

RD6R1A Rotary Type

Long-life sensor supporting absolute linearity



Typical Specifications

Items	Specifications
Rated Voltage	5V DC
Operating life	500,000 cycles
Total resistance	3.8kΩ
Operating temperature range	-40°C to +85°C

Product Line

Mounting method	Linearity guarantee range	Linearity	Hollow shaft variation	Minimum order unit (pcs.)		Model No.
				Japan	Export	
Connector type	310°	±2%	φ3.53	1,800	1,800	RD6R1A0008

Note

Please ask about linearity with variable ranges other than 320° .

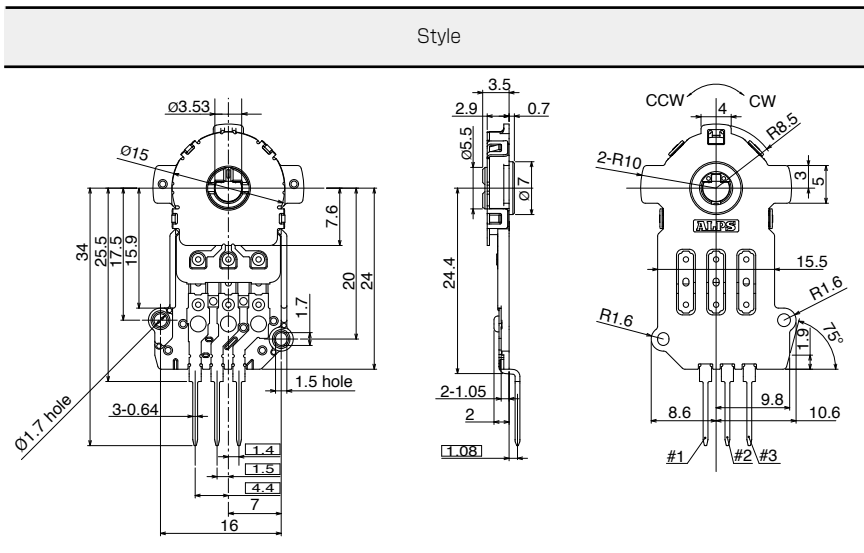
Packing Specifications

Tray

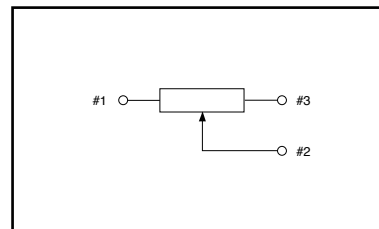
Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
1,800	1,800	540×360×250

Dimensions

Unit:mm



Circuit Diagram



Refer to P.466 for product specifications.

Resistive Position Sensors

List of Varieties

Type	Rotary Type				
Series	RDC40	RDC50	RDC90	RD6R1A	
Photo					
Direction of lever	Horizontal	Vertical Horizontal	Vertical		
Effective electrical angle (°)	5,400 (15 rotations)	333.3	80,260	320	
Linearity guarantee range (°)	4,680 (13 rotations)	320	60,244	310	
Travel	—	—	—	—	
Operating temperature range	−30°C to +80°C	−40°C to +120°C		−40°C to +85°C	
Operating life	100,000 cycles	1,000,000 cycles	10,000,000 cycles	500,000 cycles	
Available for automotive use	—	●	●	●	
Life cycle (availability)					
Mechanical performance	Operating force	—	—	—	
	Rotational torque	1.96mN·m max.	2mN·m max.		
Electrical performance	Total resistance tolerance	±30%			±20%
	Linearity (%)	±1	±2	±3	±2 (320°)
	Rated voltage (V DC)	5			
Environmental performance	Cold	−30°C 240h	−40°C 168h		
	Dry heat	80°C 240h	120°C 168h		85°C 168h
	Damp heat	60°C, 90 to 95%RH 240h	60°C, 90 to 95%RH 96h		80°C, 90 to 95%RH 96h
Terminal style	Connector	Insertion / Reflow	Reflow	Connector	
Page	456			459	

Resistive Position Sensors Measurement and Test Methods	466
Resistive Position Sensors Soldering Conditions	467
Resistive Position Sensors Cautions	467

Note

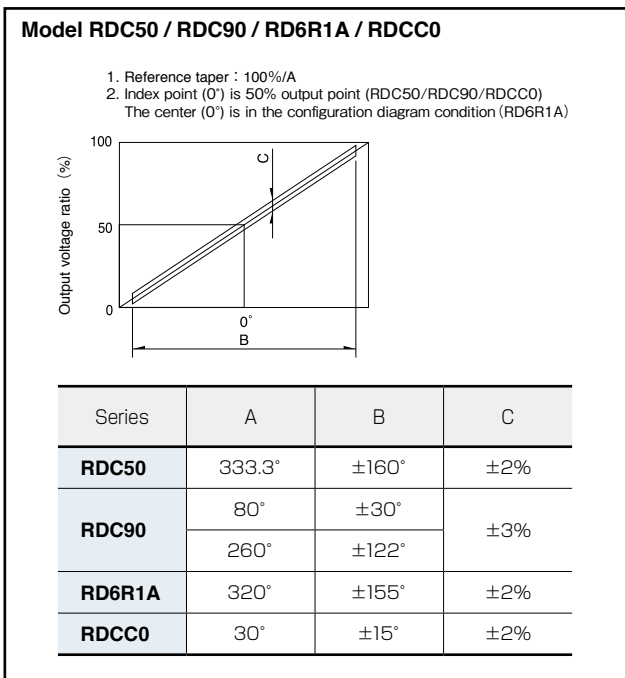
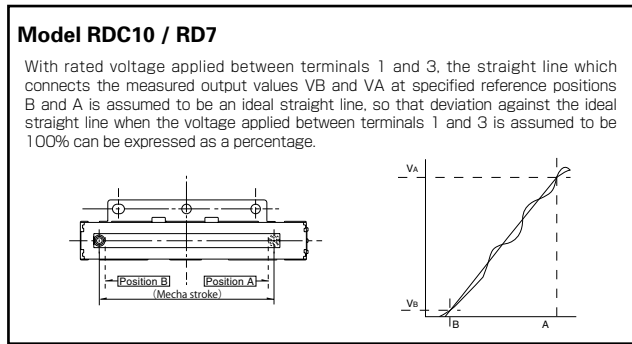
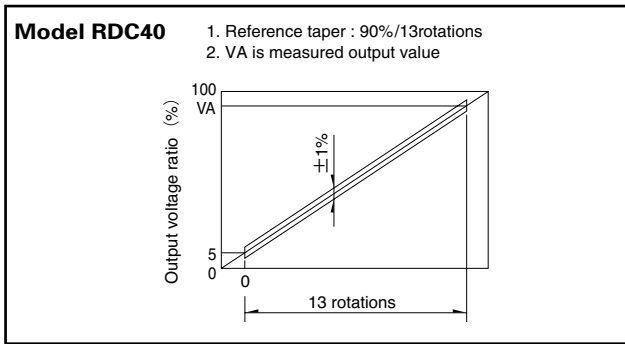
- Indicates applicability to all products in the series.

Resistive Position Sensors

Rotary Type

Linear Type

Method for Regulating the Linearity



Resistive Position Sensors / Measurement and Test Methods

Resistive Position Sensor

[Total Resistance]

The total resistance, with the shaft (lever) placed at the end of terminal 1 or 3, shall be determined by measuring the resistance between the resistor terminals 1 and 3 unless otherwise specified.

[Rating Voltage]

The rating voltage corresponding to the rated power shall be determined by the following equation. When the resulting rated voltage exceeds the maximum operating voltage of a specific resistor, the maximum operating voltage shall be taken as the rated voltage.

$$E = \sqrt{P \cdot R}$$

E : Rated voltage (V)
 P : Rated power (W)
 R : Total nominal resistance (Ω)