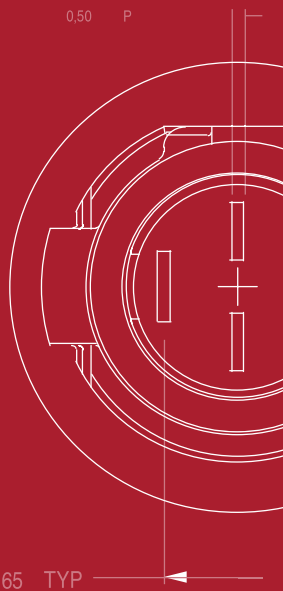



# 2020 PRODUCT GUIDE

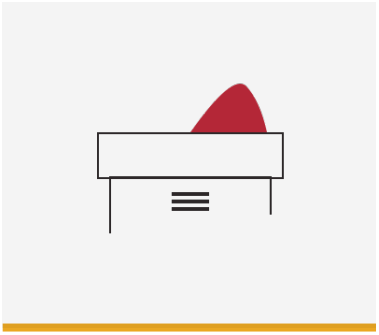
***This product guide contains a selection of our most popular switches and components.***

www.ckswitches.com

C&K®

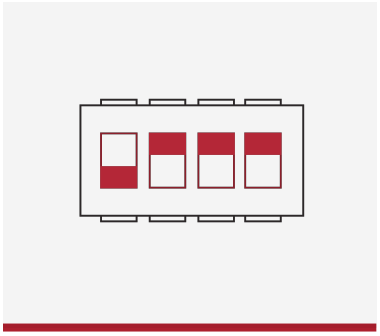
# A Selection from our **55K Products**

For over 80 years, leading designers, manufacturers and distributors of electronics have turned to C&K when they require mission-critical reliability in an electromechanical switch, high-rel connector or custom assembly. The reason they keep coming back is because C&K's innovative design, cutting-edge production process, and strict quality assurance standards produce the world's best switches and components.



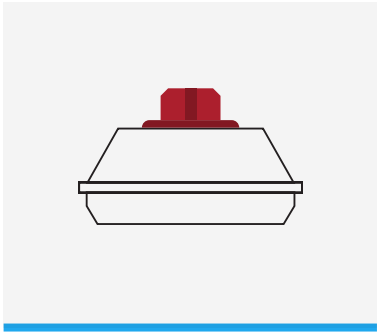
### DETECT SWITCHES

Surface mount, through-hole,
Sealed
Pushbutton, snap-acting, lever actuation



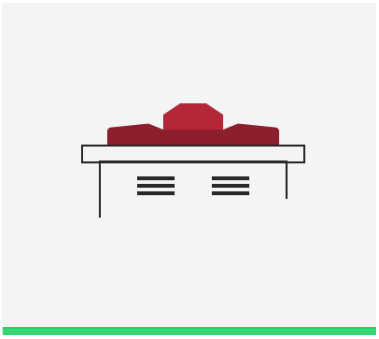
### DIP SWITCHES

1-16 position
Surface mount, through-hole
Washable
Top, side actuation



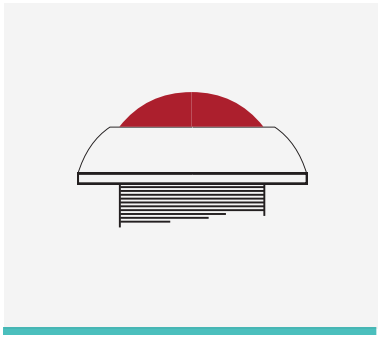
### KEYSWITCHES

Surface mount, through-hole
Illuminated
Momentary, push-on/push-off



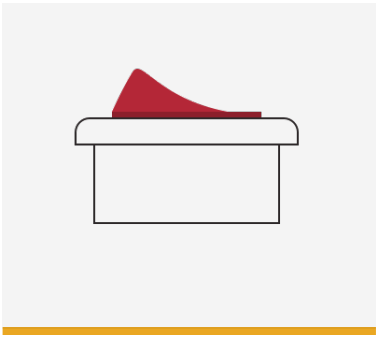
### NAVIGATION SWITCHES

Multi-direction
Joystick, rocker



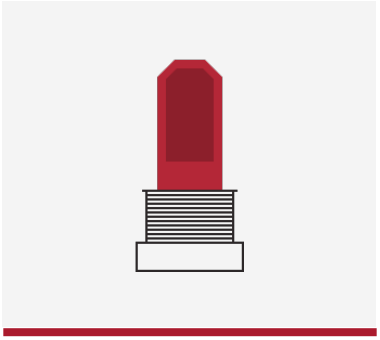
### PUSHBUTTONS

Illuminated
Sealed
Miniature, subminiature, microminiature
Surface mount, through-hole, bushing mount



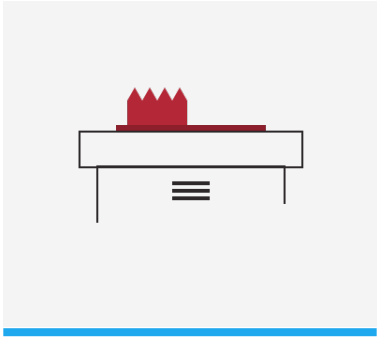
### ROCKER SWITCHES

Snap-in, panel mount
Illuminated options
Several body sizes and shapes



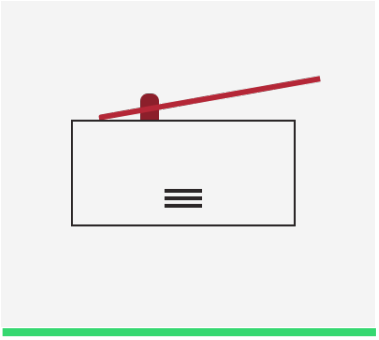
## ROTARY SWITCHES

Multi-pole, multi-position
Sealed



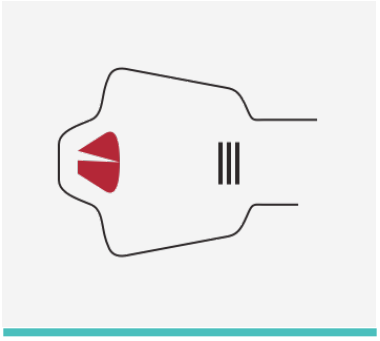
## SLIDE SWITCHES

Miniature, ultraminiature
Process sealed switches
Surface mount, through-hole



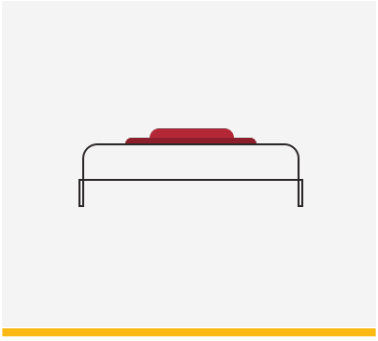
## SNAP-ACTING SWITCHES

Miniature, subminiature
Sealed
Broad range of operating forces and lever styles
Power ratings up to 30 A



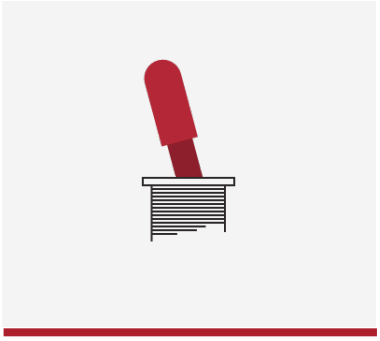
## SWITCHLOCKS

Solder lug terminal
PC thru-hole
Wire lead
Quick connect
Anti static switch
200 to 2,000 different key codes



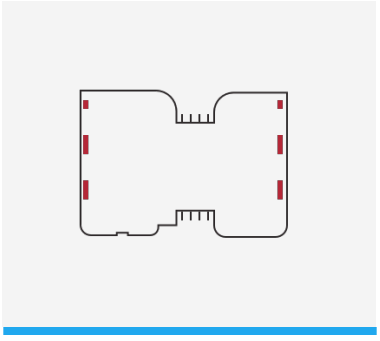
## TACTILE SWITCHES

Surface mount, through-hole
Sealed
Top, side actuation
100,000 to 1,000,000 cycles



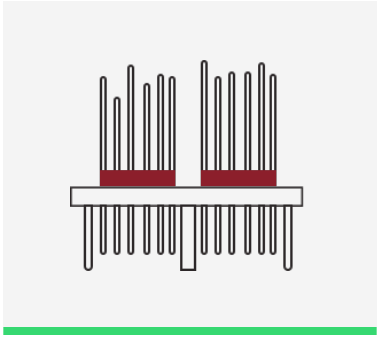
## TOGGLE SWITCHES

Miniature, subminiature, ultraminiature
Sealed
Surface mount, through-hole, bushing mount



## SMARTCARD CONNECTORS

ISO, SIM,  SAM cards
Low profile
Anti-piracy



## HIGH REL CONNECTORS

Microminiature & D-sub
Mil/Aero & medical
Board-board, board-cable, cable-cable

# SWITCH

## SOLUTION DESIGN INNOVATION

**TABLE OF CONTENT**


| | |
|---|---|
| **5-12** | Detect |
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| **19-23** | Keyswitch |
| **24-26** | Navigation |
| **27-35** | Pushbutton |
| **36-40** | Rocker |
| **41-44** | Rotary |
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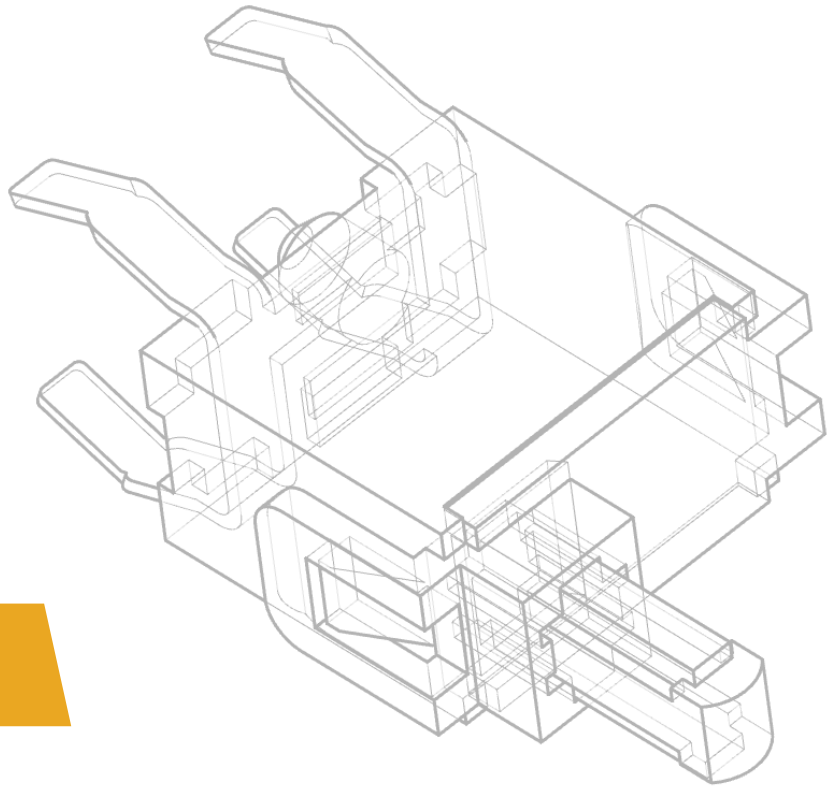
| **84-85** | High Reliability Connectors |
| **86-88** | Part Number Index |

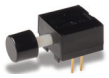


PRODUCT SELECTION GUIDE

# Detect Switches

With 19 different series of standard detect switches, C&K offers the largest selection in SMT, through-hole, panel and snap-in / chassis and screw-mount versions. C&K's detect switches are offered in a variety of sizes and shapes, with various actuator orientations including vertical or horizontal, top or side, or right-angle or left, and come with soft actuation force. These detect switches include low profile, compact, micro- and ultra-miniature designs, with some sealed versions available.

| SERIES | HDT | DS | HDS | HDP | SDP | SDS |
|---|---|---|---|---|---|---|
| **Travel to Make (mm)** | 0.3 | See datasheet | 0.17 | 0.24 | 29.2° | 0.35 |
| **Overtravel** | 0.75 | See datasheet | 0.5 | 1.66 | 39.1° | 1.65 |
| **Total Travel** | 1.05 | See datasheet | 1.07 | 1.9 | 68.3° | 2.0 |
| **Actuator Length** | 1.4 | See datasheet | 1.17 | 2.15 | 1.85 | 2.5 |
| **Life Cycle** | 100,000 | 20,000 / 50,000 / 100,000 | 100,000 | 100,000 | 50,000 | 50,000 |
| **Contact Type** | SPST N.O. | SPST / SPDT | SPST N.O. | SPST N.O. | SPDT | SPST N.O.<br>SPST N.C. |
| **Max. Voltage** | 5 V | 5 V / 16 V / 30 V | 5 V | 5 V | 5 V | 12 V |
| **Max. Switching Current** | 1 mA | 1 mA / 5 mA / 100 mA | 1 mA | 1 mA | 1 mA | 100 mA |
| **Sealing** | No | No | No | No | No | No |
| **Mounting** | Surface mount | Thru-hole, solder lug | Surface mount | Surface mount | Surface mount | Surface mount |



| | | | NEW | NEW | | |
|---|---|---|---|---|---|---|
| SERIES | DDS | MDS | FDSD | FDSE | KDS | KM |
| **Travel to Make (mm)** | 0.45 | 2.5 max. | 1.6 (15°) | 1.44 | 1.25 max. | 4.06 |
| **Overtravel** | 1.95 | 0.15 min. | 1.45 | 1.07 | 8.9 | 1.78 |
| **Total Travel** | 2.4 | 2.9 | 3.05 (60°) | 3.14 (60°) | 10.16 | 5.84 |
| **Actuator Length** | 2.6 | R 8.4 | 2.3 | 2.67 | 10.16 | 10.11 |
| **Life Cycle** | 50,000 | 100,000 | 50,000 | 50,000 | 10,000 | 10,000 |
| **Contact Type** | SPST N.O. | SPDT | SPST N.O. | SPST N.C. | SPST N.O.<br>SPST N.C. | SPDT |
| **Max. Voltage** | 30 V | 30 V | 5 | 5 | 20 V | 125 V AC |
| **Max. Switching Current** | 100 mA | 300 mA | 10 mA | 1 mA | 0.4 VA | 250 mA |
| **Sealing** | No | No | No | No | No | Flux tight |
| **Mounting** | Thru-hole | Thru-hole & surface mount | Surface mount | Surface mount | Snap-in panel | Thru-hole |

| SERIES | MPS | KSU | KSR2D | KSC4D | KSJ |
|---|---|---|---|---|---|
| **Travel to Make (mm)** | See datasheet | 0.5 | 0.3 | 0.6 | 0.3 |
| **Overtravel** | See datasheet | 1.0 | | | 0.75 |
| **Total Travel** | See datasheet | 1.5 | 0.3 | 0.6 | 1.05 |
| **Actuator Length** | | 1.5 | 0.8 | 2.6 | 1.4 |
| **Life Cycle** | 10,000,000 | 100,000 | 100,000 | 500,000 / 2,000,000 | 100,000 |
| **Contact Type** | SPST N.O. | SPST N.O. | SPST N.O. | SPST N.O. | SPST N.O. |
| **Max. Voltage** | 30 V | 32 V | 32 V | 32 V | 5 V |
| **Max. Switching Current** | 300 mA | 50 mA | 10 mA | 50 mA | 1 mA |
| **Sealing** | Yes | Dust and water drop proof | Dust and flux tight | IP67 | Flux tight |
| **Mounting** | Wire lead | Surface mount | Surface mount | Surface mount | Surface mount |

| SERIES | RB | ATS |
|---|---|---|
| **Travel to Make (mm)** | 10° / 90° | 0.7 (to break) |
| **Overtravel** | | 0.4 |
| **Total Travel** | | 1.1 |
| **Actuator Length** | | 1.6 |
| **Life Cycle** | 20,000 / 100,000 | 5,000 |
| **Contact Type** | SPST / SPDT | SPST N.C. |
| **Max. Voltage** | 5 V / 24 V | 32 V |
| **Max. Switching Current** | 1 mA / 25 mA | 50 mA |
| **Sealing** | | IP54 |
| **Mounting** | Thru-hole | Surface mount |

## HDT SERIES

### Micro Miniature Surface Mount Detect Switches

**Features / Benefits**

Low profile package
Design allows top or side actuation
Low actuation force, 35 grams max.
Pick and place compatible, available in tape & reel packaging
Halogen free

**Typical Applications**

Consumer electronics
Computers
Medical devices
ATCA and MicroTCA devices

| PART NUMBER | Contact Type | Contact Rating | Pre-Travel | Overtravel | Total Travel | Mechanical / Electrical Life |
|---|---|---|---|---|---|---|
| **HDT0001** | SPST, NO | 1 mA 5 VDC | .30 mm | .75 mm | 1.05 mm | 100,000 cycles min. |

## SDP SERIES

### Micro Mini Pendulum SMT Detect Switches

**Features / Benefits**

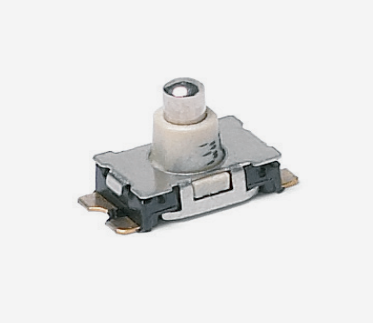
SMT process compatible
Low profile
Right or left side actuated
Low actuation force
Low halogen / halogen free

**Typical Applications**

Consumer electronics
Computers
Medical devices
ATCA and MicroTCA devices

| PART NUMBER | Contact Type | Contact Rating | Contact Material | Total Travel | Over Travel | Operating Life |
|---|---|---|---|---|---|---|
| **SDP002** | SPDT, NO | 1 mA 5 VDC | Silver over nickel | 68.3° from center | 39.1° (1.31 mm) | 50,000 cycles |

Refer to full line catalog to see operating zone chart



## KSU SERIES

### Micro Miniature Surface Mount Detect Switches

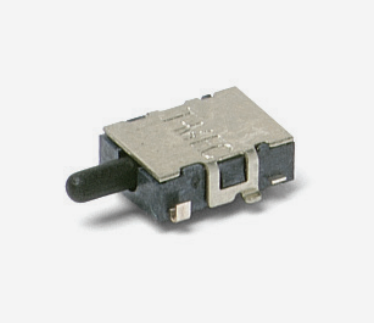
**Features / Benefits**

New multi contact construction
Metal actuator
Low actuating force
Silver / Gold contacts
Compatible with pick and place machines

**Typical Applications**

Mobile phones and other handheld device
Portable medical devices
Audio devices
Automotive
Alarm devices
Payment terminals

| PART NUMBER | Contact Type | Contact Material | Travel | Operating Force | Operating Life |
|---|---|---|---|---|---|
| **KSU211WLFG** | SPST, NO | Silver | 0.65 mm - 0.45/+0.25 mm | 0.7 ± 0.5 N | 100,000 cycles |
| **KSU213WLFG** | SPST, NO | Gold | 0.65 mm - 0.45/+0.25 mm | 0.7 ± 0.5 N | 100,000 cycles |



## SDS SERIES

### Micro Miniature Surface Mount Detect Switches

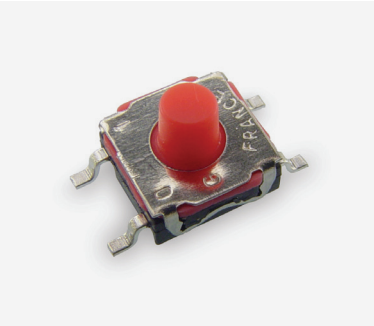
#### Features / Benefits

Low profile package sits just 2mm off PCB
2mm overtravel ideal for detector applications
Low actuation force (75 grams max.)
RoHS compliant and compatible

#### Typical Applications

Medical devices
Consumer electronic devices
PCB lock cam detect
Smart card detect
ATCA and MicroTCA

| PART NUMBER | Contact Type | Contact Rating | Contact Material | Total Travel | Over Travel | Operating Life |
|---|---|---|---|---|---|---|
| **SDS0001** | SPST, NO | 100 mA @ 12 VDC | Silver | 2.0 mm | 1.65 mm | 50,000 cycles |



## KSC4D SERIES

### Sealed Detect Switches for SMT

#### Features / Benefits

Soft actuator
Permanent actuation possible
J bend or gull wing terminations
Tape & reel
IP67

#### Typical Applications

Automotive
Cellular phones
Industrial electronics
Computer infrastructure and IT

| PART NUMBER | Actuator Height | Operating Force | Contact Material | Electrical Life | Travel |
|---|---|---|---|---|---|
| **KSC4D2J50SH** | 5.2 mm | 2 ± 1 N | Silver | 2,000,000 cycles | 0.35 ± 0.85 mm |

## KSJ SERIES

### Spherical Actuator Detect Switches

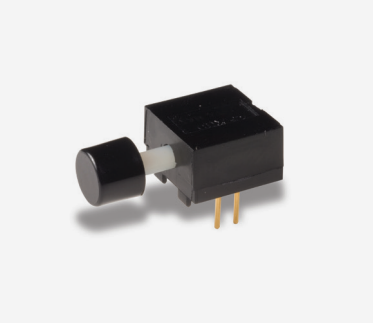
#### Features / Benefits

Straight or vertical detect
Spherical actuator allows actuation +/- 30°
High travel / silent switch
Adapted for cam actuation

#### Typical Applications

Automotive
Industrial electronics
Computer infrastructure and IT

| PART NUMBER | Operating Force | Contact Material | Electrical Life | Travel |
|---|---|---|---|---|
| **KSJ0VD1860SH LFTR** | 6.0 N | Silver | 200,000 cycles | 0.50 ± 0.25 mm |



## KM SERIES
## Subminiature Detect Switches

### Features / Benefits

Reliable contact design
Available with pretravel and overtravel

**Contact Rating:**
Gold 0.4 VA MAX. @ 20 V AC or DC MAX
Silver 0.25 AMPS @ 125 V AC or DC

### Typical Applications

Alarm systems
Computers
Detector switch application

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **KM1202A08BE** | On-Mom., SPDT | .398" high, .122" dia. | Right angle, PC thru-hole | Gold | 10,000 cycles |
| **KM1202A08QE** | On-Mom., SPDT | .398" high, .122" dia. | Right angle, PC thru-hole | Silver | 10,000 cycles |

## MPS SERIES
## Magnetic Proximity Sensors

### Features / Benefits

Long life—4M operations
Sealed contacts
Quality construction
Quick and easy installation

**Contact Rating:**
3.0 W max. @ 30 V DC or 30 V AC max. @ 0.3 AMP max.
1.0 msec. max. operate time (including bounce)
1.0 AMP max. carry current

### Typical Applications

Automotive sensors and indicators
Industrial sensors
Factory automation equipment

| PART NUMBER | Function |
|---|---|
| **MPS45WGW** | Subminiature surface mount (adhesive or flange), side exit leads, 1" make gap. |

## RB SERIES
## Rolling Ball Sensor Switches

### Features / Benefits

Compact shielded design
10 degree angle of detection
Conductive ball is movable inside tube to generate signal and control

### Typical Applications

Movement detection
White goods
Consumer electronics

| PART NUMBER | Contact Type | Contact Rating | Sensor Angle | Operating Life | Termination |
|---|---|---|---|---|---|
| **RB-231X2** | SPST | 1 mA 5 V DC resistive load max | 0˚ to 10˚ scope | 100,000 cycles | PC thru-hole |
| **RB-220-07 R** | SPST | 1 mA 5 V DC resistive load max | 15˚ to 90˚ scope | 100,000 cycles | PC thru-hole |
| **RB-441-45** | SPDT | 25 mA 24 V DC resitive load max | 45˚ ± 15˚ | 100,000 cycles | PC thru-hole |

## ATS SERIES
## Anti-Tampering Switches

### Features / Benefits

Normally closed function
Vertical detect
Reliable long time compression
IP54

### Typical Applications

Smart meters
Alarm systems
Anti-tamper devices

| PART NUMBER | Contact Type | Contact Material | Contact Rating | Operating Force | Operating Life | Termination |
|---|---|---|---|---|---|---|
| **ATS2D1GNC LFS** | SPST-NC | Silver | 50 mA @ 32 VDC | 2 N | 5,000 cycles | PC thru-hole |
| **ATS2D3GNC LFS** | SPST-NC | Gold | 50 mA @ 32 VDC | 2 N | 5,000 cycles | PC thru-hole |

## FDSD SERIES
### Micro Mini Side Actuated Detect Switches

**Features / Benefits**

Extremely small package size
Vertical side actuation
Flat or bending terminations
Long travel type
RoHS compatible and compliant

**Typical Applications**

Consumer electronics
Medical devices
Safety control devices

| PART NUMBER | Actuator Height | Operating Force | Contact Material | Electrical Life | Travel |
|---|---|---|---|---|---|
| **FDSD001R** | 2.3 mm | 40 gf | Silver | 50,000 cycles | 3.05 mm |
| **FDSD002R** | 2.3 mm | 40 gf | Silver | 50,000 cycles | 3.05 mm |

## FDSE SERIES
### Micro Mini Angled Actuated Detect Switches

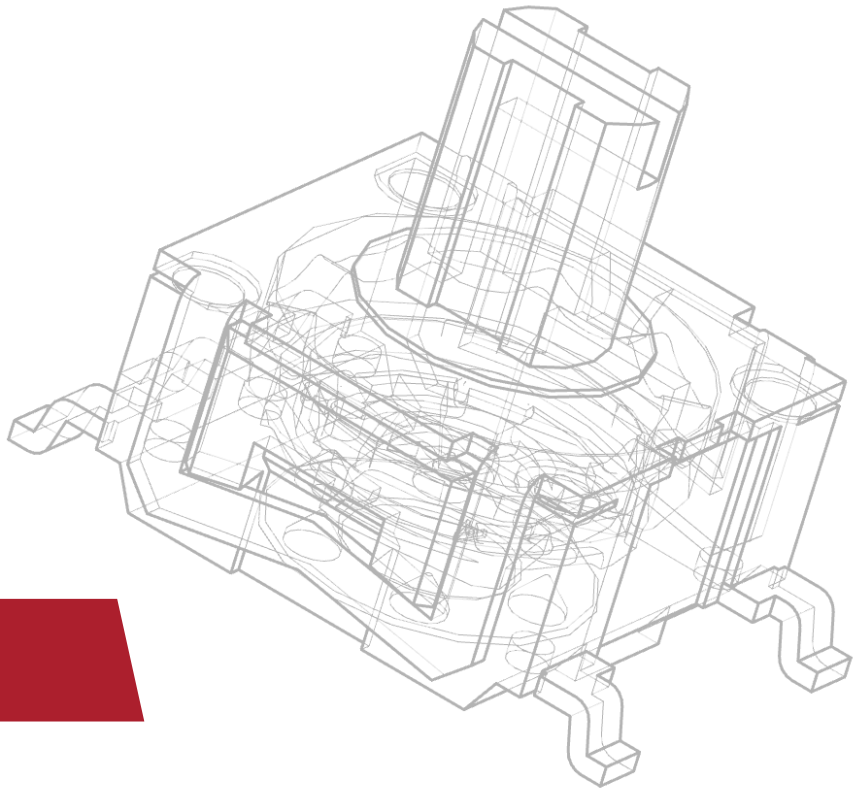
**Features / Benefits**

Extremely small package size
Angled actuation
Flat or bending terminations
Long travel type
RoHS compatible and compliant

**Typical Applications**

Consumer electronics
Medical devices
Safety control devices

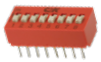
| PART NUMBER | Actuator Height | Operating Force | Contact Material | Electrical Life | Travel |
|---|---|---|---|---|---|
| **FDSE001R** | | 3.5 gf | Silver | 50,000 cycles | 3.14 mm |
| **FDSE002R** | | 3.5 gf | Silver | 50,000 cycles | 3.14 mm |



PRODUCT SELECTION GUIDE

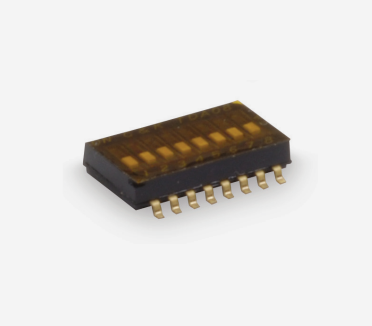
# DIP Switches

C&K's series of surface mount half-pitch DIP switches, low profile and standard profile DIP switches, rotary and coded DIP switches, coded rotary DIP switches, SIP switches and jumper switches feature a variety of extended actuator and flush actuator styles. C&K DIP switches are available in surface mount, through-hole, right angle and vertical mounting options.



| SERIES | TDP | TDA | SDA | SD | BD |
|---|---|---|---|---|---|
| **Switch Type** | Half-pitch .050" side | Half-pitch .050" | Low profile | Low profile | Standard profile |
| **No. of Positions** | 2, 4, 8 | 2-10 (even only) | 2-12 (except 11) | 2-12 (except 11) | 1-12 (except 11) |
| **Contact Style** | SPST | SPST | SPST | SPST | SPST |
| **Profile Off PCB** | .161 (4.1) | .090 (2.3) | .189 (4.80) thru-hole<br>.175 (4.45) SMT | .168 (4.27) thru-hole<br>.160 (4.06) SMT | .297 (7.55) |
| **Process Sealed** | Washable with tape | Washable with tape seal | Washable (tape not required) | Washable with tape | Washable (tape not required) |
| **Extended Actuator** | • | | • | • | • |
| **Flush Actuator** | • | • | • | • | |
| **Thru-hole** | | | • | • | • |
| **Vertical** | | • | • | • | • |
| **Right Angle** | • | | | | • |
| **Surface Mount** | • | • | • | • | |
| **Tape & Reel (SMT only)** | | • | • | • | |
| **Maximum Current** | 100 mA | 100 mA | 100 mA | 100 mA | 100 mA |

| SERIES | BPA | TDD | SPA | RTE | CD | CRD |
|---|---|---|---|---|---|---|
| **Switch Type** | Side actuated | Jumper switch | Single in-line package | Rotary & coded | 8 mm coded rotary | 10 mm coded rotary |
| **No. of Positions** | 1-10 & 12 | 2 | 2, 4, 6, 8, 10 | 4, 10, 16 | 8, 10, 16 | 10 & 16 |
| **Contact Style** | SPST | SPDT | SPST / SP3T / SP4T / coded | Coded | Coded | Coded |
| **Profile Off PCB** | .287 (7.3) thru-hole<br>.274 (6.96) SMT | .090 (2.3) | .244 (6.2) vertical<br>.169 (4.3) | .169 (4.25) thru-hole<br>.168 (4.27) SMT | .168 (4.27) thru-hole<br>.340 (8.6) Rt. angle | .256 (6.5) vertical<br>.414 (10.5) Rt. angle |
| **Process Sealed** | Washable (tape not required) | Washable with tape | Washable (tape not required) | | Washable (tape not required) | Washable (tape not required) |
| **Extended Actuator** | • | | • | • | • | • |
| **Flush Actuator** | | • | • | • | • | • |
| **Thru-hole** | • | | • | • | • | • |
| **Vertical** | | • | • | • | • | • |
| **Right Angle** | • | | • | • | • | • |
| **Surface Mount** | • | • | • | • | • | • |
| **Tape & Reel (SMT only)** | • | • | • | • | • | • |
| **Maximum Current** | 100 mA | 100 mA | 0.4 VA | 100 mA | 0.4 VA | 0.4 VA |
| **Retention Feature** | | | • | • | • C option | |



## TDA SERIES

### Ultra-miniature Surface Mount Half-pitch DIP Switches

#### Features / Benefits

Bifurcated contact for increased electrical reliability
Process sealed for surface mount soldering and washable processing

**Contact Rating:**
24 V DC, 25 mA (switching)
50 V DC, 100 mA (steady state)

#### Typical Applications

Hand-held electronic devices
Portable computer and electronic devices
Instrumentation and controls

| PART NUMBER | Number of Positions | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **TDA04H0SB1R** | SPST, 4 pos. | Flush actuator | SMT, gull wing | Gold | 1,000 cycles |
| **TDA08H0SB1R** | SPST, 8 pos. | Flush actuator | SMT, gull wing | Gold | 1,000 cycles |
| **TDA10H0SB1R** | SPST, 10 pos. | Flush actuator | SMT, gull wing | Gold | 1,000 cycles |

## SDA SERIES

### Low Profile DIP Switches

#### Features / Benefits

Low profile design saves space
Thru-hole and surface mount models
High pressure contact does not require tape seal for washing

**Contact Rating:**
25 mA @ 24 V DC or 100 mA @ 5 V DC

#### Typical Applications

Address switch for industrial controls
Logic switching for computers and peripherals
Function controlling for numerous applications

| PART NUMBER | Number of Positions | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **SDA08H0B** | SPST, 8 pos. | Flush actuator – with top tape | PC thru-hole | Gold plating | 1,000 cycles |
| **SDA03H0SBR** | SPST, 3 pos. | Flush actuator – with top tape | SMT, gull wing | Gold plating | 1,000 cycles |
| **SDA04H0SBR** | SPST, 4 pos. | Flush actuator – with top tape | SMT, gull wing | Gold plating | 1,000 cycles |

## BPA SERIES
### Side Actuated DIP Switches

#### Features / Benefits

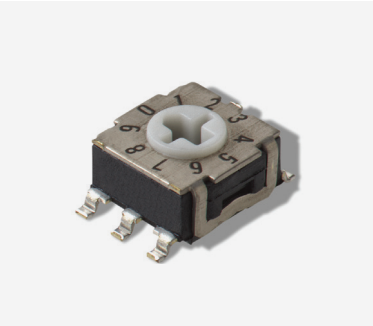
Side actuated contacts
Available in thru-hole or SMT models
High pressure contact system does not require tape seal for washing

**Contact Rating:**
100 mA max. @ 5 V DC or 25 mA max. @ 24 V DC

#### Typical Applications

Address switch for industrial controls
Logic switching for computers and peripherals
Function controlling for numerous applications

| PART NUMBER | Number of Positions | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **BPA04B** | SPST, 4 pos. | Side actuator / Piano | PC thru-hole | Gold over nickel plate | 1,000 cycles |
| **BPA01B** | SPST, 1 pos. | Side actuator / Piano | PC thru-hole | Gold over nickel plate | 1,000 cycles |
| **BPA05SB** | SPST, 5 pos. | Side actuator / Piano | SMT, gull wing | Gold over nickel plate | 1,000 cycles |



## RTE SERIES
### Low Profile Rotary DIP Switches

#### Features / Benefits

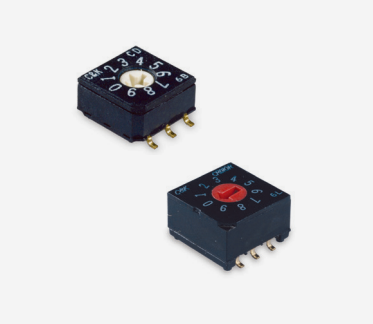
Miniature size with robust stainless steel cover
Rotary SPDT, SP3T, SP4T functions
Rotary binary-decimal and hexadecimal coding

**Contact Rating:**
Gold: 100 mA max. 10 µA min. 30 V DC max. 20 mVDC min.
Silver: 100 mA max. 1 mA min. 50 V DC max. 2 VDC min.

#### Typical Applications

Timers, automation components
Computer and peripherals
Alarms, smoke detectors, access control
Instrumentation
Address switching applications

| PART NUMBER | Switch Function | ESD Protection / Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **RTE1002G14** | 10 position, BCD | Without ESD, shaft for button | SMT, gull wing | Gold | 20,000 cycles |
| **RTE1600V44** | 16 position, hexadecimal | Without ESD, flush, screwdriver slot | Right angle | Gold | 20,000 cycles |
| **RTE0400N04** | 4 position, single pole | Without ESD, flush, screwdriver slot | PC thru-hole | Gold | 20,000 cycles |



## CD / CRD SERIES

### 8mm / 10mm DIP Coded Rotary Switches

#### Features / Benefits

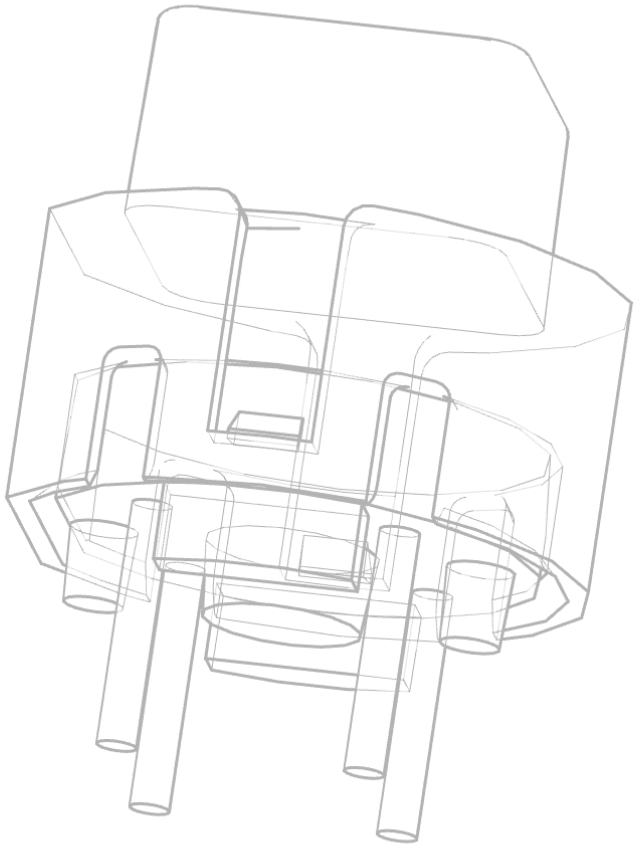
Process sealed – withstands soldering and cleaning
Thru-hole and surface mount models
Crisp, positive detent ensures actuation

**Contact Rating:**
0.4 VA max. @ 20 V AC or V DC max.

#### Typical Applications

Address switching applications
Data storage devices
Computer and peripherals
Instrumentation

| PART NUMBER | Switch Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **CD10RM0SBR** | 10 position, BCD | Flush, screwdriver slot | SMT, gull wing | Gold | 20,000 cycles |
| **CD16RM0SBR** | 16 position, hexadecimal | Flush, screwdriver slot | SMT, gull wing | Gold | 20,000 cycles |
| **CRD10RM0CB** | 10 position, BCD | Flush, screwdriver slot | PC thru-hole | Gold | 20,000 cycles |
| **CRD16CM0SBR** | 16 position, hexadecimal complement | Flush, screwdriver slot | SMT, gull wing | Gold | 20,000 cycles |



PRODUCT SELECTION GUIDE

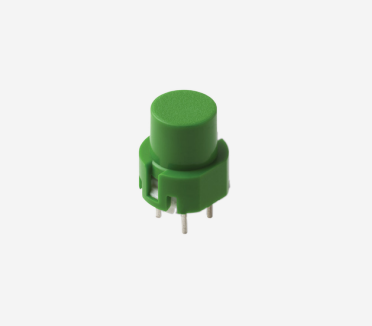
# Keyswitches

C&K keyswitches are designed to support high-performance, environmentally demanding applications. They are available in a large number of combined versions:

- SMT or THT solder process compatible
- IP40 or IP67 sealing level
- LED illumination option
- SPST, SPDT, DPST or DPDT electrical functions
- Normally Open or Normally Closed contacts
- Double step actuation
- Momentary or latching “push-on/push-off” versions
- Tactile or non-tactile feedback

| SERIES | K12S | K12 | D6 |
|---|---|---|---|
| **Size (mm) L x W x H** | 12 x 11.6 x 9.1 | 12 x 12 x 11 | 12 x 11.4 x 14.5 |
| **Poles / Throws** | SPST / DPST / 2 x SPST momentary | SPST / 2 x SPST momentary | SPST momentary |
| **Maximum Load** | 30 V / 100 mA | 30 V / 100 mA | 32 V / 100 mA* |
| **Operating Force** | 3 N / 3.5 N / 5 N / 6 N / 9 N / 4/8 N / 6/12 N | 1.5 N / 2.5 N / 3.5 N / 5 N / 3.5/7 N / 6/12 N | 1.3 N / 2.75 N |
| **Travel (standard)** | 1.5 mm | 1 mm / 1.5 mm / 2 mm | 1 mm / 1.10 mm |
| **Life Cycle** | 1,000,000 | 1,000,000 | 250,000 |
| **IP Rating** | IP40 / IP67 | IP40 except for K12C which is IP67 | |
| **Illumination** | • | • | • |
| **Termination** | SMT | Thru-hole | Thru-hole |

| SERIES | KS | DIGITAST | ED/EDM | KBD |
|---|---|---|---|---|
| **Size (mm) L x W x H** | 12.4 x 12.4 x 9.9 | 17.1 x 12.3 x 14.3 | 12.7 x 11.3 x 1.2 | 15.6 x 15.6 x 15 |
| **Poles / Throws** | SPST / SPDT | SPDT momentary or push-on / push off | SPST momentary | SPST momentary |
| **Maximum Load** | 50 V / 25 mA | 24 V / 10 mA | 100 V / 100 mA | 12 VDC / 10 mA |
| **Operating Force** | | 1.5 N | 2.4 N to 6.5 N | 45 gf / 55 gf / 60 gf 0.4 N / 0.5 N / 0.6 N |
| **Travel (standard)** | 0,75 mm | 3 mm | 0.3 mm | 1.5 - 2 mm |
| **Life Cycle** | 100,000 | 5,000,000 | 1,000,000 | 50,000,000 |
| **IP Rating** | | | IP67 | |
| **Illumination** | • | • | | |
| **Termination** | Thru-hole | Thru-hole | Thru-hole / SMT | Thru-hole |



## D6 SERIES
## SPST Momentary Key Switches

### Features / Benefits

Positive tactile feedback
High temperature
Wide variety of colors and styles

### Typical Applications

Video
Electronic games
Appliances

| PART NUMBER | Function | Button Type / Color | Travel | Operating Force |
|---|---|---|---|---|
| **D6R90 F1 LFS** | SPST, NO | Round / Black | 0.6 mm | 1.3 N |
| **D6C90 F1 LFS** | SPST, NO | Square / Black | 0.6 mm | 1.3 N |
| **D6R10 F1 LFS** | SPST, NO | Round / Gray | 0.6 mm | 1.3 N |
| **D6L90 F1 LFS** | SPST, NO | Plunger / Black | 0.6 mm | 1.3 N |

## K12 SERIES
## High Performance Key Switches

### Features / Benefits

Excellent tactile feel
Wide choice of LED colors, travel and actuator forces
Sealed version available
Designed for low-level switching
Double stroke versions available

### Typical Applications

Automotive
Off-road transportation
Industrial electronics
Computers & network equipment

| PART NUMBER | Type | Button Type / Color | Travel | Operating Force |
|---|---|---|---|---|
| **K12GO BK 1.5 6/12N** | Two-step switch | Black cap | 1.5 mm | 6 / 12 N |
| **K12P BK 1 5N** | With snap-in pegs | Black cap | 1 mm | 5 N |
| **K12A BK 1 5N** | No snap-in pegs | Black cap | 1 mm | 5 N |
| **K12C 1 5N** | Sealed contact with rubber cap (IP67) | Black rubber cap | 1 mm | 5 N |
| **K12PL WH 1.5 5N LV302** | With central LED | White LED | 1.5 mm | 5 N |

## K12S SERIES
### High Performance SMT Key Switches

**Features / Benefits**

IP67
Compatible with SMT lead free soldering process / tape & reel packaging
Illuminated
Excellent tactile feel
High reliability / long life
DPST, double step and detect versions available
Normally closed version available

**Typical Applications**

Automotive, motorbikes
Off-road transportation
Industrial electronics
Medical
Network

| PART NUMBER | Sub-Series | Type | LED Color | Travel | Operating Force | Contact Arrangement |
|---|---|---|---|---|---|---|
| **K12SB S 1.5 9N O LFTX** | IP67 with peg | SPST | None | 1.5 mm | 9 N | NO |
| **K12SB S 1.5 3.5N C LFTX** | IP67 with peg | SPST | None | 1.5 mm | 3.5 N | NC |
| **K12SC L 1.5 WHO 9N O LFTX** | IP40 without peg | SPST | White | 1.5 mm | 9 N | NO |
| **K12SC D 1.5 4/8N OO LFTX** | IP40 without peg | DPST | None | 1.5 mm | 4 / 8 N | 2 NO |

## KS SERIES
### Single Pole Key Switches

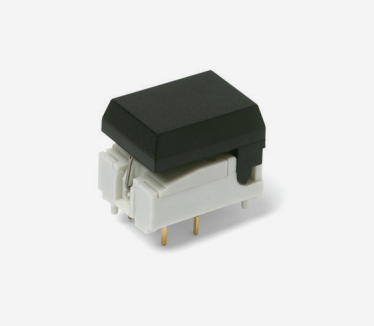
**Features / Benefits**

Positive tactile feel
Variety of cap colors
SPST and SPDT configurations
RoHS compliant

**Typical Applications**

Telecommunications
Industrial
Instrumentation

| PART NUMBER | Function | Button Type / Color | Contact Material | Seal |
|---|---|---|---|---|
| **KS11 R2 2 C Q D** | SPST Off-Mom. | Black cap | Silver | No epoxy |
| **KS12 R2 3 C B E** | SPDT On-Mom. | Red cap | Gold | Epoxy |
| **KS12 R2 1 C B D** | SPDT On-Mom. | White cap | Gold | No epoxy |



## DIGITAST SERIES
## SPDT Key Switches

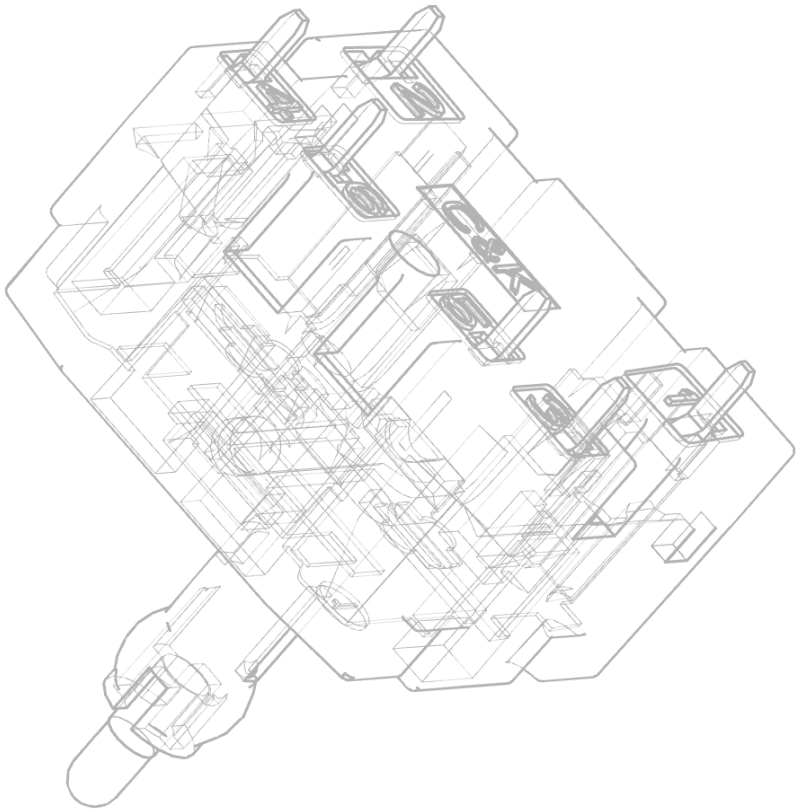
### Features / Benefits

Designed for low level switching
High reliability / long life
Several button options

### Typical Applications

Medical
Instrumentation
Industrial electronics

| PART NUMBER | Function | Button | Button Color | Contact Material | Termination |
|---|---|---|---|---|---|
| **SER BK AU OA** | SPDT, momentary | Narrow button | Black | Gold | PC thru-hole |
| **SET BK AU OA** | SPDT, momentary | Wide button | Black | Gold | PC thru-hole |
| **SERU AU OA** | SPDT, momentary | | | Gold | PC thru-hole |
| **SRK GY** | | Narrow button | Gray | | |
| **STK WH** | | Wide button | White | | |



PRODUCT SELECTION GUIDE

# Navigation Switches

C&K's navigation switches are miniature, compact and multi-directional products. The CS series features a 4-way adjustable direction switch designed for mirror control.

| SERIES | CS | SAM |
|---|---|---|
| **Number of Directions** | 4 | 2 or 4 |
| **Size on PCB (mm) L x W x H** | 40 x 40 x 38 | 20.7 x 18.0<br>26.2 x 26.2 |
| **Total Height (mm)** | 58 | 27.85 or 31.85 or 27.6 |
| **Actuation Force (N)** | 4.9 N | 5.3 / 6 N |
| **Contact Type** | Silver | Silver |
| **Max. Voltage (V)** | 10 | 14 |
| **Max. Switching Power (VA)** | .02 | 15 |
| **Life Cycles per Direction** | 10,000 | 30,000 |
| **Sealing** | Not sealed | Not sealed |

## CS SERIES

### 4-Way Adjustable Direction Switches

**Features / Benefits**

Designed for mirror control
Wire harness and connector easy to customize
Easy installation
4-way adjustable directions

**Typical Applications**

Automotive
Industrial

| PART NUMBER | Circuit | Mounting Type | Actuation Force | Current Rating | Life Cycle |
|---|---|---|---|---|---|
| **CS41001E** | SP4T | Panel mount, front, snap-in | 200 ±100 gf / 400 ± 200 gf / 500 ± 200 gf | 0.2 A @ 12 VDC | 10,000 cycles |

## SAM SERIES

### Multiway Switches

**Features / Benefits**

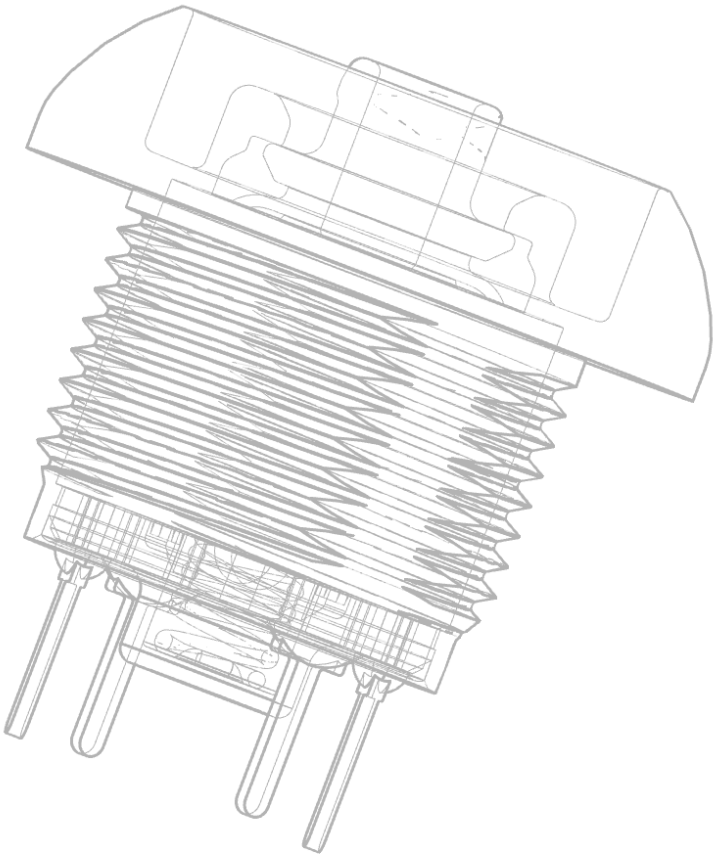
Multi-directional switches 2-way & 4-way
Actuation force 5.3 N or 6 N
Footprint 20.7 x 18.0 mm (2-way) & 26.2 x 26.2 mm (4-way)

**Typical Applications**

Automotive
Industrial

| PART NUMBER | Circuit | Actuation Force | Life Cycle* | Travel (mm) |
|---|---|---|---|---|
| **SAM-H2-LR10SPA** | SPDT | 6.0 ± 2.0 | 30,000 cycles | 1.00 ± 0.4 |
| **SAM-H2-LR14SPA** | SPDT | 5.3 ± 2.0 | 30,000 cycles | 1.25 ± 0.4 |
| **SAM-H2-MR14SPA** | SPDT | 5.3 ± 2.0 | 30,000 cycles | 1.25 ± 0.4 |
| **SAM-H4-MR11SPA** | SPDT | 6.0 ± 2.0 | 30,000 cycles | 1.00 ± 0.4 |

* Life cycle per direction

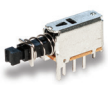


PRODUCT SELECTION GUIDE

# Pushbutton Switches

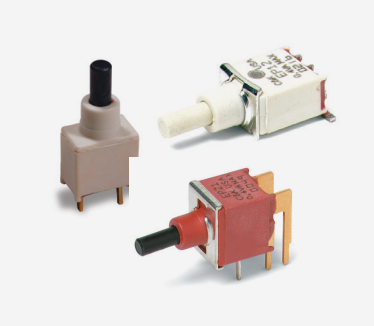
C&K's extensive range of miniature, subminiature and ultra-miniature pushbuttons for printed circuit board, surface mount and panel mount applications include momentary and latching versions with the widest selection of actuator styles, shapes and colors. Available in SPST, SPDT, DPST and DPDT functions, C&K pushbuttons are also available in illuminated, sealed and low-profile configurations, and with smd, threaded or snap-in mounting options.

| SERIES | ELUM | EP | TP | E020 | 8020 | E010 | 8060 | 8500 | KM |
|---|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Mom. / Latching | Tiny | Tiny | Snap-acting Mom. | Snap-acting Mom. | Miniature | Alternate action | Sub-miniature | Sub-miniature |
| **Poles / Throws** | SPDT | SPST / SPDT / DPST | SPST / SPDT / DPST | SPDT / DPST | SPDT / DPDT / 3PDT / 4PDT | SPDT | SPDT / DPDT | SPST | SPST / SPDT |
| **Max. Current** | 3.5 VA | 1 Amp | 1 Amp | 1 Amp | 1 Amp | 4 Amps | 6 Amps | 3 Amps | 1 Amp |
| **Process Sealed** | | • | | • | | • | | | |
| **Illuminated** | • | | | | • | | • | • | |
| PCB Mount Options | | | | | | | | | |
| **Thru-hole** | • | • | • | • | • | • | • | • | • |
| **Vertical** | | • | • | • | • | • | • | • | • |
| **Right Angle** | • | • | • | • | • | • | • | • | • |
| **Surface Mount** | • | • | | | | | | | |
| **Panel Mount** | | | • | | • | • | • | • | • |



| SERIES | 8600 | 8700 | GP | PN | PHB | F | NE-18 | FP |
|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Micro-miniature | Over travel | Ultra-miniature | Alternate & Mom. action | Short stroke | Alternate & Mom. action | Mains / Power | Ultra-miniature |
| **Poles / Throws** | SPST | SPST | SPST / SPDT | SPDT / DPDT / 4PDT | DPDT / 4PDT | DPDT / 4PDT / 6PDT / 8PDT / 10PDT | DPST / DPDT / Varied | SPST |
| **Max. Current** | 500 mA | 1 Amp | 0.4 VA | 200 mA | 100 mA | 500 mA | 6 A | 0.4 VA |
| **Process Sealed** | | | • | | | | | • |
| PCB Mount Options | | | | | | | | |
| **Thru-hole** | • | • | • | • | • | • | • | • |
| **Vertical** | • | • | • | | | | | • |
| **Right Angle** | | | • | • | • | | | • |
| **Surface Mount** | | | • | | | | | |
| **Panel Mount** | • | • | | | | • | • | |

| SERIES | PVA | AP | APB | NP | PNP | ATP | PBA | PS |
|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Push-push Mom. | Industrial | Industrial | Sealed power | Industrial | Snap-acting Mom. / Lock | Snap-acting Mom. | Subminiature / Microminiature |
| **Poles / Throws** | DPST / DPDT | SPST | SPST | SPDT | SPST N.O. / SPST N.C. / SPDT | SPST / SPDT / DPDT | DPST | SPDT / DPDT |
| **Max. Current** | 100 mA | 400 mA | 400 mA | 5 Amp | 10 mA / 3 A / 5 A | 3 A / 2 A | 250 mA | 0.1 / 1 A 0.3 / 2 A |
| **Process Sealed** | IP40 | IP67 | IP67 | IP68 | IP68 | IP67 | | |
| PCB Mount Options | | | | | | | | |
| **Thru-hole** | • | • | • | • | • | | • | • |
| **Vertical** | • | • | • | • | | | • | • |
| **Right Angle** | | | | | | | | • |
| **Panel Mount** | | • | • | • | • | | • | • |
| **Wire Leads** | | • | • | • | • | • | | |
| **Solder Lug** | | • | • | | • | • | | |
| **Surface Mount** | | | | | | | | |
| **Quick Connect** | | | | | | • | | |



## EP SERIES
## Sealed Tiny Pushbutton Switches

### Features / Benefits

Sealed against solder & cleaning processes
Snap-fitting actuator accepts standard caps
Contact rating 0.4VA max @ 20 V AC or DC max.

### Typical Applications

Telecommunications and networking equipment
Computers and peripherals
Instrumentation and controls

| PART NUMBER | Function | Mounting Style / Termination | Plunger | Contact Material | Operating Life |
|---|---|---|---|---|---|
| **EP11SD1ABE** | SPST Off-Mom. | Right angle, PC thru-hole | .215" high | Gold | 60,000 cycles |
| **EP11SD1AVBE** | SPST Off-Mom. | Vertical right angle, PC thru-hole | .215" high | Gold | 60,000 cycles |
| **EP11SD1CBE** | SPST Off-Mom. | PC thru-hole | .215" high | Gold | 60,000 cycles |
| **EP11SD1SAPE** | SPST Off-Mom. | Right angle, surface mount | .215" high | Gold, matte-tin | 60,000 cycles |
| **EP12SD1ABE** | SPDT On-Mom. | Right angle, PC thru-hole | .215" high | Gold | 30,000 cycles |

## TP SERIES
## Sealed Tiny Pushbutton Switches

### Features / Benefits

Subminiature size—capable of switching 1 AMP
Epoxy terminal seal compatible with bottom wash cleaning

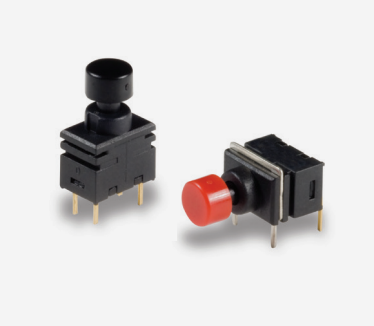
**Contact Rating**

Gold: 0.4 VA max. @ 20 V AC or DC max.
Silver: 1 AMP @ 120 V AC or 28 V DC

### Typical Applications

Telecommunications and networking equipment
Computers and peripherals
Instrumentation and controls

| PART NUMBER | Function | Actuator or Bushing | Mounting Style / Termination | Contact Material | Operating Life |
|---|---|---|---|---|---|
| **TP11SH8ABE** | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, round | Right angle, PC thru-hole | Gold | 60,000 cycles |
| **TP11SH9ABE** | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, flat | Right angle, PC thru-hole | Gold | 60,000 cycles |
| **TP11SH9CBE** | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, flat | PC thru-hole | Gold | 60,000 cycles |
| **TP11SHZQE** | SPST Off-Mom. | .155" high plunger, threaded; .220" high bushing, flat | Solder lug | Silver | 60,000 cycles |
| **TP12SH9ABE** | SPST Off-Mom. | .155" high plunger, unthreaded; .220" high bushing, flat | Right angle, PC thru-hole | Gold | 30,000 cycles |



## FP SERIES

### Sealed Ultra Miniature Pushbutton Switches

#### Features / Benefits

Sealed against soldering and cleaning processes

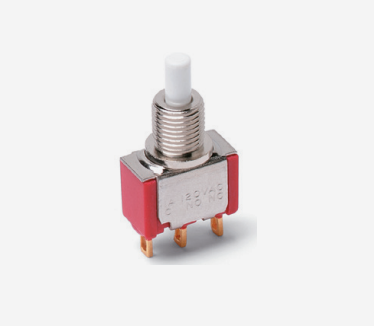
**Contact Rating:** 0.4 VA (28 V DC or V AC) max.

Operating life 50,000 cycles

#### Typical Applications

Networking equipment
Modems
Reset functions
Instrumentation

| PART NUMBER | Function | Actuator Length | Mounting Style | Contact Material | Cap |
|---|---|---|---|---|---|
| **FP11SPC1B1TP00** | SPST Off-Mom. | 3.3 mm | Vertical | Gold over nickel plate | No cap |
| **FP11SPA1B1TP02** | SPST Off-Mom. | 3.3 mm | Right angle | Gold over nickel plate | Black cap (bulk bagged) |
| **FP11SPC1B1TP02** | SPST Off-Mom. | 3.3 mm | Vertical | Gold over nickel plate | Black cap (bulk bagged) |
| **FP11SPA1B1TP03** | SPST Off-Mom. | 3.3 mm | Right angle | Gold over nickel plate | Red cap (bulk bagged) |
| **FP11SPC1B1TP03** | SPST Off-Mom. | 3.3 mm | Vertical | Gold over nickel plate | Red cap (bulk bagged) |



## 8020 SERIES

### Snap-acting Momentary Pushbutton Switches

#### Features / Benefits

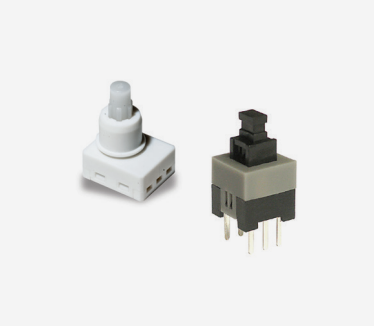
Positive tactile feel
Epoxy terminal seal compatible with bottom wash cleaning
Operating life 60,000 cycles

**Contact Rating**
Gold: 0.4 VA max. @ 20 V AC or DC max.
Gold over silver: 1 AMP @ 120 V AC or 28 V DC

#### Typical Applications

Telecommunications and networking equipment
Computers peripherals
Instrumentation and controls

| PART NUMBER | Function | Actuator or Bushing | Bushing | Mounting Style / Termination | Contact Material | Cap / Frame Color |
|---|---|---|---|---|---|---|
| **8121SHZGE** | SPDT On-Mom. | Plunger | .250" high, flat | Solder lug | Gold over silver | None |
| **8125SHZBE** | SPDT On-Mom. | Plunger | .250" high, flat | Solder lug | Gold | None |
| **8221SHZGE** | DPDT On-Mom. | Plunger | .250" high, flat | Solder lug | Gold over silver | None |
| **8121J81ZGE22** | SPDT On-Mom. | Snap-in with frame | None | Solder lug | Gold over silver | Black / Black |
| **8125SHCBE** | SPDT On-Mom. | Plunger | .250" high, flat | PC thru-hole | Gold | None |



## PS SERIES
## Push Switches

### Features / Benefits

Compact miniature size
Momentary or latching
Shorting or non-shorting

### Typical Applications

Automotive interior lighting
Computer peripherals
Appliances
Consumer electronics

| PART NUMBER | Function | Footprint | Height | Operating Force | Operating Life | Total Travel |
|---|---|---|---|---|---|---|
| **PS-12G01** | SPDT, latching | 16.8 x 14 mm | 26.4 mm | 400 gf | 20,000 cycles | 5 mm |
| **PS-12G03** | SPDT, latching | 16.8 x 14 mm | 27.2 mm | 650 gf | 20,000 cycles | 4.5 mm |
| **PS-2214-L NS PA** | DPDT, latching | 5.8 x 5.8 mm | 7.5 mm | 150 gf | 10,000 cycles | 2.3 mm |
| **PS-2214-F NS PA** | DPDT, momentary | 5.8 x 5.8 mm | 7.5 mm | 150 gf | 10,000 cycles | 2.3 mm |

## AP SERIES
## Sealed Industrial Pushbutton Switches

### Features / Benefits

IP67 sealed
Operating life 500,000 to 1,000,000 cycles
Illumination / Non-illumination, Multiple colored caps
SPST, normally open

**Contact Rating:**
200 mA @ 24 V DC resistive (500,000 cycles)
100 mA @ 50 V DC resistive (500,000 cycles)
400 mA @ 32 V AC resistive (500,000 cycles)
125 mA @ 125 V AC resistive (1,000,000 cycles)

### Typical Applications

Harsh environments
Off-road
Industrial
Medical
Transportation
Joystick control modules
Gaming
Military

| PART NUMBER | Operating Force | Total Travel | Actuator Style | Actuator Color | Bushing Style | Termination | Contact Material |
|---|---|---|---|---|---|---|---|
| **AP2D200TWBE** | 2 N | 2.1 ± 0.2 mm | Dome / Convex | Black | Threaded plastic | 12” wire leads 22 AWG | Gold |
| **AP4D200TZBE** | 4 N | 2.1 ± 0.2 mm | Dome / Convex | Black | Threaded plastic | Solder lug | Gold |
| **AP2D300SZBE** | 2 N | 2.1 ± 0.2 mm | Dome / Convex | Red | Snap-in plastic | Solder lug | Gold |
| **AP4E300TZBE** | 4 N | 2.1 ± 0.2 mm | Extended Dome | Red | Threaded plastic | Solder lug | Gold |

## APB SERIES
## Backlit Pushbutton Switches

### Features / Benefits

IP67 sealed
1,000,000 life cycle
Illumination
Threaded or snap-in mounting
RoHS compliant

### Typical Applications

Harsh environments
Off-road
Transportation
Joystick control modules
Gaming
Military

| PART NUMBER | Operating Force | Total Travel | Cap Symbol * | Actuator Color | Bushing Style | Termination | Contact Material |
|---|---|---|---|---|---|---|---|
| **APB4E01TZBE-001** | 4 N | 2.1 ± 0.2 mm | Plus | Black | Threaded plastic | Solder lug | Gold |
| **APB4E01TZBE-002** | 4 N | 2.1 ± 0.2 mm | Lock | Black | Threaded plastic | Solder lug | Gold |

* See C&K full line catalog or website for complete options for symbols

## NP SERIES
## Sealed Industrial Pushbutton Switches

### Features / Benefits

IP68 sealed
Multiple housing styles

**Contact Rating:**
10 mA / 5 VDC resistive (1,000,000 cycles)
1 A / 32 VDC resistive (100,000 cycles)
5 A / 32 VDC resistive (25,000 cycles)
3 A / 32 VDC inductive (25,000 cycles)

### Typical Applications

Harsh environments
Off-road
Industrial
Transportation
Military

| PART NUMBER | Operating Force | Total Travel | Actuator Style | Actuator Color | Housing Style | Termination | Contact Material |
|---|---|---|---|---|---|---|---|
| **NP8S2D203QE** | 8 N | 1.6 ± 0.15 mm | Standard | Black | Dome bezel | Solder lug | Silver |
| **NP8S2R203QE** | 8 N | 1.6 ± 0.15 mm | Standard | Black | Rear mount | Solder lug | Silver |
| **NP8S2T203QE** | 8 N | 1.6 ± 0.15 mm | Standard | Black | Std threaded mount | Solder lug | Silver |
| **NP8S3D203QE** | 8 N | 1.6 ± 0.15 mm | Standard | Red | Dome bezel | Solder lug | Silver |
| **NP8S2D2W4QE** | 8 N | 1.6 ± 0.15 mm | Standard | Black | Dome bezel | 4 x 12” 22 AWG UL 1569 wire | Silver |

## PNP SERIES
### Sealed Industrial Pushbutton Switches

#### Features / Benefits

IP68 sealed to endure harsh environments
Multiple housing styles
Longer solder leads for ease of wire installation
Up to 5 A resistive load

**Contact Rating:**
Silver (Q): 5 A / 32 VDC resistive (25,000 cycles)
3 A / 32 VDC resistive (25,000 cycles)
Gold (G): 10 mA / 5 VDC resistive (1,000,000 cycles)

#### Typical Applications

Control grips
Off-road panels
Heavy equipment
Industrial instruments
Lifts
Conveyor controls

| PART NUMBER | Operating Force | Total Travel | Actuator Style | Actuator Color | Housing Style | Circuit | Termination | Contact Material |
|---|---|---|---|---|---|---|---|---|
| **PNP8S2T2C03GE** | 8 N | 2 mm max. | Standard | Black | Standard | SPDT | Solder lug | Gold |
| **PNP8S2T2C03QE** | 8 N | 2 mm max. | Standard | Black | Standard | SPDT | Solder lug | Silver |
| **PNP8S2D2YW2QE** | 8 N | 2 mm max. | Standard | Black | Dome | SPST NC | 2 x 12” 22 AWG UL 1569 wire | Silver |
| **PNP8S2T2CW3QE** | 8 N | 2 mm max. | Standard | Black | Standard | SPDT | 3 x 12” 22 AWG UL 1569 wire | Silver |

## PVA SERIES
### Short Stroke Key Switches

#### Features / Benefits

Compact design
Short stroke to latch
Wide variety of actuator heights and styles
Adapted for medium power applications

#### Typical Applications

Automotive (air conditioning, lighting)
Industrial
Control panel

| PART NUMBER | Function | Mechanical Function | Total Height | Travel | Operating Force |
|---|---|---|---|---|---|
| **PVA1EEH1 3.5N V2** | DPST | Push-push | 17.5 mm | 2.4 mm | 3.5 N |
| **PVA1OAH1 1.2N V2** | DPST | Momentary | 17.5 mm | 2.4 mm | 1.2 N |
| **PVA2EEH3 1.2N V2** | DPDT | Push-push | 20.5 mm | 2.4 mm | 1.2 N |
| **PVA2OAH5 1.7N V2** | DPDT | Momentary | 13 mm | 2.4 mm | 1.7 N |

## ATP SERIES
## Anti-Vandal Pushbuttons

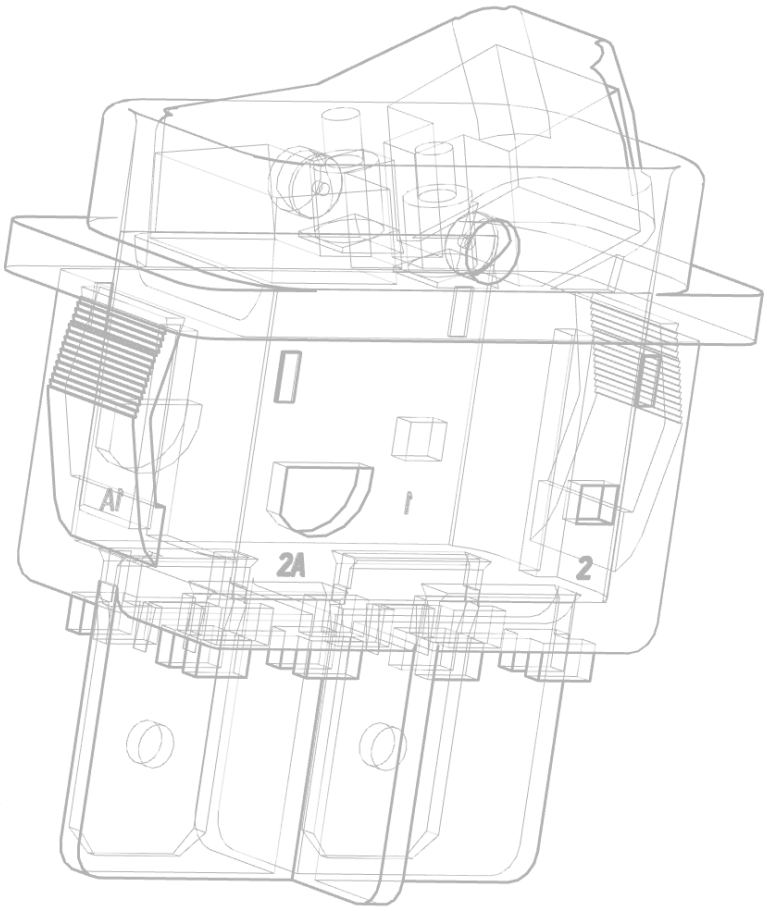
### Features / Benefits

Momentary or lock version
IP67 sealed
Various colors of LED illuminate indicator
Choices of CAP with symbol of Ring, Spot or Power logo

### Typical Applications

Control panels for car park & traffic light
Lifts / Escalator
Alarm, safety and security systems
Intercom “push-to-talk” devices
Food & drink vending machines

| PART NUMBER | Size | Function | Actuator Style | Actuator Indicator | Bushing Type | Termination | Contact Material |
|---|---|---|---|---|---|---|---|
| **ATP16-DL1-000-B4SA-04G** | 16 mm | SPST, momentary | Dome | Ring | Al alloy (anodized) | Solder lug | Gold flash |
| **ATP16-DL5-606-B3SA-04G** | 16 mm | SPST, momentary | Dome | Ring & power | Al alloy (black anodized) | Solder lug | Gold flash |
| **ATP16-SL1-612-M4SA-04G** | 16 mm | SPST, momentary | Standard / Flat | Ring | Stainless DD | Solder lug | Gold flash |
| **ATP19-SL3-624-B0DA-03Q** | 19 mm | DPDT, momentary | Standard / Flat | Ring (moving) | Stainless round | STD Solder lug | Silver |
| **ATP19-SL4-612-M0DE-03Q** | 19 mm | DPDT, lock | Standard / Flat | Power | Stainless DD | STD Solder lug | Silver |
| **ATP19-SL1-324-B0SE-03Q** | 19 mm | SPDT, lock | Standard / Flat | Ring (fix) | Stainless round | STD Solder lug | Silver |
| **ATP22-SL3-724-B0SE-03Q** | 22 mm | SPDT, lock | Standard / Flat | Ring (moving) | Stainless round | STD Solder lug | Silver |
| **ATP22-SL3-312-B0SA-03Q** | 22 mm | SPDT, momentary | Standard / Flat | Ring (moving) | Stainless round | STD Solder lug | Silver |



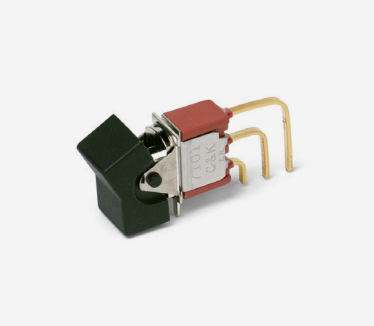

PRODUCT SELECTION GUIDE

# Rocker Switches

A rocker switch is an electrical on / off switch that rocks from one side to the other when pressed, leaving one side raised and the other depressed. This rocking mechanism will either connect or disconnect an electrical circuit. C&K's selection of rocker switches includes subminiature, miniature and power, providing an extensive range for printed circuit board through-hole, surface mount and panel mount applications. Models are available in illuminated (LED and incandescent) and sealed / waterproof versions, with SPST, SPDT, DPST, DPDT, 3PDT and 4DPT functionality. PCB mount options include vertical, right angle and surface mount, while panel mount options include front mount, rear mount and snap-in versions.

| SERIES | 7000 | E | ET | T | 9000 | DA | D |
|---|---|---|---|---|---|---|---|
| **Switch Type** | Miniature | Miniature | Subminiature | Subminiature | Power rocker & lever handle | Miniature power | Miniature power |
| **Poles / Throws** | SPDT / DPDT / 3PDT / 4PDT | SPDT / DPDT / 3PDT | SPST / SPDT / DPDT | SPST / SPDT / DPDT | DPDT | SPST / SPDT | SPST / SPDT / DPST / DPDT |
| **Max. Current** | 5 Amps | 7.5 Amps | 3 Amps | 3 Amps | 10 Amps | 16 Amps<br>10 Amps | 4 Amps<br>10 Amps |
| **Washable** | | • | • | | | | |
| **Illuminated** | | | | | | • | |
| PCB Mount Options | | | | | | | |
| **Front Mount** | • | • | | • | • | Snap-in | Snap-in |
| **Rear Mount** | • | • | • | • | • | | |
| PCB Mount Options | | | | | | | |
| **Vertical** | • | • | • | • | • | • | • |
| **Right Angle** | • | • | • | • | • | • | • |
| **Surface Mount** | | | • | | | | |

| SERIES | DM | DM | DF | CR | SW |
|---|---|---|---|---|---|
| **Switch Type** | Miniature, 2 pole power | Miniature, illuminated, power | Power | Round | Miniature, power |
| **Poles / Throws** | DPST / DPDT | SPST / DPST | SPST / SPDT / DPST | SPST / SPDT | SPST / SPDT / DPST |
| **Max. Current** | 3 Amps / 10 Amps | 3 Amps / 10 Amps | 16 Amps | 10 Amps / 6 Amps | 3 A / 6 A / 6.5 A / 10 A / 16 A |
| **Washable** | | | | | |
| **Illuminated** | | • | | • | • |
| PCB Mount Options | | | | | |
| **Front Mount** | Snap-in | Snap-in | Snap-in | Snap-in | Snap-in |
| **Rear Mount** | | | • | | |
| PCB Mount Options | | | | | |
| **Vertical** | | | | | |
| **Right Angle** | | | • | | |
| **Surface Mount** | | | | | |



## 7000 SERIES
## Miniature Rocker & Lever Handle Switches

### Features / Benefits

Multi-pole and multi-position
Wide variety of actuator and termination options
Epoxy terminal-seal compatible with bottom wash cleaning

**Contact Rating:**
Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
Silver 5 AMPS @ 120 V AC or 28 V DC, 2 AMPS @ 250 V AC

### Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **7101J1AV2QE2** | SPDT On-None-On | .531" long rocker | Vertical right angle, PC thru-hole | Silver | 100,000 cycles |
| **7101J1AQE2** | SPDT On-None-On | .531" long rocker | Right angle, PC thru-hole | Silver | 100,000 cycles |
| **7101J1ABE2** | SPDT On-None-On | .531" long rocker | Right angle, PC thru-hole | Gold | 100,000 cycles |

## E SERIES
## Sealed Miniature Rocker and Lever Handle Switches

### Features / Benefits

Sealed against solder and cleaning process contaminants
ESD Resistance—all actuator options
Rocker, case & bushing UL 94V-0

**Contact Rating:**
Gold 0.4 VA max. @ 20 V AC or DC max.
Silver 7.5 AMPS@125 V AC or 28 V DC, 3 AMPS @ 250 V AC

### Typical Applications

Telecommunications
Instrumentation
Computers & peripherals

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **E101J1AQE2** | SPDT On-None-On | .531" long rocker | Right angle, PC thru-hole | Silver | 40,000 cycles |
| **E201J1V31QE2** | DPDT On-None-On | .531" long rocker | .460" high, V-bracket, snap-in | Silver | 40,000 cycles |
| **E101J3V31QE2** | SPDT On-None-On | .906" long rocker | .460" high, V-bracket, snap-in | Silver | 40,000 cycles |

## D SERIES
## Miniature Snap-in Power Rocker Switches

### Features / Benefits

Momentary and maintained models
PC and quick connect terminals
Recessed bracket available — prevents accidental actuation

**Contact Rating:** Refer to full line catalog online

Contact Material Silver

### Typical Applications

Small appliances
Computers and peripherals
Medical instrumentation

| PART NUMBER | Function | Mounting Style / Color | Mounting Style / Termination | Markings | Electrical Life |
|---|---|---|---|---|---|
| **D502J12S2AHQA** | SPST, On-None-Off | Snap-in, black | Right angle, PC thru-hole | O I | 10,000 cycles |
| **D101J12S215PQA** | SPDT, On-None-On | Snap-in, black | PC thru-hole | O - | 10,000 cycles |
| **D501J12S2AHQA** | SPDT, On-None-On | Snap-in, black | Right angle, PC thru-hole | O I | 10,000 cycles |

## DF SERIES
## Power Rocker Switches

### Features / Benefits

Power switching up to 16 AMPS
Sub-panel and front-panel mounting
Multi-position and multi-pole function
Available in UL94V-0 grade materials

**Contact Rating:**
16 AMPS @ 125, 250 V AC, 1/4 HP @ 125 V AC
1/2 HP @ 250 V AC, 6 AMPS @ 48 V DC (UL)

### Typical Applications

Overhead fan on range / hood
Small and large appliances

| PART NUMBER | Function | Housing Style / Color | Mounting Style / Termination | Contact Material | Electrical Life | Markings |
|---|---|---|---|---|---|---|
| **DF62J12S2AHQA** | DPST, Off-On | Sub-panel, black | Right angle, PC thru-hole | Silver (UL) | 10,000 cycles | OI |
| **DF62J12S2APQA** | DPST, Off-On | Sub-panel, black | Right angle, PC thru-hole | Silver (UL) | 10,000 cycles | O- |
| **DF62J12S215PQA** | DPST, Off-On | Sub-panel, black | Quick connect | Silver (UL) | 10,000 cycles | O- |

## SW SERIES
## Power Rocker Switches

### Features / Benefits

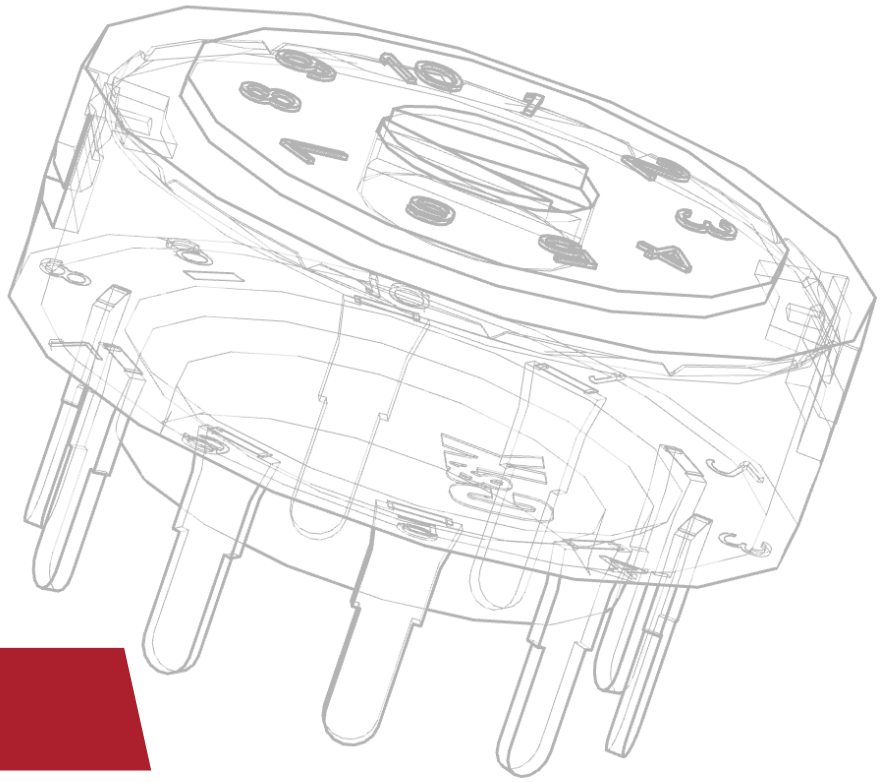
Oval shape
Several color options (black, white, almond, biscuit)
Front panel mounting

**Contact Rating:**
6.5 AMP @ 125 V AC

### Typical Applications

Computers
Power supplies
Appliances
Fitness equipment
Off-road vehicles

| PART NUMBER | Function | Actuator | Color | Termination |
|---|---|---|---|---|
| **SW-13A65N-A01 BK** | SPDT, On-Off-On | Concave (curved) | Black | Quick connect |
| **SW-13A65N-A01** | SPDT, On-Off-On | Concave (curved) | White | Quick connect |



PRODUCT SELECTION GUIDE

# Rotary Switches

Rotary switches from C&K are available in a variety of indexing options for applications ranging from 10 mA to 12 Amps. With multi-pole, multi-position, half-inch, rota-slide, power rota-slide and sub-miniature switch type designs, C&K rotary switches feature shorting and non-shorting contacts for maximum design flexibility.

| SERIES | A | RTA | M | R | F | H | RW | RM | ENC |
|---|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Multi-pole / Multi-position | Multi-pole / Multi-position | Half-inch | Rota-slide | Rota-slide | Power Rota-slide | Sub-miniature rotary SMT | Sub-miniature rotary | Optical encoder |
| **Miniature** | | | | | • | | • | • | |
| **Low Profile** | | | | | • | | • | | |
| **Screwdriver Slot** | • | • | • | • | • | | | • | |
| **Power** | | | | | | • | | | |
| **Maximum Current** | 2.5 Amps | 5 A<br>1 A | 6 Amps | 5 Amps | 4 Amps | 12 Amps | 0.1 A<br>10 mA | 0.5 Amps | 30 mA |
| **Poles** | 1-4 | 1-4 (except 3) | 1 & 2 | 1 & 2 | 1 & 2 | 1 & 2 | 1 | 1 | 1 |
| **Indexing** | 30° / 45° / 90° | 22.5° / 30° / 36° | 30° / 36° | 36° | 45° & 90° | 45° | 36° & 45° | 45° | 22.5° |
| **Splashproof** | • | | • | | | | | | |
| **Sealed** | | | • F option | | | | | | |
| **Non-shorting / Shorting Contacts** | • | | | | | | | | |
| **Panel Mount Options** | | | | | | | | | |
| **Top Mount** | | | | | | | | | • |
| **Rear Mount** | • | • | • | • | • | • | | | |
| **PCB Mount Options** | | | | | | | | | |
| **Vertical** | • | • | • | • | • | | • | | |
| **Terminations** | | | | | | | | | |
| **Solder Lug** | • | • | • | • | • | • | | | |
| **Wire Lead** | | | | • | • | • | | | |
| **Quick Connect** | | | | | | • | | | |
| **PC** | • | • | • | • | • | | • | • | |
| **Connector** | | | | | | | | | • |

## A SERIES
### 1-4 Pole Rotary Switches

**Features / Benefits**

Multi-pole and multi-position
Positive detent
Shorting & non-shorting contacts
Panel and PCB mounting
Electrical life 15,000 make-and-break cycles at full load
up to 300,000 detent operations

**Typical Applications**

Automotive
Major and small appliances
Industrial equipment

| PART NUMBER | Function | Contact Rating | Mounting Style / Termination | Contact Material | Seal |
|---|---|---|---|---|---|
| **A10305RNCB** | SP, 30° Index, 3 pos. non-shorting | 0.4 VA MAX. @ 20 V AC or DC MAX | PC thru-hole | Gold | None |
| **A11405RNZQ** | SP, 90° Index, 2 pos. non-shorting | SWITCH-2.5 AMPS @ 125 V AC; 350 mA @ 125V DC (UL/CSA). CARRY-5 AMPS CONTINUOUS | Solder lug | Silver | None |
| **A20605RNCQK** | DP, 30° Index, 6 pos. non-shorting | SWITCH-2.5 AMPS @ 125 V AC; 350 mA @ 125V DC (UL/CSA). CARRY-5 AMPS CONTINUOUS | PC thru-hole | Silver | Epoxy & splashproof bushing seal |

## R SERIES
### ROTA-SLIDE® Rotary Switches

**Features / Benefits**

Multi-pole and multi-position
Positive detent
Panel and PCB mounting
Enclosed
Electrical life 10,000 make-and-break cycles at full load

**Contact Rating:**
5 AMPS @ 125 V AC, 2.5 AMPS @ 250 V AC
0.5 AMP @ 125 V DC (UL)
1/8 HP @ 125 and 250 VAC (UL)

**Typical Applications**

Ceiling fans
Industrial equipment
Portable tools

| PART NUMBER | Function | Actuator | Mounting Style | Mounting Style / Termination |
|---|---|---|---|---|
| **R20507RR02Q** | DP, 36° Index, 5 pos. | .500” high with .156” flat | 3/8-32 threaded bushing | PC thru-hole |
| **R20407RR03Q** | DP, 36° Index, 4 pos. | .500” high with .156” flat | 3/8-32 threaded bushing | Solder lug with hole |
| **R10815RS02Q** | SP, 36° Index, 8 pos. | Screwdriver slot without bushing | PC without bushing | PC thru-hole |

## ENC SERIES

### Subminiature Rotary Switches

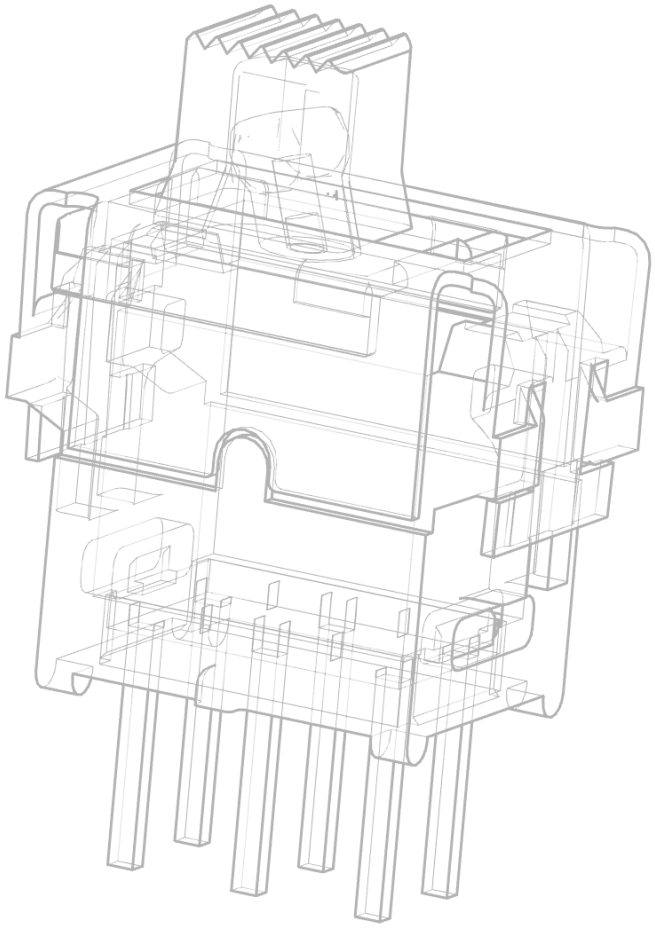
#### Features / Benefits

Clear detent / haptic feel
Two channel, 2-bit code output
Quadrature (incremental type)
Integrated pushbutton

#### Typical Applications

Automotive interior control
Industrial equipment
Test & instrumentation
Medical equipment

| PART NUMBER | Function | Contact Rating | Actuation Force | Operating Life | Termination |
|---|---|---|---|---|---|
| **ENCOS16DS5C** | 1 pole 16 position | Rotary: 30 mA @ 5 V DC<br>Pushbutton: 10 mA @ 5 V DC | 600 ± 20% gf | 300,000 cycles | SMT |



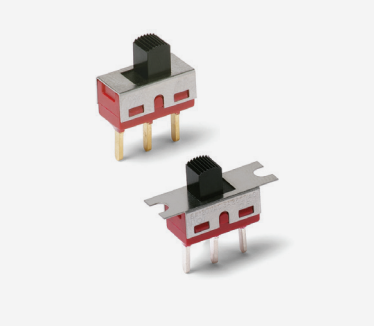
PRODUCT SELECTION GUIDE

# Slide Switches

Featuring ultra-miniature, micro, miniature, standard, industrial and power versions, C&K has slide switches compatible for printed circuit board, surface mount and panel mount applications. Available in SPST, SPDT, SP3T, DPST, DPDT, 3PDT, 4PDT and 4P3T functions, C&K provides slide switches with positive detent, sealing, and shorting or non-shorting contacts options.

| SERIES | ES | TS | 1000 | GS | L | LP | S |
|---|---|---|---|---|---|---|---|
| **Switch Type** | Tiny | Tiny | Miniature | Ultra-miniature | Miniature | Miniature | Power |
| **Poles** | 1 & 2 | 1 | 1 & 2 | 1 | 1 & 2 | 1 & 2 | 1 & 2 |
| **Momentary** | | | • | | • | | • |
| **Process Sealed** | • | | | • | | | |
| **Splashproof** | • | | | | • | | |
| **Screwdriver Slot** | | | | | • | | • |
| **Housing Marking** | | | | | | • | • |
| **Tape & Reel** | • | | | • | | | |
| **Max. Current** | 0.4 VA | 3 A | 6 A | 0.4 VA | 4 A | 11 A | 15 A |
| Terminations | | | | | | | |
| **Wire Wrap** | | • | • | | • | | |
| **Quick Connect** | | | • | | | | • |
| **Wire Lead** | | | | | • | • | • |
| **Solder Lug** | | | • | | • | • | • |
| **PC** | • | • | • | • | • | | • |
| PCB Mount Options | | | | | | | |
| **Thru-hole** | • | • | • | • | • | • | • |
| **Vertical** | • | • | • | • | • | • | • |
| **Right Angle** | • | • | • | • | | | • |
| **Surface Mount** | • | | | • | | | |
| Panel Mount Options | | | | | | | |
| **Snap-in** | | | | | | • | • |
| **Mounting Ears** | | | • | | • | | • |
| **Right Angle** | • | • | • | • | | | • |

| SERIES | V | OS | PCM | AYZ | JS | JSM | JSX | SS | SK |
|---|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Power & line voltage | Miniature | Low profile | Low profile | Low profile | Low profile | Low profile | Miniature | Miniature |
| **Poles** | 1 & 2 | 1 & 2 | 1 | 1 & 2 | 1 & 2 | 1 | 1 | 1, 2 & 4 | 1, 2 & 4 |
| **Momentary** | | | | | | • | • | | |
| **Process Sealed** | | | | | | | | | |
| **Splashproof** | | | | | | | | | |
| **Screwdriver Slot** | • | | | | | | | | |
| **Housing Marking** | | | | | | | | | |
| **Tape & Reel** | | | • | | • | • | • | | |
| **Max. Current** | 10.1 A | 200 mA | 0.3 A | 100 mA | 0.3 A | 0.3 A | 10 mA | 0.3 A | 0.3 A |
| Terminations | | | | | | | | | |
| **Wire Wrap** | | | | | | | | | |
| **Quick Connect** | • | | | | | | | | |
| **Wire Lead** | | | | | | | | | |
| **Solder Lug** | | • | | | | | | | |
| **PC** | • | • | • | • | • | | | • | • |
| PCB Mount Options | | | | | | | | | |
| **Thru-hole** | • | • | | | • | | | • | • |
| **Vertical** | • | • | | | • | | | • | |
| **Right Angle** | • | • | | | • | | | | • |
| **Surface Mount** | | | • | • | • | • | • | | |
| Panel Mount Options | | | | | | | | | |
| **Snap-in** | • | | | | | | | | |
| **Mounting Ears** | • | • | | | | | | • | |
| **Right Angle** | • | | | | | | | | |



## 1000 SERIES
## Miniature Slide Switches

### Features / Benefits

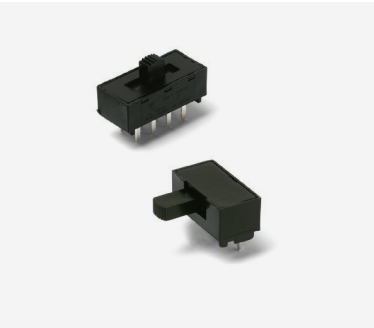
Variety of actuators and terminations
Panel mount tabs available
Epoxy terminal seal—compatible with bottom-wash cleaning

**Contact Rating:**
Gold 0.4 VA max. @ 20 V AC or DC max.
Silver 6 AMPS @ 120 V AC or 28 V DC, 3 AMPS @ 250 V AC

### Typical Applications

Test & measurement equipment
Telecommunications
Computer & peripherals

| PART NUMBER | Function | Mounting Style | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|---|
| **1101M2S3CQE2** | SPDT On-None-On | PC mount without tabs | .200" high | PC thru-hole | Silver | 40,000 cycles |
| **1101M2S3CBE2** | SPDT On-None-On | PC mount without tabs | .200" high | PC thru-hole | Gold | 100,000 cycles |
| **1101M2S3AV2QE2** | SPDT On-None-On | PC mount without tabs | .200" high | Vertical right angle, PC thru-hole | Silver | 40,000 cycles |
| **1101M1S3ZQE2** | SPDT On-None-On | Panel mount with tabs | .200" high | Solder lug | Silver | 40,000 cycles |



## L SERIES
## Miniature Slide Switches

### Features / Benefits

Positive detent
Enclosed housing
Maintained and momentary functions
PC and panel mounting

**Contact Rating:**
4 AMPS @ 125 V AC or 28 V DC
2 AMPS @ 250 V AC
0.5 AMP @ 125 V DC (UL)

### Typical Applications

Communications equipment
Lighting devices

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **L102011MS02Q** | SPDT | .200" high | PC thru-hole | Silver | 10,000 cycles |
| **L202011MS02Q** | DPDT | .200" high | PC thru-hole | Silver | 10,000 cycles |
| **L20202MA04Q** | DPDT | .335" high | Right angle, PC thru-hole | Silver | 10,000 cycles |
| **L202031MS02Q** | DPDT | .375" high | PC thru-hole (with detent) | Silver | 10,000 cycles |

## V SERIES

### Power & Line Voltage Select Slide Switches

**Features / Benefits**

Actuator with screwdriver slot

**Contact Rating:**
10 GPA @ 125 V AC 50/60 Hz T85
5 GPA @ 250 V AC 50/60 Hz T85
2 (0.5) A @ 250 VAC 50/60 Hz T85
4RA @ 30 VDC T85

**Typical Applications**

Appliances

| PART NUMBER | Function | Mounting Style | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **V80212MS02Q** | DPDT | PC thru-hole | PC thru-hole | Silver | 10,000 cycles |
| **V80212MA08Q** | DPDT | Right angle, PC thru-hole | Right angle PC thru-hole | Silver | 10,000 cycles |
| **V80212S205Q** | DPDT | Snap-in panel | Quick connect | Silver | 10,000 cycles |

## AYZ SERIES

### Miniature Slide Switches

**Features / Benefits**

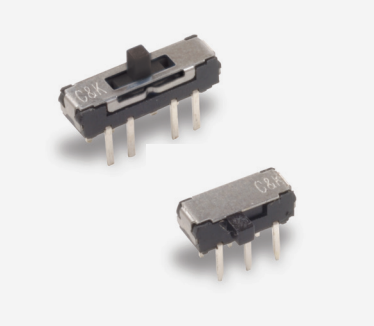
Low profile
Single & double pole models
Double & triple throw models

**Contact Rating:**
100mA @ 12 V DC

**Typical Applications**

Computer peripherals & network products
Telecommunication products
Test & measurement equipment
Medical

| PART NUMBER | Function | Actuator | Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **AYZ0102AGRLC** | SPDT, On-On | L: 1.0 mm | SMT | Copper alloy, silver plated | 10,000 cycles |
| **AYZ0202AGRLC** | DPDT, On-On | H: 1.0 mm | SMT | Copper alloy, silver plated | 10,000 cycles |
| **AYZ0203AGRLC** | DP3T, On-On-On | H: 1.0 mm | SMT | Copper alloy, silver plated | 10,000 cycles |



## JS SERIES
### Sub-Miniature Slide Switches

**Features / Benefits**

Positive detent
Low profile
IR reflow to 260° solder profile

**Contact Rating:**
0.3A @ 6 V DC

**Typical Applications**

Telecommunication products
Computer peripherals
Thermostat select switch
Instrumentation
Medical

| PART NUMBER | Function | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|
| **JS203011CQN** | DP3T | PC thru-hole | Copper alloy, silver plated | 5,000 cycles |
| **JS202011SCQN** | DPDT | Surface mount | Copper alloy, silver plated | 5,000 cycles |
| **JS202011AQN** | DPDT | Right angle, PC thru-hole | Copper alloy, silver plated | 5,000 cycles |

## PCM SERIES
### Sub-Miniature Slide Switches

**Features / Benefits**

Ultraminiature surface mount
Low profile
SPDT & SP3T models
RoHS compliant

**Typical Applications**

Computer peripherals & network product
Telecommunication products
Test & measurement equipment
Medical

| PART NUMBER | Function | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|
| **PCM12SMTR** | SPDT | SMT, right angle | Copper alloy, silver plated | 10,000 cycles |
| **PCM13SMTR** | SP3T | SMT, right angle | Copper alloy, silver plated | 10,000 cycles |

## OS SERIES
## Miniature Slide Switches

### Features / Benefits

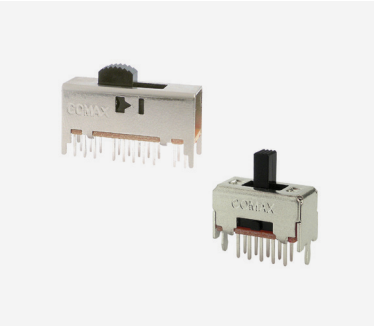
Variety of actuators & terminations
PC and panel mounting
Gold or silver plating available
Shorting or non-shorting contacts

**Contact Rating:**
0.1 A @ 12 V DC

### Typical Applications

Test & measurement equipment
Computer peripherals & network products
Consumer products

| PART NUMBER | Function | Mounting Style | Actuator | Travel | Contact Material | Electrical Life |
|---|---|---|---|---|---|---|
| **OS102011MS2QN1** | SPDT, On-On, non-shorting | Vertical | H: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |
| **OS202011MS2QS1** | DPDT, On-On, shorting | Vertical | H: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |
| **OS103011MS8QP1** | SP3T, On-On-On, non-shorting | Vertical | H: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |
| **OS202011MA0QN1** | DPDT, On-On, non-shorting | Right angle | L: 4 mm | 2 mm | Copper alloy, silver plated | 10,000 cycles |



## SS SERIES
## Miniature Slide Switches

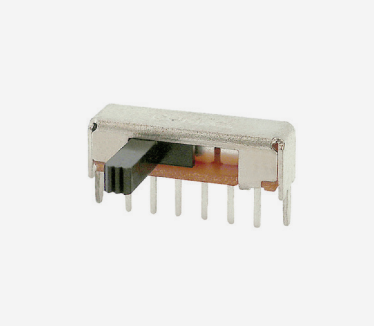
### Features / Benefits

Various circuit design, SPDT, 4P3T, vertical, right angle
Compact miniature slide switch
Shorting or non-shorting
Custom design available

### Typical Applications

Consumer electronics
Computer peripherals
Telecommunication
Audio & visual equipment
Medical

| PART NUMBER | Function | Contact Rating | Actuator | Travel | Termination | Electrical Life |
|---|---|---|---|---|---|---|
| **SS-12D07-VG 4 NS GA PA** | SPDT, non-shorting | 0.3 A @ 30 V DC | 4 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SS-12D1505-G 2** | SPDT, non-shorting | 0.3 A @ 6 V DC | 2 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SS-14D08-VG 5 PA** | 1P4T | 0.3 A @ 30 V DC | 5 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SS-22D0205-G 2** | DPDT, non-shorting | 0.3 A @ 6 V DC | 2 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SS-22D07-G 2 NS PA** | DPDT, non-shorting | 0.3 A @ 30 V DC | 4 mm | 2 mm | PC thru-hole | 10,000 cycles |



## SK SERIES
## Miniature Slide Switches

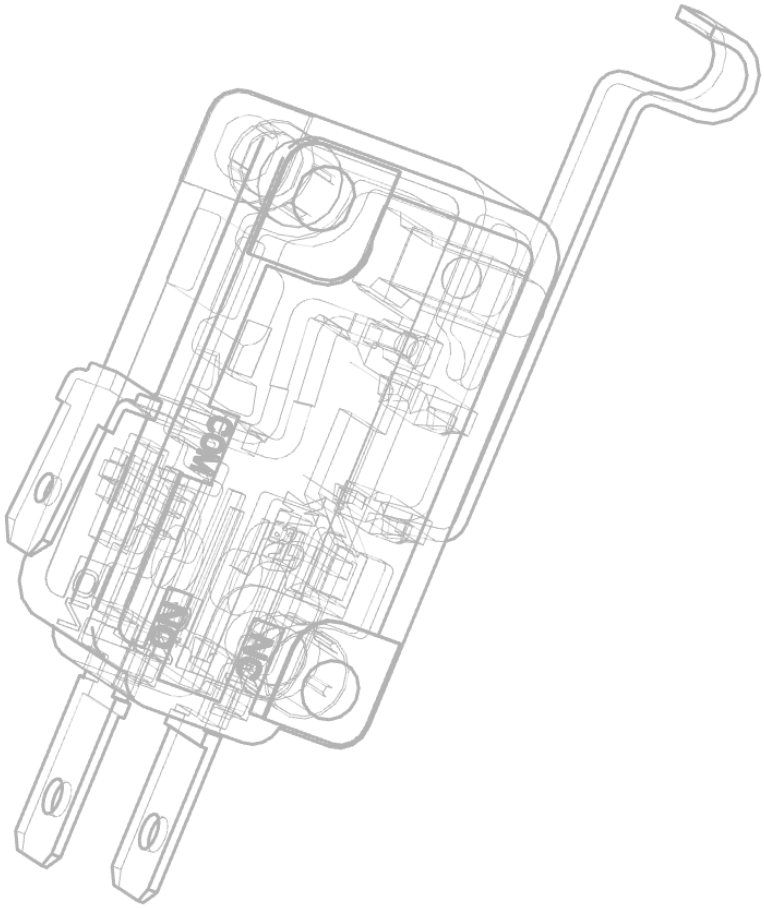
### Features / Benefits

Various circuit design, SPDT, 4P3T, vertical, right angle
Compact miniature slide switch
Shorting or non-shorting
Custom design available

### Typical Applications

Consumer electronics
Computer peripherals
Telecommunication
Audio & visual equipment
Medical

| PART NUMBER | Function | Contact Rating | Actuator | Travel | Termination | Electrical Life |
|---|---|---|---|---|---|---|
| **SK-12D04-VG 3 NS** | SPDT, non-shorting | 0.3 A @ 30 V DC | 3 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SK-12D07-G 5 NS PA** | SPDT, non-shorting | 0.3 A @ 30 V DC | 5 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SK-12D07-VG 4 NS PA** | SPDT, non-shorting | 0.3 A @ 30 V DC | 4 mm | 2 mm | PC thru-hole | 10,000 cycles |
| **SK-13D21-G 2 RT** | 1P3T, non-shorting | 0.3 A @ 4 V DC | 2 mm | 2 mm | SMT | 10,000 cycles |
| **SK-14D01-G6** | 1P4T | 0.3 A @ 30 V DC | 6 mm | 2 mm | PC thru-hole | 10,000 cycles |



PRODUCT SELECTION GUIDE

# Snap-acting Switches

C&K's broad range of snap switches includes subminiature, miniature, and metal case models. These limit switches have a variety of actuator configurations (pin plunger, lever, and roller lever), electrical ratings from low levels up to 30 Amps, and a broad range of operating forces. Terminal styles include PCB through-hole, quick connect, wire leads, screw, solder, formed PC through-hole, flat and step base. Sealed models are available as is SPST, SPDT, DPST and DPDT functionality. Mounting options include vertical or right angle, PCB and snap-in mounting.

| SERIES | TF | TM | LC | LCA | LCS | SSW | MM | ZM | ZPA |
|---|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Miniature | Miniature | Sub-miniature precision | Sub-miniature | Sealed sub-miniature | Sub-miniature | Sub-miniature precision | Sub-miniature | Sub-miniature |
| **Poles / Throws** | SPST / SPDT | SPST / SPDT | SPST / SPDT | SPDT | SPST | DPDT | SPDT | SPDT | SPST |
| **Maximum Current** | 21 Amps | 15 Amps | 10.1 Amps | 10 Amps | 6 Amps | 20 mA | 7 Amps | 3 Amps | 0.1 Amp |
| PCB Mount Options | | | | | | | | | |
| **Solder** | • | • | • | • | • | | | | |
| **Turret** | | | | | | | • | | |
| **Quick Connect** | • | • | • | • | • | | | | |
| **Screw** | | • | | | | | | | |
| **Wire Leads** | | | • | | • | | | | |
| **PC** | | | • | | • | | • | • | |
| **Formed PC** | | | • | | • | | • | • | |
| **Extended Operations** | • | • | • | • | | | | | |
| **Surface Mount** | | | | | | • | | | • |

| SERIES | ZMA | ZMS | MDS | HB | A | TL | ZMSM | TFS | MS |
|---|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Subminiature | Sealed sub-miniature | Subminiature | Standard pre-cision | General pur-pose | Door interlock | Sealed sub-miniature | Sealed min-iature | Subminiature |
| **Poles / Throws** | SPDT | SPDT | SPDT | SPST / SPDT | SPST / SPDT / DP | SPDT | SPDT | SPDT | SPST / SPDT |
| **Maximum Current** | 3 Amps | 3 Amps | 300 mA | 20 Amps | 30.1 Amps | 15 Amps | 3 Amps | 10 Amps | 0.1 / 5 Amps |
| Terminations | | | | | | | | | |
| **Solder** | | • | • | • | | • | • | | • |
| **Quick Connect** | | | | • | • | • | | • | • |
| **Wire Leads** | | • | | | | | • | • | |
| **Screw** | | | | • | | • | | | |
| **PCB Thru-hole** | • | • | • | | | | • | | • |
| **Flat & Step Base** | | | | • | | | | | |
| **Bushing** | | | | 15/32-32 | 3/8-23 | | | | |
| **Sealed** | | • | | • | | | • | • | |

## TF SERIES
### Miniature Snap-acting Switches

**Features / Benefits**

Broad range of operating forces
From low level* to 21 AMPS @ 277 V AC
Wide variety of actuator styles

**Typical Applications**

Motor controls
Thermostatics
Portable tools

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---|---|---|---|---|---|
| **TFCJL3SP004AC** | SPDT momentary | 5.29 oz. / 150 grams | 20 A, 250 V AC; 1 HP, 125 V AC;2 HP 250 V AC | Pin plunger | .250" quick connect |
| **TFCDK6ST2640C** | SPDT momentary | .88 oz. / 25 grams | 11 A, 277 V AC; 1/3 HP, 125, 250 V AC; 0.5 A, 125 V DC; 0.25 A, 250 V DC | 2.57" lever, low force | .187" quick connect |

## LC SERIES
### Subminiature Precision Snap-acting Switches

**Features / Benefits**

Compact design
Long life and high electrical capacity
Quick connect, wire lead or PC mounting
Wide variety of actuator styles

**Typical Applications**

Motorized equipment
Sump pump
Thermostatic controls

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---|---|---|---|---|---|
| **LCGHF5A10RCE** | SPDT | 6 oz. / 170 grams | 1 A, 125, V AC, 30 V DC | .28" lever roller, high force | Right formed PC thru-hole |
| **LCGGL9P00EC** | SPDT | 5 oz. / 142 grams | 5 A, 1/3 HP, 125, 250 V AC | Pin plunger | Solder lug |

## SSW SERIES
### Subminiature 2 Pole Snap-acting Switches

**Features / Benefits**

SMT
IP67
Redundant contacts
Change over time <15ms
Top and side actuation

**Typical Applications**

Automotive, ASIL related applications
(electronic parking brake, by-wire functions
Safety applications

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---|---|---|---|---|---|
| **SSW 115S** | DPDT | 2 N | 20 mA, 18 V DC | Standard | Surface mount |

## A SERIES
## General Purpose Snap-acting Switches

### Features / Benefits

Low cost—high performance
Long electrical life
Sealed actuator option available

### Typical Applications

Enclosure equipment
Garage door openers
Vending machines

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---|---|---|---|---|---|
| **ASKHC2T04AC** | SPDT | 20 oz. / 567 grams | 15 A, 125, 250 V AC<br>3/4 HP, 125 V AC<br>1 1/2 HP, 250 V AC | Lever | .250” quick connect |
| **ADPDC2T04AC** | DPDT | 30 oz. / 850 grams | 15 A, 125, 250 V AC<br>3/4 HP, 125 V AC<br>1 1/2 HP, 250 V AC | Lever | .250” quick connect |
| **ASKHC2J04AC** | SPDT | 20 oz. / 567 grams | 15 A, 125, 250 V AC<br>3/4 HP, 125 V AC<br>1 1/2 HP, 250 V AC | High overtravel plunger | .250” quick connect |

## MS SERIES
## Snap-acting Switches

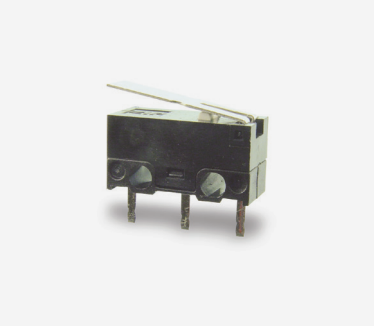
### Features / Benefits

Detect interlock and movement
Different lever options
Various operating forces

### Typical Applications

Industrial
Consumer electronics
Appliances

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---|---|---|---|---|---|
| **MS-118305-G** | SP momentary | 25 gf | 0.1 A, 30 V DC | Lever ST 12.5 mm | PC thru-hole |
| **MS-118405-H** | SP momentary | 25 gf | 0.1 A, 30 V DC | Lever SR R1.3 | Solder lug |
| **MS-105A01 (H)** | SP momentary | 230 gf | 5 A 125 V AC | Pin plunger | Solder lug |



## ZMA SERIES

### Subminiature Snap-acting Switches

#### Features / Benefits

Reliable snap-acting mechanism
Long electrical and mechanical life
Compact size—Ideal when space is limited
Electrical life 300,000 cycles @ 0.1A / 10,000 cycles @ 3A

#### Typical Applications

PCB detection switch
Communication devices
Testing equipment
Security / Alarm systems

| PART NUMBER | Function | Electrical Rating | Operating Force | Actuator | Mounting Style / Termination |
|---|---|---|---|---|---|
| **ZMA03A150S07EC** | SPDT, momentary | 3 A @ 125 V AC 24 V DC | 150 grams | Simulated roller 0.75 mm | Solder |
| **ZMA00A150L04PC** | SPDT, momentary | 0.1 A @ 125 V AC 60 V DC | 150 grams | Lever 4.55 mm | PC thru-hole |
| **ZMA03A150A03PC** | SPDT, momentary | 3 A @ 125 V AC 24 V DC | 150 grams | Roller 1.87 mm | PC thru-hole |

## LCS SERIES

### Subminiature Sealed Snap-acting Switches

#### Features / Benefits

Compact design
Quick connect, solder terminals, PC terminals, wire leads
Wide variety of actuator styles
IP67
Electrical life 10,000 cycles

#### Typical Applications

Motorized equipment
Sump pump
Thermostatic controls
Computers
Air conditioners

| PART NUMBER | Function | Operating Force | Actuator | Mounting Style/ Termination | Contact Rating |
|---|---|---|---|---|---|
| **LCS051P00SDC** | SPDT | 150 grams | Pin plunger | Solder | 5 AMP, 125/250 V AC |
| **LCS011T05QDC** | SPDT | 150 grams | Short lever, 17.4 mm | 0.110 quick connect | 0.1 AMP, 125/250 V AC |
| **LCS051P00PDC** | SPDT | 150 grams | Pin plunger | PC thru-hole | 5 AMP, 125/250 V AC |

## DS SERIES
## Interlock Pushbutton Switches

### Features / Benefits

Snap-in mounting
Reliable snap action mechanism
Latch or momentary
Halogen free material

### Typical Applications

Interlock switch
Detection switch
Circuit interrupt

| PART NUMBER | Function | Contact Rating | Actuator | Terminals |
|---|---|---|---|---|
| **DS1D6AQ1** | SPDT | 10 (4) A @125/250 V AC 50/60 Hz 50,000 cycles, 10 A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles | Momentary, short button | 4.8 x 0.5 mm |
| **DS2D6BQ1** | DPDT | 10 (4) A @125/250 V AC 50/60 Hz 50,000 cycles, 10 A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles | Momentary, long button | 4.8 x 0.5 mm |
| **DS2D6CQ1** | DPDT | 10 (4) A @125/250 V AC 50/60 Hz 50,000 cycles, 10 A G.P. @ 125 / 250 V AC 1/3HP @ 125/250 V AC 50/60 Hz 10,000 cycles | Momentary, pulled out button | 4.8 x 0.5 mm |

## ZPA SERIES
## Surface Mount Snap-acting Switches

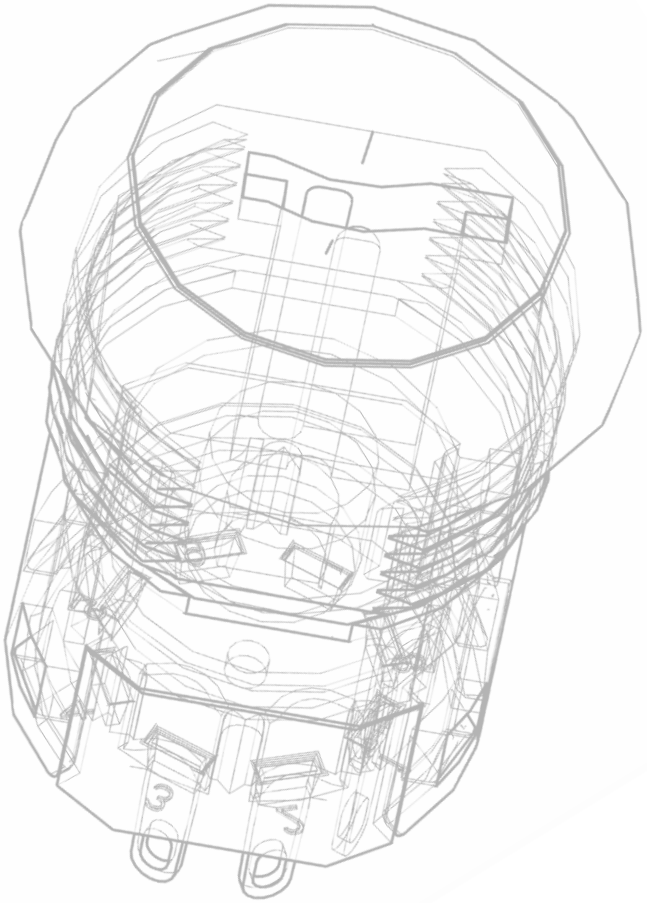
### Features / Benefits

Reliable snap-acting mechanism
Long electrical and mechanical life
Subminiature packaging size
Surface mount terminations
RoHS compatible & compliant

### Typical Applications

PCB detection switch
Communication devices
Testing equipment
Security / Alarm systems
Consumer electronics

| PART NUMBER | Function | Operating Force | Electrical Rating | Actuator | Termination |
|---|---|---|---|---|---|
| **ZPA00A150P00T** | SPST | 150 grams | 0.1 A | Pin plunger | Surface mount |



PRODUCT SELECTION GUIDE

# Switchlocks

Available in plastic or metal housings, C&K's switchlocks feature 4 to 6 tumblers supporting a variety of security needs. Miniature, anti-static and momentary versions combine with bushing or snap-in mounting for a broad product selection.

| SERIES | Y | YF | YM | PF | PM |
|---|---|---|---|---|---|
| **Switch Type** | 4, 5, 6 Tumbler | 4 Tumbler | 4 Tumbler | 5 Tumbler | 5 Tumbler |
| **Lock** | Metal | Metal | Metal | Plastic | Plastic |
| **Latch Pawl** | • | | | | |
| **Miniature** | | • | • | • | • |
| **Anti-static** | • | | | | |
| **Momentary** | • | | | | |
| **Poles** | 1 & 2 | 1 & 2 | 1 | 1 & 2 | 1 |
| **Indexing** | 45° & 90° | 45° & 90° | 90° | 45° & 90° | 90° |
| **Max. Current** | 4 Amps | 4 Amps | 4 Amps | 4 Amps | 4 Amps |
| Panel Mount Options | | | | | |
| **Snap-in** | | | | • | • |
| **Bushing** | • | • | • | | |
| **PC Thru-hole** | • | | | | |

| SERIES | A | H | PL |
|---|---|---|---|
| **Switch Type** | 4 & 5 Tumbler | 4 & 6 Tumbler | 5 Tumbler |
| **Lock** | Metal | Metal | Plastic |
| **Cam** | | | • |
| **Miniature** | | | • |
| **Anti-static** | • | | |
| **Momentary** | | | |
| **Poles** | 1 - 4 | 1 & 2 | |
| **Indexing** | 30°, 45° & 90° | 45° & 90° | 90° |
| **Max. Current** | 2.5 Amps | 12 Amps | |
| Panel Mount Options | | | |
| **Snap-in** | | | • |
| **Bushing** | • | • | |
| **Thru-hole** | • | | |

## Y SERIES
## 4, 5 & 6 Tumbler Switchlocks

### Features / Benefits

Anti-static switch—exceeds 20 KV DC static resistance
Momentary models available
Wire leads and harnesses available

**Contact Rating:**

4 AMPS @ 125 V AC or 28 V DC, 2 AMPS @ 250 V AC (UL/CSA)
Electrical Life 10,000 make-and-break cycles at full load

### Typical Applications

Point-of-sale terminals
Cash registers
Computers

| PART NUMBER | Function | Keying | Lock Type | Termination |
|---|---|---|---|---|
| **Y201132C203NQ** | DP, 90°, keypull pos. 1 | Two nickel plated brass keys (4 & 5 tumbler) or two die cast zinc alloy keys with chrome plating (6 tumbler) | 4 Tumbler lock with detent | Solder lug with hole |
| **Y1011U2C203NQ** | SP, 90°, keypull pos. 1 & 2 | Two nickel plated brass keys (4 & 5 tumbler) or two die cast zinc alloy keys with chrome plating (6 tumbler) | 4 Tumbler lock with detent | Solder lug with hole |
| **Y101132C203NQ** | SP, 90°, keypull pos. 1 | Two nickel plated brass keys (4 & 5 tumbler) or two die cast zinc alloy keys with chrome plating (6 tumbler) | 4 Tumbler lock with detent | Solder lug with hole |

## H SERIES
## 4 & 6 Tumbler Power Switchlocks

### Features / Benefits

Positive detent
Multi-pole and multi-position
Snap-together assembly
Power switching

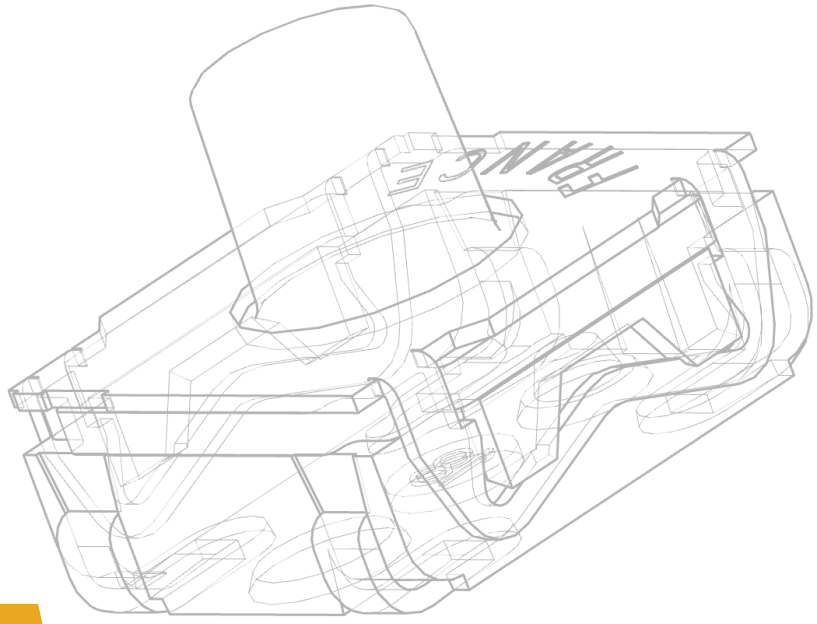
**Contact Rating:**

Silver: 12 AMPS @ 125 V AC, 6 AMPS @ 250 V AC, 1 AMP @ 125 V DC (UL/CSA)
Gold: 0.4 VA Max. @ 20 V AC or DC Max.
Electrical life 10,000 make-and-break cycles at full load

### Typical Applications

Machine controls
Elevators

| PART NUMBER | Function | Keying | Lock Type | Termination | Termination |
|---|---|---|---|---|---|
| **H1011U2F205NQ** | SP, 90° Index, keypull pos. 1 & 2 | Two nickel plated brass keys | 4 Tumbler lock with detent | Quick connect | Silver |
| **H201132F205NQ** | DP, 90° Index, keypull pos. 1 | Two nickel plated brass keys | 4 Tumbler lock with detent | Quick connect | Silver |
| **H200AA2F205NQ** | DP, 45° Index, keypull pos. 1, 2 & 3 | Two nickel plated brass keys | 4 Tumbler lock with detent | Quick connect | Silver |



PRODUCT SELECTION GUIDE

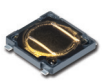
# Tactile Switches

C&K offers a broad range of miniature tactile, ultra-miniature tactile and micro miniature tactile switches for printed circuit board mounting. Available in J bend, gull wing, illuminated, sealed, low-profile, low-noise, SMT and through hole versions, C&K's tactile switches are designed for the most demanding applications.

NEW

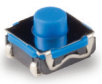
Surface Mount

| SERIES | KXT3 | KMT0 | KMT2 | KMR2-8 | KMS | PTS525 | PTS526 |
|---|---|---|---|---|---|---|---|
| **Size on PCB L x W (mm)** | 3 x 2 | 3 x 2.6 | 3 x 2.6 | 4.2 x 2.8 | 4.2 x 3.55 | 5.2 x 5.2 | 5.2 x 5.2 |
| **Total Height (mm)** | 0.6 | 0.65 | 0.65 | 1.9 / 2.5 | 1.42 | 0.8 and 1.5 | 0.8 / 1.5 / 1.7 / 2.0 |
| **Travel (mm)** | 0.13 | 0.15 | 0.15 | 0.2 to 0.35 | 0.25 to 0.3 | 0.25 | 0.25 |
| **Actuation Force (N)** | 100 gf / 160 gf / 240 gf / 330gf | 1.0 / 1.6 / 2.3 / 3.4 | 1.0 / 1.6 | 1.2 / 2.0 / 3.0 / 4.0 | 2.0 / 3.0 | 160 gf / 260 gf | 160 gf / 260 gf / 320 gf |
| **Contact Type** | Silver | Silver | Silver | Silver / Gold | Silver / Gold | Silver | Silver |
| **Max. Voltage (V)** | 15 | 32 | 32 | 32 | 32 | 15 | 12 |
| **Max. Switching Power (VA)** | 0.5 | 0.5 | 0.5 | 1 / 0.2 | 1 / 0.2 | 0.3 | 0.6 |
| **Life Cycles** | 300,000 / 500,000 | 300,000 / 600,000 / 1,000,000 | 150,000 | 100,000 / 300,000 | 100,000 | 100,000 | 150,000 to 500,000 |
| **IP Rating** | IP64 | IP68 | IP54 | IP40 | IP40 | IP40 | IP40 |



Surface Mount

| SERIES | PTS530 | PTS540 | PTS810 | PTS815 | PTS820 | PTS830 | PTS840 |
|---|---|---|---|---|---|---|---|
| **Size on PCB L x W (mm)** | 4.5 x 4.5 | 3.7 x 3.7 | 4.2 x 3.2 | 4.2 x 3.2 | 3.9 x 2.9 | 3.5 x 2.6 | 3.5 x 3.55 |
| **Total Height (mm)** | 0.55 and 0.65 | 0.35 | 2.5 | 2.5 | 1.5 / 2.0 / 2.5 | 1.4 | 1.35 |
| **Travel (mm)** | 0.2 | 0.15 | 0.15 / 0.2 | 0.2 | 0.2 | 0.15 | 0.2 |
| **Actuation Force (N)** | 100 gf / 160 gf / 200 gf / 260 gf / 400 gf / 600 gf | 160 gf / 230 gf | 160 gf / 260 gf / 400 gf / 600 gf | 180 gf / 250 gf / 400 gf | 160 gf / 250 gf | 160 gf / 450 gf | 160 gf / 220 gf |
| **Contact Type** | Silver | Silver | Silver | Silver | Silver | Silver | Silver |
| **Max. Voltage (V)** | 12 | 12 | 16 | 12 | 12 | 12 | 12 |
| **Max. Switching Power (VA)** | 0.6 | 0.6 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 |
| **Life Cycles** | 150,000 to 1,000,000 | 300,000 to 500,000 | 50,000 to 150,000 | 50,000 to 100,000 | 100,000 to 200,000 | 200,000 to 1,000,000 | 100,000 |
| **IP Rating** | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 |



NEW NEW

Surface Mount Thru-Hole Options

| SERIES | KSR | KSS | KSC4V2 | KSC1-10 | KSC DCT | KSC PF |
|---|---|---|---|---|---|---|
| **Size on PCB L x W (mm)** | 7.15 x 3.8 / 7.3 x 3.8 | 5.5 x 4.4 | 2 holes ø 1.1 / 2 pads 1.5 x 0.8 | J 6.8 x 6.2 G 10 x 6.2 | 6.8 x 6.2 | 6.8 x 6.2 |
| **Total Height (mm)** | 2.5 | 1.7 | 5.0* | | 5.2 | 5.2 |
| **Travel (mm)** | 0.3 to 0.5 | 0.3 | 0.7* | 0.20 to 0.75 * | 0.85 | 0.5 to 1.0 |
| **Actuation Force (N)** | 1.2 / 2.0 / 3.0 / 45 | 2 / 2.5 / 4 | 3.5* | 1.1 to 5.5 * | 4.75 | 1.7 to 6.25 |
| **Contact Type** | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | Silver | Silver |
| **Max. Voltage (V)** | 32 | 32 | 32 | 32 | 32 | 32 |
| **Max. Switching Power (VA)** | 1 / 0.2 | 1 / 0.2 | 1 / 0.2 | 1 / 0.2 | 1 | 1 |
| **Life Cycles** | 100,000 / 200,000 | 100,000 | 300,000 | 100,000 to 1,000,000 | 100,000 | 300,000 to 1,000,000 |
| **IP Rating** | IP50 | IP40 | IP67 | IP67 | IP67 | IP67 |

Surface Mount Thru-Hole Options

| SERIES | KSE | KT | K5AT | K8 | K5V | KSF/KSI |
|---|---|---|---|---|---|---|
| **Size on PCB L x W (mm)** | 6.8 x 6.2 | SA 7.5 x 5 SA2 7.5 x 7 | G 8.4 x 10.8 | G 8.4 x 10.8 | 8 x 9 x 17 / 9 x 13 | 7.62 x 5.08 |
| **Total Height (mm)** | 3.1 / 4.3 | 6.6 / 7.11 with tab | 6.1 | 6 | 9 / 13 | 2.6 |
| **Travel (mm)** | 0.3 | 0.3 to 0.5 | 0.5 | 0.45 | 1.2 | 0.3 to 0.5 |
| **Actuation Force (N)** | 1.5 / 2.25 | 3 | 4.0 | 4.0 | 4.0 | 1.3 / 1.6 / 3.0 / 5.0 |
| **Contact Type** | Silver | Silver / Gold | Gold | Silver | Gold | Silver / Gold |
| **Max. Voltage (V)** | 32 | 50 | 32 | 32 | 32 | 32 |
| **Max. Switching Power (VA)** | 1 | 1 / 0.2 | 1 | 1 | 1 | 1 / 0.2 |
| **Life Cycles** | 300,000 | 100,000 | 100,000 | 300,000 | 25,000 | 100,000 |
| **IP Rating** | IP67 | | IP40 | IP40 | IP40 | IP60 |

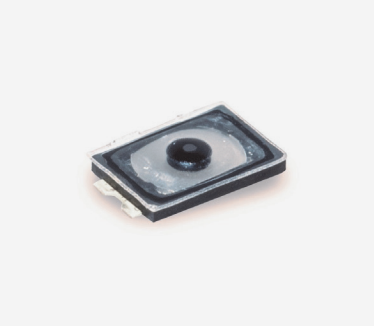
Surface Mount Thru-Hole Options

| SERIES | KSA | KSA-V | KSA MKII | KSL | KSL-V | KSJ | KSJ-V |
|---|---|---|---|---|---|---|---|
| **Footprint** | 7.62 x 5.08 | 7.62 x 2.54 | 7.62 x 5.08 | 7.62 x 5.08 | 7.62 x 2.54 | 7.62 x 5.08 | 7.62 x 2.54 |
| **Total Height (mm)** | 4.7 button option | 8 | 4.7 | 9.9 | 8 | 6.65 | 8 |
| **Travel (mm)** | 0.3 to 0.5 | 0.3 to 0.5 | 0.3 to 0.5 | 0.3 to 0.5 | 0.3 to 0.5 | 0.55 to 0.7 | 0.55 to 0.7 |
| **Actuation Force (N)** | 1.3 / 3.0 / 5.0 | 1.3 / 3.0 / 5.0 | 1.3 / 3.0 / 5.0 | 1.3 / 3.0 | 1.3 / 3.0 | 2.0 / 3.0 | 2.0 / 3.0 |
| **Contact Type** | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold | Silver / Gold |
| **Max. Voltage (V)** | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| **Life Cycles** | 100,000 | 100,000 | 100,000 / 1,000,000 | 100,000 | 100,000 | 100,000 | 100,000 / 30,000 |
| **IP Rating** | IP60 | IP60 | IP67 | IP60 | IP60 | IP60 | IP60 |

NEW

Surface Mount Thru-Hole Options

| SERIES | PTS636 | PTS641 | PTS645 | PTS645-V | PTS647 | PTS125 | ITS |
|---|---|---|---|---|---|---|---|
| **Footprint** | 6 x 3.5 | 6,3 x 6.4 | 6 x 6 | 7.0 x 7.9 | 4.5 x 4.5 | 12 x 12 | variety of sizes available |
| **Total Height (mm)** | 2.5 / 4.3 / 5.0 | 2.5 / 3.1 / 3.4 | 4.3 / 5.0 / 7.0 / 7.3 / 9.5 / 13.0 | 7.0 | 3.8 / 5.0 / 7.0 | 4.3 / 7.3 / 8.5 / 12.0 | |
| **Travel (mm)** | 0.25 to 0.30 | 0.20 / 0.30 | 0.25 | 0.25 | 0.25 | 0.30 | 0.25 |
| **Actuation Force (N)** | 130 gf /180 gf / 250 gf / 320 gf | 160 gf / 250 gf / 320 gf | 1.3 / 1.6 / 2.0 / 2.6 | 1.0 / 1.6 | 100 gf / 180 gf / 250 gf | 1.8 / 2.5 | 160 gf |
| **Contact Type** | Silver | Silver | Silver | Silver | Silver | Silver | Silver |
| **Max. Voltage (V)** | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| **Life Cycles** | 20,000 to 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 200,000 | 50,000 |
| **IP Rating** | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 | IP40 |



## KXT3 SERIES

### Ultra Low Profile Top Actuated Tact Switches

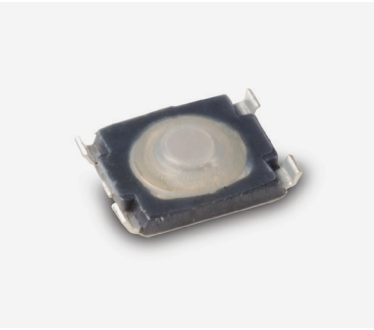
**Features / Benefits**

Smallest footprint 3.0 x 2.0 mm
0.6 mm thickness
High number of cycles

**Typical Applications**

Wearable electronics
In-ear headphones, earbuds
Portable electronics
Hearing aids

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KXT 311 LHS** | 100 ± 50 gf | Silver | 300,000 cycles | 0.13 ± 0.05 mm |
| **KXT 321 LHS** | 160 ± 50 gf | Silver | 500,000 cycles | 0.13 ± 0.05 mm |
| **KXT 331 LHS** | 240 ± 70 gf | Silver | 500,000 cycles | 0.13 ± 0.05 mm |



## KMT0 SERIES

### Nano-miniature SMT Top Actuated Tact Switches

**Features / Benefits**

3.0 x 2.06 mm footprint
IP68
Ultra low current capabilities

**Typical Applications**

Mobile phones
Hearing aids
MP3 accessories
Bluetooth headset

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KMT011NGJ LHS** | 1.0 ± 0.25 N | Silver | 300,000 cycles | 0.15 ± 0.1 mm |
| **KMT031NGJ LHS** | 3.4 ± 0.25 N | Silver | 300,000 cycles | 0.15 ± 0.1 mm |
| **KMT071NGJ LHS** | 2.3 ± 0.25 N | Silver | 300,000 cycles | 0.15 ± 0.1 mm |

## KMR SERIES

### Microminiature SMT Top Actuated

**Features / Benefits**

IP40 or IP67 sealing
Optional ground pin
Ultra low current capabilities
Heights: 1.9 mm & 2.5 mm

**Typical Applications**

Automotive
Consumer
Industrial electronics
Medical equipment

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KMR211G LFS** | 1.2 ± 0.30 N | Silver | 200,000 cycles | 0.20 ± 0.1 mm |
| **KMR621NG LFS** | 2.0 ± 0.50 N | Silver | 200,000 cycles | 0.25 ± 0.1 mm |
| **KMR73N1G LFS** | 3.0 ± 0.75 N | Silver | 150,000 cycles | 0.25 ± 0.1 mm |

## KMS SERIES
## Microminiature SMT Side Actuated

### Features / Benefits

Compact size
Excellent tactile feel
Positioning pegs for stability
IP40 sealing

### Typical Applications

Medical handheld monitors
Consumer electronics
Telecommunication networks

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KMS221G LFS** | 2.0 ± 0.5 N | Silver | 100,000 cycles | 0.25 ± 0.15 mm |
| **KMS231G LFS** | 3.0 ± 0.6 N | Silver | 100,000 cycles | 0.30 ± 0.15 mm |

## KSR SERIES
## Microminiature SMT Top Actuated

### Features / Benefits

4 actuation forces
N.O. and N.C.
Rubber actuator
IP50 sealed

### Typical Applications

Automotive
Medical equipment
Industrial electronics
Smart meters

| PART NUMBER | Operating Force | Contact Material | Switch Function | Operating Life | Travel |
|---|---|---|---|---|---|
| **KSR221G LFS** | 2.2 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.15 mm |
| **KSR231G LFS** | 3.0 N | Silver | Normally open | 100,000 cycles | 0.35 ± 0.15 mm |
| **KSR251G LFS** | 4.5 N | Silver | Normally open | 100,000 cycles | 0.50 ± 0.15 mm |
| **KSR223GNC LFG** | 2.0 N | Gold | Normally closed | 30,000 cycles | 0.30 ± 0.15 mm |
| **KSR221G NC LFS** | 2.25 N | Silver | Normally closed | 30,000 cycles | 0.30 ± 0.15 mm |

## KSS SERIES
### Subminiature SMT Side Actuated

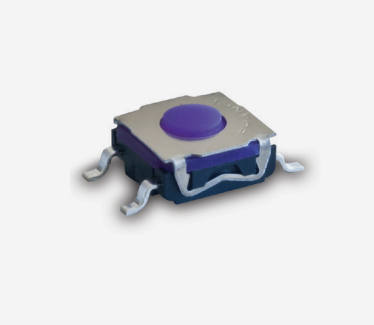
**Features / Benefits**

Low profile
3 actuation forces
IP40 sealed

**Typical Applications**

Mobile phone
Industrial electronics
Health diagnostic electronics

| PART NUMBER | Operating Force | Contact Material | Switch Function | Operating Life | Travel |
|---|---|---|---|---|---|
| **KSS221G LFS** | 2.0 ± 0.5 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.15 mm |
| **KSS231G LFS** | 2.5 ± 0.5 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.10 mm |
| **KSS241G LFS** | 4.0 ± 1 N | Silver | Normally open | 100,000 cycles | 0.30 ± 0.15 mm |



## KSE SERIES
### High Performance Sealed Tact Switches

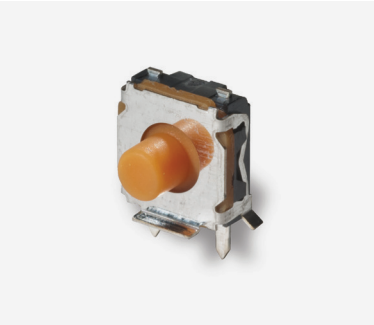
**Features / Benefits**

Low profile
IP67
Height 3.1 mm & 4.3 mm

**Typical Applications**

Smart meters
Home appliances / Consumer electronics
Industrial electronics
Telecommunications

| PART NUMBER | Operating Force | Operating Life | Travel |
|---|---|---|---|
| **KSEM31J LFS** | 1.5 ± 0.5 N | 300,000 cycles | 0.3 + 0.1/-0.2 mm |
| **KSEK43G LFS** | 2.25 ± 0.75 N | 300,000 cycles | 0.30 ± 0.2 mm |



## KSC4V2 SERIES
### Side Actuated Sealed Tact Switches

**Features / Benefits**

Full SMT compatible side actuated
Haptic adaptability
Pin in paste terminations
IP67

**Typical Applications**

Automotive
Industrial
Telecommunication networks
Network infrastructure and IT

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KSC441V2SPD LFS** | 3.5 ± 1.0 N | Silver | 300,000 cycles | 0.7 ± 0.2 mm |

Other options: height, force, travel, operating life available on request

## KSC SERIES
### Sealed Tact Switches for SMT

**Features / Benefits**

Full SMT compatible side actuated
Haptic adaptability
Pin in paste terminations
IP67

**Typical Applications**

Automotive
Industrial
Telecommunication networks
Network infrastructure and IT

| PART NUMBER | Operating Force (Min / Max) | Actuator Height | Operating Life | Travel |
|---|---|---|---|---|
| **KSC241J LFS** | 3.5 ± 0.9 N | 3.5 ± 0.2 mm | 300,000 cycles | 0.5 ± 0.2 mm |
| **KSC321J LFS** | 1.6 N | 3.47 ± 0.2 mm | 300,000 cycles | 0.2 +0.3 mm |
| **KSC441J 70SH LFS** | 4 ± 1 N | 5.2 ± 0.2 mm | 300,000 cycles | 0.75 ± 0.25 mm |
| **KSC441J ST2 LFS** | 3.4 ± 1 N | 5.2 ± 0.2 mm | 300,000 cycles | 0.35 ± 0.20 mm |
| **KSC641J LFS** | 3.4 ± 1 N | 7.7 ± 0.2 mm | 300,000 cycles | 0.4 ± 0.2 mm |
| **KSC841J OL LFS** | 3.4 ± 0.85 N | 4.9 ± 0.2 mm | 300,000 cycles | 0.4 ± 0.2 mm |
| **KSC941J LFS** | 3.4 ± 0.85 N | 7.7 ± 0.2 mm | 300.000 cycles | 0.4 ± 0.2 mm |

## KSC-DCT SERIES
### Dual Circuit Technology Tact Switches

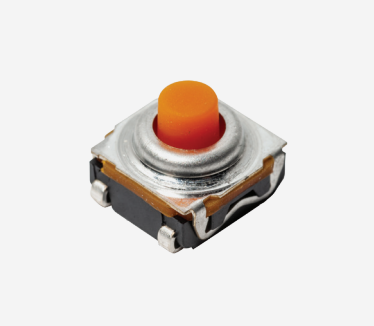
**Features / Benefits**

SPDT NC-NO function
Silicone actuator
J or G terminations
IP67

**Typical Applications**

Automotive
Medical equipment
Industrial electronics

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KSC441J DCT 70SH LFS** | 4.75 ± 1.25 N | Silver | 300,000 cycles | 0.85 + 0.35 / - 0.25 mm |
| **KSC441G DCT 70SH LFS** | 4.75 ± 1.25 N | Silver | 300,000 cycles | 0.85 + 0.35 / - 0.25 mm |



## KSC-PF SERIES

### Potting Friendly Tact Switches

**Features / Benefits**

Extended cage
Silicone actuator
J or G terminations
IP67

**Typical Applications**

Automotive
Medical equipment
Industrial electronics

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KSC421G 70SH LFS PF** | 1.8 ± 0.45 N | Silver | 300,000 cycles | 0.5 ± 0.25 mm |
| **KSC422J 70SH LFS PF** | 1.8 ± 0.45 N | Silver | 1,000,000 cycles | 0.5 ± 0.25 mm |
| **KSC441G 70SH LFS PF** | 4 ± 1 N | Silver | 300,000 cycles | 0.65 ± 0.25 mm |
| **KSC461J 70SH LFS PF** | 6.25 ± 1.75 N | Silver | 300,000 cycles | 0.75 ± 0.25 mm |
| **KSC471J 70SH LFS PF** | 4 ± 1 N | Silver | 300,000 cycles | 0.65 ± 0.25 mm |

## KSA / KSJ SERIES

### High Performance Sealed Tact Switches

**Features / Benefits**

Designed for automatic or manual insertion
Cambered terminals to ensure self retention
Large choice of caps

**Typical Applications**

Automotive
Industrial
Telecommunication networks

| PART NUMBER | Operating Force | Contact Material | Operating Life | Travel |
|---|---|---|---|---|
| **KSA0M411 LFTR** | 3 ± 0.75 N | Silver | 100,000 cycles | 0.6 ± 0.2 mm |
| **KSA0M211 LFTR** | 1.4 ± 0.4 N | Silver | 100,000 cycles | 0.5 ± 0.2 mm |
| **KSJ0M41180SH LFTR** | 3.3 ± 0.8 N | Silver | 100,000 cycles | 0.55 ± 0.25 mm |

## K8 SERIES

### Lighted SMT Tact Switches with Rugged LED Mounting Process

**Features / Benefits**

LED qualified for automotive applications
Various LED options
No light perturbation
Sound and haptic
Various climatic classes

**Typical Applications**

Automotive
Network equipment
Telecommunications
Medical equipment
Industrial controls

| PART NUMBER | Operating Force | Operating Life | Travel |
|---|---|---|---|
| **K8xx41G LFS*** | 4 N | 300,000 cycles | 0.45 ± 0.15 mm |

## K5AT SERIES
### Illuminated Tact Switches

**Features / Benefits**

High bright LEDs
Reduced space usage on board

**Typical Applications**

Network infrastructure, servers
Medical

| PART NUMBER | Operating Force | Contact Material | LED | Travel | Termination |
|---|---|---|---|---|---|
| **K5AT WH 43 G** | 4 N | Gold | White | 0.5 mm | SMT |
| **K5AT GA 43 G** | 4 N | Gold | Green | 0.5 mm | SMT |

## ITS SERIES
### Illuminated Pushbuttons

**Features / Benefits**

Vertical and right angle
Thru-hole and SMT models
Multiple caps and legends
Several LED colors and bi-color options

**Typical Applications**

Consumer electronics
Server / Storage
Medical devices
Test / Measurement / Instrumentation

| PART NUMBER | LED Color | Mounting Style / Termination | Operating Life | Operating Force |
|---|---|---|---|---|
| **ITS10FV1ST** | Red | Vertical thru-hole | 50,000 cycles | 160gf ± 50 gf |
| **ITS13FV2SR** | Red / Green | Vertical SMT gull wing | 50,000 cycles | 160gf ± 50 gf |
| **ITS50FV3SR** | White | Vertical SMT gull wing with J bend LED | 50,000 cycles | 160gf ± 50 gf |
| **ITS23FR1ST** | Yellow / Green | Right angle thru-hole | 50,000 cycles | 160gf ± 50 gf |
| **ITS40FR2ST** | Blue | Right angle thru-hole 2.5 mm leads | 50,000 cycles | 160gf ± 50 gf |

## K5V SERIES
### Illuminated Tact Switches

**Features / Benefits**

High bright LEDs
Reduced space usage on board
Excellent ergonomics

**Typical Applications**

Network infrastructure, servers
Automotive
Medical

| PART NUMBER | Operating Force | Contact Material | LED | Travel | Termination |
|---|---|---|---|---|---|
| **K5V 1 BU 43 T** | 4 N | Gold | Blue | 1.2 mm | PC thru-hole |
| **K5V 1 BA 43 T P3** | 4 N | Gold | Blue-Amber | 1.2 mm | PC thru-hole |
| **K5V 1 YG 43 T** | 4 N | Gold | Yellow-Green | 1.2 mm | PC thru-hole |
| **K5V 5 WH 43 G** | 4 N | Gold | White | 1.2 mm | SMT |
| **K5V 4 BU 43 G P3** | 4 N | Gold | Blue | 1.2 mm | SMT |

## KT SERIES
### SMT Tact Switches

**Features / Benefits**

Rubber or hard plastic actuator
Press fit or snap fit caps
Easy to pick & place with top plate tab

**Typical Applications**

Telecommunications
Computer products
Instrumentation

| PART NUMBER | Actuator | Orientation | Mounting Bracket | Contact Material | Termination |
|---|---|---|---|---|---|
| **KT11 B2 SAM 34 LFS** | Soft 2.24 mm | Side actuated | | Silver | SMT |
| **KT11 P3 SA1M 34 LFS** | Hard 1.12 mm | Side actuated | Front solder pad | Silver | SMT |
| **KT11 P4 SA2M 35 LFG** | Hard 3.96 mm | Side actuated | Solder pad and pick & place | Gold | SMT |
| **KT11 B0 SA3M 34 LFS** | Soft flush | Side actuated | Pick and place tab | Silver | SMT |
| **KT11 P3 SM 34 LFS** | Hard 1.12 mm | Top actuated | Gull wing | Silver | SMT |

## PTS125 SERIES
### Miniature SMT Top Actuated

**Features / Benefits**

12 x 12 mm
Four different heights
THT and SMT termination
Snap fit actuator option

**Typical Applications**

Computer products
Industrial
Consumer products
Instrumentation

| PART NUMBER | Total Height | Operating Force | Operating Life | Termination |
|---|---|---|---|---|
| **PTS125SJM73 SMTR-2 LFS** | 7.3 mm | 180 gf | 200,000 cycles | SMT |
| **PTS125SK43-2 LFS** | 4.3 mm | 250 gf | 200,000 cycles | THT |

## PTS526 SERIES
### Microminiature SMT Top Actuated

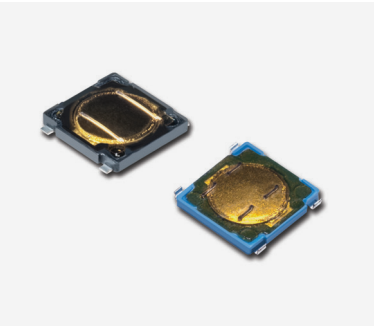
**Features / Benefits**

5.2 x 5.2 mm footprint
Variable thickness
Commercial grade

**Typical Applications**

IoT devices
Home automation
Remote controls

| PART NUMBER | Operating Force | Total Height | Operating Life |
|---|---|---|---|
| **PTS526 SM 08 SMTR2 LFS** | 160 gf | 0.8 mm | 500,000 cycles |
| **PTS526 SK G 15J SMTR2 LFS** | 250 gf | 1.5 mm | 200,000 cycles |
| **PTS526 SP 20 SMTR2 LFS** | 320 gf | 2.0 mm | 100,000 cycles |



## PTS530 SERIES
### Ultra Low Profile SMT Top Actuated

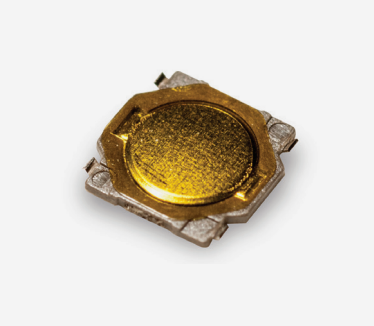
**Features / Benefits**

4.5 x 4.5 mm footprint
0.55 mm thickness
High number of cycles
Symbol line identification

**Typical Applications**

MP3 accessories
Bluetooth headset
Remote controls
Garage door opener

| PART NUMBER | Termination Style | Operating Force | Operating Life | Travel |
|---|---|---|---|---|
| **PTS530GM055SMTRLFS** | Gull wing | 160 ± 30 gf | 1,000,000 cycles | 0.2 mm - 0.1 /+ 0.15 mm |
| **PTS530GK055SMTRLFS** | Gull wing | 260 ± 30 gf | 200,000 cycles | 0.2 mm - 0.1 /+ 0.15 mm |



## PTS540 SERIES
### Microminiature SMT Top Actuated

**Features / Benefits**

3.7 x 3.7 mm footprint
High number of cycles
0.35 mm thickness

**Typical Applications**

MP3 accessories
Bluetooth headset
Remote controls

| PART NUMBER | Total Height | Operating Force | Operating Life | Travel |
|---|---|---|---|---|
| **PTS540JM035SMTRLFS** | 0.35 mm | 160 ± 50 gf | 500,000 cycles | 0.15 +/- 0.1 mm |
| **PTS540JK035SMTRLFS** | 0.35 mm | 230 ± 50 gf | 300,000 cycles | 0.15 +/- 0.1 mm |

## PTS636 SERIES
### 6.0 x 3.5 Top Actuated

**Features / Benefits**

6.0 x 3.5 mm footprint
Multiple heights
THT or SMT type
Commercial grade

**Typical Applications**

IoT devices
Home automation
Remote controls

| PART NUMBER | Total Height | Lead shape | Operating Force | Operating Life | Travel |
|---|---|---|---|---|---|
| **PTS636 SK25 SMTR LFS** | 2.5 mm | Gull wing | 250 ± 50 gf | 100,000 cycles | 0.25 mm ± 0.1 mm |
| **PTS636 SM43J SMTR LFS** | 4.3 mm | J lead | 180 ± 50 gf | 50,000 cycles | 0.30 mm ± 0.1 mm |
| **PTS636 SL50 LFS** | 5.0 mm | THT | 130 ± 50 gf | 50,000 cycles | 0.30 mm ± 0.1 mm |

## PTS641 SERIES
### Miniature SMT Top Actuated

**Features / Benefits**

6.3 x 6.3 mm footprint
Multiple heights
Ground pin option

**Typical Applications**

Metering
White goods
Home and garden equipment

| PART NUMBER | Total Height | Operating Force | Operating Life | Ground Pin |
|---|---|---|---|---|
| **PTS641SM31SMTR2LFS** | 3.1 mm | 160 gf | 100,000 cycles | No |
| **PTS641TK25SMTR2LFS** | 2.5 mm | 250 gf | 100,000 cycles | No |

## PTS645 SERIES

### Miniature SMT / THT Top / Side Actuated

**Features / Benefits**

Compact size 6 x 6 mm
Variety of actuator lengths
Choice of actuator force

**Typical Applications**

Computer products
Industrial
Consumer products
Instrumentation

| PART NUMBER | Total Height | Operating Force | Operating Life | Termination |
|---|---|---|---|---|
| **PTS645SL43SMTR92 LFS** | 4.3 mm | 130 gf | 100,000 cycles | SMT |
| **PTS645VH58-2 LFS** | 6.2 mm | 200 gf | 100,000 cycles | Vertical |

## PTS647 SERIES

### 4.5 mm Tact Switches

**Features / Benefits**

Compact size 4.5 x 4.5 mm
SMT terminals
Different actuator heights
Choice of actuation forces

**Typical Applications**

Consumer
Industrial control panels
Computer products

| PART NUMBER | Total Height | Operating Force | Operating Life | Travel |
|---|---|---|---|---|
| **PTS647SN50SMTR2 LFS** | 5.0 mm | 100 gf | 100,000 cycles | 0.25 ± 0.15 mm |

## PTS815 SERIES

### Microminiature SMT Top Actuated

**Features / Benefits**

4.2 x 3.2 mm footprint

2.5 mm thickness

**Commercial grade**

**Typical Applications**

IoT devices

Home automation

Remote controls

| PART NUMBER | Actuator Color | Operating Force | Operating Life |
|---|---|---|---|
| **PTS815 SJM 250 SMTR LFS** | White | 180 ± 50 gf | 100,000 cycles |
| **PTS815 SJK 250 SMTR LFS** | White | 250 ± 50 gf | 50,000 cycles |
| **PTS815 SJG 250 SMTR LFS** | Black | 400 ± 100 gf | 100,000 cycles |

## PTS820 SERIES
### Microminiature SMT Top Actuated

**Features / Benefits**

3.9 x 2.9 mm footprint
Three different heights
High number of cycles
Reduced footprint

**Typical Applications**

Control panels
Nomad devices
Remote controls
Keyless entry system

| PART NUMBER | Total Height | Pegs | Operating Force | Operating Life |
|---|---|---|---|---|
| **PTS820J25MSMTRLFS** | 2.5 mm | No | 160 ± 50 gf | 200,000 cycles |
| **PTS820J25KSMTRLFS** | 2.5 mm | No | 250 ± 50 gf | 100,000 cycles |

## PTS840 SERIES
### Microminiature SMT Side Actuated

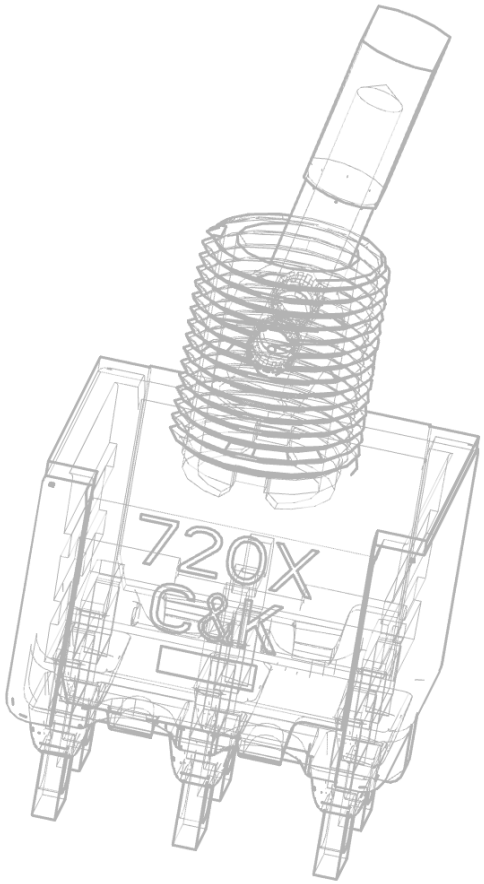
**Features / Benefits**

3.5 x 3.55 mm footprint
Front PIP leads option for strong shear resistance
ESD pin option

**Typical Applications**

Nomad devices
Remote controls
Personal health diagnostics
Consumer electronics

| PART NUMBER | Operating Force | Operating Life | Ground | Termination Style | Pegs |
|---|---|---|---|---|---|
| **PTS840PMSMTR LFS** | 160 gf -40/+70 gf | 100,000 cycles | No | Pin in paste | No |
| **PTS840GMPSMTR LFS** | 160 gf -40/+70 gf | 100,000 cycles | No | Gull wing | Yes |
| **PTS840GKPSMTR LFS** | 220 gf -70/+80 gf | 100,000 cycles | No | Gull wing | Yes |
| **PTS840ESDPMSMTR LFS** | 160 gf -40/+70 gf | 100,000 cycles | Yes | Pin in paste | No |



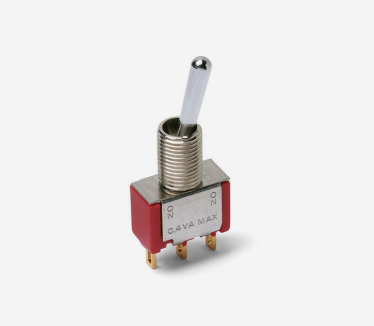

PRODUCT SELECTION GUIDE

# Toggle Switches

A toggle switch is an electrical switch that opens and closes an electrical circuit by moving a lever back and forth. C&K's large selection of toggle switches includes low voltage miniature, subminiature, and ultra-miniature models, on up to high power 10A versions. With printed circuit board, SMT and bushing options, C&K toggle switches feature vertical, right angle and vertical right angle mounting brackets.

NEW

| SERIES | 7000 | MILITARY | E | ET | T | GT | 9000 | PT |
|---|---|---|---|---|---|---|---|---|
| **Switch Type** | Miniature | Miniature | Miniature | Sub-miniature | Sub-miniature | Ultraminiature | Power | Sealed power |
| **Poles / Throws** | SPDT / DPDT / 3PDT / 4PDT | SPDT / DPDT | SPDT / DPDT / 3PDT | SPST / SPDT / DPDT | SPST / SPDT / DPDT | SPST / SPDT / DPST / DPDT | DPDT | SPST / SPDT / DPST / DPDT |
| **Maximum Current: Silver / Gold** | 5 Amps | 5 Amps | 7.5 Amps<br>5 Amps | 3 Amps<br>2 Amps | 3 Amps<br>2 Amps | 0.4 VA | 10 Amps | 25 Amps |
| **Process Sealed** | | | • | • | | • | | IP68 |
| PCB Mount Options | | | | | | | | |
| **Vertical** | • | • | • | • | • | • | • | |
| **Right Angle** | • | • | • | • | • | • | | |
| **Vertical Right Angle** | • | • | • | • | • | • | • | |
| Surface Mount Options | | | | | | | | |
| **Vertical** | | | | | | • | | |
| **Right Angle** | | | | • | | • | | |
| Panel Mount Options | | | | | | | | |
| **Rear Mount** | • | • | • | | • | | • | • |
| Terminations | | | | | | | | |
| **PCB Thru-hole** | • | • | • | • | • | • | • | |
| **Wire Wrap** | • | | • | • | • | | | |
| **Solder Lug** | • | • | • | | • | | • | • |
| **Quick Connect** | • | | • | | | | • | • |
| **Screw Lug** | | | | | | | | • |
| Other Available Options | | | | | | | | |
| **Support Brackets** | • | • | • | • | • | • | • | |
| **Snap-in Retention** | • | | • | • | | | | |
| **ESD Protection** | • | | • | • | • | | | |
| **Tape & Reel** | | | | • | | • | | |
| Bushing Options | | | | | | | | |
| **10-48** | | | | | • | | | |
| **1/4-40** | • | • | • | | • | | • | |
| **15/32** | • | | | | | | • | • |
| **M6P 0.75 (Metric)** | • | | | | | | | |



## 7000 SERIES
## Miniature Toggle Switches

### Features / Benefits

Multi-pole and multi-position
Wide variety of actuator and termination options
Epoxy terminal-seal compatible with bottom wash cleaning

**Contact Rating:**
Gold 0.4 VA max. @ 20 V AC or DC max.
Silver 5 AMPS @ 120 V AC or 28 V DC, 2 AMPS @ 250 V AC AC

### Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|---|
| **7101SYZQE** | SPDT On-None-On | Round, .420" high | .350" high, threaded keyway | Solder lug | Silver | 100,000 cycles |
| **7201SYZQE** | DPDT On-None-On | Round, .420" high | .350" high, threaded keyway | Solder lug | Silver | 100,000 cycles |
| **7103SYZQE** | SPDT On-Off-On | Round, .420" high | .350" high, threaded keyway | Solder lug | Silver | 40,000 cycles |
| **7101SYCQE** | SPDT On-None-On | Round, .420" high | .350" high, threaded keyway | PC thru-hole | Silver | 100,000 cycles |
| **7101P3YZQE** | SPDT On-None-On | Flatted, anti-rotation, .450" high | .350" high, threaded keyway | Solder lug | Silver | 100,000 cycles |

## E SERIES
## Sealed Miniature Toggle Switches

### Features / Benefits

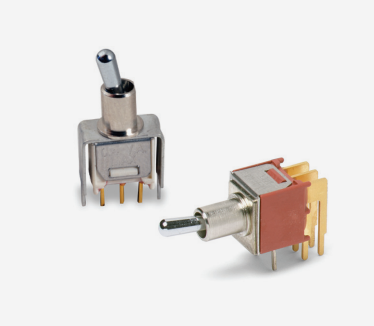
Sealed against solder and cleaning process contaminants
UL 94V-0 Nylon case and bushing
ESD protection available

**Contact Rating:**
Gold 0.4 VA max. @ 20 V AC or DC max
Gold over silver 0.4 VA MAX @20 V AC or DC MAX.,
7.5 AMPS @125 V AC or 28 V DC, 3 AMPS @ 250 V AC DC
Silver 7.5 AMPS @ 125 V AC or 28 V DC, 3 AMPS @ 250 V AC

### Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBERS | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|---|
| **E101MD1ABE** | SPDT, On-None-On | .300" high | .250" high, unthreaded | Right angle, PC thru-hole | Gold | 40,000 cycles |
| **E105SD1CBE** | SPDT, Mom.-Off-Mom. | .500" high | .250" high, unthreaded | PC thru-hole | Gold | 40,000 cycles |
| **E101MD1AV2GE** | SPDT, On-None-On | .300" high | .250" high, unthreaded | Vertical right angle, PC thru-hole | Gold over silver | 40,000 cycles |
| **E101MD1AQE** | SPDT, On-None-On | .300" high | .250" high, unthreaded | Right angle, PC thru-hole | Silver | 40,000 cycles |
| **E103MD1ABE** | SPDT, On-Off-On | .300" high | .250" high, unthreaded | Right angle, PC thru-hole | Gold | 40,000 cycles |



## T SERIES

### Subminiature Toggle Switches

#### Features / Benefits

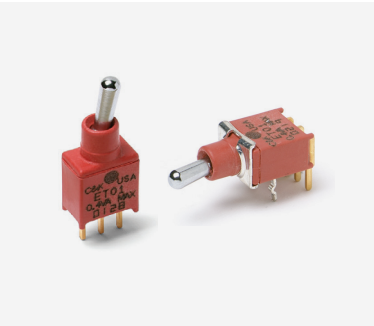
Compact size—small footprint
Single and double pole models
PC and panel mount options available

**Contact Rating:**
Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
Silver options up to 3 AMPS @ 120 V AC or 28 V DC

#### Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|---|
| **T102SHZQE** | SPDT Off-None-On | .370" high | .220" high, threaded, flat | Solder lug | Silver | 30,000 cycles |
| **T101MH9ABE** | SPDT On-None-On | .210" high | .220" high, unthreaded, flat | Right angle, PC thru-hole | Gold | 60,000 cycles |
| **T105LH9ABE** | SPDT Mom.-Off-Mom. | .290" high | .220" high, unthreaded, flat | Right angle, PC thru-hole | Gold | 30,000 cycles |
| **T101MH9AVBE** | SPDT On-None-On | .210" high | .220" high, unthreaded, flat | Vertical right angle, PC thru-hole | Gold | 60,000 cycles |
| **T211MH9V3BE** | DPDT On-On-On. | .210" high | .220" high, unthreaded, flat | Vertical mount V-bracket | Gold | 30,000 cycles |



## ET SERIES

### Sealed Subminiature Toggle Switches

#### Features / Benefits

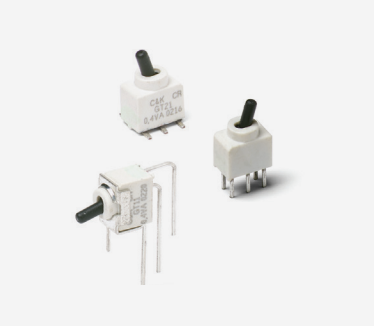
Sealed against solder and cleaning process contaminants
ESD protection available
Thru-hole and surface mount models
Compact size and small footprint save PCB space

**Contact Rating:**
Gold 0.4 VA MAX. @ 20 V AC or DC MAX.
Silver 3 AMPS @ 120 V AC or 28 V DC

#### Typical Applications

Telecommunications
Instrumentation
Medical equipment

| PART NUMBER | Function | Actuator | Bushing | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|---|
| **ET01MD1SAPE** | SPDT, On-None-On | .240" high | .177" high, unthreaded | Right angle, surface mount | Gold, matte tin | 60,000 cycles |
| **ET01MD1CBE** | SPDT, On-None-On | .240" high | .177" high, unthreaded | PC thru-hole | Gold | 60,000 cycles |
| **ET01MD1ABE** | SPDT, On-None-On | .240" high | .177" high, unthreaded | Right angle, PC thru-hole | Gold | 60,000 cycles |
| **ET08LD1CBE** | SPDT, On-None-Mom. | .320" high | .177" high, unthreaded | PC thru-hole | Gold | 30,000 cycles |
| **ET21MD1AQE** | DPDT, On-None-On | .240" high | .177" high, unthreaded | Right angle, PC thru-hole | Silver | 60,000 cycles |



## GT SERIES
### Sealed Subminiature Toggle Switches

#### Features / Benefits

Sealed against solder and cleaning process contaminants
Ultraminiature size, smallest footprint available
Thru-hole and surface mount models
High temperature materials (UL 94V-0)
Contact material gold over nickel

#### Typical Applications

Telecommunications
Small instrumentation

| PART NUMBER | Function | Mounting Style / Termination | Actuation | Contact Rating | Electrical Life |
|---|---|---|---|---|---|
| **GT11MSABETR** | SPDT, On-None-On | Right angle, surface mount | Horizontal | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |
| **GT11MCBE** | SPDT, On-None-On | PC thru-hole | | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |
| **GT23MAVBE** | DPDT, On-Off-On | Right angle, PC thru-hole | Vertical | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |
| **GT11MSCBETR** | SPDT, On-None-On | Surface mount | Horizontal | 0.4 VA max. @ 20 V AC or DC max. | 40,000 cycles |

## PT SERIES
### Sealed Power Toggle Switches

#### Features / Benefits

IP66 / IP68 versatile rating to withstand harsh outdoor environments, intense, wet weather, wind blown rain, dust, dirt

UL 61058-1 certified has global acceptance with no additional testing needed

Integrated panel seal for extra protection

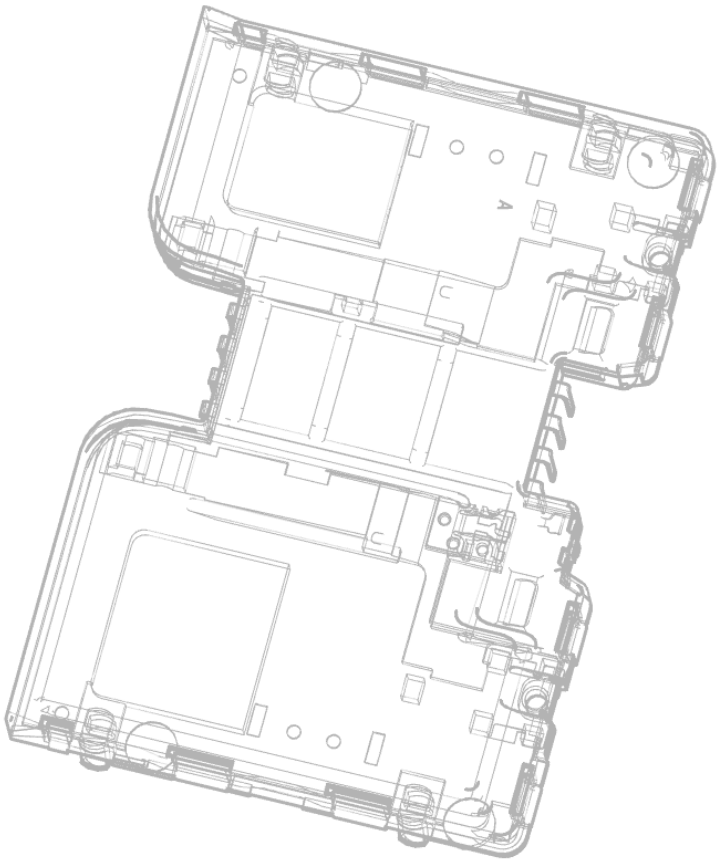
Superior oil and fuel resistance

High strength, heat resistant housing designed for demanding applications subjected to vibration and harsh conditions

#### Typical Applications

Off-road, construction / agricultural vehicles
Material handling equipment
Articulating, scissor and bucket lift controls
Outdoor industrial equipment
Lift gate controls

| PART NUMBER | Function | Actuator | Mounting Style / Termination | Contact Material | Electrical Life |
|---|---|---|---|---|---|
| **PT101SSQ** | SP, On-None-On | Standard | Screw terminal | Silver | 10,000 cycles |
| **PT103SQQ** | SP, On-Off-On | Standard | Quick connect .250” | Silver | 10,000 cycles |
| **PT201SZQ** | DP, On-None-On | Standard | Solder terminal | Silver | 10,000 cycles |
| **PT202SSQ** | DP, On-None-Off | Standard | Screw terminal | Silver | 10,000 cycles |
| **PT208SSQ** | DP, On-None-Mom | Standard | Screw terminal | Silver | 10,000 cycles |



PRODUCT SELECTION GUIDE

# Smart Card Connectors

C&K's smart card connectors are EMV and PCI compliant, and offer full-size card acceptance as well as SIM/SAM cards. All smart card connectors are compatible with lead free SMT reflow soldering processes. Full-size smart card connectors feature up to 500,000 cycles lifetime, while SIM/SAM models range from 30,000 to 50,000 cycles.

## CCM01 SERIES
### Full Size Card Connectors

**Features / Benefits**

Operating life up to 500,000 cycles
Up to 40 N card insertion force
EMV
Card detection sealed switch

**Typical Applications**

Transaction
Identification
POS

| PART NUMBER | Number of Contacts | Termination | Operating Life | Card Insertion Force |
|---|---|---|---|---|
| **CCM01-2327 LFT** | 8 | SMT | 600,000 cycles | 40 N |

## CCM01 MK5 SERIES
### Full Size Card Connectors

**Features / Benefits**

Operating life 500,000 cycles
Low profile 4 mm and 3.2 mm height
Card detection sealed switch

**Typical Applications**

Transaction
Identification
POS
MPOS

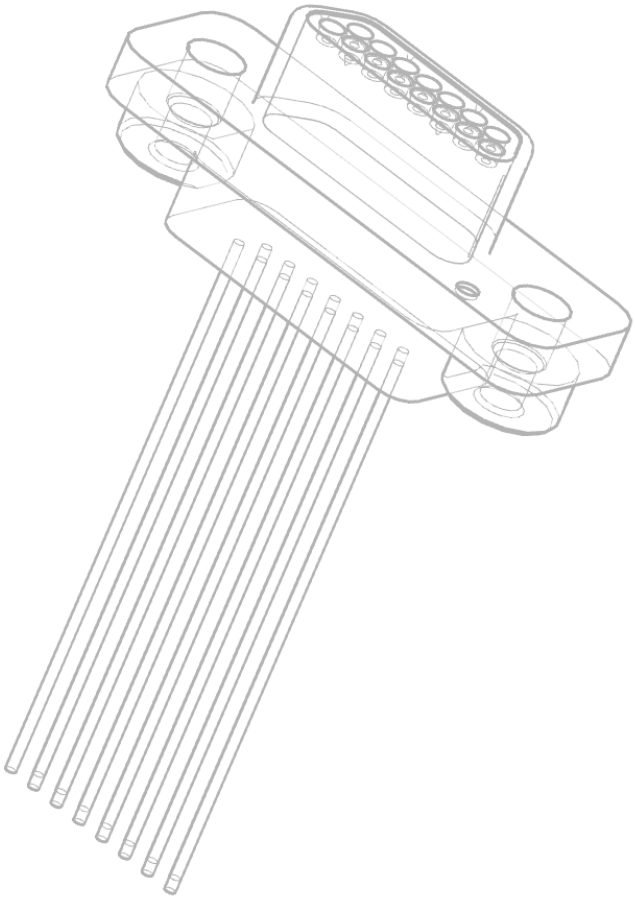
| PART NUMBER | Cover | Number of Contacts | Termination | Operating life |
|---|---|---|---|---|
| **CCM01-2563 LFT** | Plastic | 8 | SMT | 500,000 cycles |
| **CCM01-2565 LFT** | Plastic | 8 | SMT | 500,000 cycles |
| **CCM01-2663 LFT** | Metal | 8 | SMT | 500,000 cycles |
| **CCM01-2664 LFT** | Metal | 8 | SMT | 500,000 cycles |

## CCM03 SERIES
### SIM / SAM Card Connectors

**Features / Benefits**

SIM / SAM card acceptance
Hinged and fixed covers
Compatible with pick and place and lead free soldering
6 or 8 contacts

| PART NUMBER | Number of Contacts | Termination | Contact Plating | Cover | Card Presence Switch | Operating Life |
|---|---|---|---|---|---|---|
| **CCM03-3003 LFT** | 8 | SMT | Inlay | Hinged | Without | 10,000 cycles |
| **CCM03-3009 LFT** | 6 | SMT | Gold | Hinged | Without | 10,000 cycles |
| **CCM03-3013 LFT** | 6 | SMT | Gold | Hinged | With | 10,000 cycles |
| **CCM03-3754 LFT** | 6 | SMT | Inlay | Fixed | With | 10,000 cycles |



PRODUCT SELECTION GUIDE

# High Rel Connectors

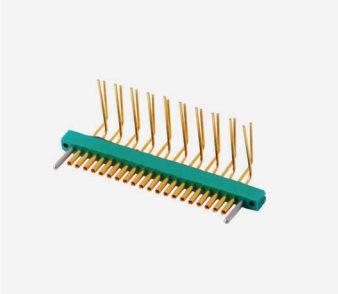
C&K's D-Sub series of connectors are extremely reliable and high-performing, helping customers design the next generation of military, industrial, aerospace and space applications. The D-Sub series of connectors are also highly configurable and available in a variety of sizes and formats. They can handle the harshest of environments, making them perfect for satellites, payload harnesses and launchers.

### D-SUBMINIATURE CONNECTORS

C&K's full line of D*M and D*MA Series D-subminiature connectors are employed in satellites and launchers, and meet strict tests for outgassing and residual magnetism. Offered in a variety of contact layouts (including with coax, power or crimp contacts) and shell sizes, the D-sub connectors are available with non-removable and removable contacts, as well as in filtered, pin and socket, and interface configurations.

### MICRO-D CONNECTORS

C&K's full line of MDM Series microminiature connectors are frequently employed to connect various modules within satellite systems. The MDM connectors utilize a proven Micropin™ contact system and are offered in a variety of contact layouts. To date, C&K is the only company that offers ESA-qualified rectangular micro-d microminiature connectors.



### SINGLE IN-LINE MICROMINIATURE CONNECTORS

Utilized in satellites as a connection between PCBs, C&K's MTB1 micro-strip single in-line microminiature connectors also employ a high performance Micropin™ contact system and meet stringent requirements for outgassing and residual magnetism. The connectors are suitable for board-to-board, board-to-cable, and cable-to-cable applications. To date, C&K is the only company that offers ESA-qualified micro-strip single in-line microminiature connectors.

### RECTANGULAR MICROMINIATURE CONNECTORS WITH REMOVABLE CONTACTS

Employed in various space equipment applications, C&K's MDMA rectangular microminiature feature removable crimp contacts compliant with ESA/ESCC specifications, along with the highly reliable Micropin™ twist pin contact system. The MDMA connectors are guaranteed to meet 'zero defect' criteria.

### SPACE SPLICE CONTACTS

A compact, easy-to-use alternative to manual splicing, the one-way Space Splice high-reliability connectors deliver high radiation and temperature resistance, low residual magnetism, and low degassing, and — manufactured in accordance with ESA/ESCC specifications — meet the highest quality requirements for satellite, payload, and other harsh environment applications, including: laboratory, avionics, military, and medical equipment. An EPPL2 (ESA/ESCC European Preferred Part List Part 2) product, the series accepts the most popular cable gauges (AWG 20 – AWG 30) and employs removable, D*MA crimpable contact technology that allows for both manual and guiding-tool-assisted insertion.

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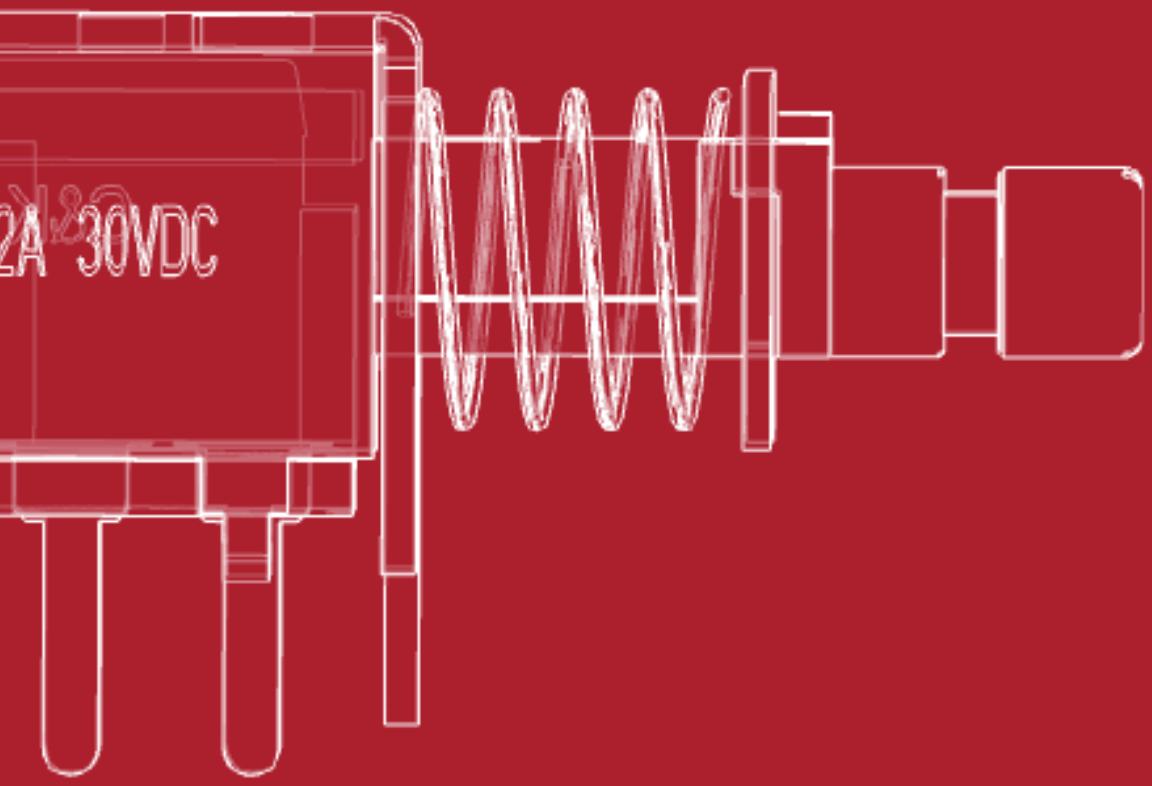


**AMERICAS**
+1.617.969.3700

**ASIA**
+852.3713.5288

**EUROPE**
+33.1.60.24.51.51

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