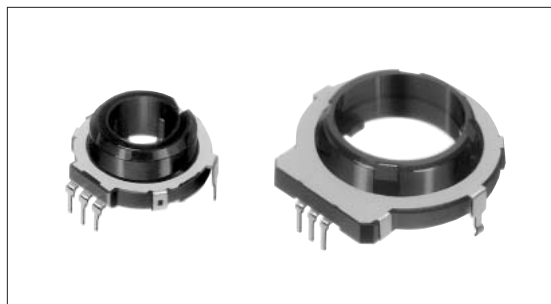


Encoder Hollow Shaft Type

SRGP Series



Hollow Shaft Encoder allowing various combinations.



Features

- Small sized hollow type.

Applications

- Controls image / sound devices including car navigation systems, DVD players car audio systems, mini component stereos, and LCD monitors
- Level controls for communication devices, including telephones and FAX machines
- Controls for general electronic devices, including air conditioners, electronic toys, microwaves, rice coolers, car navigation system, LCD monitors and remote controllers

Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		10mA 5V DC/50 μ A 3V DC
Output voltage		1V max. at 1mA 5V DC (Resistive load)
Operating life	Without load	50,000 cycles
	With load	50,000 cycles

Products Line

Detent torque (mN·m)	Number of detent	Operating direction	Resolution	Minimum packing unit (pcs.)	Products No.	Drawing No.
7 \pm 3	20	Vertical	10	100	SRGP200200	1
13 \pm 4	16		16		SRGPWJ0500	2
6.5 \pm 4	32		SRGPWJ0200			

Note

Additional switches not included in the above list are also available. Contact us for details.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line Package Type

Multi Control Devices

TACT Switch™

Custom-Products

Incremental Type

Absolute Type

Dimensions

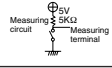
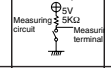
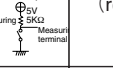
Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from the Direction A)
1	<p>Phase difference of code portion Clockwise Counter-clockwise (36°) (18°) Detent position ON OFF ON OFF T1 T2 T3 T4 $T1, T3 = 1/4T \pm 1/8T$ T2, T4 = Phase difference shall not be reversed</p>	
2	<p>Phase difference of code portion Clockwise Counter-clockwise (22.5°) Detent position ON OFF ON OFF T1 T2 T3 T4 $T1, T3 = 1/4T \pm 1/8T$ T2, T4 = Phase difference shall not be reversed (SRGPWJ0500)</p> <p>Phase difference of code portion Clockwise Counter-clockwise (11.25°) Detent position ON OFF ON OFF T1 T2 T3 T4 $T1, T3 = 1/4T \pm 1/8T$ T2, T4 = Phase difference shall not be reversed (SRGPWJ0200)</p>	

Note

The thickness of PC board is assumed to be t1.6.

Products Specifications

Items		Type										
		SRGP30	SRGP40	EC21A	SRGP20	EC28A	SRGPWJ	EC40A	EC45A	RK45A RK45B	EC60 A	
Operating temperature range		-40°C to +85°C	-10°C to +60°C	-40°C to +85°C	-10°C to +60°C	-40°C to +85°C	-10°C to +60°C	-30°C to +80°C				
Rating		10mA 5V DC	1mA 5V DC	10mA 5V DC				0.5mA 5V DC		0.05W	0.5mA 5V DC	
Electrical performance	Output voltage	1V max. at 5V DC, 1mA (resistive load) 		2.5V max. at 5V DC, 1mA (resistive load)	1V max. at 5V DC, 1mA (resistive load) 	2.5V max. at 5V DC, 1mA (resistive load)	1V max. at 5V DC, 1mA (resistive load) 	2.5V max. at 5V DC, 0.5mA (resistive load)		—	2.5V max. at 5V DC, 0.5mA (resistive load)	
	Insulation resistance	100MΩ min. 100V DC		100MΩ min. 250V DC	100MΩ min. 100V DC	100MΩ min. 250V DC	100MΩ min. 100V DC	10MΩ min. 50V DC				
	Voltage proof	100V AC for 1 min.		300V AC for 1 min.	100V AC for 1 min.	300V AC for 1 min.	100V AC for 1 min.	50V AC for 1 min.				
Mechanical performance	Rotational torque		5±2.5mN·m	2±1mN·m	16±7mN·m	7±3mN·m	5±3 mN·m 12±7mN·m 20±10mN·m	13±4mN·m 6.5±4mN·m	20±11mN·m	Shall be in accordance with individual specifications.		40±20mN·m
	Robustness of terminal		—		5N for 1 min.				3N for 10s			
	Robustness of actuator	Pushing direction	20N		100N	40N	100N	40N	100N			
		Pulling direction	20N		100N	40N	100N	40N	50N			
	Vibration		10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively									
	Resistance to soldering heat	Manual soldering	350±5°C, 3s max.	350±10°C, 3±1s				350°C max. 3s max.		350±5°C, 3s max.		
Dip soldering		—		260±5°C, 5±1s				260°C max. 5s max.				
Reflow soldering		150°C 2min max., 230°C 20s max. peak 240°C max.	150°C 150s max., 230°C 40s max. peak 260°C max.	—								
Durability	Operating life without load	50,000 cycles	100,000 cycles	50,000 cycles				30,000 cycles				
	Operating life with load	50,000 cycles	100,000 cycles	50,000 cycles				30,000 cycles				
Environmental performance	Cold	-40±2°C for 96h	-20±2°C for 96h	-40±2°C for 240h	-20±2°C for 96h	-40±2°C for 240h	-20±2°C for 96h	-40±3°C for 240h				
	Dry heat	85±2°C for 96h		85±2°C for 240h	85±2°C for 96h	85±2°C for 240h	85±2°C for 96h	85±3°C for 240h				
	Damp heat	40±2°C, 90 to 95%RH for 96h		60±2°C, 90 to 95%RH for 240h	40±2°C, 90 to 95%RH for 96h	60±2°C, 90 to 95%RH for 240h	40±2°C, 90 to 95%RH for 96h	40±2°C, 90 to 95%RH for 240h				

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