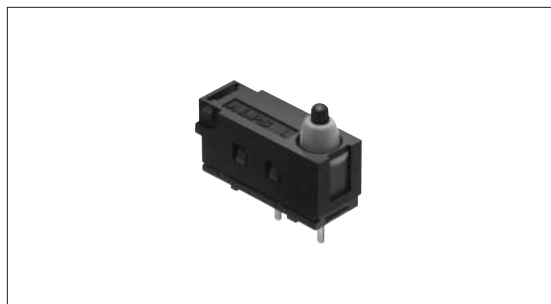


Detector Switch Water-proof Type

SPVQ4 Series



Ensures a highly reliable contact even in the minute electric current range.



Features

- Double surface sliding contacts for higher contact reliabilities.
- The water resistance conforms to IP67.
- Free from mechanical operating noises, thus ensuring superb silent operation.

Applications

- Detection of in-car mechanical drives (door operations, trunk/back door operations, and closer positions)
- Detection of mechanical drives in home electric appliances to be used in surrounding wet areas

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products

Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 12V DC/50 μ A 3V DC
Voltage drop (Initial performance/After lifetime)		0.2V max./0.3V max.
Operating force		Push type
		1 \pm 0.3N
Operating life	Without load	300,000 cycles
	With load	300,000 cycles (0.1A 12V DC)

Products Line

Poles	Positions	Change over Timing	Operating mode	Terminal style	Main body form	Products No.	Drawing No.
1	1	Non shorting	push	For PC board	Boss in the right	SPVQ440400	2
					Boss in the left	SPVQ440300	1

Note

This unit cannot be used in the water.

For other specifications, see P.70

Dimensions

Unit:mm

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

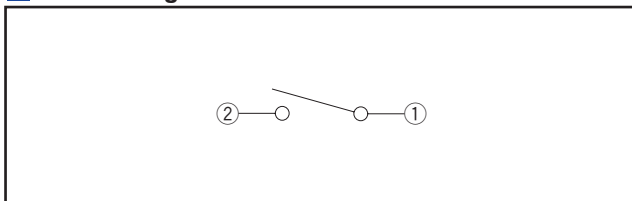
Multi Control
Devices

TACT Switch™

Custom-
Products

No.	Style
1	
2	

Circuit Diagram



Products Specifications

Items		Series											
		SPVP	SPVC1	SPVN	SPVS	SPVG	SSCW	SPVL	SPVQ1	SPVQ3	SPVQ4	SSCN	
Detector	Operating temperature range	-10°C to +60°C					-40°C to +85°C	-10°C to +60°C	-40°C to +85°C				
	Rating (max.) (Resistive load)	1mA 5V DC	10mA 16V DC	1mA 5V DC		50mA 20V DC	0.1A 12V DC	1mA 5V DC	0.1A 12V DC				
Push	Electrical performance	Initial contact resistance		5 Ω max.	1 Ω max.	2 Ω max.		500mΩ max.		2 Ω max.	500mΩ max.		
Slide		Insulation resistance		100MΩ min. 100V DC				100MΩ min. 250V DC	100MΩ min. 100V DC	100MΩ min. 500V DC			
Rotary		Voltage proof		100V AC for 1 min.				250V AC for 1 min.	100V AC for 1 min.	500V AC for 1 min.			
Encoders	Mechanical performance	Robustness of terminal		0.5N for 1 min.	3N for 1 min.	0.5N for 1 min.		—	1N for 1 min.	3N for 1 min.			
Power		Robustness of actuator		5N	10N	5N	10N	20N	5N	20N		10N	
Dual-in-line Package Type		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									
Multi Control Devices	Resistance to soldering heat	Manual soldering		350±5°C, 3s max.	350±10°C, 3 ⁺¹ s	350±5°C, 3s max.		—	350±5°C, 3s max.	300±10°C, 3 ⁺¹ s			
TACT Switch™		Dip soldering		—	260±5°C, 3s max.	—		—	—	260±5°C, 5±1s		—	
Custom-Products		Reflow soldering		Please see P.72	—	Please see P.72		—	Please see P.72	—			
Durability	Operating life without load		50,000 cycles 10Ω max.	25,000 cycles 2Ω max.	50,000 cycles 5Ω max.		100,000 cycles 1Ω max.		50,000 cycles 5Ω max.	300,000 cycles 1Ω max.	300,000 cycles or 1,000,000 cycles 1Ω max.	300,000 cycles 1Ω max.	100,000 cycles 1Ω max.
	Operating life with load		(1mA 5V DC) 50,000 cycles 10Ω max.	(10mA 16V DC) 25,000 cycles 2Ω max.	(1mA 5V DC) 50,000 cycles 5Ω max.		(50mA 20V DC) 100,000 cycles 1Ω max.	(0.1A 12V DC) 100,000 cycles 1Ω max.	(1mA 5V DC) 50,000 cycles 5Ω max.	(0.1A 12V DC) 300,000 cycles 1Ω max.	(0.1A 12V DC) 300,000 cycles or 1,000,000 cycles 1Ω max.	(0.1A 12V DC) 300,000 cycles 1Ω max.	(0.1A 12V DC) 100,000 cycles 1Ω max.
Environmental performance	Cold		-20±2°C for 96h				-40±2°C for 96h	-40±2°C for 500h	-20±2°C for 96h	-40±2°C for 500h			
	Dry heat		85±2°C for 96h				85±2°C for 500h	85±2°C for 96h	85±2°C for 500h				
	Damp heat		40±2°C, 90 to 95%RH for 96h				60±2°C, 90 to 95%RH for 500h	40±2°C, 90 to 95%RH for 96h	60±2°C, 90 to 95%RH for 500h				