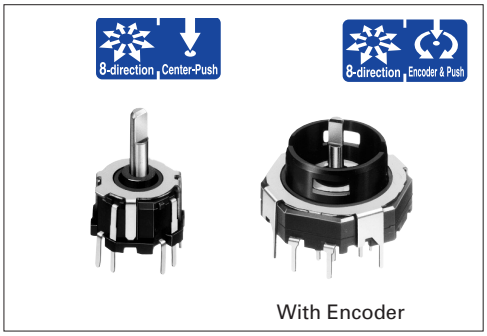
8-directional Stick Switch (with Center-push Function)

RKJXM Series

RoHS compliant

Single and dual shaft structured device contributes to simple operation and space saving.



With Encoder

Typical Specifications (Inner-shaft Stick Switch)

Items		Specifications
Rating (max.) (Resistive load)		10mA 5V DC
Contact resistance	Lever operation	1Ω max.
	Push operation	
Operating force		A·B·C·D direction : 30±20mN·m AB·BC·CD·DA direction : 25±20mN·m
Operating angle (Lever operation)		A·B·C·D direction : 10° max. AB·BC·CD·DA direction : 12° max.
Travel (Push operation)		0.3±0.2mm
Operating life	8-direction	total with 8-direction 100,000cycles
	Center-push	100,000cycles

Typical Specifications (Outer-shaft Stick Encoder)

Items	Specifications
Rating (max.) (Resistive load)	10mA 5V DC
Detent torque	12±8mN·m
Operating life	15,000cycles

Product Line

Shaft	Maximum resolution		Minimum order unit (pcs.)	Product No.	Drawing No.
	Direction	Encoder			
1	8	————	2,000	RKJXM1015001	1
2		15-pulses/15-detents	1,600	RKJXM2E13001	2

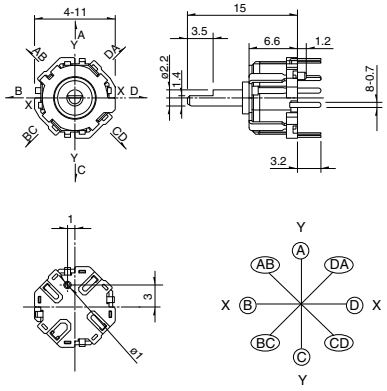
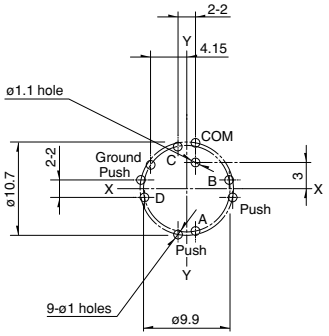
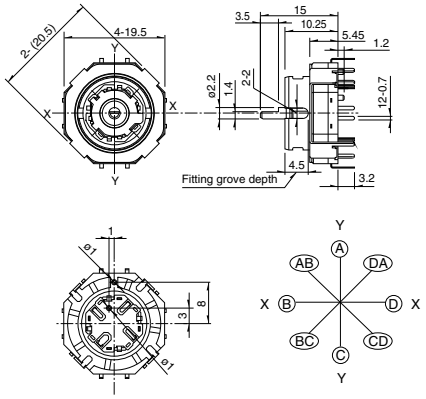
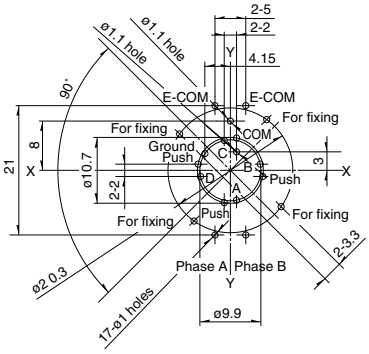
Packing Specifications

Tray

Products No.	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
RKJXM10	1,000	2,000	290×405×200
RKJXM2E	800	1,600	380×545×205

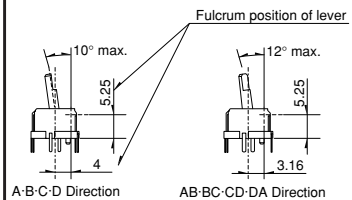
Dimensions

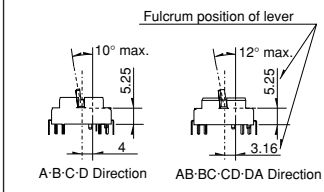
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions
1	RKJXM10 	 Operating direction of lever.	
2	RKJXM2E 	 Operating direction of lever.	

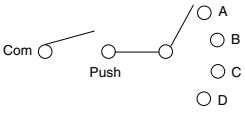
Lever Operating Angle

Unit:mm



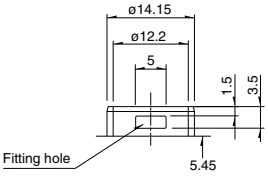


Switch Circuit

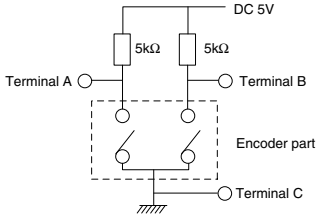


Detailed Dimensions of Knob Fitting

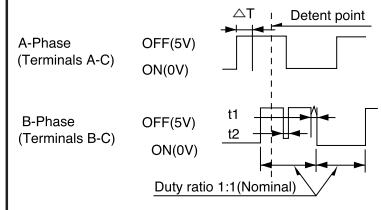
Unit:mm



Test Circuit

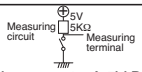


Output Signal



Chattering, bounce and phase difference indicate the time measured at constant 60rpm. Phase difference △T: above 5ms. Chattering t1: below 4ms. Bounce t2: below 2ms.

List of Varieties

Items \ Series			Switch type					
			RKJXT1F	RKJXM	RKJXL	RKJXS	SKRV	SKRH (SKRHAA, SKRHAB)	SKRH (SKRHAC, SKRHAD)
Photo									
Function			4-direction, Encoder & Push	8-direction, Encoder & Push	8-direction, Center-Push	8-direction, Center-Push	4-direction, Center-Push	4-direction, Center-Push	
Dimensions (typical value) (mm)	W		17	20.5	13	11.7	6.45	7.35/7.45	
	D						6.4	7.5	
	H		10.5	5.45	6.4	2.3	4	5	
Outlined specifications	Number of operating shafts		Single-shaft	Single-shaft/Dual-shaft	Single-shaft				
	Shaft material		Metal			Resin			
	Directional resolution		4-direction	8-direction			4-direction		
	Directional operating feeling (tactile feeling)		With		Without	With			
	Lever return mechanism		With						
	Center-push switch		With						
	Encoder		With	Without/With	Without				
Operating temperature range			−40℃ to +85℃		−30℃ to +70℃	−20℃ to +70℃		−30℃ to +85℃	
Automotive use			○	○	○	—			
Rating (max.) (Resistive load)			10mA 5V DC				50mA 12V DC		
Electrical performance	Output voltage		—			 1V max. at 1mA 5V DC (Resistive load)	—		
	Directional resolution		4-direction	8-direction			4-direction		
	Insulation resistance		100MΩ min. 250V DC			50MΩ min. 50V DC	100MΩ min. 100V DC		
	Voltage proof		300V AC for 1min. or 360V AC for 2s			50V AC for 1min.	100V AC for 1min.		
	Directional operating force		40±25mN・m	Direction A、B、C、D 30±20mN・m DirectionAB、BC、CD、DA 25±20mN・m	10±7mN・m	0.8±0.5N	1.2±0.6N	1.23 ±0.69N	1.2 ±0.69N
Mechanical performance	Push operating force		5±2N	3±1.5N	4.5±1N	2.5±1.5N	2.4±0.69N	2.35±0.69N	
	Encoder detent torque		15±8mN・m	12±8mN・m	—				
	Terminal strength		5N for 1min.	—					
	Actuator strength	Pushing direction	100N			30N	—		
		Operating direction	0.4N・m	0.3N・m	0.15N・m	20N			
Endurance	Vibration		8.3±1 to 200±4 to 8.3±1Hz,4.4G fixed (for 15 min./1 cycle), in the 3 direction of X, Y and Z for 2 hours respectively				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		
	Operating life without load		—						
	Operating life with load (at rated load)		—						
Environmental performance	Cold		−40±2℃ for 500h			−40±2℃ for 96h	−30±2℃ for 96h		
	Dry heat		85±2℃ for 500h			85±2℃ for 96h	80±2℃ for 96h		
	Damp heat		60±2℃, 90 to 95%RH for 500h			60±2℃,90 to 95%RH for 96h			
Soldering	Manual soldering		350±5℃ 3s max.			350±10℃ 3^{+1}_{0}s	350℃ max. 3s max.		
	Dip soldering		260±5℃, 5±1s		260℃ max. 6s max.				
	Reflow soldering					Please see P.495			
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● Switch Type Multi Control Devices Cautions ·····496

Note

○marks in "Available for automotive use" indicate that some of the series products can work at the operating temperature range from -40℃ to +85℃.