

# Product Guide

To The Next  
Generation

**NIDEC COMPONENTS**

# Switches

[S]: Surface mount type available

## DIP Rotary switches

[S]



### S-4000

- Positions: 10
- Code: Real
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 10 mA 2.4 VDC
- 4.8 mm square

[S]



### SA-7000

- Positions: 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 7.2 mm square

[S]

Washable

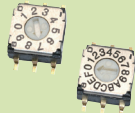


### S-7000

- Positions: 6, 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 7.2 mm square

[S]

Washable



### SH-7000

- Positions: 10 or 16
- Code: Real, complement or gray
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 7.1 mm square

[S]

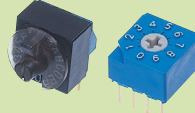
Washable



### DRS/DRR/SMR/SMRR

- Positions: 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 30 mA 15 VDC
- 7.5 mm square

Washable

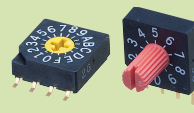


### S-1000A/2000A

- Positions: 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 10 mm square

[S]

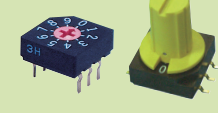
Washable



### SC-1000/2000

- Positions: 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 10 mm square

[S]



### SD-1000/2000

- Positions: 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 10 mm square

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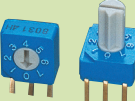
Washable



### SA-5000

- Positions: 10 or 16
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 11 mm square

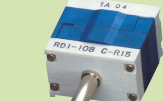
Washable



### S-8000

- Positions: 8
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 5 VDC
- 7.2 mm square

Washable



### RD

- Positions: 8 or 12
- Code: Real or complement
- Contact rating:
  - Switching 1 A 30 VDC
- 17.8 x 12 x 17.8 mm

## DIP switches

[S]

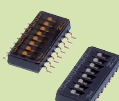


### CVS (1 mm pitch)

- Positions: 1, 2, 3, 4 or 8
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 4.7 x 2 ~ 9 x 1.45 mm

[S]

Washable



### CHS (Half pitch)

- Positions: 1, 2, 4, 6, 8 or 10
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 5.4 x 2.5 ~ 14.3 x 2.5 mm

[S]



### CHP (Half pitch)

- Positions: 2, 4 or 8
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 5.9 x 4.6 ~ 12.1 x 4.6 mm

[S]

Washable



### CFS (Full pitch)

- Positions: 1 ~ 10 available
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 6.4 x 3.95 ~ 2.69 x 4.5 mm

[S]

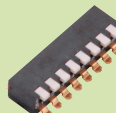


### CFP (Full pitch)

- Positions: 2, 3, 4, 5, 6, 8 or 10
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 8.6 x 7.5 ~ 22.8 x 6.7 mm

[S]

Washable



### CYP (Full pitch)

- Positions: 2, 4, 6, 8 or 10
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 6 x 6.48 ~ 26.8 x 5 mm

[S]



### CES (Full pitch)

- Positions: 2, 4, 6, 8 or 10
- Code: Real or complement
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC
- 10 x 7.66 ~ 22.9 x 10 mm

## Slide switches

[S]

Washable



### CJS

- Ideal for replacing jumper pins
- Circuits: 1; On-On, On-Off-On
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC

[S]

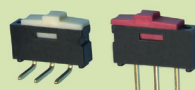
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### CAS

- Ideal for replacing jumper pins
- Circuits: 1, 2 or Dual; On-On
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 6 VDC, 25 mA 24 VDC

[S]



### CL-SA

- Circuits: 1; On-On
- Contact rating:
  - Non-switching 500 mA 50 VDC
  - Switching 500 mA 12 VDC
- Side by side mounting possible

[S]



### CL-SB

- Circuits: 1 or 2; On-On, On-Off-On
- Contact rating:
  - Non-switching 200 mA 50 VDC
  - Switching 200 mA 12 VDC
- Gold/silver contacts, Wide variety lineup

[S]



### CRFS

- DC~1GHz frequency spectrum
- Circuits: 2; On-On, On-Off-On
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 12 VDC

[S]



### CMS

- Circuits: 2 or 4; On-On and more
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 100 mA 12 VDC

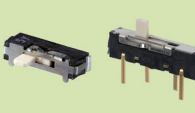
[S]



### CUS

- Circuits: 1 or 2; On-On and more
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching 300 mA 4 VDC

[S]



### CSS

- Circuits: 1; On-On, On-Mom and more
- Contact rating:
  - Non-switching 100 mA 50 VDC
  - Switching: 100 mA 12 VDC

[S]



### MFS

- Circuits: 1, 2 or 4; On-On and more
- Contact rating: Refer to webpage
- Shorting or Non-shorting contacts
- Wide variety of current ratings

[S]

Washable

[ASE]



### ASE/AS

- Circuits: 1 or 2; On-On, On-Off-On
- Contact rating: ASE: UL 50 mA 48 VAC/DC, AS: 50 mA 60 VAC/DC
- Terminal style: PC straight, 0.2"/0.3" right angle
- Gold Contacts
- UL certified (ASE)

## Slide switches



### 8SS

- Circuits: 1 or 2; On-On; On-Off-On
- Contact ratings: Silver: 6A 125VAC
- PC or solder lug terminals
- If desired with UL/CSA mark, specify it when ordering.

## Rotary selector switches

S

Washable

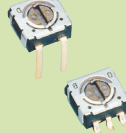


### CS-32

- 1 pole 3 positions
- Contact rating: 500mA 125VAC
- Non-switching 0.5VA
- Switching 100mA 16VDC
- 3.4mm square

S

Washable

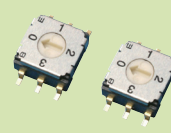


### CS-4

- 1 or 2 poles 2, 3 or 4 positions
- Contact rating: Non-switching 0.5VA
- Switching 100mA 16VDC
- 4.5×5mm

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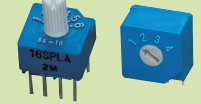
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### CS-7

- 1 pole 4 positions
- Contact rating: Non-switching 100mA 50VDC
- Switching 100mA 5VDC
- 7.1×7.3mm

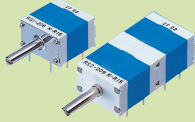
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### SS-10/S-2050

- SS-10: 1 pole 3, 5, 6 positions; 2 poles 3 positions / S-2050: 1 pole 4 positions
- Contact rating: Non-switching 100mA 50VDC
- Switching 100mA 5VDC
- 10mm square

Washable



### RS/RG

- Poles and positions: 1 ~ 3 poles: 2 thru 12 positions
- 4 ~ 6 poles: 2 thru 6 positions
- Contact rating: 1A 30VDC
- Shorting or non-shorting

### MR

- 1 pole 10 positions, 2 poles 5 positions
- Contact rating: 500mA 125VAC
- 36° angle of throw
- 16mm diameter
- Variable stopper available

Washable



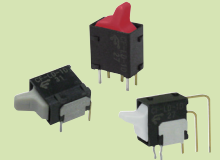
### MRB

- 1 pole 3 positions
- Contact rating: 0.4VA 12VDC
- 45° angle of throw

### SRF

- 1 pole 2, 3 or 4 positions
- Contact rating: 2 and 3 Positions: 6A 125VAC
- and 3A 250VAC / 4 Positions: 3A 125VAC and 1A 250VAC

## Lever switches



### CF-LD

- Circuit: 1 pole; On-On
- Contact rating: 0.4VA, 28VAC/DC
- Straight, right angle or vertical PC terminal
- Gold Contacts
- Ultra-miniature

## Lever/Rocker switches

Washable



### FL

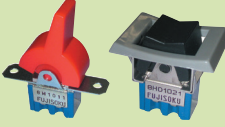
- Circuits: 1 or 2 poles, On-Mom; Mom-Off-Mom; On-Off-On; On-On and more
- Contact rating: 0.4VA, 28VDC
- Terminal style: PC straight, right angle or vertical
- Gold Contacts

Washable



### ALE

- Circuits: 1 or 2 poles; On-Mom, On-Off-Mom, On-On, On-Off-On, Mom-Off-Mom
- Contact rating: 50mA 60VAC/DC
- Terminal style: PC Straight or right angle
- Gold contacts
- UL certified



### 8 Series

- Circuits: 1 thru 4 poles, On-On; Off-On; Mom-Off-Mom; On-Mom
- Contact rating Silver: 3A 250VAC; 6A 125VAC; 4A 30VDC; Gold: 25mA 20VDC
- Solder lug or PC terminals
- If desired with UL/CSA mark, specify it when ordering.

## Rocker switches



### ETW (Environmentally sealed rockers)

- Circuits: 1 pole; On-Off, On-On, On-Off-On, Mom-Off-Mom
- Contact rating: 15A 127V~ 25E3, 10A 250V~ 25E3
- cULus recognized
- Front panel seal: IP67, Behind panel seal: IP60, Epoxy sealed terminals

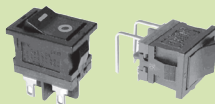
Washable



### SLP8A

- Circuits: 1 pole; Off-On
- Contact rating: 8A 127VAC; 4A 250VAC
- Quick connect terminals
- Compact size and long life
- cULus, CQC and ENEC certified

Washable



### SLE210K

- Circuits: 2 poles; On-Off
- Contact rating: 10A 125/250VAC
- High inrush ratings: 60A and 100A at 125/250VAC
- Left or right angle PC, solder lug or quick connect terminals
- cULus and SEMKO certified

Washable



### SL10K

- Circuits: 2 poles; On-Off
- Contact rating: 10A 125/250VAC
- High inrush ratings: 60A and 100A at 125/250VAC
- Quick connect terminals
- UL, CSA and VDE certified

Washable



### SLE10K

- Circuits: 2 poles; On-Off
- Contact rating: 10A 125VAC, 6A 250VAC
- High inrush ratings: 60A at 125VAC, 36A at 250VAC
- Quick connect terminals
- UL, CSA and VDE certified
- Panel seal: IP64

Washable



### CF-LA

- Circuits: 1 or 2 poles; On-Off
- Contact rating: 16A 125/250VAC
- High inrush ratings: 160A
- Straight PC, right or left angle PC, solder lug or quick connect terminals
- cULus, UL (TV-8), ENEC certified

Washable



### HLS

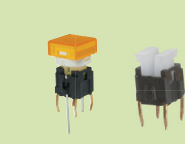
- Circuits: 1 thru 3 poles; On-On, Off-On
- Contact rating: 8A 125VAC; 12A 125VAC; 5A 250VAC; 6A 250VAC
- Solder or quick connect terminals
- If desired with UL/CSA mark, specify it when ordering.

## Illuminated switches (Pushbutton)



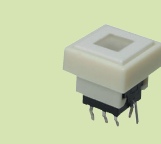
### CFPB

- Circuit: SPST; Off-Mom
- Contact rating: 5mA 20VDC
- Red, orange, yellow or green LED
- 6mm, 9mm, 11mm and 12mm square cap sizes / Red, orange, white clear, blue, green and yellow colored caps available



### LTM/LTR

- Circuit: SPST; Off-Mom
- Contact rating: 10mA 12VDC (LTR), 50mA 48VDC (LTM)
- Illuminated (normal or bright LED) / Non-illuminated
- Red, yellow or green LED
- Wide variety of cap styles, colors

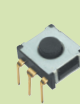


### TP/TPL

- Circuit: DPDT; On-Mom or On-On
- Contact rating: 0.1A 30VDC
- Illuminated or non-illuminated
- Alternate action option
- Red, yellow or green LED
- Wide variety of cap styles, colors

## Tactile switches

Washable



### TME1

- Poles: 1
- Circuit: Off-Mom
- Contact rating: 50mA 48VDC
- Gold or silver Contacts
- Terminal style: Straight PC
- Sharp tactile feel

Washable

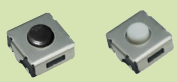


### SMT1

- Poles: 1
- Circuit: Off-Mom
- Contact rating: 50mA 48VDC
- Gold or silver Contacts
- Terminal style: Gull wing SMT
- Sharp tactile feel

Washable

[SMTE3]



### SMT3/SMTE3

- Poles: 1
- Circuit: Off-Mom
- Contact rating: 30mA 24VDC
- Gold or silver contacts
- Terminal style: J-hook SMT
- Sharp tactile feel

Washable



### CF-CA

- Poles: 1
- Circuit: Off-Mom
- Contact rating: 50mA 32VDC
- Gold or silver contacts
- Gull wing right angle SMT terminals
- 3 actuator lengths available

Washable



### FP/CFP2

- Poles: 1 or 2
- Circuits: On-Mom
- Contact rating: 0.4VA, 28VDC
- Terminal style: PC straight, right angle or vertical
- Gold Contacts
- Terminal pins: Kinked/Straight

Washable

[APE]



### APE/AP

- Circuits: 1 or 2 poles; Off-Mom (AP only), On-Mom
- Contact rating: UL 50mA 48VAC/DC
- Terminal style: 0.2" right angle (APE only), 0.3" right angle, PC straight
- Gold Contacts
- UL certified (APE)

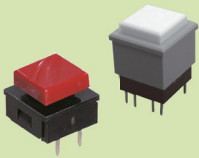
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### CFPA

- Poles: 1
- Circuits: On-Mom
- Contact rating: 0.4VA 28VDC max
- Right angle gull wing terminals
- Gold Contacts

## Pushbutton switches



### DP1&2/DP4

- Circuits: 1 pole; Off-Mom (DP1&2), 2 poles×2; On-Mom (DP4)
- Contact rating: 50 mA 24 VDC (DP1&2), 100 mA 5 VDC (DP4)
- Gold or silver contacts



### CF-PD

- Circuits: 1 pole; Off-Mom
- Contact rating: 50 mA 48 VDC; 1 VA
- Solidly design with an assembly nut
- One-touch fitting by connector



### SP101

- Circuits: 1 pole; Off-Mom, On-Mom
- Contact rating: 1 VA 48 VDC
- Sharp and light tactile feel
- Compatible with PC board mount and Snap-in panel mount



### MSP

- Circuits: 1 pole; On-Mom(Off), Off-Mom
- Contact rating: 3 A 125 VAC
- For set and reset

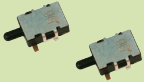


### 8 Series

- Circuits: 1~4 poles: On-On, On-Mom
- Contact rating: 3 A 250 VAC, 6 A 125 VAC / 4 A 30 VDC
- Wide variety of actuators, 4 button colors
- If desired with UL / CSA mark, specify it when ordering.

## Detect switches

[S]



### CL-DA

- Circuits: 1 pole; On-Mom, Off-Mom
- Contact rating: 100 mA 12 VDC
- Side actuated
- Gull wing SMT terminals
- Used in A-TCA standard package

[S]



### CL-DB

- Circuits: 1 pole; Off-Mom
- Contact rating: 1 mA 5 VDC
- Top or side actuated
- Gull wing SMT terminals
- Used in  $\mu$ -TCA standard package



### CF-DA

- Circuits: 1 pole; Off-Mom
- Contact rating: 100 mA 30 VDC
- One-touch fitting by connector
- Snap-in panel mount
- Long stroke 7.5 mm (full stroke)

## Toggle switches

Washable



### FT/CFT2

- Circuits: 1 or 2 poles; On-Mom, Mom-Off-Mom, On-On, On-Off-On
- Contact rating: 0.4 VA, 28 VDC
- Terminal style: PC straight, right angle or vertical
- Gold contacts
- Terminal pins: Kinked / Straight

Washable



### ATE

- Circuits: 1 or 2 poles; On-On, Mom-Off-Mom, On-Off-Mom, On-Off-On, On-Mom
- Contact rating: UL) 50 mA 48 VAC/DC
- Terminal style: PC straight, 0.2"/0.3" right angle
- Gold Contacts
- UL certified

Washable



### ATE4/ATLE4

- Circuits: 2 or 4 poles; On-On, On-Off-On
- Contact rating: 50 mA 48 VAC/DC
- Terminal style: PC straight, 0.2"/0.3" right angle
- Locking lever (ATLE4)
- Gold contacts
- UL certified

[S]



### CT-TA

- Circuits: 1~4 poles; On-Mom, Mom-Off-Mom, On-Off-Mom, On-Off-On, On-On
- Contact rating: 50 mA 48 VAC/DC
- Right angle SMT terminals
- Gold contacts
- Reflow solderable/locking lever option



### 8 Series

- Circuits: 1~4 poles; On-Mom, On-On, On-Off-On, Mom-Off-Mom, On-Off-Mom
- Contact rating: 3 A 250 VAC, 6 A 125 VAC / 4 A 30 VDC / 60 mA 30 VDC
- If desired with UL / CSA mark, specify it when ordering.



### ETW (Environmentally sealed toggles)

- Circuits: 1 pole; On-Off, On-On, On-Off-On, Mom-Off-Mom
- Contact rating: 15 A 127 V~ 25E3, 10 A 250 V~ 25E3
- cULus recognized
- Front panel seal: IP67, Behind panel seal: IP60, Epoxy sealed terminals



### ET

- Circuits: 1~4 or 6 poles; Multiple circuit options
- Contact rating: 3 A 125 VAC thru 30 A 125 VAC; 3 A 250 VAC thru 25 A 250 VAC
- Solder lug, quick connect and screw terminal options
- If desired with UL / CSA mark, specify when ordering it.

# Trimmer Potentiometers

[S]: Surface mount type available

[S]

Washable

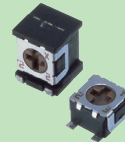


### ST-2

- Turns: 1
- Resistance range: 100  $\Omega$  ~ 1 M $\Omega$
- Resistance tolerance:  $\pm$ 20%
- Power rating: 0.1 W (70°C), 0 W (125°C)
- J-hook or gull wing SMT terminals
- Top adjustment

[S]

Washable

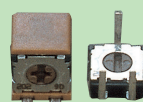


### ST-32

- Turns: 1
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 20%
- Power rating: 0.125 W (70°C), 0 W (125°C)
- J-hook or gull wing SMT terminals
- Top adjustment or side adjustment

[S]

Washable



### ST-4/42

- Turns: 1
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 20%
- Power rating: 0.25 W (70°C), 0 W (125°C)
- Straight PC or J-hook or gull wing SMT terminals
- Top, rear or side adjustment

[S]

Washable



### ST-5

- Turns: 14
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.25 W (70°C), 0 W (120°C)
- Gull wing SMT terminals
- Top adjustment or side adjustment

[S]

Washable



### ST-7

- Turns: 3
- Resistance range: 50  $\Omega$  ~ 1 M $\Omega$
- Resistance tolerance:  $\pm$ 20%
- Power rating: 0.25 W (70°C), 0 W (125°C)
- J-hook or gull wing SMT terminals
- Top adjustment

[S]

Washable

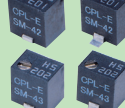


### SM-3/31

- Turns: SM-3 have 11 turns; SM-31 have 5 turns
- Resistance range: 50  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 20%
- Power rating: 0.125 W (70°C), 0 W (150°C)
- J-hook or gull wing SMT terminals
- Top adjustment or side adjustment

[S]

Washable



### SM-42/43

- Turns: SM-42 have 11 turns; SM-43 have 5 turns
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.25 W (85°C), 0 W (150°C)
- J-hook or gull wing SMT terminals
- Top adjustment or side adjustment

[S]

Washable



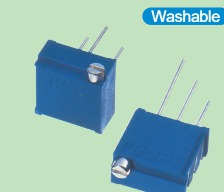
### FT-63

- Turns: 1
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.5 W (70°C), 0 W (125°C)
- Straight PC terminals
- Top or side adjustment



### CT-6

- Turns: 1
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.5 W (70°C), 0 W (120°C)
- Straight PC terminals
- Top or side adjustment



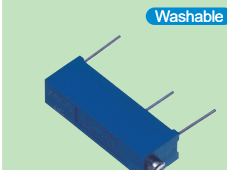
### CT-94

- Turns: 18
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.5 W (70°C), 0 W (125°C)
- Straight PC terminals
- Top or side adjustment



### CT-9

- Turns: 18
- Resistance range: 10  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.5 W (70°C), 0 W (120°C)
- Straight PC terminals
- Top or side adjustment



### CT-20

- Turns: 15
- Resistance range: 10  $\Omega$  ~ 5 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.5 W (70°C), 0 W (120°C)
- Straight PC terminals
- Side adjustment

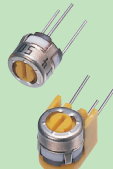


### TM-7

- Turns: 3
- Resistance range: 50  $\Omega$  ~ 2 M $\Omega$
- Resistance tolerance:  $\pm$ 10%
- Power rating: 0.5 W (70°C), 0 W (120°C)
- Straight PC terminals
- Top or side adjustment



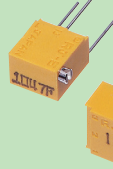
**Washable**



**RJ-4**

- Turns: 1
- Resistance range: 10 Ω~2 MΩ
- Resistance tolerance: ±10%
- Power rating: 0.5W (70°C), 0W (120°C)
- Straight PC terminals
- Top or side adjustment

**Washable**



**RJ-5**

- Turns: 14
- Resistance range: 10 Ω~2 MΩ
- Resistance tolerance: ±10%
- Power rating: 0.25W (85°C), 0W (120°C)
- Straight PC terminals
- Top or side adjustment

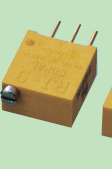
**Washable**



**RJ-6**

- Turns: 1
- Resistance range: 10 Ω~5 MΩ
- Resistance tolerance: ±10%
- Power rating: 0.5W (70°C), 0W (120°C)
- Straight PC terminals
- Top, rear or side adjustment

**Washable**



**RJ-9**

- Turns: 18
- Resistance range: 10 Ω~5 MΩ
- Resistance tolerance: ±10%
- Power rating: 0.5W (70°C), 0W (120°C)
- Straight PC terminals
- Top or side adjustment

**Washable**



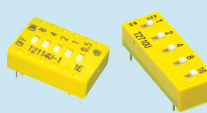
**RJ-13**

- Turns: 1
- Resistance range: 10 Ω~5 MΩ
- Resistance tolerance: ±10%
- Power rating: 0.75W (70°C), 0W (120°C)
- Straight PC terminals
- Top or side adjustment
- Panel mount version available

# Attenuators, Circuit Fuses

**[S]**: Surface mount type available

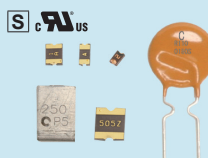
**Attenuators**



**T2114/T2710**

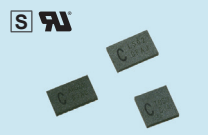
- Step type variable attenuator
- Circuit: Unbalanced type (T2710); Unbalanced/Balanced type (T2114)
- Impedance: 600 Ω
- Frequency: DC ~150 kHz
- Attenuation value: 0.5, 1, 2, 4, 8 dB; 15.5 dB total

**Resettable circuit fuses**



**P.R.C.P.**

- Polymer PTC thermistor
- Slow properly to trip, and not respond at surge or rush current
- Max. Voltage: 6~72VDC, 240VAC
- Hold Current: 0.05~13A
- SMT/Radial leaded types available
- UL recognized, TÜV certified



**C-FAP**

- Integrated MOSFET and current detection circuit; 1 or 2 per package
- Fast response; Less than 1 μsec
- DFN; small SMT package
- Impulse voltage: 250~850 Vmax
- Small energy consumption (100nJ)
- UL recognized

# Pressure Sensors

**Pressure transducer modules**



**P-2000**

- Pressure range: 0~981 kPa
- Non-corrosive gases
- Power: 1.5mA DC



**P-3000S**

- Pressure range: 0~686 kPa; 0~±98.1 kPa differential; 0~98.1 kPa absolute
- Non-corrosive gases
- Power: 1.5mA DC



**P-8300**

- Pressure range: 0~981 kPa; 0~98.1 kPa absolute
- Corrosive gases and liquids
- Power: 1.5mA DC

**Pressure transducers with Amp.**



**P-8305/P-8505**

- Pressure range: P-8305: 0~10 kPa; P-8505: 0~1000 kPa
- Corrosive gases and liquids
- Power: 1.5mA DC



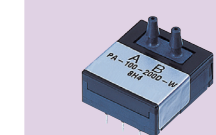
**P-7100**

- Pressure range: 100 kPa~1.0 MPa; 0~133.3 kPa abs.
- Corrosive gases and liquids
- Output: 0.5~4.5 VDC
- Power: 5~0.5 VDC



**PA-20**

- Pressure range: 0~100 kPa; -100~300 kPa
- Non-corrosive gases
- Output: 1~5 VDC
- Power: 10.8~30 VDC



**PA-100**

- Pressure range: -5~5 kPa differential
- Non-corrosive gases
- Output: 0.5~4.5 VDC
- Power: 5 VDC



**PA-500**

- Pressure range: 0~3.5 MPa; 0~100 kPa; -100~300 kPa; 0~100 kPa absolute
- Corrosive gases and liquids
- Output: 1~5 VDC/4~20 mA
- Power: 10.8~30 VDC/24 VDC



**PA-750/758**

- Pressure range: 0~3.5 MPa; 0~100 kPa; -100~300 kPa; 0~100 kPa absolute
- Corrosive gases and liquids
- Output: 1~5 VDC/4~20 mA
- Power: 10.8~30 VDC/24 VDC



**PA-800**

- Pressure range: 0~981 kPa; 0~98.1 kPa
- Corrosive gases and liquids
- Output: 1~5 VDC
- Power: 12~24 VDC



**PA-838-D**

- Pressure range: 0~100 kPa differential
- Corrosive gases and liquids
- Output: 4~20 mA
- Power: 24 VDC



**PA-830/838**

- Pressure range: 0~98.1 kPa; 0~98.1 kPa absolute (PA-830), 0~98.1 kPa (PA-838)
- Corrosive gases and liquids
- Output: 1~5 VDC/4~20 mA
- Power: 12~24 VDC/24 VDC



**PA-840/848**

- With IP67 degree of protection
- Pressure range: 0~3.5 MPa; -0.1~0.35 MPa; 0~0.1 MPa abs.
- Corrosive gases and liquids
- Output: 1~5 VDC/4~20 mA
- Power: 10.8~26.4 VDC/21.6~26.4 VDC



**PA-850/858**

- Pressure range: 0~1000 kPa; 0~100 kPa; -100~100 kPa (PA-850 only); -100~300 kPa; 0~100 kPa abs.
- Corrosive gases and liquids
- Output: 1~5 VDC/4~20 mA
- Power: 10.8~30 VDC/24 VDC



**PA-860/868**

- For high pressure media
- Pressure range: 0~35 MPa
- Hydraulic oil
- Output: 1~5 VDC for PA-860; 4~20 mA DC for PA-868
- Power: 12~24 VDC



**PA-920S/928S**

- Ideal for gas feed line
- Pressure range: 0~1000 kPa; -100~0.1 MPa; -0.1~1 MPa
- Corrosive gases and liquids
- Output: 1~5 VDC/4~20 mA
- Power: 12~24 VDC/24 VDC



**PA-930/930-A**

- Suitable for high temp. media (150°C)
- Pressure range: 0~1000 kPa; -100~300 kPa; 0~100 kPa/0~200 kPa abs.
- Corrosive gases and liquids
- Output: 1~5 VDC
- Power: 12~24 VDC



**PA-97\*-S**

- Wide variety for middle-high pressure range
- Pressure range: 0~80 MPa
- Corrosive gases and liquids
- Output: 1~5/0.5~4.5/0.5~10 VDC/4~20 mA
- Power: 9~36 VDC/5 VDC/14~36 VDC

## Pressure switches



### PS20

- Pressure range: 0~100 kPa; -100~300 kPa compound
- Non-corrosive gases
- One switch output
- Power: 10.8~30 VDC



### PS6

- Pressure range: 0~1000 kPa; 0~100 kPa
- Non-corrosive gases
- Two or one switch output
- Analog output: 1~5 VDC
- Power: 12~24 VDC
- 2 digit LED display



### PS40

- Pressure range: 0~1000 kPa; 0~100 kPa
- Non-corrosive gases
- Two or one switch output
- Analog output: 1~5 VDC
- Power: 10.8~30 VDC
- Two LED indicators



### PS30

- Pressure range: -100~1000 kPa
- Non-corrosive gases
- Two switch output
- Power: 12~24 VDC
- 2.5 digit LED display



### PS60

- Pressure range: -100~1000 kPa
- Non-corrosive gases
- Two switch output
- Power: 12~24 VDC
- 3 digit LED display
- DIN rail mountable



### PS8

- Pressure range: 0~98.1 kPa; 0~98.1 kPa abs.
- Corrosive gases and liquids
- Two switch output
- Power: 12~24 VDC
- Two LED indicators



### PS83

- Pressure range: 0~98.1 kPa; 0~98.1 kPa abs.
- Corrosive gases and liquids
- Two switch output
- Power: 12~24 VDC
- Two LED indicators



### PS85

- Pressure range: -100~1000 kPa; 0~100 kPa abs.
- Corrosive gases and liquids
- Two switch output
- Power: 10.8~30 VDC
- Two LED indicators



### PS86

- For high pressure media
- Pressure range: 0~35 MPa
- Corrosive gases and liquids
- One switch output
- Power: 10.8~30 VDC
- Two LED indicators



### PS91

- Suitable for high vacuum pressure
- Pressure range: -100~10 kPa
- Corrosive gases and liquids
- Two switch output
- Power: 12~24 VDC
- Two LED indicators



### PS97

- Wide variety for middle-high pressure range
- Pressure range: 0~80 MPa
- Corrosive gases and liquids
- Two or one switch output
- Output: 1~5/0.5~4.5/0~5/0~10 VDC (4~20 mA)
- Power: 9~36 VDC

\*Purchased items



### PG-20

- Pressure range: 0~1.0 MPa; -0.1~1.0 MPa
- Corrosive gases and liquids
- Two or one switch output
- Output: 1~5 VDC
- Power: 12~24 VDC
- 3.5 digit LED display



### PG-30

- Pressure range: -100~1000 kPa
- Non-corrosive gases
- Corrosive gases and liquids
- Two switch output
- Output: 1~5 VDC
- Power: 10.8~30 VDC
- 3 digit LED display



### PG-35

- Pressure range: -100~1000 kPa; 0~100 kPa abs.
- Corrosive gases and liquids
- Two switch output
- Output: 1~5 VDC
- Power: 10.8~30 VDC
- 3 digit LED display



### PG-35H

- For high pressure media
- Pressure range: -0.1~35 MPa
- Corrosive gases and liquids
- Two switch output
- Output: 1~5 VDC
- Power: 10.8~30 VDC
- 3 digit LED display



### PG-35L

- Suitable for high vacuum pressure
- Pressure range: -100~1000 kPa
- Corrosive gases and liquids
- Two switch output
- Output: 1~5 VDC
- Power: 10.8~30 VDC
- 3 digit LED display



### PG-75

- Pressure range: -100~100 kPa and -0.1~3.5 MPa; 0~100 kPa and 0~3.5 MPa
- Corrosive gases and liquids
- Two switch output
- Output: 1~5 VDC or 4~20 mA
- Power: 10.8~30 VDC
- 3.5 digit LED display



### PG-200/208

- Pressure range: 0~1000 kPa; 0~100 kPa; 0~100 kPa abs. (PG-200 only)
- Corrosive gases and liquids
- Two or one switch output
- Output: 0~1 VDC or 4~20 mA
- Power: 10~24 VDC; 5~10 VDC (PG-200 only) or 3.6 VDC lithium battery
- 3.5 digit LCD display



### PG-100N

- Pressure range: -100~1000 kPa compound
- Non-corrosive gases
- Power: 2 AAA batteries
- 3.5 digit LCD display



### PG-100B

- Pressure range: -100~1000 kPa compound; 0~100 kPa absolute
- Corrosive gases and liquids
- Power: 2 AAA batteries
- 3.5 digit LCD display

## Pressure Indicators



### PZ-30

- Input signal: 1~5V or 4~20 mA
- Two switch output
- Output: 1~5 VDC or 4~20 mA
- Power: 10.8~30 VDC
- 3 digit LED display



### PZ-200

- Input signal: 1~5V or 4~20 mA
- Four switch output
- Output: 4~20 mA
- Power: 10.8~30 VDC
- 3.5 digit LCD display

## Liquid leak sensors



### WL10

- Unique one piece detector
- Two housing materials: Polypropylene (PP) for use in water, Perfluoroalkoxy alkane (PFA) for use with corrosive fluids
- Power: 12~24 VDC
- 2 or 4 meter cable leads

# Potentiometers

[W]: Wire wound type

[P]: Conductive plastic type

[C]: Cermet type

[O]: Optical contactless type

## Sensing potentiometers



### JT22

- Turns: Single
- Effective electrical angle: 120° or 320°
- Linearity: ±3%
- Output voltage: +0.5~+4.5 V
- Rotational life: 100 million cycles



### JT30

- Turns: Single
- Effective electrical angle: 120° or 340°
- Linearity: ±1.5% or 2.0%
- Output voltage: +0.5~+4.5 V
- Rotational life: 200 million cycles



### J40S/J45S/J50S

- Turns: Single
- Effective electrical angle: 350°, 353°, 355°
- Linearity: ±0.15% or 0.10%
- Resistance range: 500~50 kΩ
- Rotational life: 1~10 million cycles



### M22L10

- Turns: 10
- Effective electrical angle: 3600°
- Linearity: ±0.2%
- Resistance range: 1 k~20 kΩ
- Rotational life: 5 million cycles



### MC1003

- Turns: 3
- Effective electrical angle: 1080°
- Linearity: ±1%
- Resistance range: 5 k~20 kΩ
- Rotational life: 1 million cycles

## Sensing potentiometers

**P**



### JC10

- Turns: 1
- Effective electrical angle:  $324^\circ \pm 5^\circ$
- Linearity:  $\pm 2\%$
- Resistance range: 2 k $\sim$ 20 k $\Omega$
- Rotational life: 5 million cycles

**P**



### JC22S

- Turns: 1
- Effective electrical angle:  $340^\circ \pm 5^\circ$
- Linearity:  $\pm 0.5\%$
- Resistance range: 200 $\sim$ 10 k $\Omega$
- Rotational life: 20 million cycles

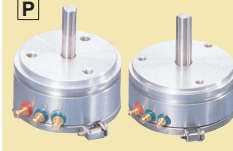
**P**



### JC22E

- Turns: 1
- Effective electrical angle:  $320^\circ \pm 5^\circ$
- Linearity:  $\pm 1\%$
- Resistance range: 1 k $\sim$ 10 k $\Omega$
- Rotational life: 10 million cycles

**P**



### JC30S/40S

- Turns: 1
- Effective electrical angle:  $343^\circ \pm 5^\circ$  /  $345^\circ \pm 5^\circ$
- Linearity:  $\pm 0.5\%$  /  $\pm 0.3\%$
- Resistance range: 500 $\sim$ 20 k $\Omega$
- Rotational life: 30 million cycles

**P**



### CRV16

- Turns: 1
- Effective electrical angle:  $220^\circ \pm 10^\circ$
- Linearity:  $\pm 2\%$
- Resistance range: 2 k $\sim$ 10 k $\Omega$
- Rotational life: 500,000 cycles

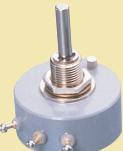
**P**



### JCL/JCL B (Rectilinear type)

- Effective electrical travel: 10 $\sim$ 50mm/100 $\sim$ 500mm
- Linearity:  $\pm 0.5\%$
- Resistance range: 1 k $\sim$ 10 k $\Omega$
- Rotational life: 20 million cycles / 4 $\sim$ 20 million cycles

**C**



### JP-30

- Turns: 1
- Effective electrical angle:  $300^\circ \pm 1^\circ$
- Linearity:  $\pm 0.5\%$
- Resistance range: 500 $\sim$ 100 k $\Omega$
- Rotational life: 3 million cycles

## Manual setting potentiometers

**W**



### M-1303/1305

- Turns: 3 on M-1303 and 5 on M-1305
- Effective electrical angle:  $1080^\circ$  on M-1303 and  $1800^\circ$  on M-1305
- Linearity:  $\pm 0.5\%$
- Resistance range: 100 $\sim$ 20 k $\Omega$
- Rotational life: 15,000 cycles

**W**



### M-22S10

- Turns: 10
- Effective electrical angle:  $3600^\circ$
- Linearity:  $\pm 0.2\%$
- Resistance range: 100 $\sim$ 50 k $\Omega$
- Rotational life: 25,000 cycles

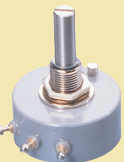
**W**



### M-22E10

- Turns: 10
- Effective electrical angle:  $3600^\circ$
- Linearity:  $\pm 0.2\%$
- Resistance range: 100 $\sim$ 50 k $\Omega$
- Rotational life: 25,000 cycles

**C**



### JP-30B

- Effective electrical angle:  $300^\circ \pm 1^\circ$
- Linearity:  $\pm 0.5\%$
- Resistance range: 500 $\sim$ 100 k $\Omega$
- Rotational life: 100,000 cycles

# Encoders

**O** : Incremental Optical type

**M** : Incremental Magnetic type

## Sensing rotary encoders

**O**



### RE12

- Incremental
- Miniature size
- Input voltage: 5VDC
- Quasi-sinusoidal A phase
- Resolution: 100, 200 or 300 P/R

**O**



### RE12D

- Incremental
- Miniature size
- Input voltage: 5VDC
- Square wave, A and B phases
- Resolution: 100, 200 or 300 P/R

**O**



### RE30E

- Incremental
- Input voltage: 5 VDC or 24 VDC
- Square wave, A, B and Z phase
- Resolution: 100 $\sim$ 1024 P/R

**O**



### RE30E

- Incremental
- Input voltage: 5 VDC or 24 VDC
- Square wave, A, B and Z phase
- Resolution: 100 $\sim$ 1024 P/R

**O**



### REC20/RES20

- Incremental
- Input voltage: 5 VDC
- Square wave, A and B phases
- Resolution: 25 P/R

**O**



### REC20D(W)/RES20D(W)

- Incremental
- Input voltage: 5 VDC
- Square wave, A and B phases
- Resolution: 25 P/R
- Panel seal types (W) available

**M**



### RMS20

- Incremental
- Input voltage: 5 VDC
- Square wave, A and B phases
- Resolution: 100, 250 or 256 P/R

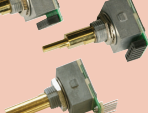
**O**



### REC16/RES16

- Incremental
- Input voltage: 5 VDC
- Square wave, A and B phases
- Resolution: 25 or 50 P/R
- Push switch option available

**O**



### REC16K/16L/16M

- Incremental
- Detent & smooth feel
- Input voltage: 5 VDC
- Square wave, A and B phases
- Resolution: 25 P/R
- Single/double shaft; Push switch option available

**O**



### CJ25

- Joystick, encoder and pushbutton switch in one package
- Power supply: 5 VDC / 20 mA max
- Resolution: 5 P/R (20 position)
- Square wave, A and B phases
- Joystick: 4 or 8 direction

# Turbo Fans

Resin material in full compliance with

**U** : UL94 V0

**F** : FDA standards

## Micro blower TF series with aerodynamic bearings is compact yet provides high power, long life and low vibration.

**U**



### TF037C-2100

- Operating voltage range: 10 $\sim$ 30 VDC
- Rotation speed: 6,000 $\sim$ 45,000 r/min
- Min. flowrate: 5 L/min
- Static pressure: e.g. 4 kPa max. at 40,000 r/min, 80 L/min, at 24 VDC
- With fixing leg
- Weight: 94 g
- Driver set also available

**U**



### TF037C-2000

- Operating voltage range: 10 $\sim$ 30 VDC
- Rotation speed: 6,000 $\sim$ 45,000 r/min
- Min. flowrate: 5 L/min
- Static pressure: e.g. 4 kPa max. at 40,000 r/min, 80 L/min, at 24 VDC
- Without fixing leg
- Weight: 90 g

**U**



### TF037E-2000

- Operating voltage range: 10 $\sim$ 30 VDC
- Rotation speed: 6,000 $\sim$ 45,000 r/min
- Min. flowrate: 5 L/min
- Static pressure: e.g. 4 kPa max. at 40,000 r/min, 80 L/min, at 24 VDC
- With fixing leg, and quick fastener P14 (inlet / outlet)
- Weight: 165 g

**F**



### TF037F-2000

- Operating voltage range: 10 $\sim$ 30 VDC
- Rotation speed: 6,000 $\sim$ 45,000 r/min
- Min. flowrate: 5 L/min
- Static pressure: e.g. 4 kPa max. at 40,000 r/min, 80 L/min, at 24 VDC
- Weight: 72 g
- Driver set also available

**F**



### TF029B-1000

- Operating voltage range: 12 $\sim$ 27 VDC
- Rotation speed: 10,000 $\sim$ 50,000 r/min
- Min. flowrate: 10 L/min
- Static pressure: e.g. 2 kPa at 36,000 r/min, 100 L/min
- Weight: 55 g
- Driver set also available



# Brushless DC Fans



## F16FB

- Miniature side flow fan
- Air flow: 0.012 m<sup>3</sup>/min
- Static pressure: 5.5 Pa
- Noise: 3 db (A)
- Rated voltage: 5 VDC



## F16EA

- Air flow: 0.012 m<sup>3</sup>/min
- Static pressure: 4.7 Pa
- Noise: 3 db (A)
- Rated voltage: 3.3 VDC
- 16mm square



## F17FA

- Air flow: 0.01 m<sup>3</sup>/min
- Static pressure: 6 Pa
- Noise: 5 db (A)
- Rated voltage: 3.3 VDC
- 17mm square



## F17HA

- Air flow: 0.015 m<sup>3</sup>/min or 0.018 m<sup>3</sup>/min
- Static pressure: 10.0 Pa or 17.0 Pa
- Noise: 7 db (A) or 15 db (A)
- Rated voltage: 5 VDC
- 17mm square



## F251R

- Air flow: 0.04 m<sup>3</sup>/min or 0.05 m<sup>3</sup>/min
- Static pressure: 20.0 Pa or 30.0 Pa
- Noise: 11 db (A) or 15 db (A)
- Rated voltage: 5V or 12 VDC
- 25mm square



## F310R

- Air flow: 0.09 m<sup>3</sup>/min or 0.06 m<sup>3</sup>/min
- Static pressure: 14.0 Pa or 23.0 Pa
- Noise: 13 db (A) or 17 db (A)
- Rated voltage: 5 V or 12 VDC
- 30mm square



## F412R/F410T

- Air flow: 0.11 m<sup>3</sup>/min or 0.15 m<sup>3</sup>/min
- Static pressure: 15.0 Pa, 26.0 Pa / 10.0 Pa, 23.0 Pa
- Noise: 16 db (A), 23 db (A) / 12 db (A), 18 db (A)
- Rated voltage: 5 V or 12 VDC
- 41mm square / 40mm square



## F614T

- Air flow: 0.36 m<sup>3</sup>/min
- Static pressure: 20 Pa
- Noise: 23 db (A)
- Rated voltage: 4 V or 12 VDC
- 50mm square

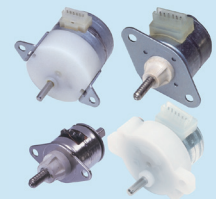
# Precision Motors

## DC geared motors



\*Please refer to our website for details.

## Stepping motors



\*Please refer to our website for details.

# Polygon Laser Scanners

## Polygon mirrors and scanner motors



### Polygon Mirrors

- No. 1 in global market share in the world
- Excellent processing technology provides high reflectivity
- Flexibly customize a variety of configuration and sizes
- Achievements of monthly production of 1 million or more
- An ideal solution for LiDAR long-distance detection

for LiDAR



Automotive Grade Drone Topography

NIDEC COMPONENTS' advanced and unique technologies are bearing fruit in various industries.



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