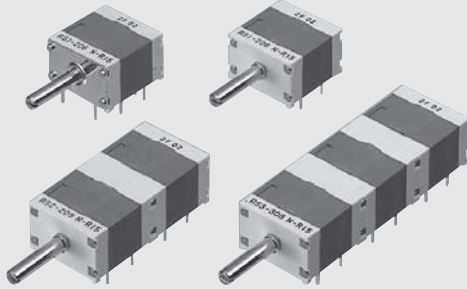


# ROTARY SELECTOR SWITCHES

# RS/RG

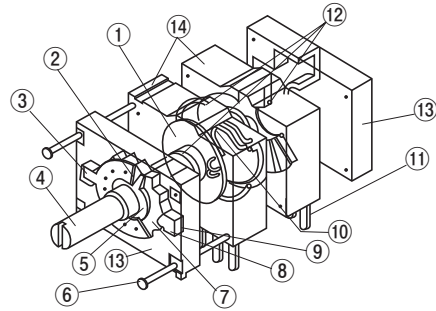
## RoHS compliant



## FEATURES

- RoHS compliant
- P.C.B. mounted, compact size and DIP compatible
- Protection by “O” ring (contact block) against dust and for cleaning after soldering
- Precious metal alloy wiping type contacts provide a long life (50000 revolutions at no load) and high reliability. (In house comparison)
- Both shorting and non-shorting types are available

## INTERNAL STRUCTURE



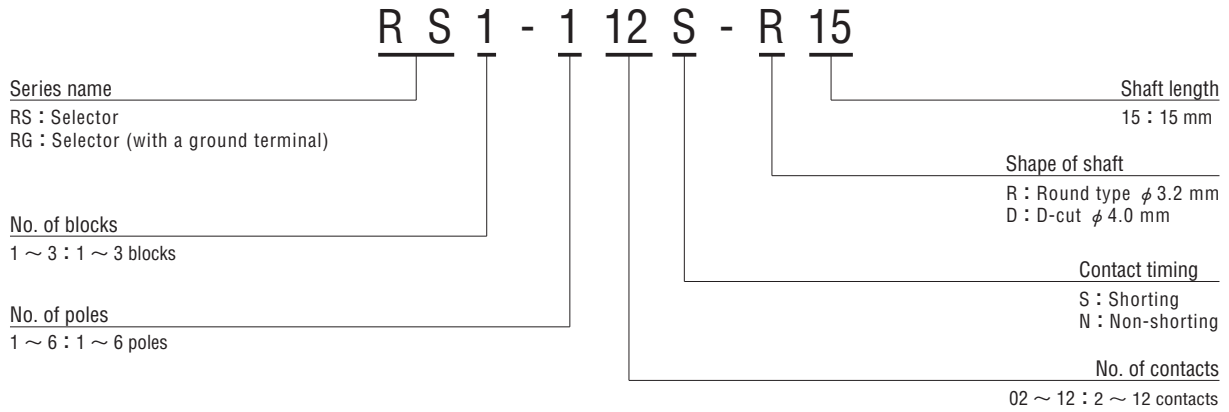
|   | Part name          | Material                        | Flammability |
|---|--------------------|---------------------------------|--------------|
| ① | Rotor              | POM (Polyoxymethylene)          | UL94HB       |
| ② | Stopper pin        | Copper alloy                    | —            |
| ③ | Stopper pin holder |                                 |              |
| ④ | Shaft              | Copper alloy, Nickel-plated     | —            |
| ⑤ | Stopper ring       | Nickel-plated                   |              |
| ⑥ | Linking pin        | Copper alloy, Nickel-plated     | UL94HB       |
| ⑦ | Click gear         | PA (Polyamide)                  |              |
| ⑧ | Click plate        | POM (Polyoxymethylene)          | —            |
| ⑨ | Click spring       | SWPA (Piano wire)               |              |
| ⑩ | Contact spring     | Multi metal alloy               | UL94HB       |
| ⑪ | Terminal pin       | Copper alloy, Gold-plated       |              |
| ⑫ | “O” ring           | Silicone rubber                 | UL94HB       |
| ⑬ | Cover              | PBT (Polybutyleneterephthalate) |              |
| ⑭ | Housing            |                                 |              |

The DIP-TYPE ROTARY SELECTOR SWITCHES RS/RG series listed here are standard versions, but our production will be made upon receipt of your orders.

# RS/RG

## ROTARY SELECTOR SWITCHES

### ■ PART NUMBER DESIGNATION



※ Shaft length of 10 mm or 20 mm is also available.

### ■ LIST OF PART NUMBERS

| No. of blocks | No. of poles | No. of contacts |         |         |         |         |         |         |         |         |         |         |
|---------------|--------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|               |              | 02              | 03      | 04      | 05      | 06      | 07      | 08      | 09      | 10      | 11      | 12      |
| 1             | 1            | RS1-102         | RS1-103 | RS1-104 | RS1-105 | RS1-106 | RS1-107 | RS1-108 | RS1-109 | RS1-110 | RS1-111 | RS1-112 |
|               | 2            | RS1-202         | RS1-203 | RS1-204 | RS1-205 | RS1-206 |         |         |         |         |         |         |
| 2             | 3            |                 |         |         |         |         | RS2-207 | RS2-208 | RS2-209 | RS2-210 | RS2-211 | RS2-212 |
|               | 3            | RS2-302         | RS2-303 | RS2-304 | RS2-305 | RS2-306 |         |         |         |         |         |         |
| 3             | 3            |                 |         |         |         |         | RS3-307 | RS3-308 | RS3-309 | RS3-310 | RS3-311 | RS3-312 |
| 2             | 4            | RS2-402         | RS2-403 | RS2-404 | RS2-405 | RS2-406 |         |         |         |         |         |         |
| 3             | 5            | RS3-502         | RS3-503 | RS3-504 | RS3-505 | RS3-506 |         |         |         |         |         |         |
|               | 6            | RS3-602         | RS3-603 | RS3-604 | RS3-605 | RS3-606 |         |         |         |         |         |         |

☐ : Not manufactured

※ Verify the above part numbers when placing orders.

※ The above part numbers are all available respectively with the combination of Ground terminal (with or without). Contact timing (Shorting or Non-shorting), and Shaft shape (Round or D-cut).

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# RS/RG

## ROTARY SELECTOR SWITCHES

### STANDARD SPECIFICATIONS

|                             |  |
|-----------------------------|--|
| Circuit type                | 1 pole 2 ~ 12 contacts (per block)<br>2 poles 2 ~ 6 contacts (per block)         |
| Operating temperature range | -40 ~ 85 °C  |
| Storage temperature range   |  |
| Sealing                     | Washable (only contact block, "O" ring sealed)<br>※Please refer to page 150, 151 |
| Net weight                  | Approx. 7 g (1 block)<br>Approx. 13.6 g (2 blocks)<br>Approx. 19.4 g (3 blocks)  |

### ELECTRICAL CHARACTERISTICS

|  |                                      |
|--|--------------------------------------|
| Contact rating<br>Maximum current<br>Minimum current<br>Maximum voltage<br>Minimum voltage | 1 VA<br>1 A<br>1 μA<br>30 V<br>20 mV |
| Contact timing   | Shorting, Non-shorting               |
| Contact resistance   | 100 mΩ maximum                       |
| Insulation resistance  | 1000 MΩ (DC500 V) minimum            |
| Dielectric strength  | AC500 V, 60 s                        |
| Electrostatic capacity   | 4 pF maximum, 10 kHz                 |

### MECHANICAL CHARACTERISTICS

|                   |  |
|-------------------|--|
| Adjustment torque | 60 ± 30 mN·m {612 ± 306 gf·cm}   |
| Stopper strength  | 500 mN·m {5.1 kgf·cm} minimum  |
| Stepping angle    | 30°  |
| Terminal strength | 10 N {1.02 kgf} minimum  |
| Solderability     | 245 ± 3 °C, 2 ~ 3 s  |
| Soldering heat    | Flow : 260 ± 3 °C as the temperature in a pot of molten solder, immersion from head of terminal to backside of board, 5 ~ 6 s, two times maximum |
|                   | Manual soldering : 380 ± 10 °C, 3 ~ 4 s  |

{ } : Reference only

### ENVIRONMENTAL CHARACTERISTICS

|                           |   |
|---------------------------|---|
| Vibration                 | Amplitude 3 mm or<br>Acceleration 196 m/s <sup>2</sup> ,<br>10-2000-10 Hz, 3 directions for 4 h each                      |
| Shock                     | 980 m/s <sup>2</sup> , 6 ms<br>6 directions for 3 times each  |
| Load life                 | 500,000 steps or 50,000 cycles at 6 contacts with no load<br>200,000 steps or 20,000 cycles at 6 contacts with rated load |
| Humidity (Steady state)   | 40 °C, Relative humidity 90 ~ 95 %, 240 h   |
| High temperature exposure | 85 °C, 16 h   |
| Low temperature exposure  | -40 °C, 16 h  |

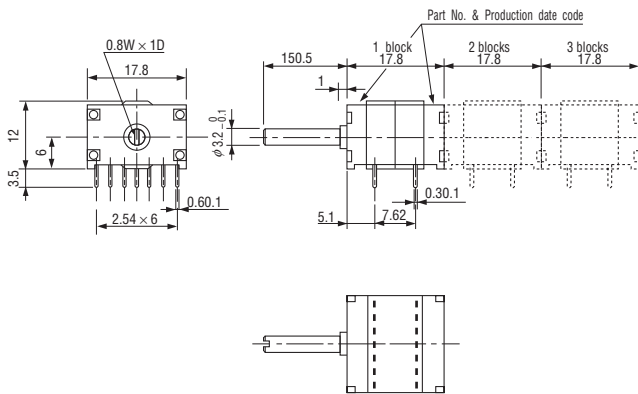
The DIP-TYPE ROTARY SELECTOR SWITCHES RS/RG series listed here are standard versions, but our production will be made upon receipt of your orders.

# RS/RG ROTARY SELECTOR SWITCHES

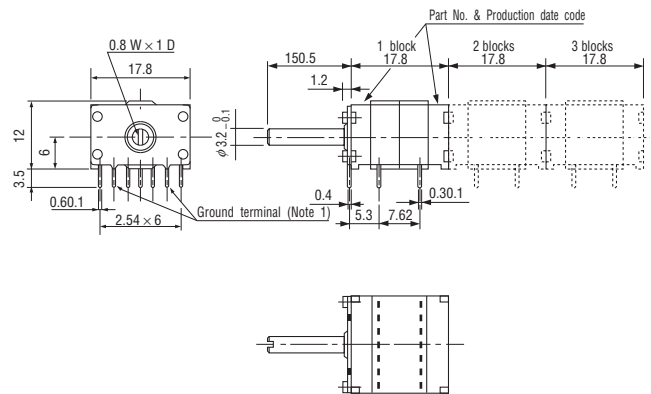
## OUTLINE DIMENSIONS

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

### RS series

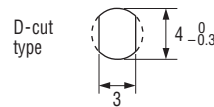
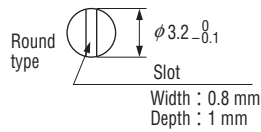


### RG series



(Note1)  
A ground terminal is connected electrically to a shaft.

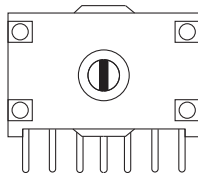
### (A) Diameter of shaft



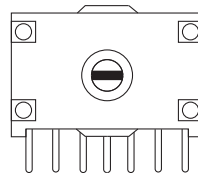
### <Shaft slot direction>

There is a difference in the direction of the slot on the shaft between shorting and non-shorting type. The location of the shaft of each type when their shafts are fully turned to CCW is shown in the chart below.

### Shorting type



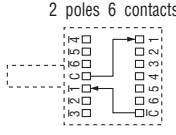
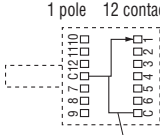
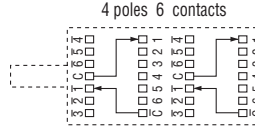
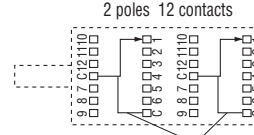
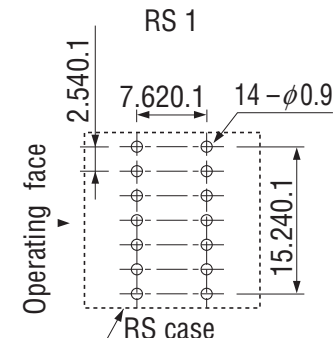
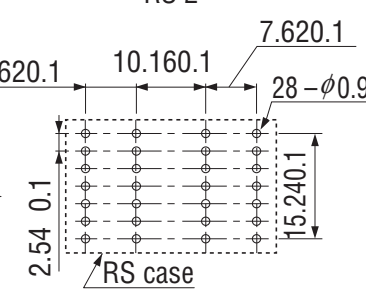
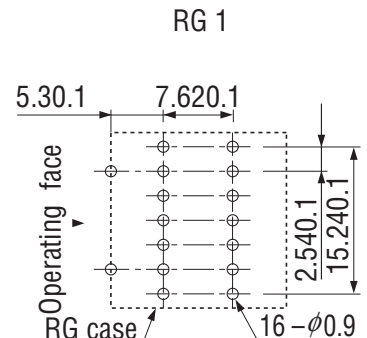
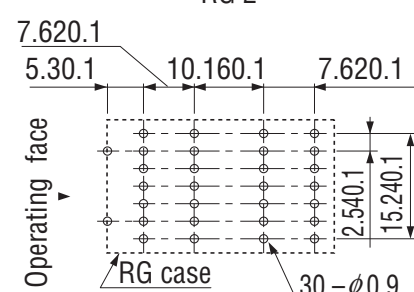
### Non-shorting type



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# RS/RG ROTARY SELECTOR SWITCHES

## TERMINAL CONNECTION / P.C.B. THROUGH HOLE DIMENSIONS (Unit: mm)

|                                   | RS   | RG   |
|-----------------------------------|--|--|
| Terminal pin layout (Bottom view) | <p>2 poles 6 contacts</p>  <p>1 pole 12 contacts</p>  <p>External connection</p>                       | <p>4 poles 6 contacts</p>  <p>2 poles 12 contacts</p>  <p>External connection</p>                     |
| P.C.B. dimensions (Bottom view)   | <p>RS 1</p>  <p>Operating face</p> <p>RS case</p> <p>RS 2</p>  <p>Operating face</p> <p>RS case</p> | <p>RG 1</p>  <p>Operating face</p> <p>RG case</p> <p>RG 2</p>  <p>Operating face</p> <p>RG case</p> |

## PACKAGING SPECIFICATIONS

- Boxing of one block type is performed 20 pcs. (More than two blocks type are 10 pcs.) per box. Order will be accept for the quantities by packaging unit(s).  
(Ex. 1 block: 20 pcs, 40pcs... / 2 blocks: 10 pcs, 20 pcs...)

Note: The conventional knob (Round shaft,  $\phi$  3.2 mm) available in the market such as the one in the picture can be used.



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