

SPVQ4H Water-proof Type

Contributes high contact reliability at micro-current range



Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.1A 12V DC / 1mA 5V DC
Contact resistance (Initial/After operating life)		500mΩ max. / 1Ω max.
Operating force		3N max.
Operating life	Without load	300,000cycles
	With load	300,000cycles (0.1A 12V DC)

Product Line

Poles	Positions	Change over timing	Operating part shape	Terminal type	Minimum order unit (pcs)		Product No.	Drawing No.
					Japan	Export		
1	2	Non shorting	Actuator	With wire (downwards)	180	720	SPVQ4H1200	1
	1			With wire (downwards) N/O Circuit			SPVQ4H1300	2
				With wire (downwards) N/C Circuit			SPVQ4H1400	3

- Notes**
- The length of lead wire is 250mm. For length modification, please contact us.
 - This unit cannot be used in water (IP67 rating).

Packing Specifications

Bulk

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
180	720	555×375×223

Dimensions

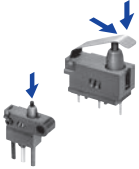
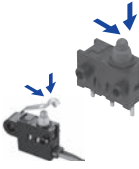

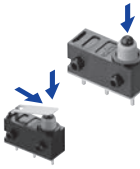






Unit:mm

No.	Style	No.	Style				
1		3					
2		<h3>Circuit Diagram</h3> <table border="1"> <tbody> <tr> <td> No.1 </td> <td> No.3 </td> </tr> <tr> <td> No.2 </td> <td></td> </tr> </tbody> </table>		No.1 	No.3 	No.2 	
No.1 	No.3 						
No.2 							

Detector
 Slide
 Push
 Rotary
 Power
 Dual-In-line Package Type
 General-purpose Type
 Water-proof Type

Detector Switches

List of Varieties

Series		Water-proof Type				
		SPVQ1	SPVQ3	SPVQ4H	SPVQ6	SPVQ7
Photo						
Operation type		One-way Two-way	Two-way		One-way Two-way	Two-way
Dimensions (mm)	W	13.3	13	19	13.3	14.7
	D	5.8		6	5.3	5.4
	H	8	8.35	11.9	7	6.7
Operating temperature range		-40°C to +85°C				
Automotive use		●	●	●	●	●
Life cycle (availability)						
Poles / Positions		1/2	1/1 1/2		1/2	1/1 1/2
Rating (max.) (Resistive load)		0.1A 12V DC	0.1A 12V DC or 0.3A 16V DC	0.1A 12V DC		
Rating (min.) (Resistive load)		50μA 3V DC	50μA 5V DC or 1mA 5V DC	1mA 5V DC	50μA 5V DC	
Durability	Operating life without load	300,000cycles 1Ω max.	300,000cycles or 1,200,000cycles 1Ω max.	300,000cycles 1Ω max.		
	Operating life with load Rating (max.) (Resistive load)	300,000cycles 1Ω max.	300,000cycles or 1,200,000cycles 1Ω max.	300,000cycles 1Ω max.		
Electrical performance	Initial contact resistance	500mΩ max.				
	Insulation resistance	100MΩ min. 500V DC				
	Voltage proof	500V AC for 1minute				
Mechanical performance	Terminal strength	3N for 1minute (with terminal) Wire strength 30N for 1minute (with wire)	Wire strength 30N for 1 minute		3N for 1minute	
	Actuator strength	20N				
Environmental performance	Cold	-40°C 500h				
	Dry heat	85°C 500h				
	Damp heat	60°C, 90 to 95% RH 500h				
Operation force		2N max. 5.9N max.	1±0.5N 3N max.	3N max.	1±0.5N 3N max.	1±0.5N
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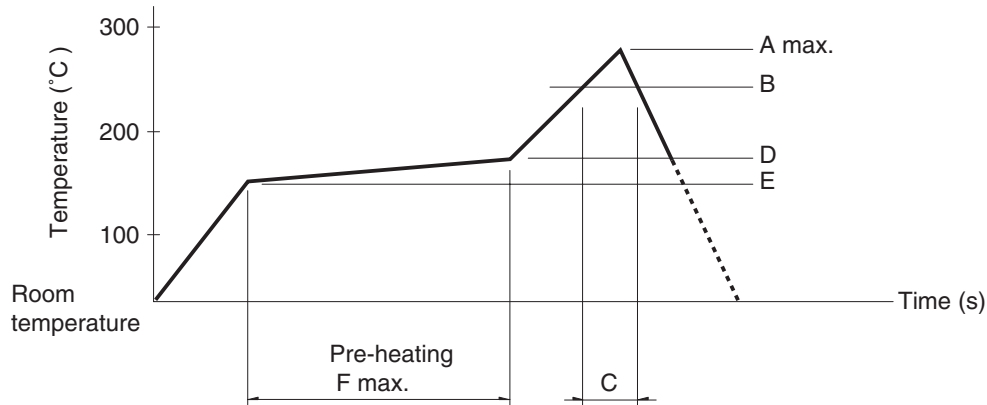
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Note
● Indicates applicability to all products in the series.

Detector Switches Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple $\phi 0.1$ to 0.2 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) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SPPB	250		40			
SPPW8			35			
SPVE	260	230	40	180	150	120
SPVL						
SPVM						
SPVN						
SPVR						
SPVS						
SPVT						
SSCM						
SSCQ						
SPVQC	250					

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, surface 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.

Reference for Hand Soldering

Series	Soldering temperature	Soldering time
SPVS, SPVN, SPVT, SPVM, SPVR, SPVE, SPPW8, SSCQ, SSCM, SPVL, SSCT, SPVQC	350±5°C	3s max.
SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA	300±10°C	3 +1 / 0s
SPPB (Reflow)	300±5°C	5s max.
SSCF, SPPB (For Lead, Dip)	350±10°C	3 +1 / 0s

Reference for Dip Soldering

(For PC board terminal types)

Series	Items		Dip soldering	
	Preheating temperature	Preheating time	Soldering temperature	Duration of immersion
SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA	100±10°C	60s max.	260±5°C	5±1s
SPPW8, SPPB	100 °C max.	60s max.	255±5°C	5±1s
SSCF	—		260±5°C	5±1s