Build-A-Switch

Our easy Build-A-Switch concept allows you to mix and match options to create the switch you need. Below is a complete listing of options shown in catalog. To order, simply select desired option from each category and place in the appropriate box. Switches with standard options are shown on pages A-4 and A-5. Available options are shown and described on pages A-6 thru A-18. For additional options not shown in catalog, consult our Customer Service Center.

### Models Available

#### Features/Benefits
- Multi-pole and multi-position
- Wide variety of actuator and termination options
- Epoxy sealed terminals prevent contamination during soldering

#### Typical Applications
- Telecommunications
- Instrumentation
- Medical equipment

---

#### Switch Function

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Actuator</th>
<th>Bushing</th>
<th>Contact Material</th>
<th>Actuator Color/Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>7101</td>
<td>(STD) SP On-None-On</td>
<td>M</td>
<td>D</td>
<td>B (STD) Gold</td>
<td>KXX Actuator Color/Finish</td>
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<tr>
<td>7103</td>
<td>(STD) SP Off-Off-On</td>
<td>P3</td>
<td>E</td>
<td>(STD) Silver Seal</td>
<td>NONE (STD) Nickel on all bushings (except D8, satin chrome)</td>
</tr>
<tr>
<td>7201</td>
<td>(STD) DP On-None-On</td>
<td>S</td>
<td>F</td>
<td>(STD) Epoxy</td>
<td>Black</td>
</tr>
<tr>
<td>7203</td>
<td>(STD) DP Off-Off-On</td>
<td>T</td>
<td>G</td>
<td>Gold over silver base</td>
<td>Red</td>
</tr>
<tr>
<td>7211</td>
<td>(STD) DP On-Off-On</td>
<td>K2</td>
<td>H</td>
<td>Gold</td>
<td>Black</td>
</tr>
<tr>
<td>7213</td>
<td>(STD) DP Off-On-Mom.</td>
<td>L1</td>
<td>I</td>
<td>Silver</td>
<td>Blue</td>
</tr>
<tr>
<td>7301</td>
<td>(STD) 3P On-None-On</td>
<td>L1</td>
<td>J</td>
<td>Natural aluminum</td>
<td>Gold</td>
</tr>
<tr>
<td>7401</td>
<td>(STD) 4P On-None-On</td>
<td>L2</td>
<td>K</td>
<td>Natural aluminum with black bushing</td>
<td>Black</td>
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<tr>
<td>7015</td>
<td>SP Mom.-Off-Mom.</td>
<td>L3</td>
<td>L</td>
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<tr>
<td>7107</td>
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<td>Satin chrome</td>
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<tr>
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<td>N</td>
<td>Black</td>
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</tr>
<tr>
<td>7109</td>
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<td>L42</td>
<td>O</td>
<td>Black anodized</td>
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</tr>
<tr>
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<td>P</td>
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<td>Q</td>
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<td>R</td>
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<tr>
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<tr>
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<tr>
<td>7215</td>
<td>DP Mom.-Mom.-Mom.</td>
<td>L48</td>
<td>U</td>
<td>Gold</td>
<td>Gold</td>
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<td>7303</td>
<td>3P Off-Off-On</td>
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<td>7307</td>
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<td>X</td>
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<tr>
<td>7308</td>
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<td>L52</td>
<td>Y</td>
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<td>7309</td>
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<td>L53</td>
<td>Z</td>
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<td>7403</td>
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<td>L54</td>
<td>AA</td>
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<td>7405</td>
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<td>AF</td>
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<td>7415</td>
<td>3P Mom.-Mom.-Mom.</td>
<td>L61</td>
<td>AH</td>
<td>Satin chrome</td>
<td>Satin chrome</td>
</tr>
</tbody>
</table>

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#### Typical Example: **7101 S Y Z Q E**

#### Terminations

- **A**: (STD) Right angle, PC thru-hole
- **AV2**: (STD) Vert. right angle, PC thru-hole
- **C**: (STD) PC Thru-hole
- **V3**: (STD) .460" high, V-bracket
- **Z**: (STD) Solder lug
- **A2**: Right angle, PC thru-hole
- **A3**: Right angle, PC thru-hole
- **A4**: Right angle, PC thru-hole
- **A7**: Right angle, PC thru-hole
- **AV3**: Vert. right angle, PC thru-hole
- **AW**: Right angle, extended, PC thru-hole
- **AW1**: Right angle, extended, PC thru-hole
- **AW3**: Right angle, extended, PC thru-hole
- **AW4**: Right angle, extended, PC thru-hole
- **R**: Right angle with PCB
- **R2**: Right angle with PCB
- **V2**: .555" high, V-bracket
- **V4**: .630" high, V-bracket
- **V6**: .630" high, V-bracket
- **V7**: .630" high, V-bracket
- **V9**: .935" high, V-bracket
- **V9**: 1.150" high, V-bracket
- **V21**: .555" high, snap-in V-bracket
- **V31**: .460" high, snap-in V-bracket
- **V41**: .630" high, snap-in V-bracket
- **V61**: .460" high, snap-in V-bracket
- **V71**: .630" high, snap-in V-bracket
- **V81**: .935" high, snap-in V-bracket
- **V89**: 1.150" high, snap-in V-bracket
- **W**: .750" long, wire wrap
- **W1**: .964" long, wire wrap
- **W3**: .425" long, wire wrap
- **W4**: 1.062" long, wire wrap
- **W5**: 1.305" long, wire wrap
- **Z3**: Quick connect
**Specifications**

- **CONTACT RATING:** B contact material: 0.4 VA max. @ 20 V AC or DC max. Q contact material: 5 AMPS @ 120 V AC or 28 V DC; 2 AMPS @ 250 V AC. See page A-18 for additional ratings.
- **ELECTRICAL LIFE:** 7X01 and UX1 models: 100,000 make-and-break cycles at full load. All other models: 40,000 cycles.
- **CONTACT RESISTANCE:** Below 10 milliohms typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.
- **INSULATION RESISTANCE:** 10^9 ohms min.
- **DIELECTRIC STRENGTH:** 1000 V RMS 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).

**NOTE:** Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

**Materials**

- **CASE:** Glass filled nylon 6/6, flame retardant, heat stabilized, or dialyl phthalate (DAP) (UL 94V-0).
- **ACTUATOR:** Brass, chrome plated.
- **BUSHING:** Brass or zinc, nickel plated.
- **HOUSING:** Stainless steel.
- **SWITCH SUPPORT:** Brass or steel, tin plated.
- **CENTER CONTACTS & ALL TERMINALS:** B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Coin silver, silver plated. See page A-18 for additional contact materials.
- **END CONTACTS:** B contact material: Copper alloy, with gold plate over nickel plate. Q contact material: Coin silver, silver plated. See page A-18 for additional contact materials.
- **TERMINAL SEAL:** Epoxy.
- **HARDWARE:** Nut & Locking Ring: Brass, nickel plated. Lockwasher: Steel, nickel plated.

---

### SWITCHES WITH STANDARD OPTIONS

#### SPDT

**7101SYZQE**

- **PART NUMBER:** 7101SYZBE, 7101SYZGE, 7101SYZQE, 7103SYZBE, 7105SYZBE, 7107SYZOE, 7108SYZQE
- **POLES:** SPDT
- **CONTACTS:** SPDT: ON, ON; MOM.: ON, ON
- **TERMINAL TO TERMINAL:** 1/4-40 UNS-2A
- **EPOXY SEAL:**

#### DPDT

**7201SYZQE**

- **PART NUMBER:** 7201SYZQE, 7203SYZQE, 7205SYZQE, 7207SYZQE, 7208SYZQE, 7211SYZQE
- **POLES:** DPDT
- **CONTACTS:** MOM.: OFF, OFF; ON, ON
- **TERMINAL TO TERMINAL:** 1/4-40 UNS-2A
- **EPOXY SEAL:**

#### 3PDT

**7301SYZQE**

- **PART NUMBER:** 7301SYZOE, 7303SYZOE
- **POLES:** 3PDT
- **CONTACTS:** OFF, OFF, OFF
- **TERMINAL TO TERMINAL:** 1/4-40 UNS-2A
- **EPOXY SEAL:**
### 7000 Series

#### Miniature Toggle Switches

#### SWITCHES WITH STANDARD OPTIONS

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>NO. POLES</th>
<th>POS. 1</th>
<th>POS. 2</th>
<th>POS. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7401SYZQE</td>
<td>4PDT</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
</tr>
<tr>
<td>7403SYZQE</td>
<td>4PDT</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>7411SYZQE</td>
<td>4PDT</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>

**NOTE:** For PC termination, replace ‘Z’ with ‘C’.

For panel mounting information, see page A-9.

For PC mounting information, see page A-10.

---

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>NO. POLES</th>
<th>POS. 1</th>
<th>POS. 2</th>
<th>POS. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7201MD9AQE</td>
<td>DPDT</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
</tr>
</tbody>
</table>

**NOTE:** For PC mounting information, see page A-11.

---

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>NO. POLES</th>
<th>POS. 1</th>
<th>POS. 2</th>
<th>POS. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7301MD9ABE</td>
<td>3PDT</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
</tr>
</tbody>
</table>

**NOTE:** For PC mounting information, see page A-11.

---

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>NO. POLES</th>
<th>POS. 1</th>
<th>POS. 2</th>
<th>POS. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>7201MD9AV2BE</td>
<td>DPDT</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
</tr>
</tbody>
</table>

**NOTE:** For PC mounting information, see page A-13.

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C&K Components, Inc.  Web Site: www.ckcorp.com  Americas Sales  Tel: 800-635-5936  Fax: 617-926-6846

Europe Sales  Tel: +44-1536-521147  Fax: +44-1536-411602  • Asia Sales  Tel: +852-2798-6393  Fax: +852-2751-9926

Rev. A 8/99
## 7000 Series
### Miniature Toggle Switches

#### Switch Function Table

<table>
<thead>
<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>UL/CSA** MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
<th>SCHEMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>7101 (STD.)</td>
<td>U11</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>7103 (STD.)</td>
<td>U13</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>7105</td>
<td>U15</td>
<td>MOM.</td>
<td>OFF</td>
<td>MOM.</td>
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<tr>
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<td>7107</td>
<td>U17</td>
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<td>OFF</td>
<td>MOM.</td>
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<tr>
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<tr>
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<td>U19</td>
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<td>MOM.</td>
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</table>

<table>
<thead>
<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>UL/CSA** MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
<th>SCHEMATIC</th>
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<tbody>
<tr>
<td>DP</td>
<td>7201 (STD.)</td>
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<td>NONE</td>
<td>ON</td>
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<tr>
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<td>U23</td>
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<td>OFF</td>
<td>ON</td>
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<tr>
<td></td>
<td>7205</td>
<td>U25</td>
<td>MOM.</td>
<td>OFF</td>
<td>MOM.</td>
</tr>
<tr>
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<td>U27</td>
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<td>OFF</td>
<td>MOM.</td>
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<tr>
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<td>7208</td>
<td>U28</td>
<td>ON</td>
<td>NONE</td>
<td>MOM.</td>
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<tr>
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<td>7209</td>
<td>U29</td>
<td>NONE</td>
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<td>MOM.</td>
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<td>7211 (STD)</td>
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<tr>
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<td>7213*</td>
<td>U213</td>
<td>ON</td>
<td>ON</td>
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<tr>
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<td>U215</td>
<td>MOM.</td>
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<table>
<thead>
<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>UL/CSA** MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
<th>SCHEMATIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3P</td>
<td>7301 (STD.)</td>
<td>U31</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
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<tr>
<td></td>
<td>7303</td>
<td>U33</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
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<td>7305</td>
<td>U35</td>
<td>MOM.</td>
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<td>U39</td>
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<tr>
<th>NO. POLES</th>
<th>MODEL NO.</th>
<th>UL/CSA** MODEL NO.</th>
<th>SWITCH FUNCTION</th>
<th>CONNECTED TERMINALS</th>
<th>SCHEMATIC</th>
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<tbody>
<tr>
<td>4P</td>
<td>7401 (STD.)</td>
<td>U41</td>
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<tr>
<td></td>
<td>7403</td>
<td>U43</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
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<tr>
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<td>7405</td>
<td>U45</td>
<td>MOM.</td>
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<td>MOM.</td>
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<tr>
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<td>U415</td>
<td>MOM.</td>
<td>ON</td>
<td>MOM.</td>
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</tbody>
</table>

MOM. = Momentary

* Wiring for 3-way switch, see page L-29.

**U11-U415 model nos. with all options when ordered with G, L, M or Q contact material.
### ACTUATOR

<table>
<thead>
<tr>
<th>ACTUATOR FINISH</th>
<th>ACTUATOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>S</strong> (STD.) .410&quot;, <strong>M</strong> (STD.) .200&quot;, <strong>L, L1, L2</strong> .840&quot;, .640&quot;, .550&quot;</td>
</tr>
</tbody>
</table>

**S** actuator standard when ordered with C, W-W5, Z & Z3 terminations.

**M** actuator standard when ordered with all terminations except C, W-W5, Z & Z3.

**L, L1, L2** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.

**P1** FLATTED WITH ANTIROTATION, .840" HIGH 2, 3

**P3** (STD.) FLATTED WITH ANTIROTATION, .450" HIGH 2, 3

**P4** FLATTED WITH ANTIROTATION, .250" HIGH 2, 3

**T** (STD.) .687" HIGH 1, 2

**TP** ANTIROTATION, .687" HIGH, 15/32 BUSHING 1, 2, 3

**T1** 460" HIGH 1, 2

**T1P** ANTIROTATION, .460" HIGH, 15/32 BUSHING 1, 2, 3

**T2P** FLATTED, ANTIROTATION, .610" HIGH, 15/32 BUSHING 1, 2, 3

### Dress Nut Part Number

Dress nut part number 709901201 supplied standard with threaded bushing. (Part number 709903201 with metric threaded bushings.)

### Black Hardware

NOTE: Caps are available separately, see page L-10.

### Option Code

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM. “A”</th>
</tr>
</thead>
<tbody>
<tr>
<td>L, LP</td>
<td>.840 (21.34)</td>
</tr>
<tr>
<td>L1, L1P</td>
<td>.640 (16.26)</td>
</tr>
<tr>
<td>L2, L2P</td>
<td>.550 (13.97)</td>
</tr>
</tbody>
</table>

### Antirotation

Antirotation: Provides anti-push-in feature on actuator.

### NOTE

- **S** actuator standard when ordered with C, W-W5, Z & Z3 terminations.
- **M** actuator standard when ordered with all terminations except C, W-W5, Z & Z3.
- **L, L1, L2** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.
- **P1** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.
- **P4** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.

### Option Code

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>ACTUATOR FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(STD.) BRIGHT CHROME - With Nickel Plated Bushing</td>
</tr>
<tr>
<td>0</td>
<td>(STD.) BLACK</td>
</tr>
<tr>
<td>S</td>
<td>BRIGHT CHROME - With Black Bushing</td>
</tr>
<tr>
<td></td>
<td>SATIN CHROME</td>
</tr>
</tbody>
</table>

### NOTE

- **S** actuator standard when ordered with C, W-W5, Z & Z3 terminations.
- **M** actuator standard when ordered with all terminations except C, W-W5, Z & Z3.
- **L, L1, L2** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.

**L, L1, L2** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.

**P1** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.

**P4** actuator not available with CW splashproof bushing or single pole models with A-A7, AW-AW4, R & R2 terminations.

**T** (STD.) .687" HIGH 1, 2

**TP** ANTIROTATION, .687" HIGH, 15/32 BUSHING 1, 2, 3

**T1** 460" HIGH 1, 2

**T1P** ANTIROTATION, .460" HIGH, 15/32 BUSHING 1, 2, 3

**T2P** FLATTED, ANTIROTATION, .610" HIGH, 15/32 BUSHING 1, 2, 3

### Bushing Option Code

Bushing option code not required unless CW splashproof bushing ordered. TP & T1P actuators not available with CW splashproof bushing. All TXX actuators not available on single pole models with A-A7, AW-AW4, R & R2 terminations.

### Black Hardware

NOTE: Black hardware is supplied when either black actuators or bushings are specified. All hardware is available separately, see section L.
Locking Positions

- 01 Models
  - 2 Position lock

- 03 & 09 Models
  - 3 Position lock

- 05 & 15 Models
  - 1 Position lock

- 07 & 13 Models
  - 2 Position lock

- 08 Models
  - 1 Position lock

NOTE: To prevent accidental actuation, toggle must be lifted before being actuated. When released, toggle will lock in place. Overtightening mounting nut may cause actuator to bind. Bushing option code not required unless CW splashproof bushing ordered.

L40 LEVER HANDLE WITHOUT CAP
L41 PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4810
L42 PLASTIC LEVER HANDLE WITH ANTIROTATION AND CAP, P/N 4811

NOTE: Lever handle for L41 & L42 actuators supplied, but not installed. For interchangeability, order L40 actuator option and lever handles separately, see section L. L4X actuators not available with H4, Y1, Y4 bushings. Antirotation: Provides anti-push-in feature on actuator.

OPTION CODE | ACTUATOR CAP FINISH
--- | ---
NONE | (STD.) NATURAL ALUMINUM—With Nickel Plated Bushing
0 | (STD.) NATURAL ALUMINUM—With Black Bushing
2 | BLACK ANODIZED ALUMINUM
3 | RED ANODIZED ALUMINUM
7 | BLUE ANODIZED ALUMINUM

L3 PLASTIC, .840* HIGH
L3P ANTIROTATION, .840* HIGH

NOTE: Lever handle for L41 & L42 actuators supplied, but not installed. For interchangeability, order L40 actuator option and lever handles separately, see section L. L4X actuators not available with H4, Y1, Y4 bushings. Antirotation: Provides anti-push-in feature on actuator.

OPTION CODE | PLASTIC ACTUATOR COLORS
--- | ---
NONE | (STD.) No Actuator Color (L40 option)
2 | (STD.) BLACK
1 | WHITE
3 | RED

* Add .070 (1.78) for D, D8 & D9 bushings, subtract .020 (0.51) for H3 bushing.
**Bushing**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Finishes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>.350&quot; HIGH, THREADED, KEYWAY</td>
<td>(STD.) NICKEL on all bushings except 'D8' satin chrome.</td>
</tr>
<tr>
<td>Y9</td>
<td>.350&quot; HIGH, UNTHREADED, KEYWAY</td>
<td>2 BLACK</td>
</tr>
<tr>
<td>D</td>
<td>.280&quot; HIGH, THREADED, KEYWAY</td>
<td>NONE</td>
</tr>
<tr>
<td>D8</td>
<td>.280&quot; HIGH, UNTHREADED, FLAT</td>
<td>NO BUSHING</td>
</tr>
<tr>
<td>D9</td>
<td>.280&quot; HIGH, UNTHREADED, KEYWAY</td>
<td>NO BUSHING</td>
</tr>
<tr>
<td>H</td>
<td>.296&quot; HIGH, FLAT, THREADED, HIGH TORQUE</td>
<td>NONE</td>
</tr>
<tr>
<td>H3</td>
<td>.315&quot; HIGH, KEYWAY, THREADED, HIGH TORQUE</td>
<td>NONE</td>
</tr>
</tbody>
</table>

**Bushing Choice**

- **Y** bushing standard with C, W-W5, Z or Z3 terminations.
- **D9** bushing standard with all terminations except C, W-W5, Z or Z3. Add .070 (1.78) to all actuators lengths with D, D8 & D9 bushings.
- **Y** bushing standard with C, W-W5, Z or Z3 terminations.

**NOTE**

1. Will withstand 12 in.-lbs. of torque with no distortion.
2. CW, H, H3, H4, Y1 & Y4 bushings not available on single pole models with A4, R or R2 terminations.
3. D8 & H4 bushings available only with L, L1, L2, L3, M & S actuators.
4. Y1 bushing available only with LP, LXP, MP, PX & SP actuators.
5. Y4 bushing not available with L4X actuators.

**Internal Actuator Seal Standard**

Internal actuator seal standard for actuators other than T & T1.

**External Bushing Seal Washer**


**Mounting Nut and Locking Ring**

Supplied standard with threaded bushings. Black hardware is supplied when either black bushings or actuators are specified.

**PANEL MOUNTING**

- **1/4 INCH BUSHING**
- **METRIC BUSHING**
- **15/32 INCH BUSHING**

---

**FOR T & T1 ACTUATORS**

- **CW** THREADED, SPLASHPROOF 1, 2
- **H4** 8mm HIGH, KEYWAY, THREADED, METRIC HIGH TORQUE 1, 2, 3
- **Y1** .378" HIGH, KEYWAY, THREADED, HIGH TORQUE 1, 2, 4
- **Y3** 8.9mm HIGH, KEYWAY, THREADED, METRIC
- **Y4** .378" HIGH, FLAT, THREADED, METRIC 1, 2, 5

**OPTION CODE**

- **NONE** (STD.) NICKEL on all bushings except 'D8' satin chrome.
- **2** BLACK

**NOTE**

1. Will withstand 12 in.-lbs. of torque with no distortion.
2. CW, H, H3, H4, Y1 & Y4 bushings not available on single pole models with A4, R or R2 terminations.
3. D8 & H4 bushings available only with L, L1, L2, L3, M & S actuators.
4. Y1 bushing available only with LP, LXP, MP, PX & SP actuators.
5. Y4 bushing not available with L4X actuators.

---

**Metropolitan North America**

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---

**A-9**
**TERMINATIONS**

### A

**RIGHT ANGLE, PC THRU-HOLE**

Actuator Shown In Pos. 1

- **DIM 'A'**
  - .33 TYP. (8.4)

**AW**

- **TYP.**
  - .19 (4.8)

**AW1**

- **TYP.**
  - .40 (10.2)

**AW4**

- **TYP.**
  - .50 (12.7)

**OPTION CODE**

- **DIM 'A'**
  - .19 (4.8)
  - .40 (10.2)
  - .50 (12.7)

**A3**

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

- **TYP.**
  - .048 (1.2)

**AW, AW1, AW4**

**RIGHT ANGLE, EXTENDED, PC THRU-HOLE**

Actuator Shown In Pos. 1

- **DIM 'A'**
  - .33 TYP. (8.4)

**A**

**RIGHT ANGLE, PC THRU-HOLE**

Actuator Shown In Pos. 1

- **DIM 'A'**
  - .33 TYP. (8.4)

**AW4**

**RIGHT ANGLE, EXTENDED, PC THRU-HOLE**

**PC MOUNTING**

Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

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Rev. A 8/99
7000 Series Miniature Toggle Switches

**TERMINATIONS**

**A2** RIGHT ANGLE, PC THRU-HOLE, .156" PITCH

7101MHA2BE Horizontal Actuation

SPDT

Terminals & Support

Not available with TXX actuators and I seal.

 Terminal bend radii and lead-in manufacturing option.

**A4** RIGHT ANGLE, PC THRU-HOLE, .156" PITCH

7101MD9A4BE Horizontal Actuation

SPDT

Not available with KXX & TXX actuators, CW, H, H3, H4, Y1 & Y4 bushings, and I seal. Terminal bend radii and lead-in manufacturing option.

**AV2** (STD.) VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150" PITCH

7101MD9AV2BE Vertical Actuation

SPDT

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

PC MOUNTING

NOTE: Termination options A4 & R2 are functionally identical and fit the same PC mounting pattern. The switches, however, are shifted relative to the mounting holes. Unlike the R2, the A4 option is available with any contact material and can be UL recognized and CSA certified. The PC pattern must clear switch support legs.

Not available with I seal option. Terminal bend radii and lead-in manufacturing option.
**AV2**  
**(STD.) VERTICAL RIGHT ANGLE, PC THRU-HOLE, \(0.150\) PITCH

Actuator Shown In Pos. 1

Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.

**AV3**  
VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, \(0.150\) PITCH

Not available with I seal option.
Terminal bend radii and lead-in manufacturing option.
# 7000 Series
## Miniature Toggle Switches

### Terminations

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV2</td>
<td>(STD.) VERTICAL RIGHT ANGLE, PC THRU-HOLE, .150° PITCH</td>
<td>Not available with I seal option. Terminal bend radii and lead-in manufacturing option.</td>
</tr>
<tr>
<td>AV3</td>
<td>VERTICAL RIGHT ANGLE, SNAP-IN, PC THRU-HOLE, .150° PITCH</td>
<td></td>
</tr>
</tbody>
</table>

### Right Angle with PCB

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV2</td>
<td>Vertical Actuation</td>
<td></td>
</tr>
<tr>
<td>AV3</td>
<td>Vertical Actuation</td>
<td></td>
</tr>
</tbody>
</table>

### ACTUATOR SHOWN IN POS. 1

- **Actuator Shown In Pos. 1**
- **PC Mounting**

### Terminal & Support

- **Terminals & Support**

---

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Europe Sales  Tel: +44-1536-521147  Fax: +44-1536-411602  Asia Sales  Tel: +852-2798-6393  Fax: +852-2751-9926

Rev. A 8/99

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A-14
**TERMINATIONS**

**A7**

RIGHT ANGLE, PC THRU-HOLE, 
.025" SQUARE, 200° PITCH

---

**V2, V6, V7, V8**

VERTICAL MOUNT, V-BRACKET

**V21, V61, V71, V81**

VERTICAL MOUNT, V-BRACKET, SNAP-IN

---

Not available with KXX & TXX actuators, H, H3, H4, Y1 & Y4 bushings. I seal option. Terminal bend radii and lead-in manufacturing option. Available with B contact material only.

---

**V2, V6, V7, V8**

VERTICAL MOUNT, V-BRACKET

**V21, V61, V71, V81**

VERTICAL MOUNT, V-BRACKET, SNAP-IN

---

Not available with I seal option.

---

**V2, V6, V7, V8**

VERTICAL MOUNT, V-BRACKET

**V21, V61, V71, V81**

VERTICAL MOUNT, V-BRACKET, SNAP-IN

---

Not available with I seal option.
7000 Series
Miniature Toggle Switches

**TERMINATIONS**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Dim 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2, V21</td>
<td>.555 (14,10)</td>
</tr>
<tr>
<td>V7, V71</td>
<td>.630 (16,00)</td>
</tr>
<tr>
<td>V8, V81</td>
<td>.953 (24,21)</td>
</tr>
</tbody>
</table>

**PC MOUNTING**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Dim 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2, V21</td>
<td>.555 (14,10)</td>
</tr>
<tr>
<td>V7, V71</td>
<td>.630 (16,00)</td>
</tr>
<tr>
<td>V8, V81</td>
<td>.953 (24,21)</td>
</tr>
</tbody>
</table>

Actuator Shown In Pos. 1
Not available with I seal option.

**MINIATURE TOGGLE SWITCHES**

**7301MD9__BE**

3PDT

**7401MD9__BE**

4PDT

**7101MD9__BE**

SPDT
7000 Series
Miniature Toggle Switches

**TERMINATIONS**

### V3 (STD.), V4, V9
VERTICAL MOUNT, V-BRACKET

![Diagram of V3 (STD.), V4, V9](image)

**Actuator Shown In Pos. 1**

Not available with I seal option.

### V31, V41, V91
VERTICAL MOUNT, V-BRACKET, SNAP-IN

![Diagram of V31, V41, V91](image)

Not available with I seal option.

### V4, V9
VERTICAL MOUNT, V-BRACKET

**Actuator Shown In Pos. 1**

**PC MOUNTING**

Not available with I seal option.

### V41, V91
VERTICAL MOUNT, V-BRACKET, SNAP-IN

![Diagram of V41, V91](image)

### TERMINATIONS

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>V3, V31</td>
<td>0.460 (11.68)</td>
</tr>
<tr>
<td>V4, V41</td>
<td>0.630 (16.00)</td>
</tr>
<tr>
<td>V9, V91</td>
<td>1.150 (29.21)</td>
</tr>
</tbody>
</table>

**PC MOUNTING**

![Diagram of PC MOUNTING](image)

### V4, V9
VERTICAL MOUNT, V-BRACKET

**Actuator Shown In Pos. 1**

### V41, V91
VERTICAL MOUNT, V-BRACKET, SNAP-IN

**Actuator Shown In Pos. 1**

### TERMINATIONS

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>V4, V41</td>
<td>0.630 (16.00)</td>
</tr>
<tr>
<td>V9, V91</td>
<td>1.150 (29.21)</td>
</tr>
</tbody>
</table>

**PC MOUNTING**

![Diagram of PC MOUNTING](image)

### V4, V9
VERTICAL MOUNT, V-BRACKET

**Actuator Shown In Pos. 1**

### V41, V91
VERTICAL MOUNT, V-BRACKET, SNAP-IN

**Actuator Shown In Pos. 1**

### TERMINATIONS

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>DIM 'A'</th>
</tr>
</thead>
<tbody>
<tr>
<td>V4, V41</td>
<td>0.630 (16.00)</td>
</tr>
<tr>
<td>V9, V91</td>
<td>1.150 (29.21)</td>
</tr>
</tbody>
</table>
CONTACT MATERIAL

<table>
<thead>
<tr>
<th>OPTION CODE</th>
<th>CONTACT MATERIAL</th>
<th>TERMINAL PLATING</th>
<th>RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>B (STD.)</td>
<td>GOLD 1</td>
<td>GOLD 1, TIN-LEAD 6</td>
<td>LOW LEVEL/DRY CIRCUIT</td>
</tr>
<tr>
<td>K</td>
<td>SILVER 4,5</td>
<td>SILVER 5, TIN-LEAD 6</td>
<td>POWER</td>
</tr>
<tr>
<td>Q (STD.)</td>
<td>GOLD OVER SILVER 2,3</td>
<td>GOLD 3, TIN-LEAD 6</td>
<td>LOW LEVEL/DRY CIRCUIT OR POWER</td>
</tr>
<tr>
<td>M</td>
<td>COPPER ALLOY, TIN-LEAD 6</td>
<td>COPPER ALLOY, TIN-LEAD 6</td>
<td>POWER</td>
</tr>
<tr>
<td>G</td>
<td>COPPER ALLOY, TIN-LEAD 6</td>
<td>COPPER ALLOY, TIN-LEAD 6</td>
<td>POWER</td>
</tr>
<tr>
<td>L</td>
<td>COPPER ALLOY, TIN-LEAD 6</td>
<td>COPPER ALLOY, TIN-LEAD 6</td>
<td>POWER</td>
</tr>
</tbody>
</table>

**CONTACT MATERIAL / APPLICATION RECOMMENDATIONS – SEE CHART, PAGE L-31.**

1 CONTACTS & TERMINALS: Copper alloy, with gold plate over nickel plate.
2 END CONTACTS: Coin silver, with gold plate over nickel plate.
3 CENTER CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate.
4 END CONTACTS: Coin silver, silver plated.
5 CENTER CONTACT & ALL TERMINALS: Copper alloy, silver plated.
6 TERMINALS: Copper alloy, with tin-lead alloy over nickel plate.

**B** contact material standard with all terminations, except C, Z & Z3.
**B** contact material must be ordered with A7, AW6 - AW7, R, R2, W6 - W7 terminations.
**Q** contact material standard with C, Z & Z3 terminations.
**K, L & M** contact materials not available with Z & Z3 terminations.

**E** EPOXY SEAL

Compatible with "bottom-wash" PC board cleaning methods.

**I** EPOXY POTTED BASE

Available with C, W - W5, Z & Z3 terminations only.