## General Specifications

### Electrical Capacity (Resistive Load)

**Power Level:** 3A @ 250V AC

### Other Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Resistance</td>
<td>20 milliohms maximum</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1,000 megohms minimum @ 500V DC</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>1,000V AC minimum between contacts for 1 minute minimum; 1,500V AC minimum between contacts &amp; case for 1 minute minimum</td>
</tr>
<tr>
<td>Mechanical Life</td>
<td>30,000 cycles minimum</td>
</tr>
<tr>
<td>Electrical Life</td>
<td>10,000 cycles minimum</td>
</tr>
<tr>
<td>Static Capability</td>
<td>Withstands 1.5 kilovolts minimum ESD minimum (for CKM models only)</td>
</tr>
<tr>
<td>Nominal Operating Torque</td>
<td>16mm Bushing (CKM models):</td>
</tr>
<tr>
<td></td>
<td>.04 mNm (5.67 oz-in) for Flat Key</td>
</tr>
<tr>
<td></td>
<td>.08 mNm (11.33 oz-in) for Tubular Key</td>
</tr>
<tr>
<td></td>
<td>19mm Bushing (CKL models):</td>
</tr>
<tr>
<td></td>
<td>.05 mNm (7.08 oz-in) for Flat Key</td>
</tr>
<tr>
<td></td>
<td>.07 mNm (9.91 oz-in) for Tubular Key</td>
</tr>
<tr>
<td>Contact Timing</td>
<td>Break-before-make</td>
</tr>
<tr>
<td>Angle of Throw</td>
<td>90° for 2-position &amp; 45° for 3-position</td>
</tr>
</tbody>
</table>

### Materials & Finishes

- **Keys for CKM:** Brass with nickel plating with ABS handle
- **Keys for CKL:** Brass with nickel plating for tubular key; brass with chrome plating for flat key
- **Housing/Bushing:** Glass fiber reinforced PBT for CKM models; zinc alloy with chrome plating for CKL
- **Base:** LCP (Liquid Crystal Polymer)
- **Contact Terminals:** Copper with silver plating
- **Common Terminals:** Copper with silver plating
- **Movable Contactor:** Copper
- **Movable Contacts:** Silver

### Environmental Data

- **Operating Temperature Range:** 
  -25°C through +70°C (-13°F through +158°F)
- **Humidity:** 90 ~ 95% humidity for 240 hours @ 40°C (104°F) for CKM; 90 ~ 95% humidity for 96 hours @ 40°C (104°F) for CKL
- **Vibration:** 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm for CKM or 0.7mm for CKL traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
- **Shock:** 50G (490m/s²) acceleration for CKM; 30G (294m/s²) acceleration for CKL; (CKM & CKL tested in 6 right angled directions, with 5 shocks in each direction)

### Installation

- **Mounting Torque:** 1.5 Nm (13.28 lb-in) maximum
- **Soldering Time & Temperature:** Manual Soldering: See Profile A in Supplement section.
High Security Keylocks

Distinctive Characteristics

High insulating material for 16mm CKM models withstands over 15 kilovolts of electrostatic discharge, thus providing antistatic feature.

Rugged, die cast housing 19mm CKL models designed for higher security requirements.

Vertically rotating switching mechanism combines with self-cleaning sliding contacts for high reliability and long operating life.

16mm and 19mm diameter bushings available.

CKL and CKM on-off-on models with tubular keys have push-and-lock mechanism which allows contactor to drop and slide over stationary contacts.

Available in both flat and tubular key styles; flat key is reversible for easier setting.

Epoxy sealed terminals prevent entry of flux and other contaminants.

Interior construction provides seal for contact area.

High dielectric strength of 1,500 volts between contacts and case.
**Series CK**

**High Security Keylocks**

**TYPICAL SWITCH ORDERING EXAMPLE**

<table>
<thead>
<tr>
<th>Bushings</th>
<th>Poles</th>
<th>Keys</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 16mm Diameter</td>
<td>1 SPDT</td>
<td>F Flat</td>
<td>01 Solder Lug *</td>
</tr>
<tr>
<td>L 19mm Diameter</td>
<td></td>
<td>T Tubular</td>
<td></td>
</tr>
</tbody>
</table>

### Circuits & Key-Removable Positions

<table>
<thead>
<tr>
<th>Code</th>
<th>Pos. 1</th>
<th>Pos. 2</th>
<th>Pos. 3</th>
<th>Key Removes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
<td>Positions 1 and 3</td>
</tr>
<tr>
<td>2B</td>
<td>ON</td>
<td>NONE</td>
<td>ON</td>
<td>Position 1</td>
</tr>
<tr>
<td>3E</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>Position 2</td>
</tr>
</tbody>
</table>

### Contact Material

- **W Silver**
- Rated 3A @ 250V AC

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**DESCRIPTION FOR TYPICAL ORDERING EXAMPLE**

**CKM12AFW01**

- One key supplied with each switch
- SPDT ON-NONE-ON Circuit
- Key Removable in Positions 1 and 3
- 16mm Diameter Bushing
- Solder Lug Terminals
- Silver Contacts Rated 3A @ 250V AC

* Wire harness & cable assemblies offered only in Americas
# High Security Keylocks

## POLES, CIRCUITS & KEY-REMOVABLE POSITIONS

<table>
<thead>
<tr>
<th>Pole &amp; Throw</th>
<th>Model</th>
<th>Key Positions</th>
<th>Connected Terminals</th>
<th>Schematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDT</td>
<td>CKM12A</td>
<td>ON</td>
<td>COM-1</td>
<td>COM-2</td>
</tr>
<tr>
<td></td>
<td>CKL12A</td>
<td>NONE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPDT</td>
<td>CKM12B</td>
<td>ON</td>
<td>COM-1</td>
<td>COM-2</td>
</tr>
<tr>
<td></td>
<td>CKL12B</td>
<td>NONE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPDT</td>
<td>CKM13E</td>
<td>ON</td>
<td>COM-1</td>
<td>OPEN</td>
</tr>
<tr>
<td></td>
<td>CKL13E</td>
<td>OFF</td>
<td></td>
<td>COM-2</td>
</tr>
</tbody>
</table>

- **@** = Key Removable
- **•** = Not Removable
- ◄ = Maximum Arc

## KEYS

### Flat Key

#### AT4147 for CKM 16mm
- Brass with Nickel Plating key base & ABS key handle

#### AT4153 for CKL 19mm
- Brass with Chrome Plating (crosshatch texture on handle)

One key provided with each switch (no master key available)
For ordering additional keys, indicate the same key number that is engraved on the face of your switch.

Randomly assigned key number (001 through 010 for CKM models & 001 through 025 for CKL models).

Typical Key Ordering Example: AT4153-001

### Tubular Key

#### AT4146 for CKM 16mm
- Brass with Nickel Plating key base & ABS key handle

#### AT4152 for CKL 19mm
- Brass with Nickel Plating (smooth)

One key provided with each switch (no master key available)
For ordering additional keys, indicate the same key number that is engraved on the face of your switch.

Randomly assigned key number (001 through 025 for CKM models & 001 through 050 for CKL models).

Typical Key Ordering Example: AT4146-001

## CONTACT MATERIALS, RATINGS & TERMINALS

### Silver over Silver

- Power Level 3A @ 250V AC

### Solder Lug Terminals

- Solder Lug Terminal for CKM

- Solder Lug Terminal for CKL
Series CK
High Security Keylocks

TYPICAL SWITCH DIMENSIONS

16mm Bushing • Flat Key

90°
Angular Throw

45°
Angular Throw

CKM12AFW01

16mm Bushing • Tubular Key

90°
Angular Throw

45°
Angular Throw

CKM13ETW01

PANEL CUTOUT & STANDARD HARDWARE FOR 16MM BUSHING

Maximum Effective Panel Thickness: .469" (11.9mm)

AT016
16mm Hex Mounting Nut for CKM

1 included with each switch

Steel
TYPICAL SWITCH DIMENSIONS

19mm Bushing • Flat Key

19mm Bushing • Tubular Key

PANEL CUTOUT & STANDARD HARDWARE FOR 19MM BUSHING

Maximum Effective Panel Thickness: .496" (12.6mm)