

RD

ROTARY CODED SWITCHES

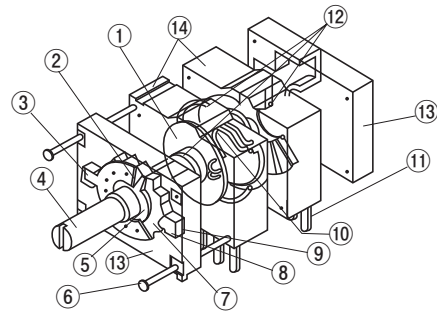
RoHS compliant



FEATURES

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

INTERNAL STRUCTURE



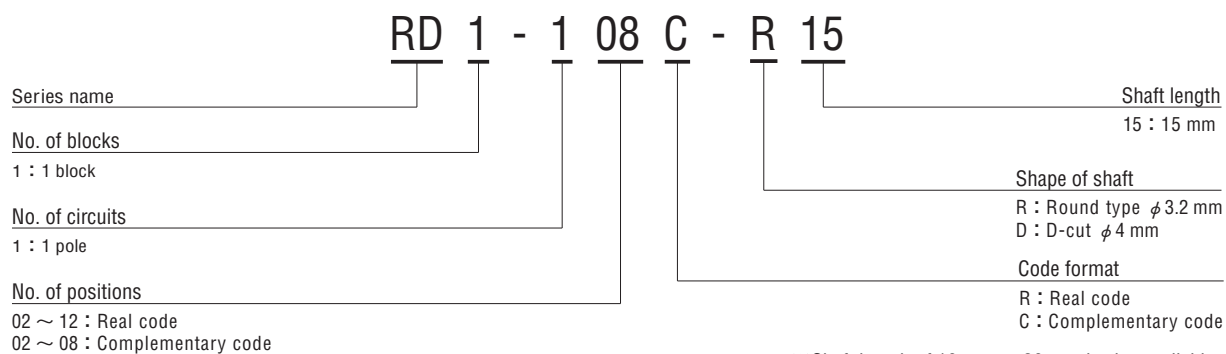
Part name		Material	Flammability
①	Rotor	Polyoxymethylene	UL94HB
②	Stopper pin	Copper alloy	—
③	Stopper pin holder		
④	Shaft	Copper alloy, Nickel-plated	
⑤	Stopper ring	Nickel-plated	
⑥	Linking pin	Copper alloy, Nickel-plated	
⑦	Click gear	PA (Polyamide)	UL94HB
⑧	Click plate	POM (Polyoxymethylene)	—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

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PART NUMBER DESIGNATION



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

LIST OF PART NUMBERS

No. of circuits	Code	No. of positions										
		02	03	04	05	06	07	08	09	10	11	12
1	Real code	RD1-102R	RD1-103R	RD1-104R	RD1-105R	RD1-106R	RD1-107R	RD1-108R	RD1-109R	RD1-110R	RD1-111R	RD1-112R
	Complementary code	RD1-102C	RD1-103C	RD1-104C	RD1-105C	RD1-106C	RD1-107C	RD1-108C				

☐ : Not manufactured

※ Verify the above part numbers when placing orders.

※ The above part numbers are all available with a round or D-cut shaft.

CODE FORMAT

No. of positions		1	2	3	4	5	6	7	8	9	10	11	12
Binary code		0	1	2	3	4	5	6	7	8	9	A	B
Code	Real code	8								●	●	●	●
		4				●	●	●	●				
		2		●	●			●	●			●	●
		1	●		●		●		●		●		●
	Complementary code	4	●	●	●	●							
		2	●	●		●	●						
		1	●		●		●		●				

● ... Contact closed

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STANDARD SPECIFICATIONS

Circuit type	Binary code
Operating temperature range	-40 ~ 85 °C
Storage temperature range	
Sealing	Washable (only contact block, "O" ring sealed) ※Please refer to page 150,151
Net weight	Approx. 7 g

ELECTRICAL CHARACTERISTICS

Contact rating	1 VA
Maximum current	1 A
Minimum current	1 μA
Maximum voltage	30 V
Minimum voltage	20 mV
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

No. of positions	Real code: 12 maximum Complementary code: Below 8 maximum
Adjustment torque	60 ± 30 mN·m (612 ± 306 gf·cm)
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 (Acceleration) 196 m/s ² , 10-2000-10 Hz, 3 directions for 4 h each
Shock	980 m/s ² , 6 ms 6 directions for 3 times each
Load life	500,000 steps or 50,000 cycles at 6 positions with no load 200,000 steps or 20,000 cycles at 6 positions 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

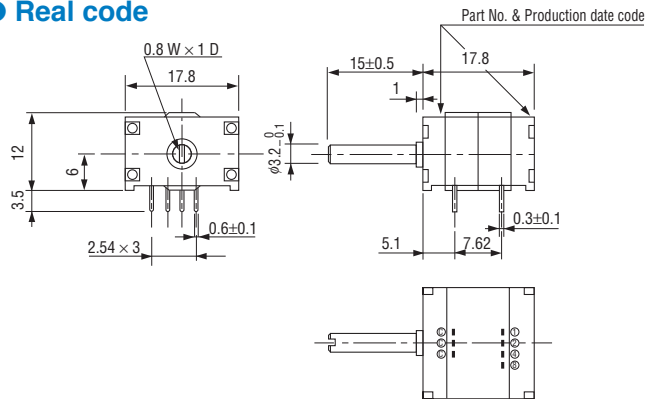
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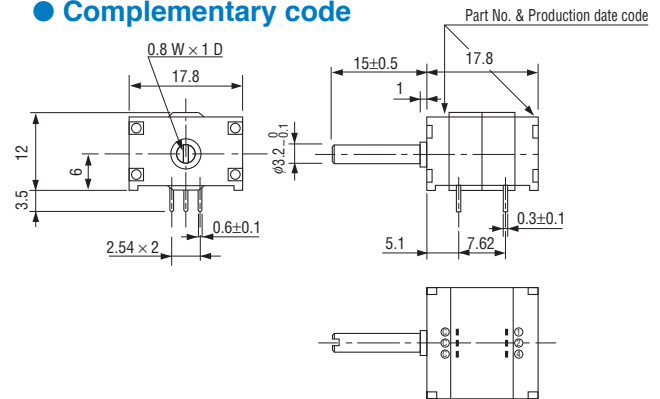
OUTLINE DIMENSIONS

Real code



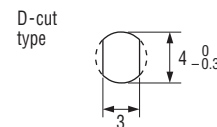
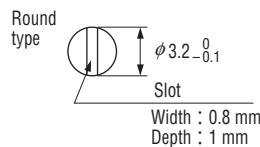
The above shows when a shaft is fully turned to CCW direction.

Complementary code



The above shows when a shaft is fully turned to CCW direction.

Diameter of shaft



TERMINAL CONNECTION / P.C.B. THROUGH HOLE DIMENSIONS

(Unit: mm)

	Real code	Complementary code
Terminal pin layout (Bottom view)		
P.C.B. dimensions (Bottom view)		

PACKAGING SPECIFICATIONS

- Boxing is performed with 20 pcs. per box.
- Order will be accept for unit of 20 pcs., ie., 20, 40, 60pcs., etc.

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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