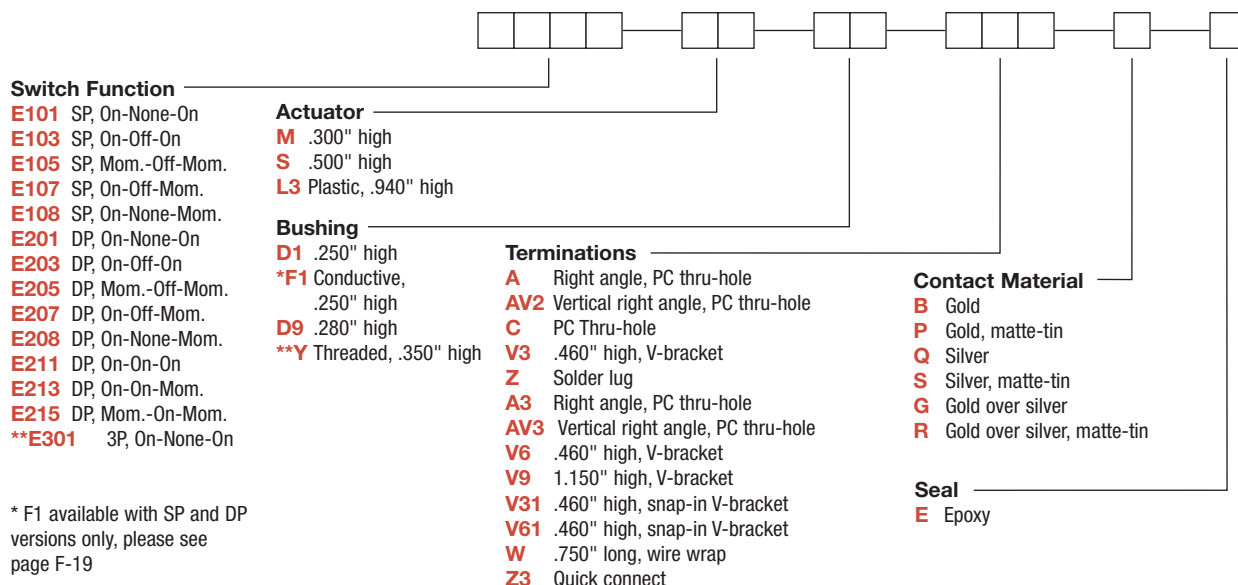
HARDWARE: Nut & Locking ring: Brass, nickel plated.
Lockwasher: Steel, nickel plated.

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

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 F-18 thru F-24. 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.



* F1 available with SP and DP versions only, please see page F-19

** Y threaded bushing available for 1 & 2 pole only



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



E Series
Sealed Miniature Toggle 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			

SP	E101	ON	NONE	ON	2-3	N/A	2-1	
	E103	ON	OFF	ON	2-3	OPEN	2-1	
	E105	MOM.	OFF	MOM.				
	E107	ON	OFF	MOM.				
	E108	ON	NONE	MOM.	2-3	N/A	2-1	

SPDT

Part number shown: E101SD1CBE

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

DPDT

Part number shown: E201SD1CBE

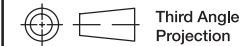
MOM. = Momentary

** Wiring for 3-way switch, see Section N.

All models with all options when ordered with G,R, Q or S contact material except with F1 conductive bushing.



F
Toggle



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

Sealed Miniature Toggle 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			
3P	E301	ON	NONE	ON	2-3,5-6,8-9	N/A	2-1,5-4,8-7	3PDT

3PDT

C&K MARKING ON OPPOSITE SIDE

EPOXY SEAL

25°

POS 3

POS 2

POS 1

Term. Width

Terminal Nos.
For Reference Only

Part number shown: E301SD1CBE

All models **CRUS** with all options when ordered with G, R, Q or S contact material except with F1 conductive bushing.

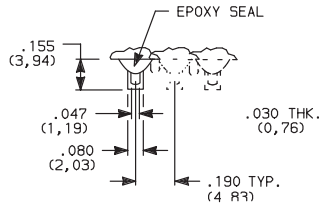
F Toggle



E Series Sealed Miniature Toggle Switches

TERMINATIONS

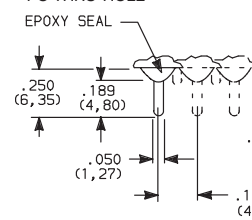
Z SOLDER LUG



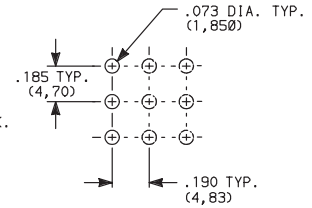
Not available with F1 conductive bushing or P, R or S contact material.

SPDT thru 3PDT

C PC THRU-HOLE



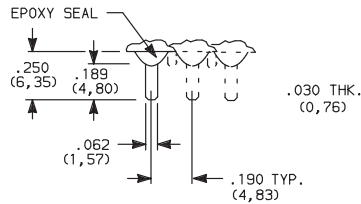
PC MOUNTING



SPDT thru 3PDT

Not available with F1 conductive bushing.

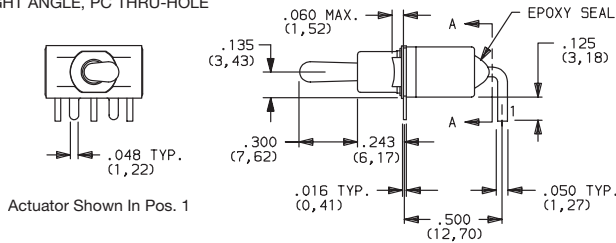
Z3 QUICK CONNECT



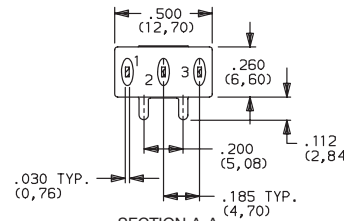
Not available with F1 conductive bushing or P, R or S contact material. Mating quick connector available; order part number 530100000, page F-26.

SPDT thru 3PDT

A RIGHT ANGLE, PC THRU-HOLE



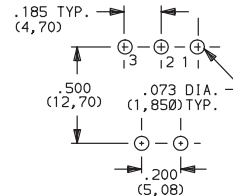
Actuator Shown In Pos. 1



SECTION A-A

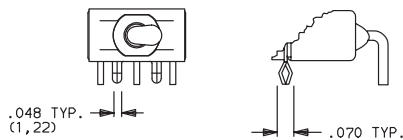
Terminal Nos. For Reference Only

PC MOUNTING



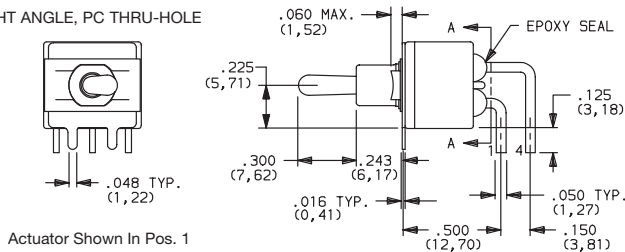
E101MD1ABE
Horizontal Actuation
SPDT

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

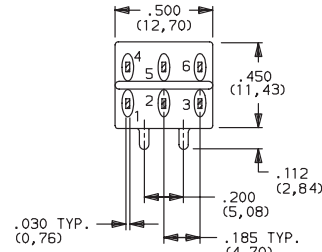


Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

A RIGHT ANGLE, PC THRU-HOLE



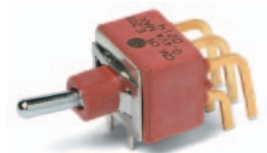
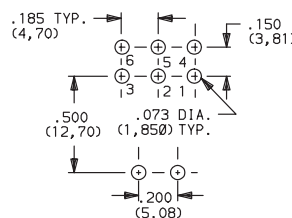
Actuator Shown In Pos. 1



SECTION A-A

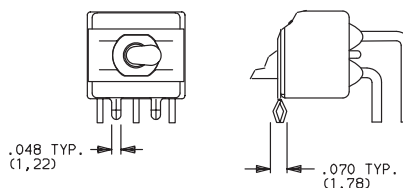
Terminal Nos. For Reference Only

PC MOUNTING



E201MD1ABE
Horizontal Actuation
DPDT

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



Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.



Third Angle
Projection

Dimensions are shown: Inches (mm)

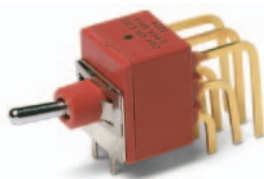
Specifications and dimensions subject to change

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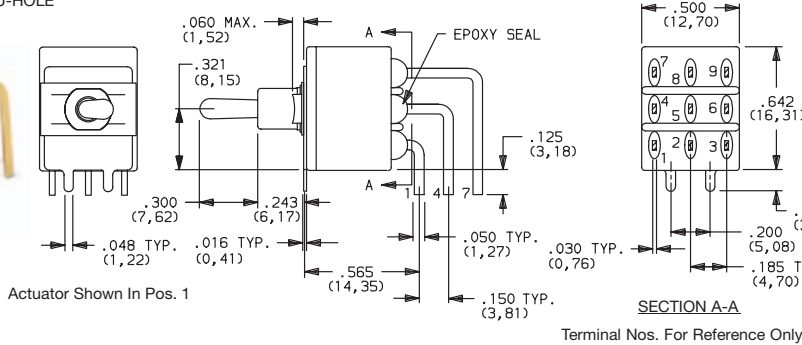
E Series Sealed Miniature Toggle Switches

TERMINATIONS

A RIGHT ANGLE, PC THRU-HOLE



E301MD1ABE
Horizontal Actuation
3PDT

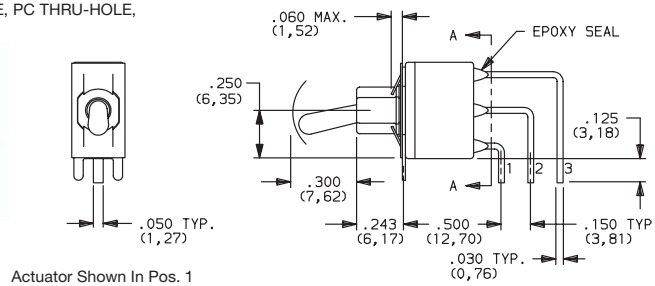


Not available with D9 & Y bushings.
Terminal bend radii and lead-in manufacturing option.

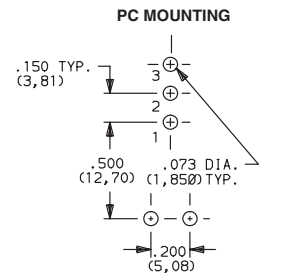
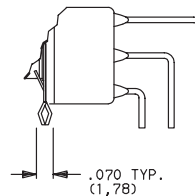
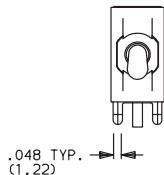
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



E101MD1AV2BE
Vertical Actuation
SPDT



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

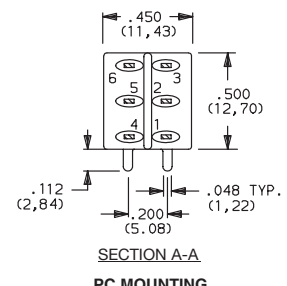
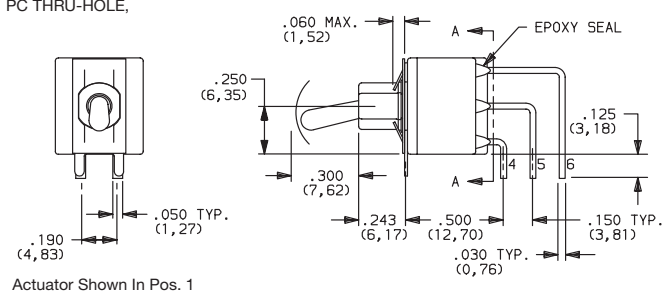


Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.

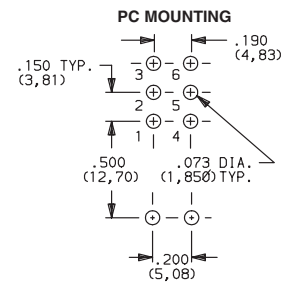
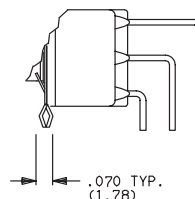
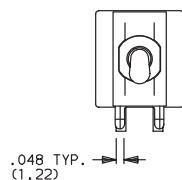
AV2 VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH



E201MD1AV2BE
Vertical Actuation
DPDT



A3 VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150" PITCH

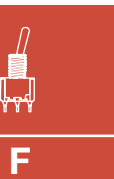


Not available with Y bushing.
Terminal bend radii and lead-in manufacturing option.



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

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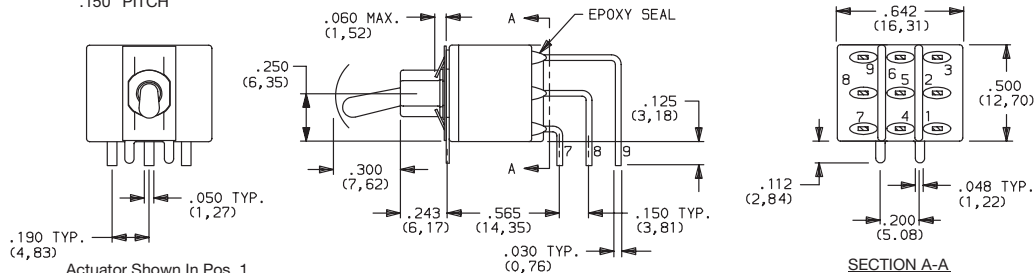
F

Toggle

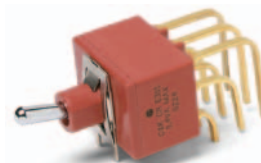
E Series Sealed Miniature Toggle Switches

TERMINATIONS

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



Actuator Shown In Pos. 1

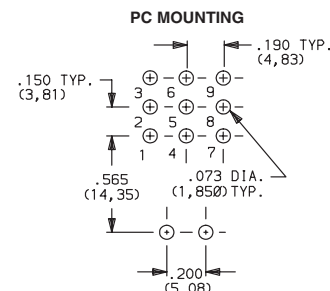


E301MD1AV2BE
Vertical Actuation
3PDT

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

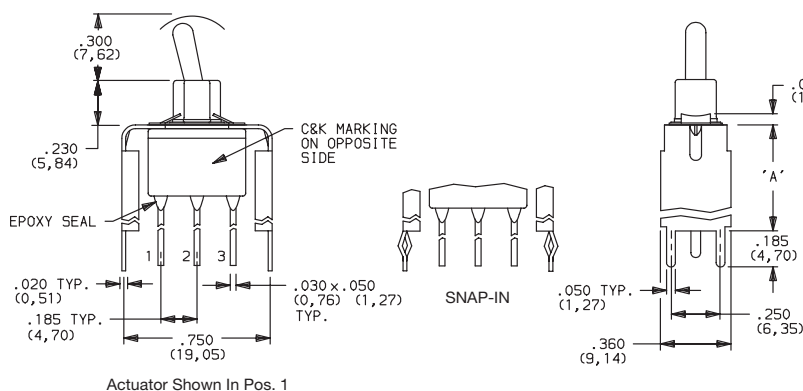


Not available with D9 & Y bushings.
Terminal bend radii and lead-in manufacturing option.



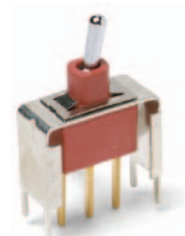
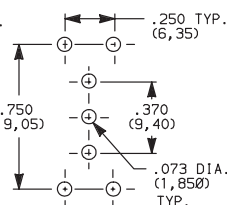
V6 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

PC MOUNTING



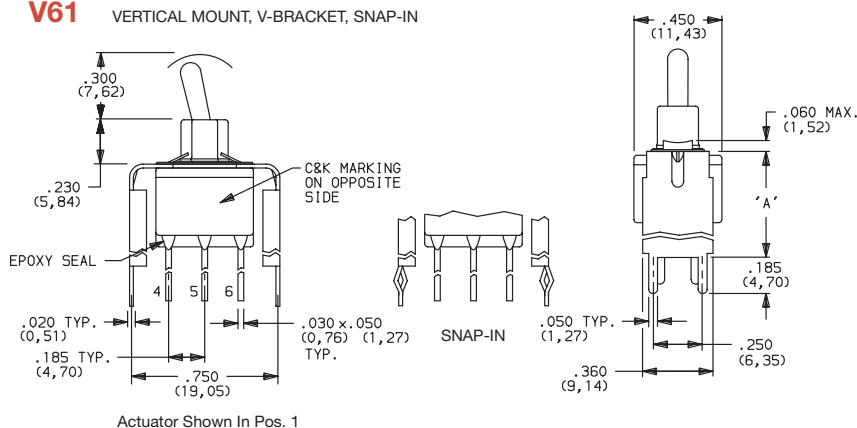
E101MD1_BE
SPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)

Not available with Y bushing.

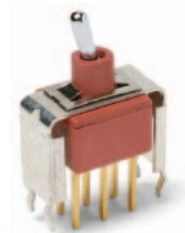
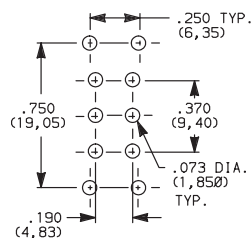
V6 VERTICAL MOUNT, V-BRACKET

V61 VERTICAL MOUNT, V-BRACKET, SNAP-IN



Actuator Shown In Pos. 1

PC MOUNTING



E201MD1_BE
DPDT

OPTION CODE	DIM 'A'
V6, V61	.460 (11,68)



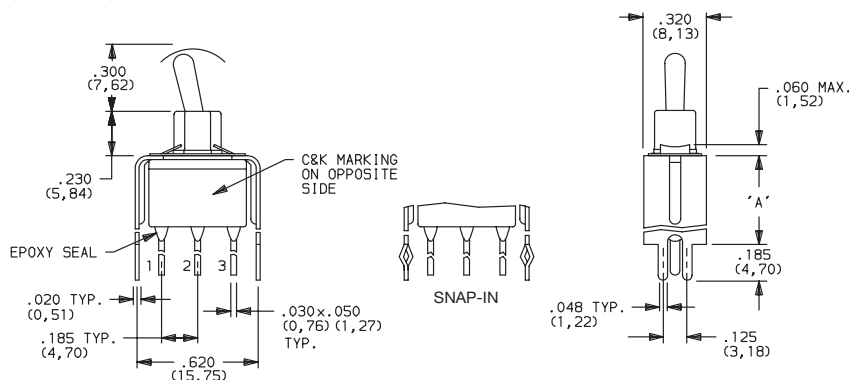
Third Angle
Projection

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

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TERMINATIONS

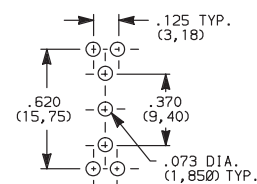
V31 VERTICAL MOUNT. V-BRACKET. SNAP-IN



Actuator Shown In Pos. 1

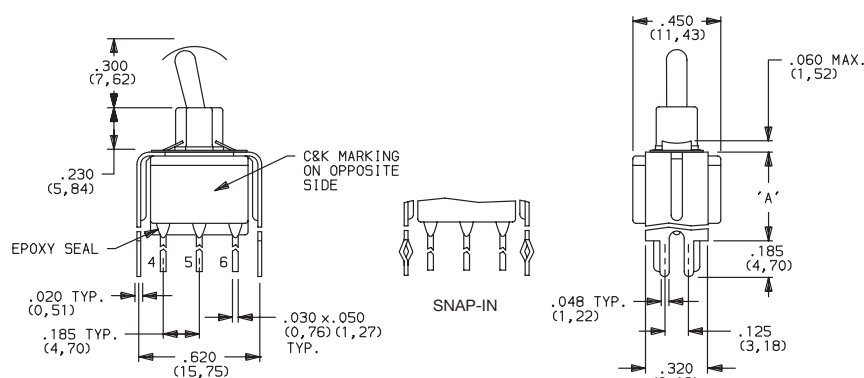
Not available with Y bushing.

PC MOUNTING



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

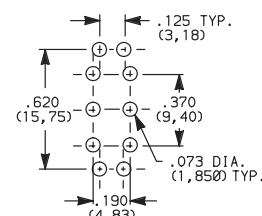
V31 VERTICAL MOUNT. V-BRACKET. SNAP-IN



Actuator Shown In Pos. 1

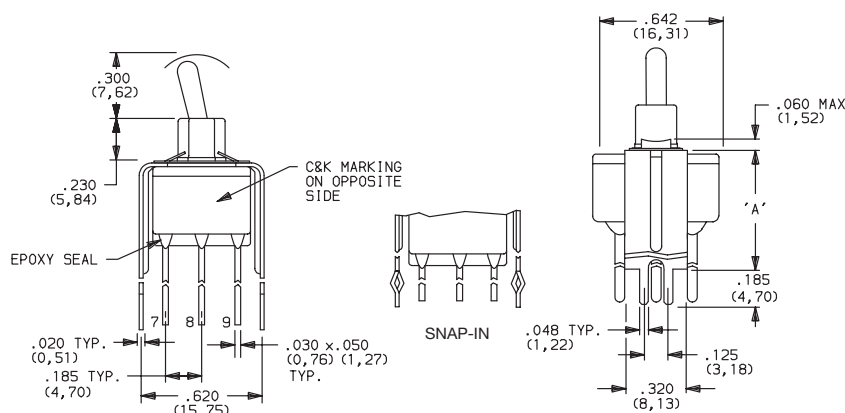
Not available with Y bushing.

PC MOUNTING



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

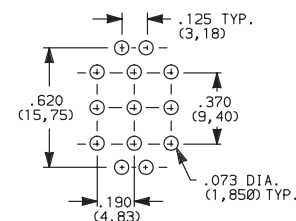
E301MD1__BE
3PDT



Actuator Shown In Pos. 1

Not available with D9 & Y bushings.

PC MOUNTING



OPTION CODE	DIM 'A'
V9	1.150 (29,21)



F

Toggle



Third Angle Projection

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

E Series

Sealed Miniature Toggle 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 ⁶		
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 P, S, R, Q, B or G contact material are RoHS compliant.

All models with all options when ordered with S, R, G, or Q contact material except with F1 conductive bushing.

B contact material standard with all terminations.

P, S & R contact materials not available with Z & Z3 terminations.



Toggle



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