



# Product Guide

To The Next  
Generation

**NIDEC COPAL ELECTRONICS CORP.**

# Switches

**S** : SMD type available

## Rotary coded switches

**S**



**S-4000**  
 ● Code: BCD  
 ● Contact rating:  
 Non-switching 100mA 50VDC  
 Switching 100mA 2.4VDC  
 ● Contact resistance 100mΩ max.  
 ● Dimensions: □4.8×2.6mm

**S**



**SA-7000**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100mA 50VDC  
 Switching 100mA 5VDC  
 ● Contact resistance 100mΩ max.  
 ● Dimensions: □7.2×3mm

**S**



**S-7000** **WASHABLE**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100mA 50VDC  
 Switching 100mA 5VDC  
 ● Contact resistance 100mΩ max.  
 ● Dimensions: □7.2×2.9mm

**S**



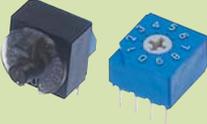
**SH-7000** **WASHABLE**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100mA 50VDC  
 Switching 100mA 5VDC  
 ● Contact resistance 100 mΩ max.  
 ● Dimensions: 7.3×7.1×3.7~3.75mm  
 ● Gray code output available

**S**



**DRS/DRR/SMR/SMRR** **WASHABLE**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100mA 50VDC  
 Switching 30 mA 15VDC  
 ● Dimensions: □7.5×4.1mm

**S**



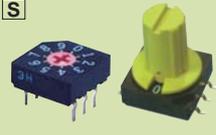
**S-1000A/2000A** **WASHABLE**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 5VDC  
 ● Dimensions: □10×7mm

**S**



**SC-1000/2000** **WASHABLE**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100 mA 50VDC,  
 Switching 100mA 5VDC  
 ● Terminal pin layout 4-1  
 ● Dimensions: □10×3.9mm

**S**



**SD-1000/2000**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100 mA 50VDC,  
 Switching 100mA 5VDC  
 ● Terminal pin layout 3-3  
 ● Heat resism knob type available (MTO)  
 ● Dimensions: □10×3.9mm

**S**



**SA-5000** **WASHABLE**  
 ● Code: BCD, BCH  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 5VDC  
 ● Integrated circuit: Pull-up  
 resistors, diodes  
 ● Dimensions: □11×9.5mm

**S**



**S-8000** **WASHABLE**  
 ● Code: BCO  
 ● SCSi compatible  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 5VDC  
 ● Dimensions: □7.2×3.9mm

**S**



**RD** **WASHABLE**  
 ● Code: Binary code  
 ● Contact rating:  
 Switching 1VA (1A 30VDC max.)  
 ● Dimensions: 17.8×12×17.8mm

## Dip slide switches

**S**



**CVS(1mm pitch)**  
 ● No. of bits: 1,2,3,4,8 bits  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 200mΩ max.  
 ● Dimensions: 4.7×2~9×1.45mm

**S**



**CHS(Half pitch)** **WASHABLE**  
 ● No. of bits: 1, 2, 4, 6, 8, 10 bits  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 50mΩ max.  
 ● Dimensions: 5.4×2.5~14.3×2.5mm

**S**



**CHP(Half pitch)**  
 ● No. of bits: 2, 4, 8 bits  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 50mΩ max.  
 ● Dimensions: 5.9×4.6~12.2×4.6mm

**S**



**CFS(Full pitch)** **WASHABLE**  
 ● No. of bits: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 bits  
 ● Contact rating:  
 Non-switching DC50V 100mA,  
 Switching DC6V 100mA, DC24V 25mA  
 ● Contact resistance: 50mΩ max.  
 ● Dimensions: 6.4×3.95~9.9×4.5mm

**S**



**CFP(Full pitch)**  
 ● No. of bits: 2, 3, 4, 5, 6, 8, 10bits  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 50mΩ max.  
 ● Dimensions: 8.6×7.5~22.8×6.7mm

**S**



**CYP(Full pitch, Low profile)** **WASHABLE**  
 ● No. of bits: 2, 4, 6, 8, 10 bits  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 100mΩ max.  
 ● Dimensions: 6×6.48~26.8×5mm

**S**



**CES(Full pitch, Tall profile)**  
 ● No. of bits: 2, 4, 6, 8 bits  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 50mΩ max.  
 ● Dimensions: 10×7.66~22.9×10mm

## Slide switches

**S**



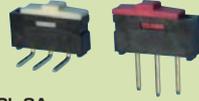
**CJS** **WASHABLE**  
 ● Ideal for replacing jumper pins  
 ● Circuit structure: SPDT  
 (with neutral detent type available)  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 70mΩ max.  
 ● Dimensions: 2.5×5.4~6×2.5mm

**S**



**CAS** **WASHABLE**  
 ● Ideal for replacing jumper pins  
 ● Circuit structure: SPDT  
 SPDT/2PDT/Dual SPDT  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 6VDC, 25mA 24VDC  
 ● Contact resistance: 50mΩ max.  
 ● Dimensions: 2.5~3.9×5.4×2.5mm

**S**



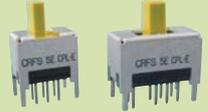
**CL-SA**  
 ● Ideal for replacing jumper pins  
 ● Continuous mountable with 2.54 mm pitch  
 ● Circuit structure: SPDT  
 ● Contact rating:  
 Non-switching 500mA 50VDC,  
 Switching 500mA 12VDC  
 ● Contact resistance: 22mΩ max.  
 ● Mounting Type PC, PC-R/A  
 ● Dimensions: 2.54×10×4.5mm

**S**



**CL-SB**  
 ● Wide variety 48 types, silver/gold contact  
 ● Circuit structure:  
 SPDT/SP3T/2PDT/2P3T  
 ● Contact rating: Non-switching  
 200mA 50VDC, Switching 200mA 12VDC  
 ● Contact resistance:  
 Silver 50mΩ max. Gold 70mΩ max.  
 ● Dimensions: 3.5×8.5~12×3.5mm

**S**



**CRFS**  
 ● High frequency: DC ~1.0GHz  
 ● Circuit structure: 2PDT/2P3T  
 ● Contact rating:  
 Non-switching 100mA DC50V,  
 Switching 100mA 12VDC  
 ● Contact resistance: 70mΩ max.  
 ● Dimensions: 6~6.5×10~13.8×8.5mm

**S**



**CMS**  
 ● Circuit structure:  
 2PDT/2P3T/2P4T/4PDT  
 ● Contact rating:  
 Non-switching 100mA 50VDC,  
 Switching 100mA 12VDC  
 ● Contact resistance: 70mΩ max.  
 ● Dimensions: 5×10.8~17.8×3.5~4.7mm

**S**



**CUS**  
 ● Circuit structure:  
 SPDT/SP3T/2PDT/SP4T  
 ● Contact rating:  
 Non-switching 100mA DC50V  
 Switching 300mA 4VDC  
 ● Contact resistance 70mΩ max.  
 ● Low-profile of 1.4mm  
 ● Dimensions: 2.6~4.1×6.7~11.3×2mm

**S**



**CSS**  
 ● Circuit structure: SPDT/SP3T  
 ● Contact rating:  
 Non-switching 100mA 50VDC  
 Switching 100mA 12VDC  
 ● Contact resistance 70mΩ max.  
 ● Low-profile of 2.0mm  
 ● Self-return type available  
 ● Dimensions: 3.8×8.5~12.5×2mm

**S**



**MHS**  
 ● Circuit structure:  
 SPDT/SP3T/2PDT/2P3T/4P2T  
 ● Contact rating: 200mA 12VDC  
 ● Switching function  
 On-On-On/On-On  
 ● Low-profile of 3.5mm  
 ● Dimensions: 3.5×8.6~14×3.5mm

**S**



**MFS**  
 ● Circuit structure:  
 SPDT/SP3T/2PDT/2P3T/4P4T  
 ● Contact resistance: 20~50mΩ max.  
 ● Switching function  
 On-On-On/On-On  
 ● Shorting/Non-shortng  
 ● Wide variety

## Slide switches



### MCS

- Circuit structure: SPDT/SP3T/2PDT/2P3T 4P2T/6P2T/4P3T/4P4T
- Switching function: On-On/On/On/On/On-Off-On/On-On/On-On
- Shorting/Non-shorting
- Wide variety



### MCS-N

- Circuit structure: 2PDT/4P2T
- Contact rating: Silver: Switching 0.2A 30VDC Gold: 0.4VA (50mA 30VDC max.)
- Contact resistance: Silver 30mΩ max. Gold 50mΩ max.
- Switching function: On-On
- Dimensions: 6.6×11.2~16.2×5mm



### ASE

**WASHABLE**

- High reliability by twin-contact clip
- Circuit structure: SPDT, 2PDT
- Contact rating: Switching 50mA 48VAC/DC
- Contact material: gold
- UL approved
- Dimensions: 5×9.5×8mm



### AS

- High reliability by twin-contact clip
- Circuit structure: SPDT, 2PDT
- Contact rating: Switching 50mA 48VAC/DC
- Contact material: gold
- Dimensions: 5×9.5×8mm



### 8SS

- High reliable power supply switch
- Circuit structure: SPDT, 2PDT
- Contacts material: Silver/Gold(MTO)
- Contact rating: Switching 6A 125VAC 3A 250VAC, 4A 30VDC/ 25mA 20VDC
- For panel mounting or PCB
- UL approved
- Dimensions: 7.9~12.9×13×8.5mm



### HSS

- Circuit structure: SPST/SPDT/2PST/2PDT
- Contact rating: Switching 12A 125VAC, 6A 250VAC (1 pole) 8A 125VAC, 5A 250VAC (2 poles)
- For panel mounting
- Dimensions: 15×21×14mm



### S

- Circuit structure: 2PDT
- Contact rating: 8A 125VAC, 4A 250VAC
- Switching function: On-On
- UL approved
- Dimensions: 14×20×10mm



### SS

- Circuit structure: SPDT
- Contact rating: 8A 125VAC / 10A 125VAC / 6A 250VAC
- Switching function: Off-On/On-On/On-Off-On
- Dimensions: 16×29×22mm



### ES

- Circuit structure: SPST/SPDT/2PDT
- Contact rating: 25A 125VAC / 25A/12A 250VAC, 15A 125VAC / 15A/7A 250VAC
- For panel mounting
- Dimensions: 16×28.8×15.8mm 19.3×33×19.9mm



### SS220K-23

- High inrush: 70A
- Circuit structure: 2PST
- Contact rating: 20A 250VAC
- For built-in use (ex. Electronic tools)
- Melting protection structure
- Dimensions: 14×27.5×19.8mm

## Rotary selector switches

**S**



### CS-32

**WASHABLE**

- Circuit structure: SP2T
- Contact rating: Non-switching 0.5VA Switching 100mA 16VDC
- Contact resistance: 2Ω max.
- Dimensions: 3.4×3.4×2mm

**S**



### CS-4

**WASHABLE**

- Circuit structure: SPDT/SP3T/2PDT/SP4T
- Contact rating: Non-switching 0.5VA Switching 100mA 16VDC
- Contact resistance: 100mΩ max.
- Dimensions: 5×4.5×2.3mm

**S**



### CS-7

**WASHABLE**

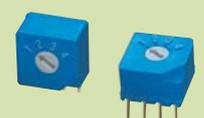
- Circuit structure: SP4T
- Contact rating: Non-switching 100mA 50VDC, Switching 100mA 5VDC
- Contact resistance: 100mΩ max.
- Dimensions: 7.3×7.1×3.75mm



### SS-10

**WASHABLE**

- Circuit structure: SP5T/SP6T/2P3T
- Contact rating: Non-switching 100mA 50VDC, Switching 100mA 5VDC
- Contact resistance: 100mΩ max.
- Dimensions: 10×10×7mm



### S-2050

**WASHABLE**

- Circuit structure: SP4T
- Contact rating: Non-switching 100mA 50VDC, Switching 100mA 5VDC
- Contact resistance: 100 mΩ max.
- Dimensions: 10×10×7mm



### RS/RG

**WASHABLE**

- Circuit structure: 1-3 poles 2-12 contacts, 4-6 poles 2-6 contacts
- Contact rating: 1VA (1A 30VDC max.)
- Contact resistance: 100mΩ max.
- Dimensions: 17.8×12×17.8mm (1block)



### MRE(36° step)

- Circuit structure: 1-10, 2-5, 3-3, 4-2
- Contact rating: 500mA 125VAC
- Panel seal
- Dimensions: φ 16×15.3mm



### MR(30°/36° step)

- Circuit structure: 1-10, 2-5, 3-3, 4-2 (36° step) 1-12, 2-6, 3-4, 4-3 (30° step)
- Contact rating: 500mA 125VAC
- Variable stopper available (36° step)
- Dimensions: φ 16×14.5mm



### MRB(45° step)

**WASHABLE**

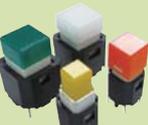
- Circuit structure: SP3T
- Contact Rating: Switching 0.4VA (12VDC max.)
- Twin contact type
- Gold contacts (for use in dry circuit)
- Dimensions: □ 15.8 × 11mm



### SRF

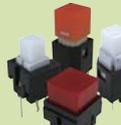
- Circuit structure: SPDT (90° step) SP3T/SP4T (45° step)
- Contact Rating: 6A 125VAC / 3A 250VAC (SPDT, SP3T) 1VA (50mA 48VDC max.) (LTM)
- Dimensions: φ 28×18.5~20mm

## Push-button switches (Illuminated type)



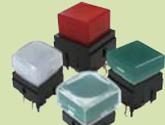
### CFPB

- Full surface illumination by LED
- Circuit structure: SPST
- Contact rating: 5mA 5VDC, 1mA 20VDC
- Soft operating feel
- Wide variety of key-top dimensions: □ 6mm/□ 9mm/□ 11mm/□ 12mm
- Dimensions: □ 9.9~14.8×12~14mm



### 13AL/13BL

- Full surface illumination by LED
- Circuit structure: SPST
- Contact rating: 5mA 5VDC, 1mA 20VDC
- Wide variety of key-top dimensions: □ 6mm/□ 9mm/□ 11mm
- Dimensions: □ 9.9~15×12~14mm



### 15EL/15GL

- Full surface illumination by LED
- Circuit structure: SPST
- Contact rating: 5mA 5VDC, 1mA 20VDC
- Wide variety of key-top dimensions: □ 12mm/□ 14mm/□ 15mm/□ 18mm
- With concave face shape clear button-cover available (15GL)
- Dimensions: 15×14×12.5mm



### TM/TR

- Ultra-Miniature Switch with LED
- Metal contact / Rubber contact
- Circuit structure: SPST
- Contact rating: 10mA 12VDC(TM) 1VA (50mA 48VDC max.) (TM)
- Contact material: Silver/Gold (TM)
- Wide variety of button's color & style
- Dimensions: 5.9~10.5×7~11.5×6.5mm



### LTM/LTR

- Full surface illumination by LED
- Metal contact / Rubber contact
- Circuit structure: SPST
- Contact rating: 10mA 12VDC(LTR) 1VA (50mA 48VDC max.) (LTM)
- Contact material: Silver/Gold (LTM)
- Wide variety of button's color & style
- Dimensions: □ 8×6.5mm



### LTM3

- Connector wiring
- Snap-in panel mounting
- Sharp operating feel
- Circuit structure: SPST
- Contact rating: 1VA (50mA max 48VDC max.)
- Contact material: Silver/Gold
- Dimension: 12×11.5×13.5mm



### TP/TPL

- Circuit structure: 2PDT
- Contact rating: 0.1A 30VDC
- Contact material: Silver/Gold
- TPL: Lock type (stroke: 1mm) PL: Non-lock type (stroke: 1.5mm)
- Wide variety of button's color & style
- Dimensions: 8.5×7.5×6.5mm



### LP

- Full face illumination by LED
- Circuit structure: SPDT/2PDT
- Contact rating: 3A 125VAC / 3A 250VAC / 3A 30VDC, 0.4VAC/DC (Gold contacts)
- LED illuminated / LED indicator
- For panel Snap-in mounting or PCB
- UL, CSA approved (except indicator)
- Dimensions: 15.2~19×15.2×10mm



### DP1~3

- Circuit structure: SPST/4PST
- Contact rating: 50mA 24VDC
- Contact material: Silver/Gold
- Self-cleaning contact mechanism
- Light operating feel
- Wide variety of button's color & style
- Dimensions: 12.4~19×12.4~17.4×6.5~8.3mm



### DP4

- Non-illuminated type
- Circuit structure: 2PDT
- Contact rating: 100mA 5VDC
- Switching function: On-On/On-Mom
- Contact material: Silver/Gold
- Self-cleaning contact mechanism
- Dimensions: □ 12.6×10.2mm

## Push-button switches (Non-illuminated type)

**S**



**CFPA** **WASHABLE**

- Reflow solderable, Right angle
- Circuit structure: SPDT
- Contact rating: 0.4VA (28VDC max.)
- Contact material: Gold
- Switching function: On-Mom
- Dimensions: 7.5×8.5×5.3mm

**S**



**SMAP** **WASHABLE**

- Reflow solderable, Right angle
- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (28VDC max.)
- Contact material: Gold
- Switching function: On-Mom
- Dimensions: 8.35×11.75×5mm

**S**



**FP** **WASHABLE**

- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (28VDC max.)
- Switching function: On-Mom
- Gold plated contacts
- Terminal: Wavy
- Dimensions: 4.5×7.0×5.4 mm

**S**



**CFP2** **WASHABLE**

- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (28VDC max.)
- Switching function: On-Mom
- Gold plated contacts
- Terminal: Straight
- Dimensions: 4.5×7.0×5.4 mm

**S**



**APE** **WASHABLE**

- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (50mA 60VAC/DC max.)
- Switching function: On-Mom
- Gold plated contacts
- UL approved
- Dimensions: 5×9.5×8 mm

**S**



**AP**

- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (50mA 60VAC/DC max.)
- Switching function: On-Mom
- Gold plated contacts
- Dimensions: 5×9.5×8mm

**S**



**CF-PD**

- Fixed panel by assembly resin nut
- Connector wiring
- Sharp click feeling
- Circuit structure: SPST
- Contact rating: 1 VA (50mA 48VDC max.)
- Switching function: On-Mom
- Dimensions:  $\phi$  20×16.8mm

**S**



**SP101**

- Sharp and light operating feel
- Snap-in panel mounting
- Circuit structure: SPST/SPDT
- Contact rating: 60mA 30VDC
- Contact material: Gold
- Connector wiring, PC terminal available
- Switching function: On-Mom
- Dimensions: 10.5×20×11mm

**S**



**SPC103**

- Sharp and light operating feel
- Wide variety of button colors
- Snap-in panel mounting
- Circuit structure: SPDT
- Contact rating: 3A AC125V/AC250V/DC30V
- Switching function: On-Mom
- Dimensions:  $\square$  18×14.8mm

**S**



**MSP**

- Circuit structure: SPST
- Contact rating: Silver contact: 3A 125VAC Gold contact: 25mA 20VDC
- Switching function: On-Mom/Off-Mom
- Small size ●For set/resetting
- Dimensions:  $\phi$  12×19 mm

**S**



**B series**

- Circuit structure: 1~4PDT
- Contact rating: 6A 125VAC / 3A 250VAC / 4A 30VDC
- Contacts material: Silver / Gold (MTO)
- Switching function: On-On/On-Mom
- For panel mounting or PCB
- Dimensions: 13×8~22.6×11.7~19.8mm

- UL, CSA approved models available
- Self-extinguishing resin housing
- Wide variety of button styles
- Panel water proof type (8P) \*class IP67
- Light and soft operating feel by snap action construction (8R-n/8W-n)
- Snap-in panel mounting (8W-n)

**S**



**SP/SPP/S2P**

- Circuit structure: SPST/SPDT/2PST/2PDT
- Contact rating: AC125 V 3 A / AC250 V 1 A, AC125 V 10 A / AC250 V 6 A
- Switching function: On-(On)
- UL, CSA approved
- Wide variety of button selections

### Tactile switches (Non-illuminated type)

**S**



**SMT1/TME1** **WASHABLE**

- Sharp tactile feel
- Circuit structure: SPST
- Contact rating: 1VA (DC48V 50mA max.)
- Contact material: Silver/Gold
- Switching function: On-Mom
- Anti-static electricity
- Dimensions: 6.5×7.5×3mm

**S**



**SMT3/SMTES3** **WASHABLE** [SMTES3]

- Sharp tactile feel
- Circuit structure: SPST
- Contact rating: 0.6VA (DC24V 30mA max.)
- Contact material: Silver/Gold
- Switching function: On-Mom
- Anti-static electricity (SMTES3)
- Dimensions: 6.8×7×2.5mm

**S**



**CF-CA**

- Right angle tactile switches
- Circuit structure: SPST
- Contact rating: 1VA (50mA 32VDC max.)
- Contact material: Silver/Gold
- Switching function: On-Mom
- Wide variety of button length
- Dimensions: 3.8×6.7×7mm

**S**



**CL-DA**

- Used in A-TCA standard package
- Direction for operation: side
- Circuit structure: SPST
- Contact rating: 100mA 12VDC
- Contacts material: Gold
- Switching function: On-Mom/Off-Mom
- Dimensions: 4×5.7×2mm

**S**



**CL-DB**

- Used in  $\mu$ -TCA standard package
- Direction for operation: top or side
- Circuit structure: SPST
- Contact rating: 1mA 5VDC
- Contacts material: Gold
- Switching function: Off-Mom
- Dimensions: 2.8×3.5×1.95mm

**S**



**CF-DA**

- Long stroke: 7.5mm
- Connector wiring
- Snap-in panel mounting
- Circuit structure: SPST
- Contact rating: 100mA 30VDC
- Contacts material: Silver
- Switching function: Off-Mom
- Dimensions: 11×19×13mm

**S**



**SPB101**

- Long stroke: 5mm
- Connector wiring
- Snap-in panel mounting
- Circuit structure: SPST
- Contact rating: 50mA 48VDC
- Contacts material: Silver/Gold
- Switching function: On-Mom/Off-Mom
- Dimensions: 9×13.3×12.5mm

## Lever rocker switches

**S**



**FL** **WASHABLE**

- Ultra-compact type
- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (DC28V max.)
- Contact material: gold
- PC, R.A. terminals
- Dimensions: 4.5×7×5.4mm

**S**



**CF-LD**

- Light operate feeling and clear visibility in lever design
- Ultra-compact type
- Circuit structure: SPDT
- Contact rating: 0.4VA (0.1A 28VAC/DC max.)
- 3 lever colors: White/Red/Gray
- Dimensions: 7×4.5×7 mm

**S**



**ALE** **WASHABLE**

- High reliability by twin-contact clip
- Circuit structure: SPDT/2PDT
- Contact rating: 0.4 VA (50mA 60VAC/DC max.)
- Contact material: gold
- PC and R.A. terminals
- UL approved
- Dimensions: 5×9.5×8mm

**S**



**CF-LA (Dust proof)**

- High inrush: 160A
- Circuit structure: SPST/2PST
- Contact rating: 16A 125VAC, 16A 250VAC
- Wide variety of terminal styles (5 kinds)
- Snap-in panel mounting
- C-US UL, UL(TV-6), ENEC approved
- Dimensions: 10.8×27.8×17.8mm

**S**



**SLE6 / SLE10 (Dust proof)**

- Circuit structure: SPST/SPDT
- Contact Rating: 6A 125VAC / 4A 250VAC(SLE6) 10A 125VAC / 5A 250VAC(SLE10)
- Snap-in panel mounting
- With rubber cover types available
- C-US UL, CSA, VDE, SEMKO approved
- Dimensions: 12.9×18.8×12.5mm

**S**



**SLE210K(Dust proof)**

- High inrush: 100A
- Circuit structure: 2PST
- Contact Rating: 10A 125VAC / 10A 250VAC
- Snap-in panel mounting
- C-US UL, VDE, SEMKO approved

**S**



**SL10K**

- High inrush: 100A
- Circuit structure: 2PST
- Contact Rating: 10A 125VAC / 6A 250VAC
- Snap-in panel mounting
- UL, CSA, VDE approved

**S**



**SLE10K**

- High inrush: 60A
- Panel water proof \*class IP64
- Circuit structure: 2PST
- Contact Rating: 10A 125VAC / 6A 250VAC
- Snap-in panel mounting
- UL, CSA, VDE approved

**S**



**SLA215K**

- Circuit structure: 2PST
- Contact Rating: 15A 125VAC / 15A 250VAC
- Enhanced isolation structure
- Snap-in panel mounting
- UL, CSA, ENEC approved
- Dimensions: 13×18.8×13mm

**S**



**ELE120(Dust proof)**

- High inrush: 120A
- Circuit structure: SPST
- Contact rating: 20A 125VAC / 12A 250VAC
- C-US UL approved
- Dimensions: 16~19.5×28.8~33×16~24.6mm

## Lever rocker switches



### EL/ELE

- Circuit structure: 1~2P1~2T
- Contact Rating: 25/20/15/10A 125VAC, 25/15/12/7A 250VAC
- Self-extinguishing resin housing
- Screw panel mount
- Dust proof (ELE)
- Dimensions: 16~19.3×29~33×22~23.6mm



### HLA/HLC/HLS

- Circuit structure: SPST/2PST/3PST/SPDT/2PDT
- Contact Rating: 8A 125VAC, 5A 250VAC, 12A 125VAC, 6A 250VAC
- Self-extinguishing resin housing
- For panel snap-in mounting
- UL, CSA approved
- Dimensions: 15~25×21~28×9~21.5mm



### B series

- High reliable power supply switch
- Circuit structure: 1~4PDT
- Contact rating: 6A 125VAC, 3A 250VAC, 4A 30VDC / 25mA 20VDC
- Contacts material: silver/gold (MTO)
- Dimensions: 13×8~22.6×9~17.5mm

- UL, CSA approved models available
- Self-extinguishing resin housing
- Wide variety of actuator styles
- For panel mounting or PCB
- Dust proof type (8HD)
- Snap-in panel mounting type (8H/8HD)

## Panel seal rocker switches



### CL-LB

- Multifunction and utility switch
- Panel seal (IP68 compatible)
- Switching function: 8 types
- Rich lineup such as illuminated type

- Actuator designed for excellent operability from ergonomics standpoint
- Circuit structure: SPST/SPDT/2PST/2PDT
- Snap-in panel mounting

- Contact rating: 15A 24VDC, 20A 12VDC, 10A 250VAC / 15A 125VAC
- Dimensions: 24.5×48.4×27.4mm

- Applications: Function operation for construction machinery, automobile use, etc.

## Toggle switches



### FT

WASHABLE

- Ultra-compact type
- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (28VDC max.)
- Contact material: Gold
- Terminal: Wavy
- Dimensions: 4.5×7×5.4mm



### CFT2

WASHABLE

- Ultra-compact type
- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (28VDC max.)
- Contact material: Gold
- Terminal: Straight
- Dimensions: 4.5×7×5.4mm



### ATE

WASHABLE

- High reliability by twin-contact clip
- Circuit structure: SPDT/2PDT
- Contact rating: 0.4VA (50mA 60VAC/DC)
- Contact material: Gold
- Terminal pin pitch: 2.54mm
- UL approved (except with cap type)



### ATE4/ATLE4

WASHABLE

- High reliability by twin-contact clip
- Circuit structure: SPDT/2PDT
- Contact rating: 50mA 48VAC/DC
- Contact material: Gold
- Lever lock type
- UL approved (except with cap type)



### BT

- Circuit structure: SPDT/DPDT
- Contact rating: 50mA 20VAC/DC
- Contact material: Gold
- Insulation resistance 10000MΩ min.
- Dimensions: 7.6~12.7×15.8×8.5mm

## S



### CF-TA

- Through hall reflow toggle SW (R/A)
- Circuit structure: SPDT
- Contact rating: 50mA 48VAC/DC
- Contact material: gold
- Lever-lock type available
- Dimensions: 8×9.5×5mm



### B series

- High reliable power supply switch
- Circuit structure: 1~4PDT
- Contact rating: 6A 125VAC, 3A 250VAC, 4A 30VDC / 25mA 20VDC



- Contacts material: silver/gold (MTO)
- For panel mounting or PCB
- Dimensions: 13×7.9~22.6×9~11.3mm
- UL, CSA approved models available



- Self-extinguishing resin housing
- Wide variety of actuator styles
- Panel water proof type (8F) \*class IP67
- Lever-lock type (8E)



WASHABLE  
[8G, 8GA, 8GD, 8GS]

## ET



### ET

- Circuit structure: 1~4PST/1~4PDT/6PST/6PDT
- Contact Rating: Switching 3~30A 125VAC, 2~25A 250VAC
- UL, CSA approved models available
- Self-extinguishing resin housing
- For panel mounting
- Dimensions: 16~57×25.5~33.5×14.5~29.2mm

## Key switches



### MRK/MRKC

- Circuit structure: 1~2P 2~4T
- Contact rating: 0.4VA (20VDC max.)
- Click operation feeling
- MRKC: Cylinder key type
- Dimensions: 14.5×15.8×11.8mm / 15.8×11.8mm (MRKC)



### MRK1052B

- High security for the exclusive key
- Circuit structure: SP5T
- Contact rating: 100mA 35VDC
- Connector wiring
- Nut attachment on panel
- Dimensions: φ21.4×25mm

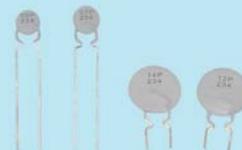
# Circuit protectors

## Resettable Fuses



### PRCP series

- Polymer PTC Thermistors
- Quick rising edge at trip point
- UL, CSA, TÜV approved
- Max. rated voltage (V max.): 6.0~72V
- Hold current: 0.05~13A, Trip current: 0.1~24A
- Max. rated current (I max.): 10~100A
- Min. resistance value (R min.): 0.003~7.3Ω



### CR-CP series

- Ceramic PTC Thermistors
- Quick rising edge at trip point
- Operated more than 100,000 times repeatedly
- Max. rated voltage (V max.): 16V \*low operating voltage
- Hold current: 470~1550mA, Trip current: 880~2860mA
- Max. rated current (I max.): 2~10A
- Resistance: 0.15~1.0Ω \*low resistance



### C-FAP series

- Fast response (less than 1 μsec)
- Wide bandwidth (fc=3GHz)
- Small SMD package (DFN)
- Small energy consumption (100nJ)
- UL approved
- Max. trigger current (I trigger max.): 50/100/200/300/500mA
- Max. impulse voltage (V imp): 250/400/500/650/850V



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