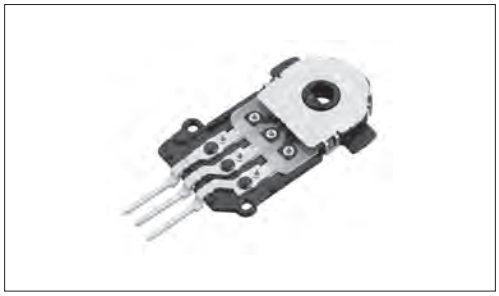
RD6R1A Rotary Type

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℃ to +85℃

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

Other varieties are also available. Please inquire.

Packing Specifications

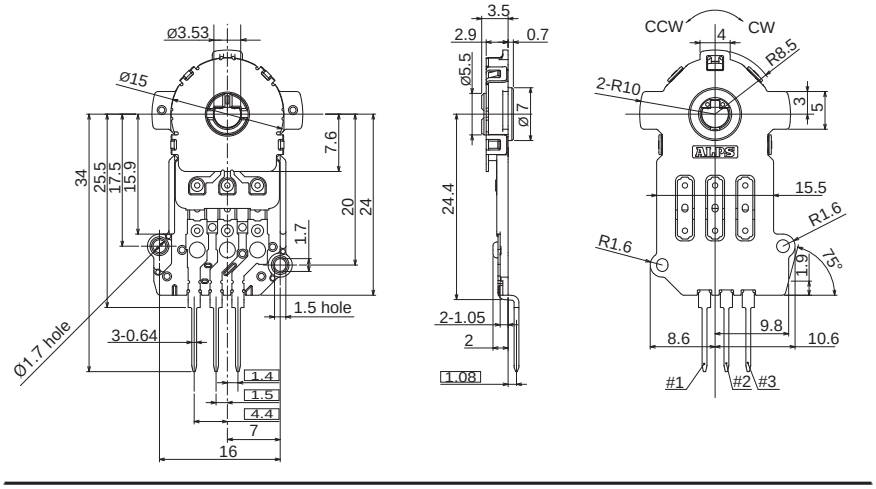
Tray

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

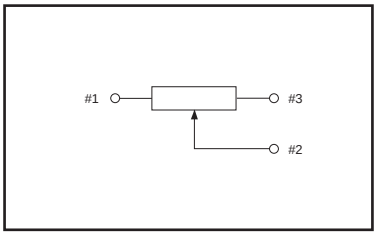
Dimensions

Unit:mm

Style



Circuit Diagram



Refer to P.426 for product specifications.

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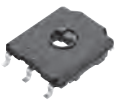
List of Varieties

Type		Rotary Type		
Series		**RDC50**	**RDC90**	**RD6R1A**
Photo				
Direction of lever		Vertical / Horizontal	Vertical	
Reference taper		100%/333.3°	100%/80°, 100%/260°	100%/320°
Linearity guarantee range		320°	60°, 244°	310°
Operating temperature range		−40℃ to +120℃		−40℃ to +85℃
Operating life		1,000,000 cycles	10,000,000 cycles	500,000 cycles
Available for automotive use		●	●	●
Life cycle (availability)		★2	★2	★2
Mechanical performance	Rotational torque	2mN·m max.		100mN·m
Electrical performance	Total resistance tolerance	±30%		±20%
	Linearity	±2%	±3%	±2% (320°)
	Rated voltage	5V DC		
Environmental performance	Cold	−40℃ 168h		
	Dry heat	120℃ 168h		95℃ 168h
	Damp heat	60℃, 90 to 95%RH 96h		80℃, 90 to 95%RH 96h
Terminal style		Insertion / Reflow	Reflow	Connector
Page		417		420

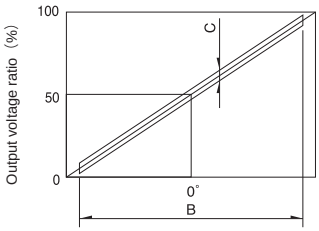
Note

● Indicates applicability to all products in the series.

Method for Regulating the Linearity

Model RDC50 / RDC90 / RD6R1A

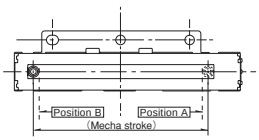
1. Reference taper : 100%/A
2. Index point (0°) is 50% output point (RDC50/RDC90)
   The center (0°) is in the configuration diagram condition (RD6R1A)

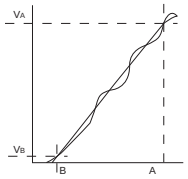


Series	A	B	C
RDC50	333.3°	±160°	±2%
RDC90	80°	±30°	±3%
	260°	±122°	
RD6R1A	320°	±155°	±2%

Model RDC10 / RD7

With rated voltage applied between terminals 1 and 3, the straight line which connects the measured output values VB and VA at specified reference positions B and A is assumed to be an ideal straight line, so that deviation against the ideal straight line when the voltage applied between terminals 1 and 3 is assumed to be 100% can be expressed as a percentage.





Resistive Position Sensors / Measurement and Test Methods

Resistive Position Sensor

(Total Resistance)

Unless otherwise specified, total resistance is the resistance measured between resistor terminals 1 and 3.

(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)