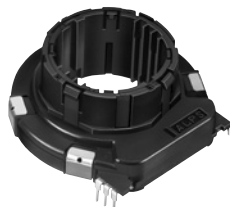


45mm Size Hollow Shaft Encoder / Potentiometer

EC45A / RK45A Series

Large ring, heavy potential torque device perfect for large ring knob design.



Car Use

Features

- Large ring for various applications.
- Round shape and low profile contributes to various designs for illuminated functions.
- An excellent operational feeling.

Applications

- Car air conditioner controls such as temperature, blower & distribution controls

Typical Specifications

Items	Specifications	
	Encoder	Potentiometer
Rating (max.)	0.5mA 5V DC	0.05W
Operating life	30,000 cycles	

Products Line

Encode (Absolute type)

Output code	Positions	Rotational angle	Detent torque	Minimum packing unit (pcs.)	Products No.	Drawing No.
5bit Gray code	31	240 degree	$36 \pm 16 \text{mN} \cdot \text{m}$	200	EC45AG520402	1

Encode (Incremental type)

Positions	Resolution	Detent torque	Minimum packing unit (pcs.)	Products No.	Drawing No.
30	15	$30 \pm 14 \text{mN} \cdot \text{m}$	200	EC45A1520404	2

Potentiometer

Resistance	Resistance taper	Positions	Rotational angle	Detent torque	Minimum packing unit (pcs.)	Products No.	Drawing No.
10k Ω	B	5	240 degree	$50 \pm 20 \text{mN} \cdot \text{m}$	200	RK45A1100004	3

Note

Additional products other than listed above are also available. Contact our Sales Department for other products.

Power

Push

Slide

Rotary

Encoders

Jog Shuttle

Telephone-hook

Detector

Vibration Sensors

Dual-in-line Package Type

Multi Control Devices

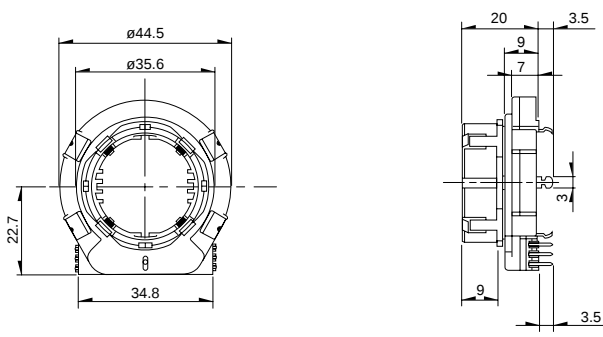
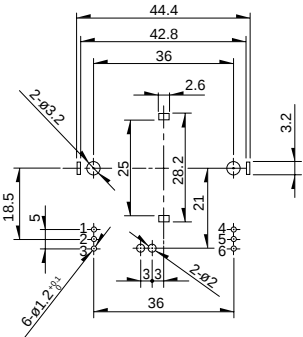
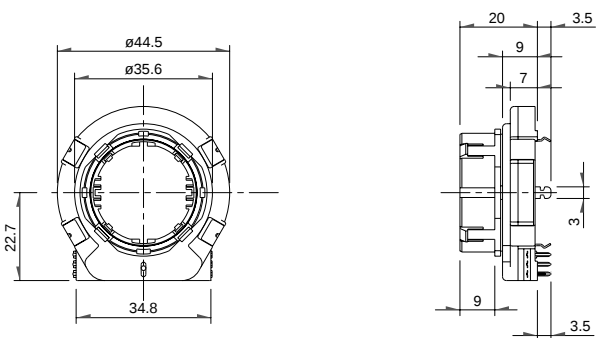
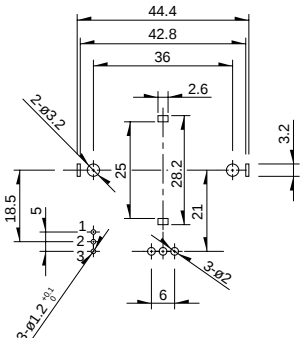
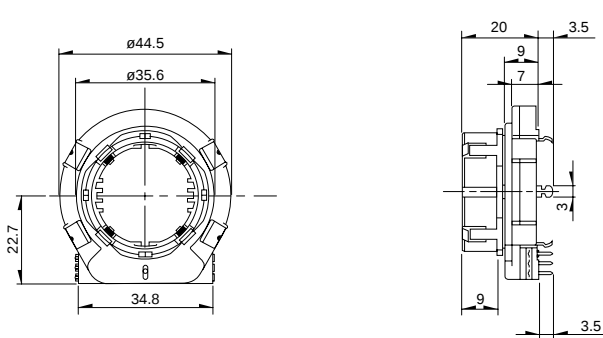
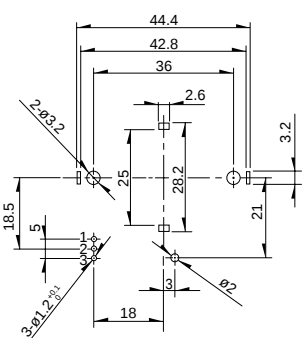
TACT

Incremental Type

Absolute Type

Dimensions

Unit : mm

No.	Style	PC board mounting hole dimensions (Viewed from switch mounting face)
1		
2		
3		

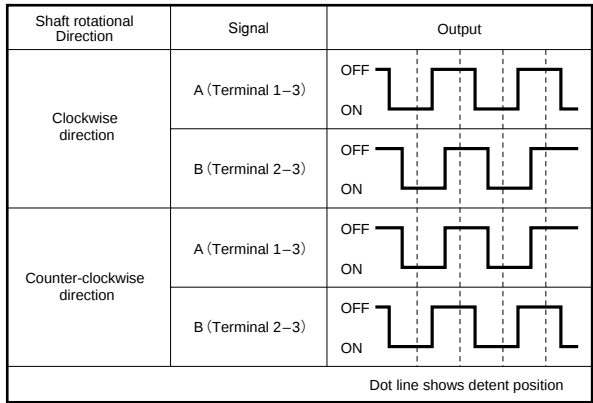
- Power
- Push
- Slide
- Rotary
- Encoders
- Jog Shuttle
- Telephone-hook
- Detector
- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT
- Incremental Type
- Absolute Type

Standard codes (Absolute encoder)

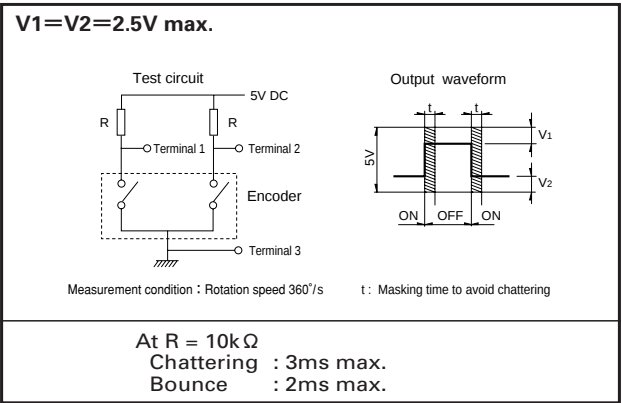
Number of positions																																	31	
Code	Terminal	Position																																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Gray	4		●	●			●	●			●	●			●	●				●	●			●	●			●	●			●	●	
	2			●	●	●	●					●	●	●	●						●	●	●	●					●	●	●	●		
	3					●	●	●	●	●	●	●	●										●	●	●	●	●	●	●	●				
	5									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
	6																		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

1. The ● marks shows the ON position.
2. The ● marks : Connections between terminals and the common terminal (terminal No. =1) are ON.

Output wave (Incremental encoder)

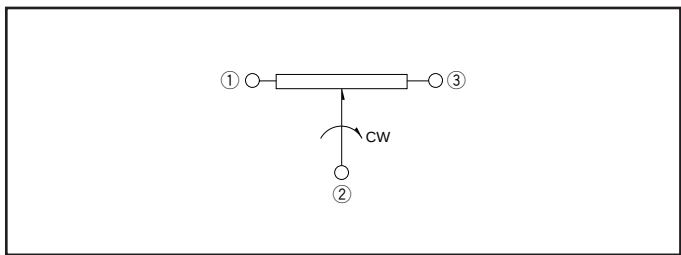


Sliding noise (Incremental encoder)



Circuit Diagram (Potentiometer)

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

Series			SRRQ	SRGH	SRGA	EC45A
Items						
Operating temperature range			-10℃ to +60℃			-30℃ to +80℃
Rating (max.) (Resistive load)			0.1A 6V DC	0.1A 12V DC		0.5mA 5V DC
Electrical performance	Initial contact resistance		1Ω max.			100Ω max.
	Insulation resistance		100MΩ min. 100V DC			10MΩ min. 50V DC
	Voltage proof		100V AC for 1 min.			50V AC for 1 min.
Mechanical performance	Rotational torque		Shall be in accordance with individual specifications.			
	Robustness of terminal		5N for 1 min.			3N for 10 s
	Robustness of actuator	Rotational direction	——			1 N・m
		Push direction	5N	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			
	Solderability		230±5℃,3±0.5s			
	Resistance to soldering heat	Manual soldering	300±10℃, 3 ⁺¹ ₀ s	350±10℃, 3 ⁺¹ ₀ s		350℃ max. 3s max.
		Dip soldering	260±5℃, 10±1s			260℃ max. 5s max.
		Reflow soldering	——		150℃ 2min max. 220℃ 30s max.	——
Durability	Operating life without load		10,000 cycles			30,000 cycles
	Operating life with load Load : As rating		10,000 cycles			30,000 cycles
Environmental performance	Cold		-20±2℃ for 96h			-40℃±3℃ for 240h
	Dry heat		85±2℃ for 96h			+85℃±3℃ for 240h
	Damp heat		40±2℃, 90 to 95%RH for 96h			40℃±2℃, 90 to 95%RH for 240h