

# Low-profile and Hollow Shaft Surface mount type Encoder

SRGP40 Series

Space-saving surface-mount type features a 1.55 mm body thickness and a hollow structure of  $\phi 9.23$  mm.



## Features

- Thin type of 1.55mm main body thickness.
- The combination with tact switches of SKRH series and SKRN series, etc. is possible in the hollow space of  $\phi 9.23$ mm.
- For surface mounting.

## Applications

- Scroll of menu and data for Portable audio, digital camera, PDA and etc.

## Typical Specifications

Items		Specifications
Rating		1mA 5V DC
Output voltage		1V max. at 1mA 5V DC (Resistive load)
Operating life	Without resister	100,000 cycles
	With resister	100,000 cycles

## Products Line

Torque	Number of detent	Resolution	Soldering	Minimum packing unit (pcs.)	Products No.
$2 \pm 1$ mN·m	24	12	Reflow	800	SRGP400100

Power

Push

Slide

Rotary

Encoders

Jog Shuttle

Telephone-hook

Detector

Vibration Sensors

Dual-in-line Package Type

Multi Control Devices

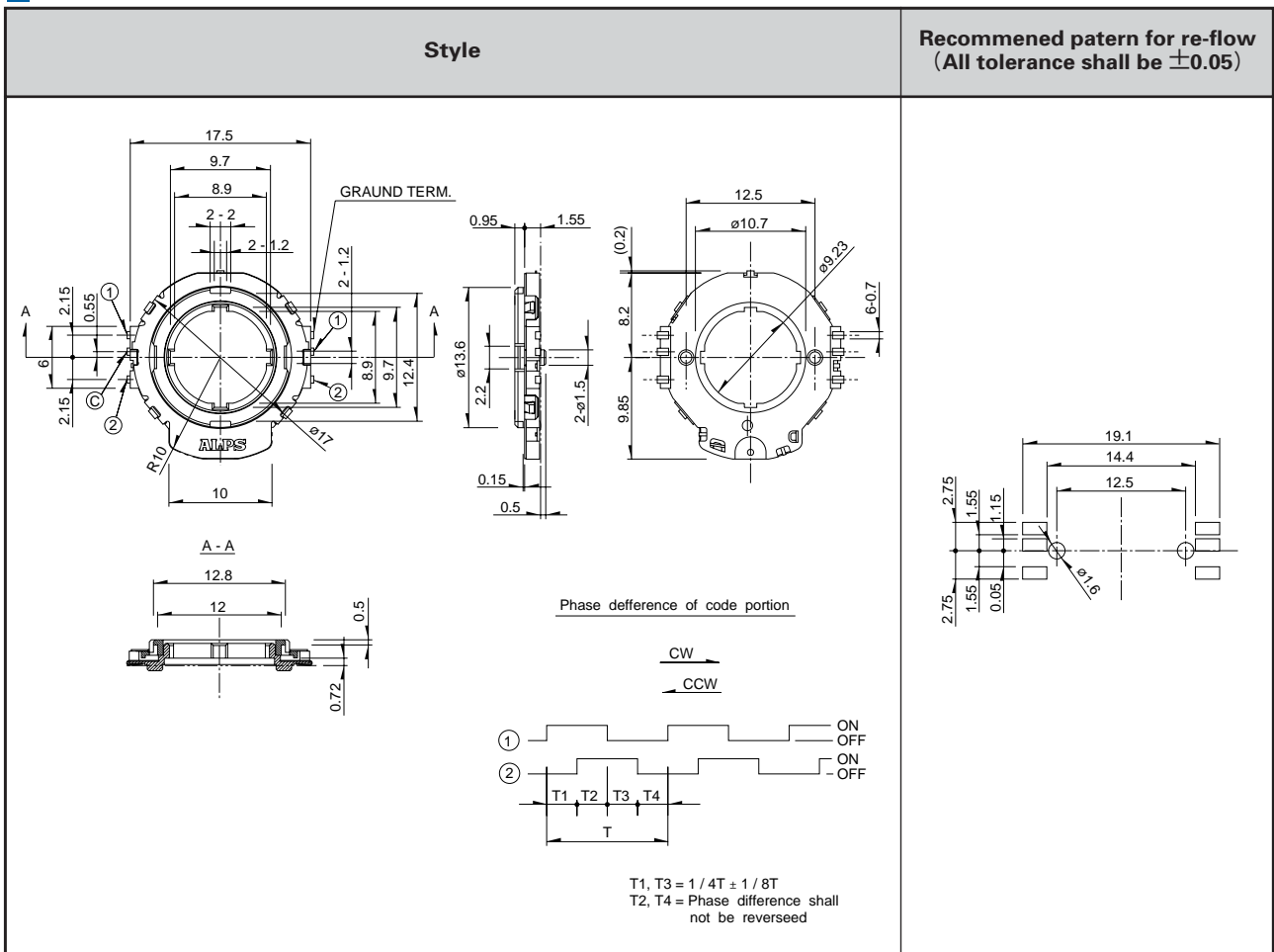
TACT

Incremental Type

Absolute Type

Dimensions

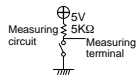
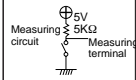
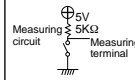
Unit : mm



- Power
- Push
- Slide
- Rotary
- Encoders
- Jog Shuttle
- Telephone-hook
- Detector
- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT

- Incremental Type
- Absolute Type

## Products Specifications

Items		Type	SRGP30	SRGP40	EC21A	SRGP20	EC28B	SRGPWJ	EC60A	
<b>Operating temperature range</b>			-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	
<b>Rating</b>			10mA 5V DC	1mA 5V DC	10mA 5V DC				0.5mA 5V DC	
<b>Electrical performance</b>	<b>Output voltage</b>		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)		
	<b>Insulation resistance</b>		100MΩ min. 100V DC	100MΩ min. 250V DC	100MΩ min. 100V DC	100MΩ min. 250V DC	100MΩ min. 100V DC	10MΩ min. 50V DC		
	<b>Voltage proof</b>		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.		
<b>Mechanical performance</b>	<b>Rotational torque</b>		5±2.5mN·m	2±1mN·m	16±7mN·m	7±3mN·m	5 ± <sub>3</sub> mN·m 7±5mN·m 12±7mN·m 20±10mN·m	13±4mN·m/ 6.5±4mN·m	40±20mN·m	
		<b>Robustness of terminal</b>	—				5N for 1 min.			3N for 10s
		<b>Robustness of actuator</b>	<b>Pushing direction</b>	20N		100N	40N	100N	40N	100N
			<b>Pulling direction</b>	20N		100N	40N	100N	40N	50N
	<b>Vibration</b>	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								
	<b>Solderability</b>	230±5°C, 3±0.5s								
	<b>Resistance to soldering heat</b>	<b>Manual soldering</b>	350±5°C, 3s max.	300±10°C, 3 <sup>±</sup> 1s					350±5°C, 3s max.	
<b>Dip soldering</b>		—		260±5°C, 5±1s				260°C 5s max.		
<b>Reflow soldering</b>		150°C 2min max., 230°C 20s max.	150°C 150s max., 230°C 40s max. peak 260°C max.	—						
<b>Durability</b>	<b>Operating life without load</b>	50,000 cycles	100,000 cycles	50,000 cycles				30,000 cycles		
	<b>Operating life with load</b>	50,000 cycles	100,000 cycles	50,000 cycles				30,000 cycles		
<b>Environmental performance</b>	<b>Cold</b>	-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		
	<b>Dry heat</b>	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		
	<b>Damp heat</b>	40±2°C, 90 to 95%RH for 96h		60°C±2°C, 90 to 95% RH for 240h	40±2°C, 90 to 95% RH for 96h	60°C±2°C, 90 to 95% RH for 240h	40±2°C, 90 to 95% RH for 96h	40°C±2°C, 90 to 95% RH for 240h		

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