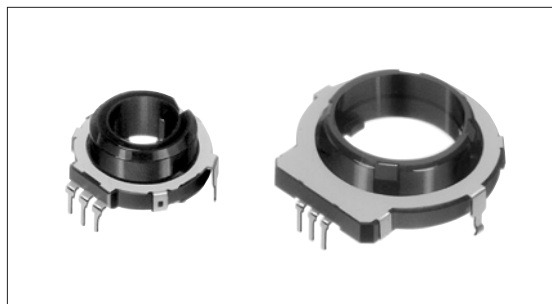


# Encoder Hollow Shaft Type

SRGP Series



Hollow-center shaft encoder enabling various combinations.



## Features

- Compact size Hollow-center shaft type.

## Applications

- DVD players/recorders, car AV equipment, mini component stereos, and various audio-visual devices
- Telephones, facsimile machines and various communication devices
- Air conditioners, electronic toys, microwave ovens, rice cookers, car navigation systems, flat panel TVs, remote controllers and various electronic devices

## Typical Specifications

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

## Product Line

Detent torque (mN·m)	Number of detent	Operating direction	Number of pulse	Minimum packing unit (pcs.)	Product 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

Products other than those listed in the above chart are also available. Please contact us for details.

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

Multi Control  
Devices

TACT Switch™

Custom-  
Products

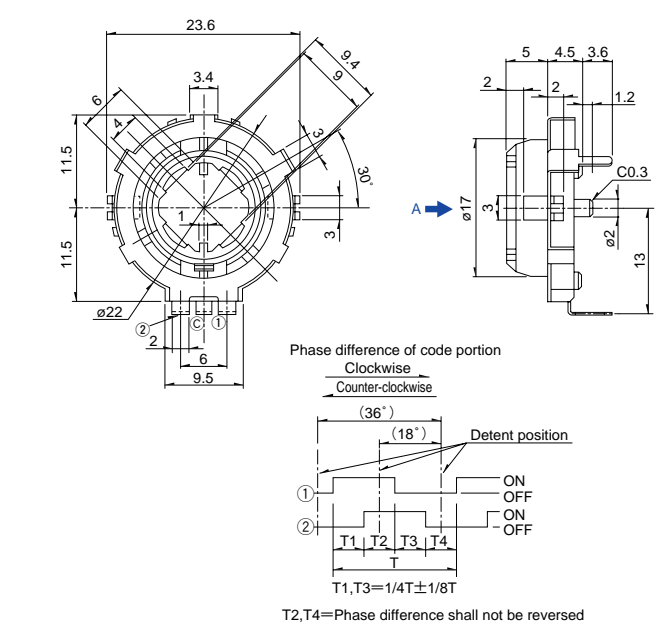
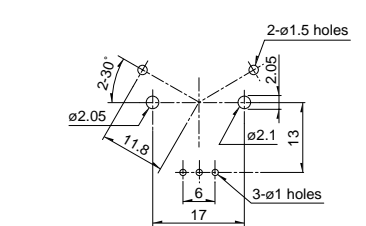
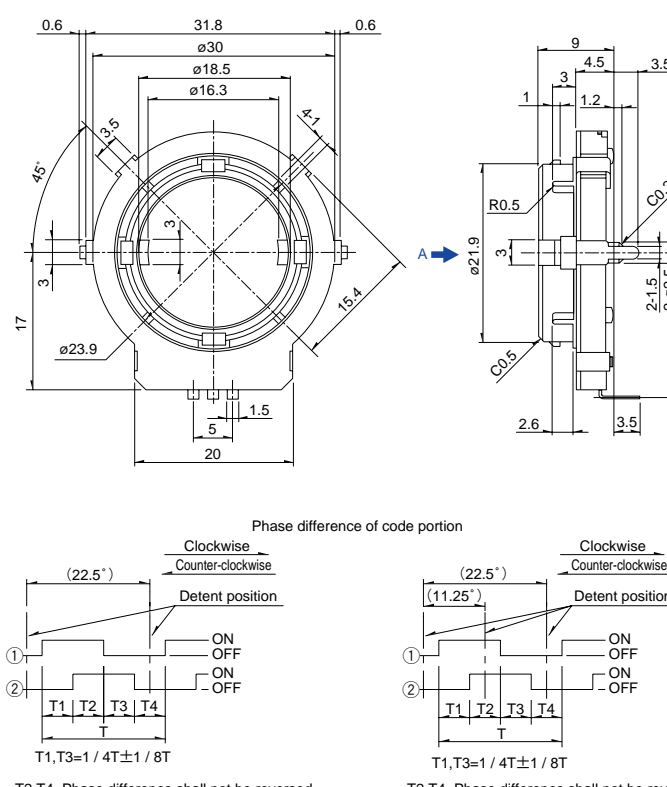
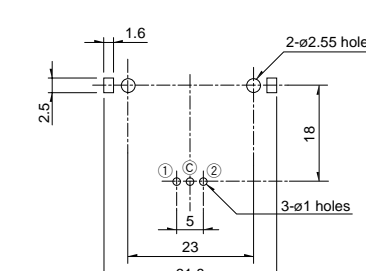
Incremental  
Type

Absolute  
Type

Refer to P.213 for product specifications.

Dimensions

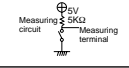
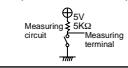
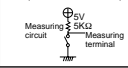
Unit:mm

No.	Style	PC board mounting hole dimensions (Viewed from the Direction A)
1	 <p>Phase difference of code portion</p> <p>Clockwise Counter-clockwise</p> <p>(36°) (18°)</p> <p>Detent position</p> <p>① ON OFF ② ON OFF</p> <p>T1 T2 T3 T4</p> <p><math>T1, T3 = 1/4T \pm 1/8T</math></p> <p>T2, T4 = Phase difference shall not be reversed</p>	 <p>2-φ1.5 holes</p> <p>2-φ2.05 holes</p> <p>3-φ1 holes</p> <p>11.8</p> <p>17</p> <p>6</p> <p>1.3</p> <p>2.05</p> <p>2-30°</p>
2	 <p>Phase difference of code portion</p> <p>Clockwise Counter-clockwise</p> <p>(22.5°) (11.25°)</p> <p>Detent position</p> <p>① ON OFF ② ON OFF</p> <p>T1 T2 T3 T4</p> <p><math>T1, T3 = 1/4T \pm 1/8T</math></p> <p>T2, T4 = Phase difference shall not be reversed (SRGPWJ0500)</p> <p><math>T1, T3 = 1/4T \pm 1/8T</math></p> <p>T2, T4 = Phase difference shall not be reversed (SRGPWJ0200)</p>	 <p>2-φ2.55 holes</p> <p>3-φ1 holes</p> <p>1.6</p> <p>2.5</p> <p>18</p> <p>23</p> <p>31.8</p> <p>5</p>

Note

PC board thickness in above diagram is based on 1.6mm.

## Product Specifications

Type		SRGP30※	SRGP40	EC21A	SRGP20	EC28A	SRGPWJ	
Operating temperature range		-10°C to +60°C			-40°C to +85°C			
Rating		10mA 5V DC	1mA 5V DC	10mA 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) 		1V max. at 5V DC, 1mA (resistive load) 	
	Insulation resistance	100MΩ min. 100V DC		100MΩ min. 250V DC	100MΩ min. 100V DC	100MΩ min. 250V DC	100MΩ min. 100V DC	
	Voltage proof	100V AC for 1minute		300V AC for 1minute	100V AC for 1minute	300V AC for 1minute	100V AC for 1minute	
Mechanical performance	Detent torque		5±2.5mN·m	2±1mN·m 3.5±1mN·m	16±7mN·m	7±3mN·m	12±7mN·m 20±10mN·m	13±4mN·m 6.5±4mN·m
	Terminal strength		—————			5N for 1minute		
	Actuator strength	Pushing direction	20N		100N	40N	100N	40N
		Pulling direction	20N		100N	40N	100N	40N
	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 <sup>+</sup> 1s	350°C max, 3s max	350±10°C, 3 <sup>+</sup> 1s	350°C max, 3s max	350±10°C, 3 <sup>+</sup> 1s
Dip soldering		—————			260±5°C, 5±1s			
Reflow soldering		Please see P.215						
Durability	Operating life without load	50,000cycles	100,000cycles	50,000cycles				
	Operating life with load	50,000cycles	100,000cycles	50,000cycles				
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	
	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	
	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	

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line Package Type

Multi Control Devices

TACT Switch™

Custom-Products

Incremental Type

Absolute Type

### Note

※ The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.