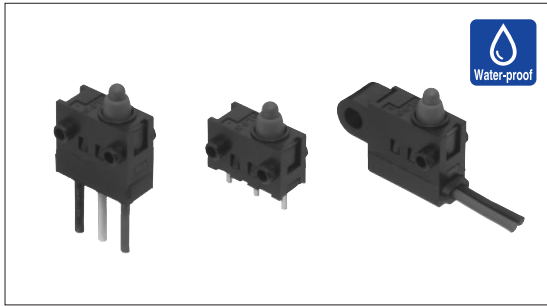


Detector Switch Water-proof Type

SPVQ3 Series



Long travel type applicable to diagonal pressing without an actuator.



Typical Specifications

Items		Specifications	
Rating (max.) / (min.) (Resistive load)		0.1A 12V DC/50μA 5V DC	0.3A 16V DC/1mA 5V DC
Voltage drop (Initial/After operating life)		0.2V max./0.3V max.	
Operating force	Push type	1±0.5N	
	Actuator type	3N max.	
Operating life		Normal type	Long life type
	Without load	300,000cycles	1,200,000cycles
	With load	300,000cycles (0.1A 12V DC)	1,200,000cycles (0.1A 16V DC)

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products



Automotive
Use

Product Line

Operating life	Poles	Positions	Changeover timing	Operating part shape	Terminal type	Main body form	Minimum order unit (pcs)	Packing specification type	Product No.	Drawing No.					
300,000 cycles	1	2	Non shorting	Push	For PC board	Normal	5,200	A	SPVQ380400	1					
						Boss - right side			SPVQ380300						
						Boss - left side			SPVQ380201						
						Boss - both sides			SPVQ380100						
					Solder terminal	Boss - right side			SPVQ380700						
						Boss - left side			SPVQ380600						
		Right angle			Boss - right side	SPVQ380900									
					Boss - left side	SPVQ380800									
		1			1	Non shorting			Push	With wire (Downwards)	With a screw hole	1,600	B	SPVQ361000※	5
											Boss - right side			SPVQ361100※	
											Boss - left side			SPVQ361200※	
										With wire (Right side)	Boss - right side			SPVQ361400※	
	Boss - left side		SPVQ361500※												
	Boss - both sides		SPVQ361600※												
	With wire (Left side)	Boss - right side	SPVQ361700※												
		Boss - left side	SPVQ361800※												
		Boss - both sides	SPVQ361900※												
	1	1	Non shorting	Actuator A	For PC board	Normal	5,200	A	SPVQ370400	1					
						Boss - right side			SPVQ370300						
						Boss - left side			SPVQ370200						
						Boss - both sides			SPVQ370100						
					Solder terminal	Boss - right side			SPVQ370700						
						Boss - left side			SPVQ370600						
					Right angle	Boss - right side			SPVQ370500						
Boss - left side						SPVQ370900									
1					1	Non shorting			Actuator A	With wire (Downwards)	With a screw hole	480	C	SPVQ350100※	5
											Boss - right side			SPVQ350200※	
											Boss - left side			SPVQ350300※	
										With wire (Right side)	Boss - both sides			SPVQ350400※	
	Boss - right side	SPVQ350500※													
	Boss - left side	SPVQ350600※													
With wire (Left side)	Boss - right side	SPVQ350700※													
	Boss - left side	SPVQ350800※													
	Boss - both sides	SPVQ350900※													
								SPVQ351000※	9						
								SPVQ351100※							

Product Line

Operating life	Poles	Positions	Changeover timing	Operating mode	Terminal type	Main body form	Minimum order unit (pcs)	Packing specification type	Product No.	Drawing No.			
300,000 cycles	1	2	Non shorting	Actuator B	For PC board	Normal	5,200	A	SPVQ371300	1			
						Boss - right side			SPVQ371200				
						Boss - left side			SPVQ371100				
						Boss - both sides			SPVQ371000				
					Solder terminal	Boss - right side			SPVQ371600	2			
						Boss - left side			SPVQ371500				
						Boss - both sides			SPVQ371400				
						Right angle			SPVQ371800				
		Left angle		Boss - right side	SPVQ371700	4							
				Boss - left side	SPVQ371700								
		1		1	1	Actuator B	With wire (Downward s)	With a screw hole	480	C	SPVQ351200※	5	
								Boss - right side			SPVQ351300※		
								Boss - left side			SPVQ351400※		
								Boss - both sides			SPVQ351500※		
							With wire (Right side)	With a screw hole			SPVQ351600※	7	
								Boss - right side			SPVQ351700※		
Boss - left side	SPVQ351800※												
Boss - both sides	SPVQ351900※												
With wire (Left side)	Boss - right side	SPVQ352000※	9										
	Boss - left side	SPVQ352100※											
	Boss - both sides	SPVQ352200※											
1,200,000 cycles	1	2	Non shorting	Push	For PC board	Normal	5,200	A	SPVQ340400	1			
						Boss - right side			SPVQ340300				
						Boss - left side			SPVQ340200				
						Boss - both sides			SPVQ340100				
					Solder terminal	Boss - right side			SPVQ340700	2			
						Boss - left side			SPVQ340600				
						Boss - both sides			SPVQ340500				
						Right angle			SPVQ340900				
		Left angle		Boss - right side	SPVQ340800	4							
				Boss - left side	SPVQ340800								
		1		1	1	Push	With wire (Downward s)	With a screw hole	1,600	B	SPVQ320100※	5	
								Boss - right side			SPVQ320200※		
								Boss - left side			SPVQ320300※		
								Boss - both sides			SPVQ320400※		
							With wire (Right side)	With a screw hole			SPVQ320500※	7	
								Boss - right side			SPVQ320600※		
								Boss - left side			SPVQ320700※		
								Boss - both sides			SPVQ320800※		
		With wire (Left side)		Boss - right side	SPVQ320900※	9							
				Boss - left side	SPVQ321000※								
				Boss - both sides	SPVQ321100※								
		2		2	2	Non shorting	Actuator A	For PC board	Normal	5,200	A	SPVQ330400	1
									Boss - right side			SPVQ330300	
Boss - left side	SPVQ330200												
Boss - both sides	SPVQ330100												
Solder terminal	Boss - right side		SPVQ330700					2					
	Boss - left side		SPVQ330600										
	Boss - both sides		SPVQ330500										
	Right angle		SPVQ330900										
Left angle	Boss - right side		SPVQ330800				4						
	Boss - left side		SPVQ330800										
1	1		1				Actuator A	With wire (Downward s)	With a screw hole	480	C	SPVQ310100※	5
									Boss - right side			SPVQ310200※	
									Boss - left side			SPVQ310300※	
									Boss - both sides			SPVQ310400※	
								With wire (Right side)	With a screw hole			SPVQ310500※	7
									Boss - right side			SPVQ310600※	
		Boss - left side		SPVQ310700※									
		Boss - both sides		SPVQ310800※									
With wire (Left side)	Boss - right side	SPVQ310900※	9										
	Boss - left side	SPVQ311000※											
	Boss - both sides	SPVQ311100※											

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line Package Type

TACT Switch™

Custom-Products



Automotive Use

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

Product Line

Operating life	Poles	Positions	Changeover timing	Operating mode	Terminal type	Main body form	Minimum order unit (pcs)	Packing specification type	Product No.	Drawing No.		
1,200,000 cycles	1	2	Non shorting	Actuator B	For PC board	Normal	5,200	A	SPVQ331300	1		
						Boss - right side			SPVQ331200			
						Boss - left side			SPVQ331100			
						Boss - both sides			SPVQ331000			
		Solder terminal			Boss - right side	SPVQ331600			2			
					Boss - left side	SPVQ331500						
					Boss - both sides	SPVQ331400						
					Right angle	SPVQ331800						
	1	1	1	Non shorting	Actuator B	Left angle	Boss - left side	480	C	SPVQ331700	4	
							With wire (Downwards)			With a screw hole	SPVQ311200※	5
										Boss - right side	SPVQ311300※	6
										Boss - left side	SPVQ311400※	
	Boss - both sides	SPVQ311500※										
	With wire (Right side)	With a screw hole	SPVQ311600※	7								
		Boss - right side	SPVQ311700※	8								
		Boss - left side	SPVQ311800※									
Boss - both sides		SPVQ311900※										
With wire (Left side)	Boss - right side	SPVQ312000※	9									
	Boss - left side	SPVQ312100※										
	Boss - both sides	SPVQ312200※										

Packing Specifications

Bulk

Packing specifications type	Number of packages (pcs.)		Export package measurements (mm)
	1 case /Japan	1 case /export packing	
A	1,300	5,200	540×360×290
B	400	1,600	555×375×223
C	120	480	555×375×223

Note

- 1.This unit cannot be used in water.
- 2.※Unless specified, the length of the lead wire is 250mm. Color is either red, black or yellow. For length modification, please consult us.
- 3.※Unless circuit is specified, wired (downward) types will apply three wires.
- 4.※Please specify circuits (N.O. or N.C.) for wired (side) types. Unless specified, the circuit will apply N.O.
- 5.Please place purchase orders per minimum order unit N (integer).



Automotive Use

Dimensions

Unit:mm

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

Custom-
Products

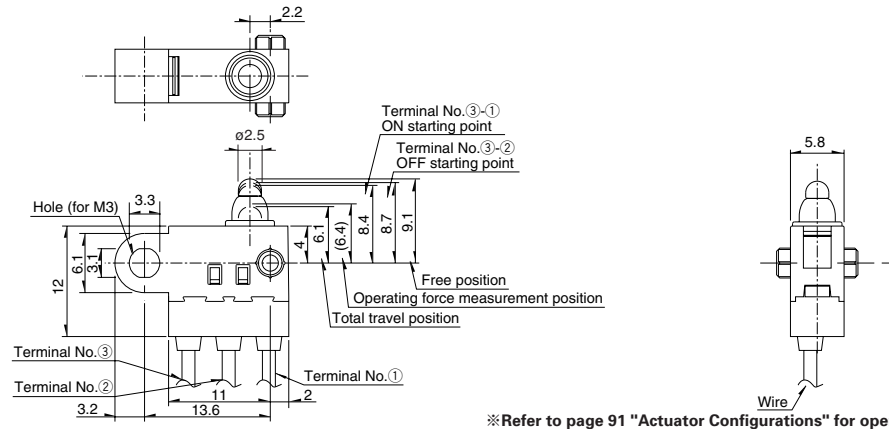
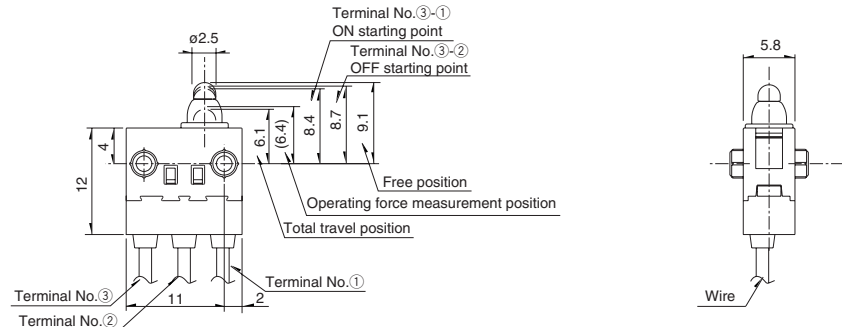
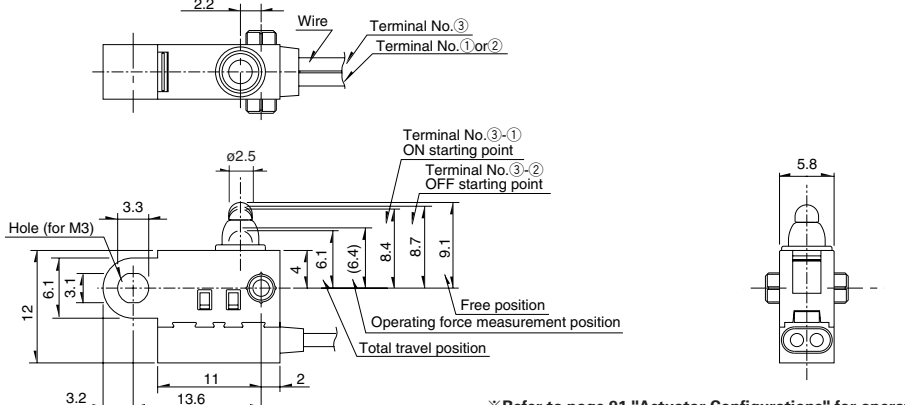
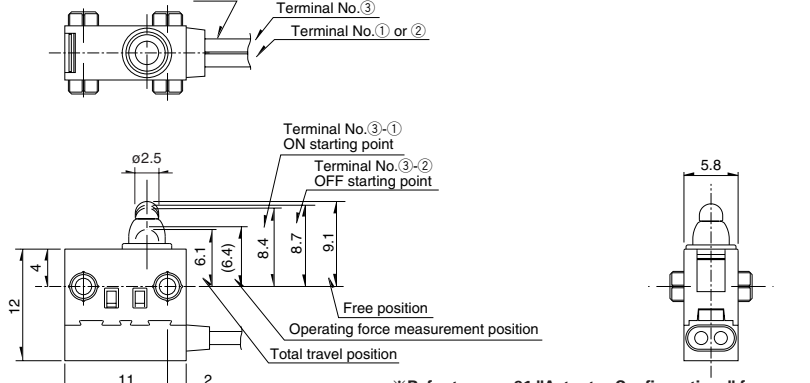


Automotive
Use

No.	Style
1	<p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>PC board mounting face</p> <p>Terminal No.①</p> <p>Terminal No.②</p> <p>Terminal No.③</p> <p>Dimensions: $\phi 2.5$, 4, 4.35, 0.9, 2.3, 5, 5, 13, 6.1, (6.4), 8.4, 8.7, 9.1, 5.8, 0.5</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape. ※ Refer to page 91 "Unit Configurations" for boss positions.</p>
2	<p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Terminal No.①</p> <p>Terminal No.②</p> <p>Terminal No.③</p> <p>Dimensions: $\phi 2.5$, 4, 4.35, 7.45, 1.5, 1.2, 2.2, 2.3, 4.35, 4.35, 13, 6.1, (6.4), 8.4, 8.7, 9.1, 5.8, 0.5</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape. ※ Refer to page 91 "Unit Configurations" for boss positions.</p>
3	<p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Terminal No.①</p> <p>Terminal No.②</p> <p>Terminal No.③</p> <p>Dimensions: 0.9, 5, 5, 2.3, $\phi 2.5$, 4, 4.15, 13, 6.1, (6.4), 8.4, 8.7, 9.1, 5.8, 6, 0.5, (2.6)</p> <p>PC board mounting face</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape.</p>
4	<p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Terminal No.①</p> <p>Terminal No.②</p> <p>Terminal No.③</p> <p>Dimensions: 0.9, 5, 5, 2.3, $\phi 2.5$, 4, 4.15, 13, 6.1, (6.4), 8.4, 8.7, 9.1, 5.8, 6, 0.5, (2.6)</p> <p>PC board mounting face</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape.</p>

Dimensions

Unit:mm

No.	Style
5	 <p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Hole (for M3)</p> <p>Terminal No.③</p> <p>Terminal No.②</p> <p>Terminal No.①</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Wire</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape.</p>
6	 <p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Terminal No.③</p> <p>Terminal No.②</p> <p>Terminal No.①</p> <p>Wire</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape. ※ Refer to page 91 "Unit Configurations" for boss positions.</p>
7	 <p>Terminal No.③</p> <p>Terminal No.① or ②</p> <p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Hole (for M3)</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Wire</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape.</p>
8	 <p>Terminal No.③</p> <p>Terminal No.① or ②</p> <p>Terminal No.③-① ON starting point</p> <p>Terminal No.③-② OFF starting point</p> <p>Free position</p> <p>Operating force measurement position</p> <p>Total travel position</p> <p>Wire</p> <p>※ Refer to page 91 "Actuator Configurations" for operating part shape. ※ Refer to page 91 "Unit Configurations" for boss positions.</p>

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

TACT Switch™

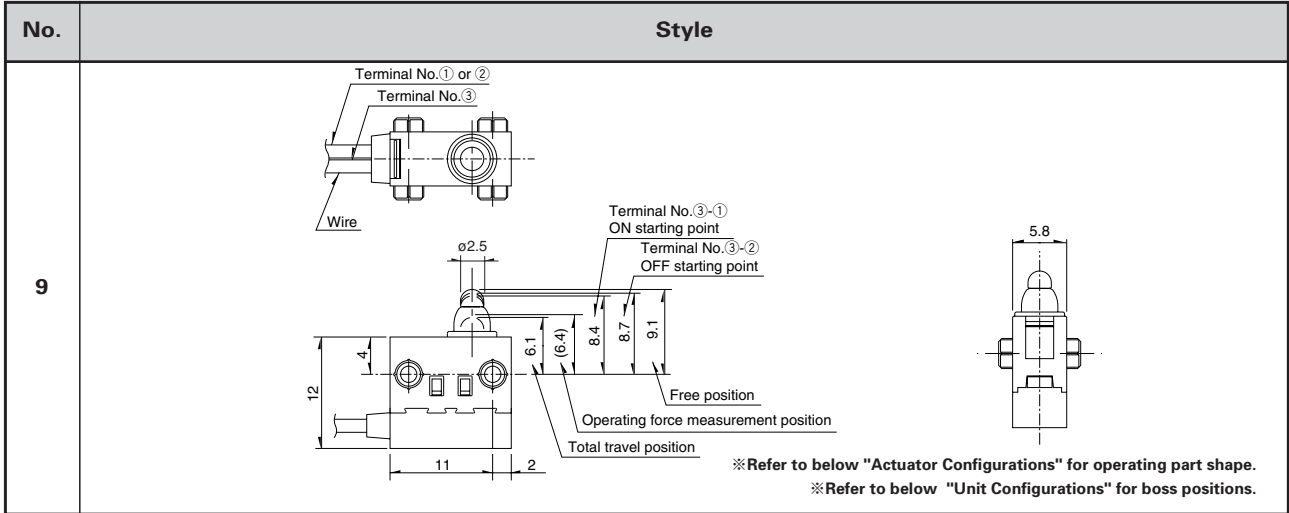
Custom-
Products



Automotive
Use

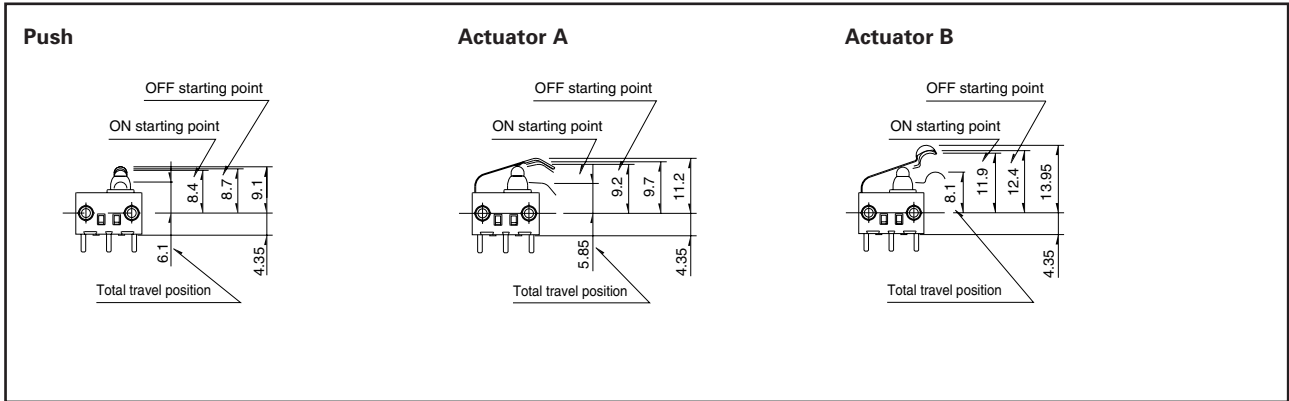
Dimensions

Unit:mm



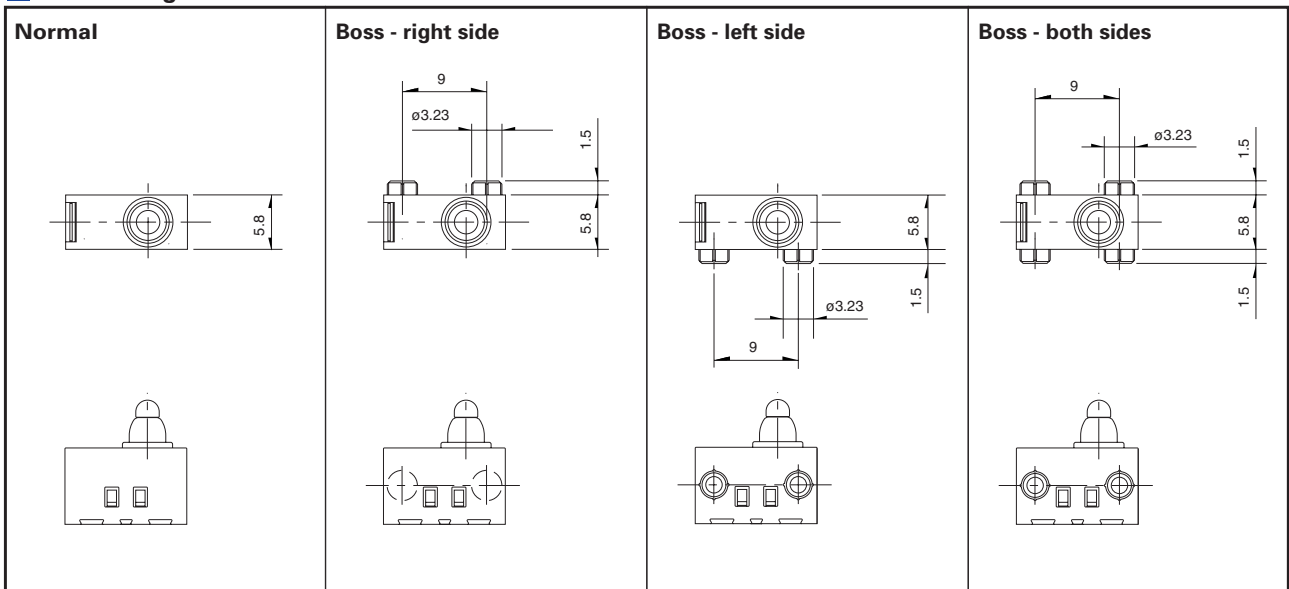
Actuator Configurations

Unit:mm

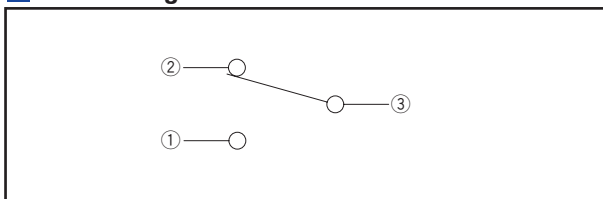


Unit Configurations

Unit:mm



Circuit Diagram



Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

















TACT Switch™

Custom-
Products



Automotive
Use

List of Varieties (General-purpose Type / Water-proof Type / Telephone-hook Type)

Series	General-purpose Type					Water-proof Type		
	SPVT	SPVG	SPVL	SSCW	SPVQ5	SPVQ1	SPVQ3	
Photo								
Operation type						 	 	
Operating temperature range	-40°C to +85°C							
Automotive use	●	●	●	●	●	●	●	
Rating (max.) (Resistive load)	1mA 5V DC	50mA 20V DC	1mA 5V DC	0.1A 12V DC				
Rating (min.) (Resistive load)	100µA 3V DC		50µA 3V DC	100µA 3V DC	50µA 3V DC		50µA 3V DC or 1mA 5V DC	
Electrical performance	Initial contact resistance	2Ω max.	500mΩ max.	2Ω max.	500mΩ max.			
	Insulation resistance	100MΩ min. 100V DC			100MΩ min. 250V DC	100MΩ min. 500V DC		
	Voltage proof	100V AC for 1 minute			250V AC for 1 minute	500V AC for 1 minute		
Mechanical performance	Terminal strength	0.5N for 1 minute		1N for 1 minute	3N for 1 minute Wire strength 30N for 1minute			
	Actuator strength	10N		5N	20N			
Durability	Operating life without Load	100,000cycles 5Ω max.	100,000cycles 1Ω max.	50,000cycles 5Ω max.	100,000cycles 1Ω max.	300,000cycles 1Ω max.	300,000cycles or 1,200,000cycles 1Ω max.	
	Operating life with Load	(1mA 5V DC) 100,000cycles 5Ω max.	(50mA 20V DC) 100,000cycles 1Ω max.	(1mA 5V DC) 50,000cycles 5Ω max.	(0.1A 12V DC) 100,000cycles 1Ω max.	(0.1A 12V DC) 300,000cycles 1Ω max.	(0.1A 12V DC) 300,000cycles or 1,200,000 1Ω max.	
Environmental performance	Cold	-40±2°C for 96h	-40±2°C for 500h					
	Dry heat	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					
Dimensions (mm)	W	5.6	5.5	5.55	13.1	13.8	13.3	13
	D	6.5	6.5	6.6	11.35	5.8		
	H	1.9	2	1	5.3	5.8	8	8.35
Soldering	Manual soldering	350±5°C, 3s max.					300±10°C, 3 ⁺ 1s	
	Dip soldering	—					260±5°C, 5±1s	
	Reflow soldering	Please see P.102						
Number of poles	1							
Operation force	0.4N max.		0.35N max.	1N max.	2N max.	2N max. 5.9N max.	3N max.	
Page	71	74	79	80	81	82	86	

● Detector Switches Soldering Conditions102

● Detector Switches Cautions103

- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- TACT Switch™
- Custom-Products