

# Specifications

## Ratings/Characteristics

Item	Power ratings		15 W			30 W		
	Output voltage		5 V	12 V	24 V	5 V	12 V	24 V
Efficiency	With 100-VAC input		74% typical	79% typical	83% typical	74% typical	81% typical	85% typical
	With 200-VAC input		73% typical	78% typical	80% typical	74% typical	80% typical	86% typical
Input	Voltage *1		100 to 240 VAC (allowable range: 85 to 264 VAC, 80 to 370 VDC *5)					
	Frequency *1		50/60 Hz (47 to 450 Hz)					
	Current	With 100-VAC input	0.45 A max., 0.34 A typical				0.9 A max., 0.66 A typical	
		With 200-VAC input	0.25 A max., 0.22 A typical				0.6 A max., 0.4 A typical	
	Power factor		---					
	Harmonic current regulation		Conforms to EN61000-3-2					
	Leakage current	With 100-VAC input	0.5 mA max.					
		With 200-VAC input	1.0 mA max.					
Inrush current *2	With 100-VAC input	17.5 A max., 14 A typical						
	With 200-VAC input	35 A max., 28 A typical						
Output	Voltage adjustment range *3		-10% to 15% (with V.ADJ)					
	Ripple noise voltage (at rated I/O)		60 mV max.	70 mV max.	60 mV max.	60 mV max.	90 mV max.	150 mV max.
	Input variation influence		0.5% max. (at 85- to 264-VAC input, 100% load)					
	Load variation influence (rated input voltage)		2.0% max. (5 V), 1.5% max. (12 V, 24 V), (with rated input, 0 to 100% load)					
	Temperature variation influence		0.05%/°C max.					
	Startup time (at rated I/O) *2	With 100-VAC input	580 ms typical	530 ms typical	600 ms typical	500 ms typical	560 ms typical	560 ms typical
		With 200-VAC input	340 ms typical	360 ms typical	400 ms typical	360 ms typical	380 ms typical	400 ms typical
	Output hold time (at rated I/O) *2	With 100-VAC input	39 ms typical	27 ms typical	28 ms typical	31 ms typical	22 ms typical	31 ms typical
With 200-VAC input		187 ms typical	134 ms typical	134 ms typical	174 ms typical	123 ms typical	140 ms typical	
Additional functions	Overload protection *2		The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).					
	Overvoltage protection *2		Yes *4					
	Output voltage indication		No					
	Output current indication		No					
	Peak-hold current indication		No					
	Maintenance forecast monitor indication		No					
	Maintenance forecast monitor output		No					
	Total run time monitor indication		No					
	Total run time monitor output		No					
	Undervoltage alarm indication		Yes (color: red)					
	Undervoltage alarm output		No					
	Parallel operation		No (However, backup operation is possible. An external diode is required.)					
Series operation		Models with 24-V output: Possible for up to 2 Power Supplies (with external diode) Models with 5- or 12-V output: Not possible						
Other	Operating ambient temperature		Refer to the derating curve in <i>Engineering Data</i> . (with no icing or condensation)					
	Storage temperature		-25 to 65°C					
	Operating ambient humidity		25% to 85% (Storage humidity: 25% to 90%)					
	Dielectric strength		3.0 kVAC for 1 min. (between all inputs and outputs; detection current: 20 mA) 2.0 kVAC for 1 min. (between all inputs and PE terminals; detection current: 20 mA) 1.0 kVAC for 1 min. (between all outputs and PE terminals; detection current: 20 mA)					
	Insulation resistance		100 MΩ min. (between all outputs and all inputs/ PE terminals) at 500 VDC					
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions					
	Shock resistance		150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, and ±Z directions					
	Output indicator		Yes (color: green)					
	EMI	Conducted Emissions	Conforms to EN55011 Group1 Class B and based on FCC Class A					
		Radiated Emissions	Conforms to EN55011 Group1 Class B					
	EMS		Conforms to EN61204-3 high severity levels					
	Approved standards		UL 508 (Listing, Class2 Output: Per 1310) UL 60950-1, UL 62368-1 CSA C22.2 No.107.1 (cUL) (Class2 Output: Per CSA C22.2 No.223) CSA C22.2 No.60950-1 (cUR), No.62368-1 EN 50178, EN 60950-1, EN 62368-1 EAC mark, RCM mark					
SEMI		F47-0706 (With 200-VAC input)						
Weight		160 g max.				180 g max.		

\*1. Do not use an inverter output for the Power Supply. Inverters with an output frequency of 50/60 Hz are available, but the rise in the internal temperature of the Power Supply may result in ignition or burning.

\*2. For a cold start at 25°C. Refer to *Engineering Data* on page 18 for details.

\*3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +15% of the voltage adjustment range. When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.

\*4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.

\*5. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).

Item	Power ratings		60 W		
	Type		Standard	Maintenance forecast monitor	Total run time monitor
Efficiency	With 100-VAC input		84% typical	83% typical	
	With 200-VAC input		83% typical	85% typical	
Input	Voltage *1	100 to 240 VAC (allowable range: 85 to 264 VAC or 80 to 370 VDC *11)			
	Frequency *1	50/60 Hz (47 to 450 Hz)			
	Current	With 100-VAC input	1.7 A max., 1.3 A typical	1.7 A max., 1.3 A typical	
		With 200-VAC input	1.0 A max., 0.68 A typical	1.0 A max., 0.78 A typical	
	Power factor	---			
	Harmonic current regulation	Conforms to EN61000-3-2			
	Leakage current	With 100-VAC input	0.5 mA max.		
		With 200-VAC input	1.0 mA max.		
Inrush current *2	With 100-VAC input	17.5 A max., 14 A typical			
	With 200-VAC input	35 A max., 28 A typical			
Output	Voltage adjustment range *3	-10% to 15% (with V. ADJ) (The voltage cannot be adjusted for the S8VS-09024□□□S□.)			
	Ripple noise voltage (at rated I/O)	70 mV max.	90 mV max.		
	Input variation influence	0.5% max. (at 85- to 264-VAC input, 100% load)			
	Load variation influence (rated input voltage)	1.5% max. (with rated input, 0 to 100% load)			
	Temperature variation influence	0.05%/°C max.			
	Startup time (at rated I/O) *2	With 100-VAC input	620 ms typical	460 ms typical	
		With 200-VAC input	400 ms typical	290 ms typical	
	Output hold time (at rated I/O) *2	With 100-VAC input	34 ms typical	33 ms typical	
With 200-VAC input		158 ms typical	154 ms typical		
Additional functions	Overload protection *2	105% to 160% of rated load current (101% to 110% of rated load current for the S8VS-09024□□□S□), inverted L voltage drop, intermittent, automatic reset			
	Overvoltage protection *2, *4	Yes			
	Output voltage indication *5	No	Yes (selectable) *6		
	Output current indication *5	No	Yes (selectable) *7		
	Peak-hold current indication *5	No	Yes (selectable) *8		
	Maintenance forecast monitor indication *5	No	Yes (selectable)	No	
	Maintenance forecast monitor output	No			
	Total run time monitor indication *5	No	Yes (selectable)		
	Total run time monitor output *5	No			
	Undervoltage alarm indication *5	No	Yes (selectable)		
	Undervoltage alarm output terminals	No			
Parallel operation	No (However, backup operation is possible. An external diode is required.)				
Series operation	Yes for up to 2 Power Supplies (with external diode)				
Other	Operating ambient temperature	Refer to the derating curve in . (with no icing or condensation)			
	Storage temperature	-25 to 65°C			
	Operating ambient humidity	25% to 85% (Storage humidity: 25% to 90%)			
	Dielectric strength	3.0 kVAC for 1 min. (between all inputs and outputs/ alarm outputs; detection current: 20 mA)			
		2.0 kVAC for 1 min. (between all inputs and PE terminals; detection current: 20 mA)			
		1.0 kVAC for 1 min. (between all outputs/ alarm outputs and PE terminals; detection current for standard models: 30 mA, detection current for models with indication monitor: 20 mA)			
		500 VAC for 1 min. (between all outputs and alarm outputs; detection current: 20 mA)			
	Insulation resistance	100 MΩ min. (between all outputs/ alarm outputs and all inputs/ PE terminals) at 500 VDC			
	Vibration resistance	10 to 55 Hz, 0.375-mm single amplitude for 2 h each in X, Y, and Z directions 10 to 150 Hz, 0.35-mm single amplitude (5 G max.) for 80 min each in X, Y, and Z directions			
	Shock resistance	150 m/s <sup>2</sup> , 3 times each in ±X, ±Y, and ±Z directions			
	Output indicator	Yes (color: green)			
	EMI	Conducted Emissions	Models with indication monitor: Conforms to EN55011 Group1 Class A and based on FCC Class A, Conforms to EN55011 Group1 Class B *11		
		Radiated Emissions	Models with indication monitor: Conforms to EN55011 Group1 Class A, Conforms to EN55011 Group1 Class B *11 Standard models: Conforms to EN55011 Group1 Class B		
	EMS	Conforms to EN61204-3 high severity levels			
Approved standards *11	Standard model: UL 508 (Listing; Class 2 Output: Per UL1310) UL 60950-1 (Recognition), UL 62368-1 CSA C22.2 No.107.1 (cUL) (Class 2 Output: Per CSA C22.2 No. 223) CSA C22.2 No.60950-1 (cUR), No.62368-1 EN 50178, EN 60950-1, EN 62368-1 EAC mark, RCM mark With indication monitor: UL 508 (Listing, Class2 Output: Per 1310) CSA C22.2 No.107.1 (cUL) (Class2 Output: Per CSA C22.2 No.223) EN 62477-1 EAC mark, RCM mark, KOSHA S Mark *10				
SEMI *11	F47-0706 (With 200-VAC input)				
Weight	330 g max.				

\*1. Do not use an inverter output for the Power Supply. Inverters with an output frequency of 50/60 Hz are available, but the rise in the internal temperature of the Power Supply may result in ignition or burning.  
 \*2. For a cold start at 25°C. Refer to *Engineering Data* on page 18 for details.  
 \*3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +15% of the voltage adjustment range (by more than +10% for 240-W models with indication monitor). When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.  
 \*4. To reset the protection, turn OFF the input power for three minutes or longer and then turn it back ON.  
 \*5. Displayed on 7-segment LED. (character height: 8 mm)  
 \*6. Resolution of output voltage indication: 0.1 V; Precision of output voltage indication: ±2% (percentage of output voltage value, ±1 digit)  
 \*7. Resolution of output current indication: 0.1 A; Precision of output current indication: ±5% F.S. ±1 digit max. (specified by rated output voltage)  
 \*8. Resolution of peak-hold current indication: 0.1 A; Precision of peak-hold current indication: ±5% F.S. ±1 digit max. (specified by rated output voltage);  
 Signal width required for peak-hold current: 20 ms  
 \*9. A Type and B Type: Sinking, AP Type and BP Type: Sourcing, BE Type: No alarm output  
 \*10. S8VS-06024A, S8VS-09024A/AP, S8VS-12024A/AP, S8VS-18024A/AP, S8VS-24024A/AP only  
 \*11. The range for compliance with EC Directives and safety standards (UL, EN, etc.) is 100 to 240 VAC (85 to 264 VAC).