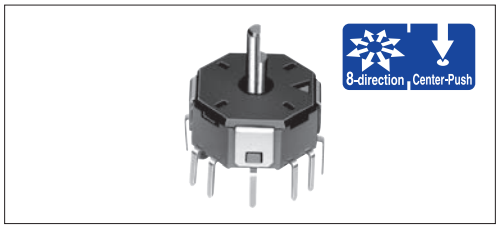
RKJXL

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

Low-profile 6.4mm height contributes to flexibility in set design.



Typical Specifications

Items		Specifications
Rating (max.) (Resistive load)		10mA 5V DC
Contact resistance	8-direction	500m Ω max.
	Center-push	
Operating angle (8-direction)		Each direction 12 ± 3°
Travel(Center-push)		0.2 ± 0.1mm
Operating life	8-direction	Total with 8-direction 100,000cycles
	Center-push	100,000cycles

Product Line

Maximum resolution	Operating force		Minimum order unit (pcs.)		Product No.
	Direction (mN·m)	Center-push (N)	Japan	Export	
8-direction	10 ± 7	4.5 ± 1	800	1,600	RKJXL100401V

Packing Specifications

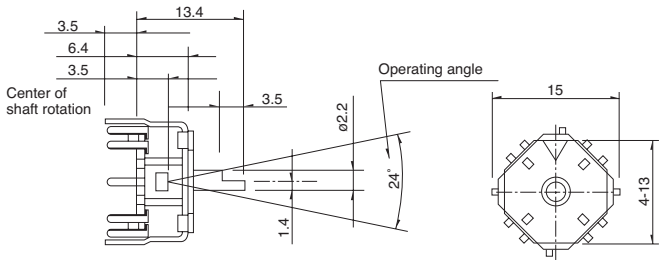
Tray

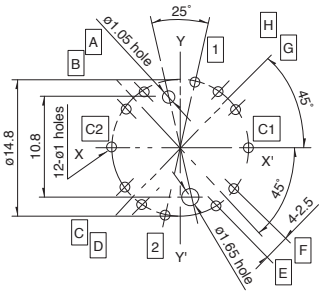
Number of packages (pcs.)		Export package measurements (mm)
1 case / Japan	1 case / export packing	
800	1,600	380 × 545 × 150

Dimensions

Unit:mm

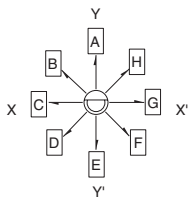
Style	PC board mounting hole dimensions (Viewed from mounting side)





Output Relation Chart between Lever Position and ON Position.

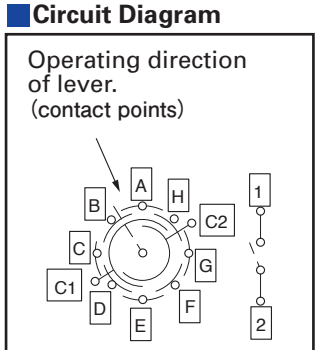
Terminal / The direction of the operation	A	B	C	D	E	F	G	H	C1	C2	1	2
A	ON								ON			
B		ON							ON			
C			ON						ON			
D				ON					ON			
E					ON					ON		
F						ON				ON		
G							ON			ON		
H								ON		ON		
Center Push											ON	ON



Operating direction of lever.

※Shorting areas exist between adjacent terminals
※Between H and A, and D and E, both C1 and C2 are connected

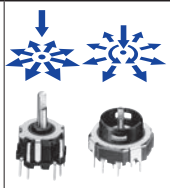
Circuit Diagram



Refer to P.429 for soldering conditions.

Multi Control Devices

■ List of Varieties

Type		Switch type						
Series		RKJXT1F	RKJXM	RKJXL	RKJXS	SKRV	SKRH	
							SKRHAA, SKRHAB	SKRHAC, SKRHAD
Photo								
Dimensions (typical value) (mm)	W	17	11 / 19.5	13	11.7	6.45	7.35 / 7.45	
	D					6.4	7.5	
	H	10.5	6.6 / 5.45	6.4	2.3	4	5	
Number of operating shafts		Single-shaft	Single-shaft / Dual-shaft	Single-shaft				
Shaft material		Metal	The inner shaft : Metal The outer shaft : Resin	Metal	Resin			
Directional resolution		4-direction	8-direction			4-direction		
Directional operating feeling (tactle feelimg)		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℃		–40℃ to +85℃	
Operating life	Directional operation	total with 4-direction 50,000 cycles	total with 8-direction 100,000 cycles		500,000 cycles for each direction	200,000 cycles for each direction	200,000 cycles for each direction	1,000,000 cycles for each direction
	Center-push	50,000 cycles	100,000 cycles		500,000 cycles			
	Encoder	15,000 cycles		—	—	—	—	
Automotive use		●	●	●	—	—	—	
Life cycle (availability)		★2	★2	★2	★2	★2	★2	
Rating (max.) (Resistive load)		10mA 5V DC				50mA 12V DC		
Electrical performance	Output voltage	—	—	—	Measuring circuit 5V 5KΩ Measuring terminal 1V max. at 1mA 5V DC (Resistive load)	—	—	
	Encoder resolution	15pulses / 360°		—	—	—	—	
	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. or 60V AC for 2s	100V AC for 1min.		
Mechanical performance	Directional operating force	40±25mN·m	Direction A、B、C、D 30±20mN·m Direction AB、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
	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 (Push / pull directions)	100N (Push / Pull)	100N (Push), 50N (Pull)		30N (Push)、10N (Pull)	—	—	
	Actuator strength (Operating direction)	0.4N·m	0.3N·m	100N	20N	29.4N		
Environmental performance	Cold	–40±2℃ for 500h			–40±2℃ for 96h	–30±2℃ for 96h	–40±2℃ for 96h	
	Dry heat	85±2℃ for 500h			85±2℃ for 96h	80±2℃ for 96h	90±2℃ for 96h	
	Damp heat	60±2℃, 90 to 95%RH for 500h			60±2℃,90 to 95%RH for 96h			
Page		415	417	419	420	421	422	

● Switch Type Multi Control Devices Soldering Conditions · 429
● Switch Type Multi Control Devices Cautions · 430

Note ● indicates applicability to all products in the series.

Reference for Hand Soldering

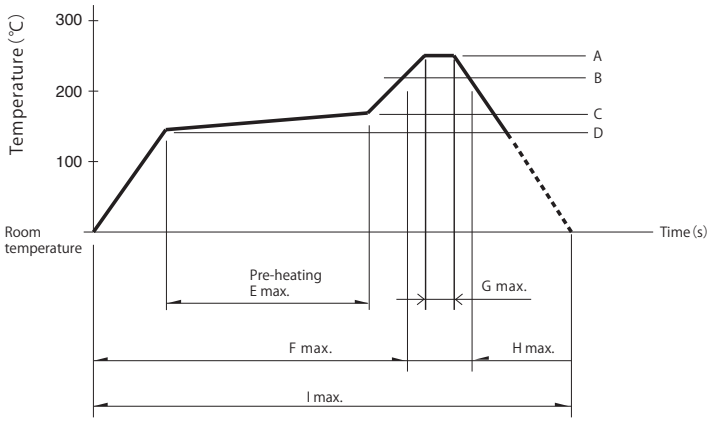
Series	Tip temperature	Soldering time	No. of solders
RKJXT1F, RKJXM, RKJXL, SLLB, SLLB5, SRBE, SKRV, SKRH	350±5℃	3s max.	1 time
RKJXS	350±10℃	$3\,^{+1}_{-0}$ s	2 time max.

Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RKJXT1F, RKJXM	100℃ max.	2 min. max.	260±5℃	5±1s	2 time max.
RKJXL	120℃ max.	70s max.	260℃ max.	6s max.	2 time max.

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 solder joints (copper foil surface) .
   A heat resistive tape should be used to fix thermocouple.
3. Temperature profile



Series	A	B	C	D	E	F	G	H	I	No. of reflows
RKJXS	260℃	230℃	150℃	150℃	2 min.	—	10s	40s	4 min.	1 time
SLLB5	250℃	230℃	150℃	150℃	—	2 min.	—	30s	—	1 time
SKRV, SKRH,SLLB, SRBE	260℃	230℃	180℃	150℃	2 min.	—	—	40s	—	1 time

Notes

1. The above temperature shall be measured 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 material, size thickness of PC boards and others. 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.