

ROTARY CODED SWITCHES

RD

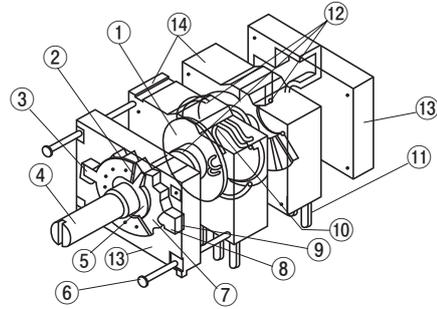
RoHS compliant



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



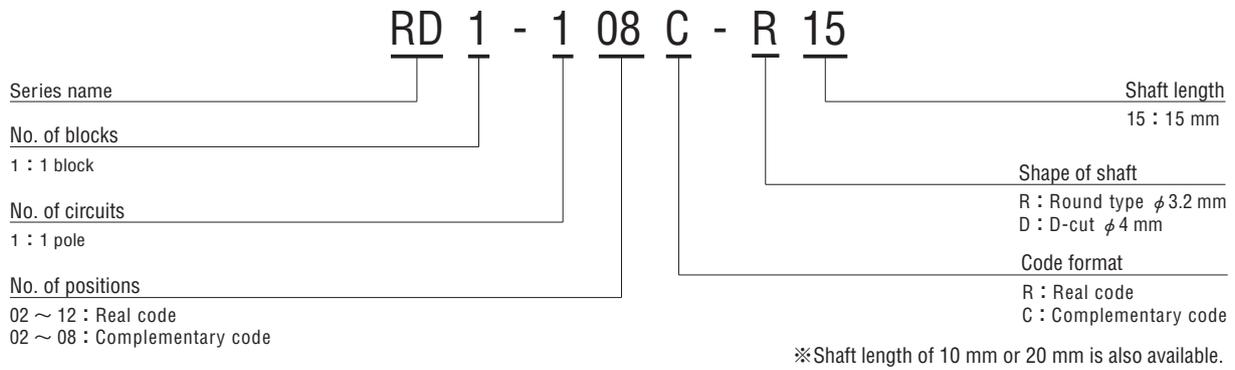
Part name	Material	Flammability
① Rotor	Polyoxymethylene	UL94HB
② Stopper pin	Copper alloy	—
③ Stopper pin holder		
④ Shaft		
⑤ Stopper ring	Nickel-plated	UL94HB
⑥ Linking pin	Copper alloy, Nickel-plated	
⑦ Click gear	PA (Polyamide)	—
⑧ Click plate	POM (Polyoxymethylene)	
⑨ Click spring	SWPA (Piano wire)	
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		

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■ PART NUMBER DESIGNATION



■ 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	$\bar{4}$	●	●	●	●								
		$\bar{2}$	●	●			●	●						
$\bar{1}$		●		●		●		●						

● ... 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

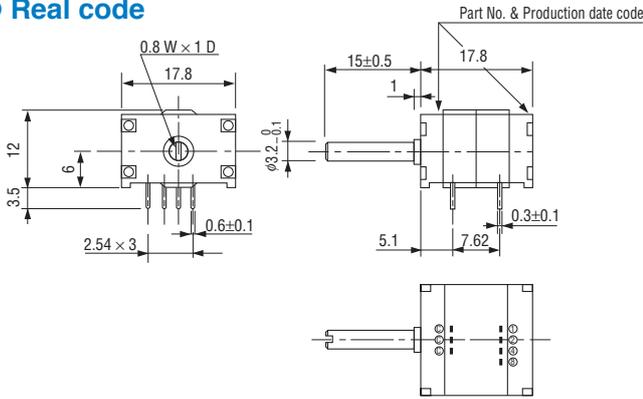
Vibration	(Amplitude) 3 mm or (Acceleration) 196 m/s ² , 10-2000-10 Hz, 3 directions for 4 h each
Shock	980 m/s ² , 6 ms 6 directions for 3 times each
Load life	500,000 steps or 50,000 cycles at 6 positions with no load 200,000 steps or 20,000 cycles at 6 positions with rated load
Humidity (Steady state)	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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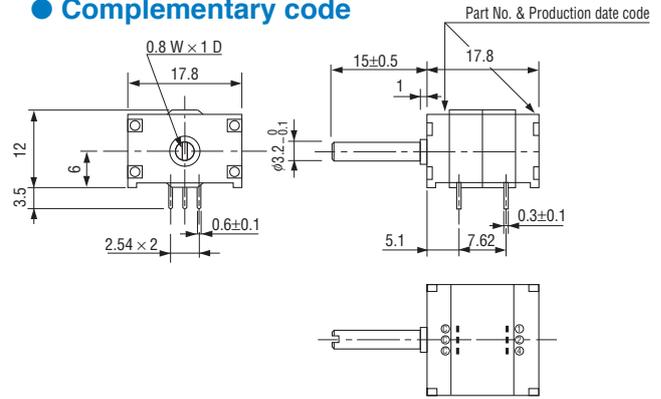
OUTLINE DIMENSIONS

Real code



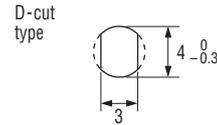
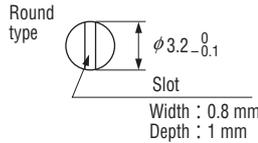
The above shows when a shaft is fully turned to CCW direction.

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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