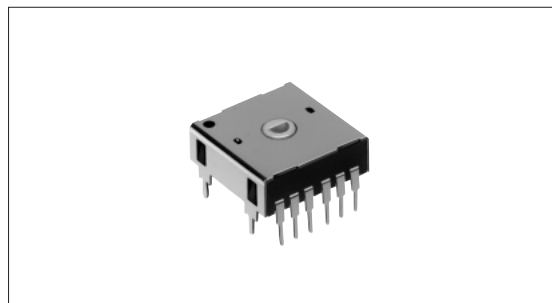


Encoder Hollow Shaft Type

SRGA Series



Hollow shaft vertical encoders deliver increased ease of use.



Typical Specifications

Items		Specifications
Rating (max.) / (min.) (Resistive load)		0.1A 12V DC/50 μ A 3V DC
Contact resistance (Initial/After operating life)		1 Ω max./1 Ω max.
Operating life	Without load	10,000cycles
	With load	10,000cycles (0.1A 12V DC)

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Incremental
Type

Absolute
Type

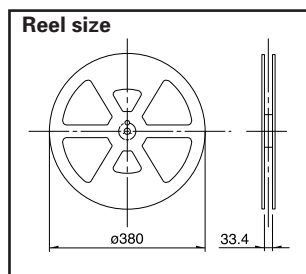
Product Line

Torque (mN·m)	Operating direction	Output code	Positions	Changeover angle	Type	Minimum order unit (pcs.)	Product No.	Drawing No.
20 \pm 10	Vertical	Gray	8	45°	Standard (hollow shaft)	1,680	SRGAV80601	1
			12	30°			SRGAVC0301	
			24	15°			SRGAVQ1100	
Without detent	13	Reflow	900		SRGAR10100	2		

Packing Specifications

Taping

Unit:mm



Series	Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
	1 reel	1 case /Japan	1 case /export packing		
SRGAR10100	300	300	600	32	428 \times 413 \times 172

Bulk

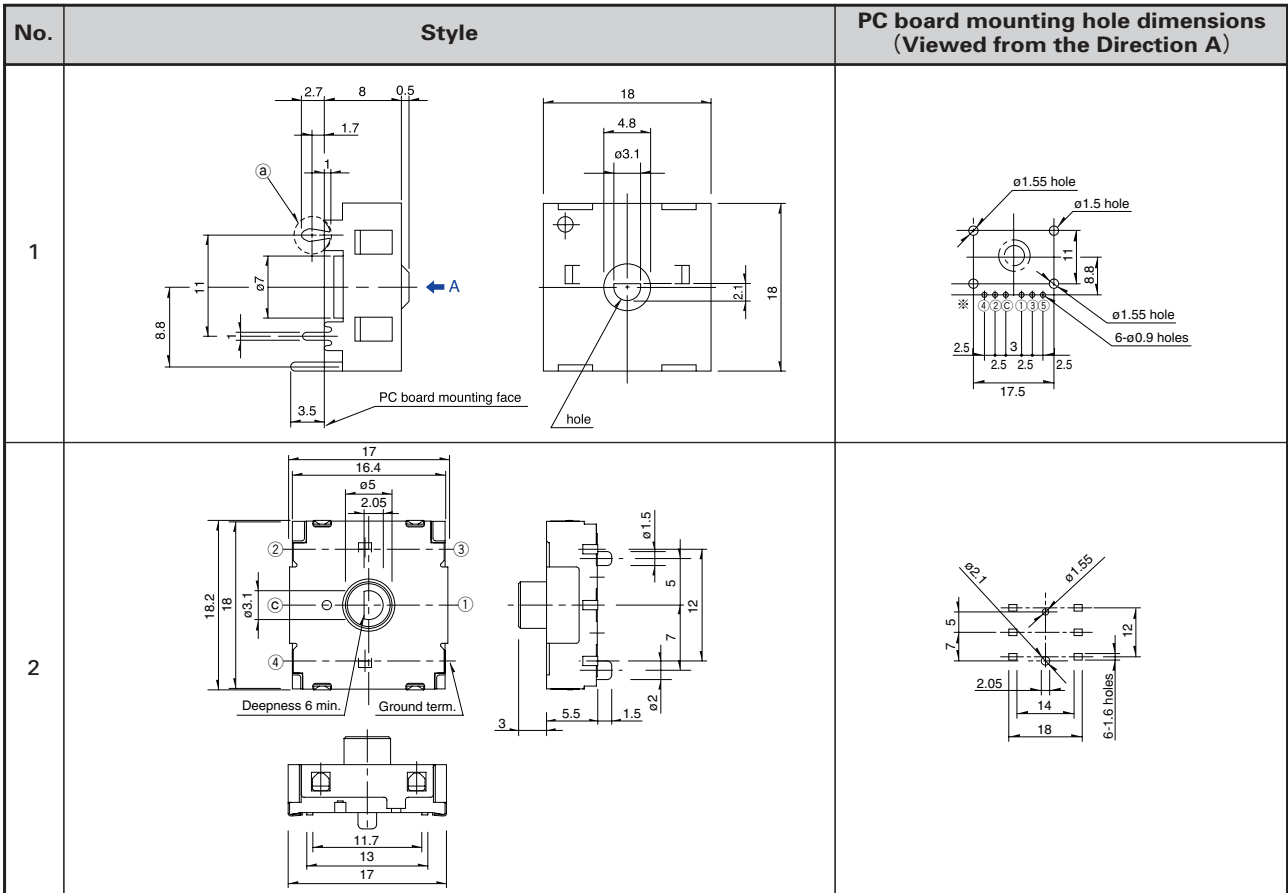
Product No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case/ export packing	
SRGAV80601 SRGAVC0301 SRGAVQ1100	840	1,680	542 \times 377 \times 209

Notes

1. Products other than those listed in the above chart are also available. Please contact us for details.
2. Please contact us for automotive use products.
3. Please place purchase orders per minimum order unit N (integer).

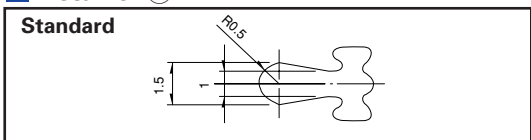
Dimensions

Unit:mm



Detail of (a)

Unit:mm



Note

※(4)(5) of SRGAV80601 and (5) of SRGAVC0301 are dummy terminals.

Standard Code (Viewed from Direction A)

SRGA

Code	Terminal	Number of positions																							24
		8								12															
Gray	1	●	●			●	●			●	●			●	●			●	●			●	●		
	2			●	●	●	●					●	●	●	●			●	●			●	●		
	3					●	●	●	●			●	●	●	●							●	●	●	●
	4									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5																					●	●	●	●



SRGAR

Code	Terminal	Number of positions																							24
		13																							
Gray	1	●			●	●	●	●	●			●	●												
	2				●	●	●	●	●			●	●												
	3	●	●	●	●	●	●					●	●	●											
	4			●	●	●	●	●																	

● The marks show the ON position.

※For terminal alignment, please refer to the illustration.

※Please note that there might be ON output of the dummy terminal in the circuit design.

Type	Absolute type			
	Metal shaft	Hollow shaft		
Series	SRGH	SRGA		
Detector	 			
Photo				
Push				
Slide	Absolute type			
Rotary	Output	Absolute type		
	Outline specifications	Shaft types	Single-shaft	Hollow shaft
		Operating direction	Vertical	
		Number of pulse/ Number of detent	—————	
		Push switch (Travel mm)	Without	
		Optional functions	—————	
Changeover angle	40°, 12.8°	15°, 24°, 30°, 45°		
Dimensions (mm)	W	20	18	
	D	19		
	H	10.5		8
Soldering	Manual soldering	350±10°C, 3 ⁺¹ s		
	Dip soldering	260±5°C, 10±1s		
Operating temperature range		—————	Please see P.234	
Maximum operating current (Resistive load)		-40°C to +85°C	-10°C to +60°C	
Electrical performance	Initial contact resistance	1Ω max.		
	Insulation resistance	100MΩ min. 100V DC		
	Voltage proof	100V AC for 1minute		
Mechanical performance	Rotational torque	Shall be in accordance with individual specifications.		
	Terminal strength	5N for 1minute		
	Push-pull strength	100N		
	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		
Environmental performance	Cold	-20±2°C for 96h		
	Dry heat	85±2°C for 96h		
	Damp heat	40±2°C, 90 to 95%RH for 96h		
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- Encoders Attached Parts234
- Encoders Cautions235, 236

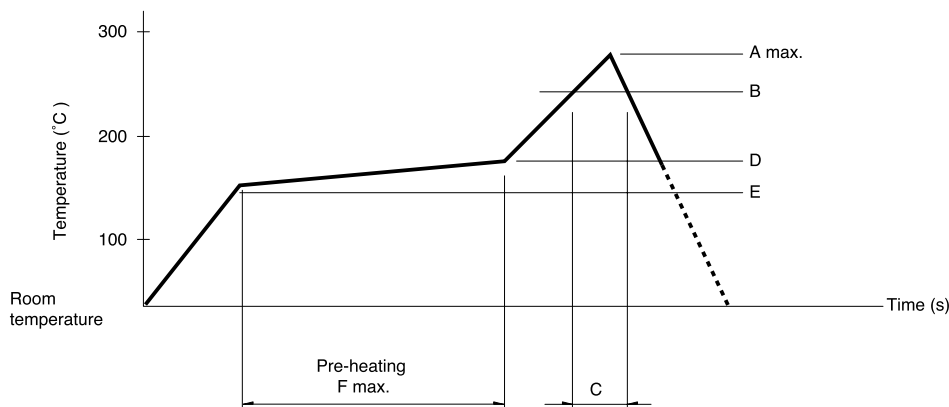
Note

※ The operating temperature range for automotive applications can be raised upon request. Please contact us for details.

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 ϕ CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



Series(Reflow type)	A (°C) max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SRGP30	240	230	20	150	150	120
SRGP30	260		40	180		
SRGAR10100	240	220	30	160		

Notes

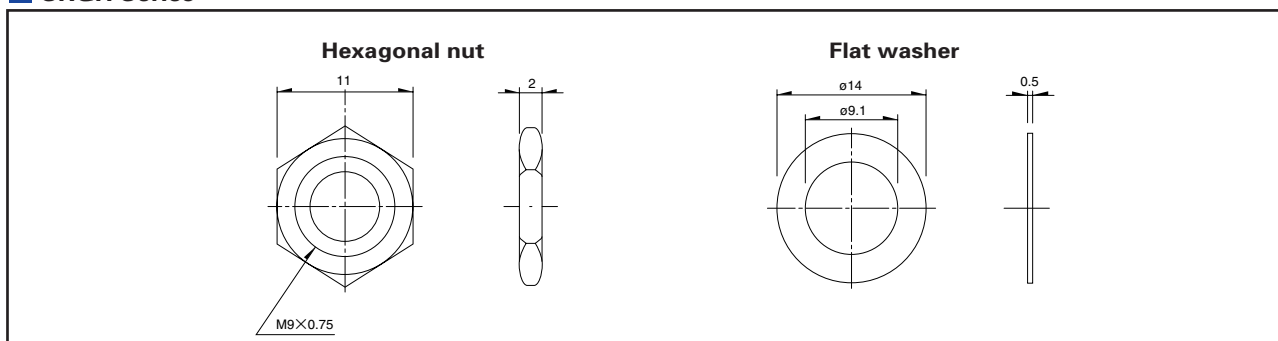
1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

Attached Parts

The following parts are included with the product.

SRGH Series

Unit:mm



- Detector
- Push
- Slide
- Rotary
- Encoders**
- Power
- Dual-in-line Package Type
- TACT Switch™
- Custom-Products

- Incremental Type
- Absolute Type**