C&K 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 G-25 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 Ω 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: -30ºC to 85ºC.
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 G-29 for additional contact materials.
TERMINAL SEAL: Epoxy.

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–23 thru G–29. 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
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-None-Off
E213 DP, On-None-Off
E301 3P, On-None-On

Actuator
M .300” high
S .500” high
L3 Plastic, .940” high

Bushing
D1 .250” high
F1 Conductive, .250” high
D9 .280” high
Y Threaded, .350” high

Terminations
A Right angle, PC thru-hole
AV2 Vertical right angle, PC thru-hole
C PC Thru-hole
Z Solder lug
A3 Right angle, PC thru-hole
AV3 Vertical right angle, PC thru-hole
V6 .460” high, V-bracket
V9 .1150” high, V-bracket
V31 .460” high, snap-in V-bracket
V61 .460” high, snap-in V-bracket
W .750” long, wire wrap
Z3 Quick connect

Contact Material
B Gold
K Gold, tin-lead
P Gold, matte-tin
O Silver
M Silver, matte-tin
S Silver, tin-lead
G Gold over silver
L Gold over silver, tin-lead
R Gold over silver, matte-tin

Seal
E Epoxy

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 G-29 for additional contact materials.
TERMINAL SEAL: Epoxy.

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–23 thru G–29. 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
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-None-Off
E213 DP, On-None-Off
E301 3P, On-None-On

Actuator
M .300” high
S .500” high
L3 Plastic, .940” high

Bushing
D1 .250” high
F1 Conductive, .250” high
D9 .280” high
Y Threaded, .350” high

Terminations
A Right angle, PC thru-hole
AV2 Vertical right angle, PC thru-hole
C PC Thru-hole
Z Solder lug
A3 Right angle, PC thru-hole
AV3 Vertical right angle, PC thru-hole
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V9 .1150” high, V-bracket
V31 .460” high, snap-in V-bracket
V61 .460” high, snap-in V-bracket
W .750” long, wire wrap
Z3 Quick connect

Contact Material
B Gold
K Gold, tin-lead
P Gold, matte-tin
O Silver
M Silver, matte-tin
S Silver, tin-lead
G Gold over silver
L Gold over silver, tin-lead
R Gold over silver, matte-tin

Seal
E Epoxy
# C&K E Series
Sealed Miniature Toggle Switches

## SWITCH FUNCTION

### CONNECTED TERMINALS

<table>
<thead>
<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>POS. 1</td>
<td>POS. 2</td>
</tr>
<tr>
<td>SP (ON)</td>
<td>E101</td>
<td>ON</td>
<td>NONE</td>
</tr>
<tr>
<td>SP (OFF)</td>
<td>E103</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>SP (MOM.)</td>
<td>E105</td>
<td>MOM.</td>
<td>OFF</td>
</tr>
<tr>
<td>SP (OFF)</td>
<td>E107</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>SP (MOM.)</td>
<td>E108</td>
<td>ON</td>
<td>NONE</td>
</tr>
</tbody>
</table>

### DPDT

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E201</td>
<td>ON NONE ON</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E203</td>
<td>ON OFF ON</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E205</td>
<td>MOM. OFF MOM.</td>
<td>2-3,5-6 OPEN 2-1,5-4</td>
</tr>
<tr>
<td>E207</td>
<td>ON OFF MOM.</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E208</td>
<td>ON NONE MOM.</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E211**</td>
<td>ON ON MOM.</td>
<td>2-3,5-6 2-1,5-4</td>
</tr>
<tr>
<td>E213**</td>
<td>ON ON MOM.</td>
<td>2-3,5-6 2-1,5-4</td>
</tr>
<tr>
<td>E215**</td>
<td>MOM. ON MOM.</td>
<td>2-3,5-6 2-1,5-4</td>
</tr>
</tbody>
</table>

### SPDT

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E101</td>
<td>ON NONE ON</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E103</td>
<td>ON OFF ON</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E105</td>
<td>MOM. OFF MOM.</td>
<td>2-3,5-6 OPEN 2-1,5-4</td>
</tr>
<tr>
<td>E107</td>
<td>ON OFF MOM.</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E108</td>
<td>ON NONE MOM.</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
</tbody>
</table>

### DPDT

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E201</td>
<td>ON NONE ON</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E203</td>
<td>ON OFF ON</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E205</td>
<td>MOM. OFF MOM.</td>
<td>2-3,5-6 OPEN 2-1,5-4</td>
</tr>
<tr>
<td>E207</td>
<td>ON OFF MOM.</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
<tr>
<td>E208</td>
<td>ON NONE MOM.</td>
<td>2-3,5-6 N/A 2-1,5-4</td>
</tr>
</tbody>
</table>

**MOM. = Momentary**

All models are available with all options when ordered with G, L, R, M, O or S contact material except with F1 conductive bushing.

---

Dimensions are shown: Inch (mm)  
Specifications and dimensions subject to change.
# C&K E Series
## Sealed Miniature Toggle Switches

### SWITCH FUNCTION

<table>
<thead>
<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
<th>SCHEMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3P</td>
<td>E301</td>
<td></td>
<td>C&amp;K marking on opposite side</td>
<td>3PDT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>POS. 1</td>
<td>POS. 2</td>
<td>POS. 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
</tr>
</tbody>
</table>

### ACTUATOR

<table>
<thead>
<tr>
<th>ACTUATOR COLOR</th>
<th>ACTUATOR COLOR</th>
<th>OPTION CODE</th>
<th>L3 ACTUATOR COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>M .300&quot; HIGH</td>
<td>S .500&quot; HIGH</td>
<td>2</td>
<td>BLACK</td>
</tr>
</tbody>
</table>

### BUSHING

- **D1 .250" HIGH, UNTHREADED**
- **F1 ESD CONDUCTIVE BUSHING, .250" HIGH, UNTHREADED**
- **D9 .280" HIGH, UNTHREADED**
- **Y THREADED, INSULATED, .350" HIGH WITH KEYWAY**

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**NOTE:** Internal o-ring actuator seal standard for all bushing options.

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**G/Toggle**

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change
C&K E Series
Sealed Miniature Toggle Switches

TERMINATIONS

Z  SOLDER LUG

SPDT thru 3PDT

Not available with F1 conductive bushing or K, L or M contact material.

Z3  QUICK CONNECT

SPDT thru 3PDT

Not available with F1 conductive bushing or K, L or M contact material. Mating quick connector available; order part number 630100000, page G-26.

A  RIGHT ANGLE, PC THRU-HOLE

Actuator Shown In Pos. 1

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

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

E101MD1ABE
Horizontal Actuation
SPDT

E201MD1ABE
Horizontal Actuation
DPDT

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

www.ittcannon.com

Downloaded from Arrow.com.
# C&K E Series
## Sealed Miniature Toggle Switches

### TERMINATIONS

#### A

<table>
<thead>
<tr>
<th>Description</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIGHT ANGLE, PC THRU-HOLE</td>
<td>E301MD1ABE</td>
</tr>
<tr>
<td>Vertical Actuation</td>
<td>E101MD1AV2BE</td>
</tr>
<tr>
<td>3PDT</td>
<td>AV2</td>
</tr>
<tr>
<td>Vertical Right Angle, PC Thru-Hole, .150&quot; Pitch</td>
<td>AV3</td>
</tr>
</tbody>
</table>

#### AV2

<table>
<thead>
<tr>
<th>Description</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical Right Angle, PC Thru-Hole, .150&quot; Pitch</td>
<td>E201MD1AV2BE</td>
</tr>
<tr>
<td>Vertical Actuation</td>
<td>AV2</td>
</tr>
<tr>
<td>DPDT</td>
<td>A3</td>
</tr>
</tbody>
</table>

#### AV3

<table>
<thead>
<tr>
<th>Description</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical Right Angle, Snap-In, PC Thru-Hole, .150&quot; Pitch</td>
<td>AV3</td>
</tr>
</tbody>
</table>

---

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

---

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change
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C&K E Series
Sealed Miniature Toggle Switches

TERMINATIONS

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

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

V6
VERTICAL MOUNT, V-BRACKET

V61
VERTICAL MOUNT, V-BRACKET, SNAP-IN

V6, V61
VERTICAL MOUNT, V-BRACKET

E301MD1AV2BE
Vertical Actuation
3PDT

E101MD1_BE
SPDT

E201MD1_BE
DPDT

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

Not available with Y bushing.

Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change
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C&K E Series
Sealed Miniature Toggle Switches

TERMINATIONS

V3, V9 VERTICAL MOUNT, V-BRACKET
V31 VERTICAL MOUNT, V-BRACKET, SNAP-IN

E101MD1_BE
SPDT

EPOXY SEAL

0.01 x 0.050 (0.25, 1.27) TYP.

300 (76, 2)
620 (157.5)

Actuator Shown In Pos. 1

SNAP-IN

PC MOUNTING

Not available with Y bushing.

E201MD1_BE
DPDT

EPOXY SEAL

0.01 x 0.050 (0.25, 1.27) TYP.

300 (76, 2)
620 (157.5)

Actuator Shown In Pos. 1

SNAP-IN

PC MOUNTING

Not available with Y bushing.

E301MD1_BE
3PDT

EPOXY SEAL

0.01 x 0.050 (0.25, 1.27) TYP.

300 (76, 2)
620 (157.5)

Actuator Shown In Pos. 1

SNAP-IN

PC MOUNTING

Not available with D9 & Y bushings.
C&K E Series
Sealed Miniature Toggle Switches

CONTACT MATERIAL

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>RoHS COMPLIANT</th>
<th>RoHS COMPATIBLE</th>
<th>CONTACT MATERIAL</th>
<th>TERMINAL PLATING</th>
<th>RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>YES</td>
<td>YES</td>
<td>GOLD 1</td>
<td>LOW LEVEL/</td>
<td>0.4 VA MAX. @ 20 V AC OR DC MAX.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TIN-LEAD 8</td>
<td>DRY CIRCUIT</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MATTE-TIN 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>NO</td>
<td>YES</td>
<td>SILVER 4,5</td>
<td>POWER</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TIN-LEAD 6</td>
<td>E1XX &amp; E2XX MODELS: 7.5 AMPS @ 125 V AC OR 28 V DC; 3 AMPS @ 250 V AC.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MATTE-TIN 7</td>
<td>E3XX MODELS: 5 AMPS @ 125 V AC OR 28 V DC; 2 AMPS @ 250 V AC.</td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>YES</td>
<td>YES</td>
<td>GOLD OVER</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SILVER 2,3</td>
<td>LOW LEVEL/DRY</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>TIN-LEAD 6</td>
<td>CIRCUIT OR POWER</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MATTE-TIN 7</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>YES</td>
<td>YES</td>
<td>GOLD 3</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>TIN-LEAD 6</td>
<td>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.</td>
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</tr>
<tr>
<td>G</td>
<td>YES</td>
<td>YES</td>
<td>GOLD OVER</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>SILVER 2,3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>NO</td>
<td>YES</td>
<td>TIN-LEAD 6</td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>MATTE-TIN 7</td>
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<td></td>
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<tr>
<td>R</td>
<td>YES</td>
<td>YES</td>
<td>TIN-LEAD 6</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>MATTE-TIN 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 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 tin-lead alloy over nickel plate.
7 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. For the latest information regarding RoHS compliance, please go to: www.ittcannon.com/rohs.

All models **Yes** with all options when ordered with S, R, G, L, M or Q contact material except with F1 conductive bushing.
B contact material standard with all terminations.