High Security Keylocks

General Specifications

Electrical Capacity (Resistive Load)
  Power Level: 3A @ 250V AC

Other Ratings
  Contact Resistance: 20 milliohms maximum
  Insulation Resistance: 1,000 megohms minimum @ 500V DC
  Dielectric Strength: 1,000V AC minimum between contacts for 1 minute minimum; 1,500V AC minimum between contacts & case for 1 minute minimum
  Mechanical Life: 30,000 cycles minimum
  Electrical Life: 10,000 cycles minimum
  Static Capability: Withstands 15 kilovolts minimum ESD minimum (for CKM models only)
  Nominal Operating Torque: 16mm Bushing (CKM models):
    .04 mNm (5.67 oz•in) for Flat Key
    .08 mNm (11.33 oz•in) for Tubular Key
  19mm Bushing (CKL models):
    .05 mNm (7.08 oz•in) for Flat Key
    .07 mNm (9.91 oz•in) for Tubular Key
  Contact Timing: Break-before-make
  Angle of Throw: 90° for 2-position & 45° for 3-position

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
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.
**TYPICAL SWITCH ORDERING EXAMPLE**

**CK**

- **M**: 16mm Diameter
- **L**: 19mm Diameter

- **Poles**: 1 SPDT

**Keys**
- **F**: Flat
- **T**: Tubular

**Bushings**
- **M**: 16mm Diameter
- **L**: 19mm Diameter

**Contact Material**
- **W**: Silver Rated 3A @ 250V AC

**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>
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<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>

**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
Series CK

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 CKL12A</td>
<td>ON NONE ON</td>
<td>COM-1 —— COM-2</td>
<td>POS 1 3</td>
</tr>
<tr>
<td>SPDT</td>
<td>CKM12B CKL12B</td>
<td>ON NONE ON</td>
<td>COM-1 —— COM-2</td>
<td>POS 1 3</td>
</tr>
<tr>
<td>SPDT</td>
<td>CKM13E CKL13E</td>
<td>ON OFF ON</td>
<td>COM-1 OPEN COM-2</td>
<td>POS 1 2</td>
</tr>
</tbody>
</table>

Keypad

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

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

KEYS

Flat Key

Tubular Key (must be pressed inward to actuate)

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

www.nkkswitches.com
High Security Keylocks

Series CK

TYPICAL SWITCH DIMENSIONS

16mm Bushing • Flat Key

16mm Bushing • Tubular Key

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 with nickel plating
Series CK
High Security Keylocks

TYPICAL SWITCH DIMENSIONS

19mm Bushing • Flat Key

90° Angular Throw

45° Angular Throw

CKL12AFW01

19mm Bushing • Tubular Key

90° Angular Throw

45° Angular Throw

CKL13ETW01

PANEL CUTOUT & STANDARD HARDWARE FOR 19MM BUSHING

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

AT019
19mm Hex Mounting Nut for CKL

1 included with each switch
Steel with nickel plating