

# Switching Power Supply S8VS (15/30/60/90/120/180/240-W Models)

## Wide Range of DIN-Rail Mount Micro Power Supplies with LED Display

- 3-digit, 7-segment LED display shows status at a glance for output voltage, output current, peak current, lifetime years, and run time hours.
- Incorporates a maintenance forecast monitor that displays the remaining life of the power supply, displayed in years.
- Run-time monitor model displays how long the output has been on, displayed in thousands of hours.
- 15 and 30 W models have 22.5 mm width, which saves panel space.
- 60, 90, 120, 180 and 240 W models have LED Displays.
- 90, 120, 180 and 240 W LED models have two outputs; one for undervoltage output and one for either the lifetime monitor or run-time monitor.
- All models are Lead-free.

## Approvals

- 15 and 30 W models  
cULus, UL508 listed, Class 2 output, Class I Division 2
- 60 W model  
cULus, UL508 listed, Class 2 output, SEMI F47
- 90, 120, 180 and 240 W models  
cULus, UL508 listed
- All models are CE marked.

## Warranty

- All models have a 3-year warranty.



# Model Number Structure

## Model Number Legend

S8VS- 

1	2	3			

### 1. Power Ratings

- 015: 15 W
- 030: 30 W
- 060: 60 W
- 090: 90 W
- 120: 120 W
- 180: 180 W
- 240: 240 W

### 2. Output voltage

- 05: 5 V
- 12: 12 V
- 24: 24 V

### 3. Configuration

#### 15-W, 30-W Models

- None: Standard (No Display)

#### 60-W Models

- None: Standard (No Display)
- A: With maintenance forecast monitor
- B: With total run time monitor

#### 90-W, 120-W, 180-W, 240-W Models

- None: Standard (No Display)
- A: With maintenance forecast monitor and undervoltage alarm (transistor (sinking))
- B: With total run time monitor and undervoltage alarm (transistor (sinking))
- AP: With maintenance forecast monitor and undervoltage alarm (transistor (sourcing))
- BP: With total run time monitor and undervoltage alarm (transistor (sourcing))

## Ordering Information

**Stock Note:** Shaded models are normally stocked.

Power ratings	Input voltage	Output voltage	Output current	Alarm output	Model number	
15 W	100 to 240 VAC	5 V	2.0 A	---	S8VS-01505 (See note 1.)	
		12 V	1.2 A		S8VS-01512	
		24 V	0.65 A		S8VS-01524	
30 W		5 V	4.0 A	---	S8VS-03005 (See note 2.)	
		12 V	2.5 A		S8VS-03012	
		24 V	1.3 A		S8VS-03024	
60 W		24 V	2.5 A	---		S8VS-06024
						S8VS-06024A
						S8VS-06024B
90 W	24 V	3.75 A	---		S8VS-09024	
				Sinking	S8VS-09024A	
				Sourcing	S8VS-09024AP	
				Sinking	S8VS-09024B	
				Sourcing	S8VS-09024BP	
120 W		5 A	---		S8VS-12024	
				Sinking	S8VS-12024A	
				Sourcing	S8VS-12024AP	
				Sinking	S8VS-12024B	
180 W		7.5 A	---		S8VS-18024	
				Sinking	S8VS-18024A	
				Sourcing	S8VS-18024AP	
				Sinking	S8VS-18024B	
240 W		10 A	---		S8VS-24024	
				Sinking	S8VS-24024A	
	Sourcing			S8VS-24024AP		
	Sinking			S8VS-24024B		
			Sourcing	S8VS-24024BP		

- Note:**
1. The output capacity of the S8VS-01505 is 10 W.
  2. The output capacity of the S8VS-03005 is 20 W.
  3. Optional mounting brackets are shown on page 21.

# Specifications

## ■ Ratings/Characteristics

Item	Power ratings		15 W	30 W
	Type		Standard	Standard
Efficiency (typical)	5-V models		72% min.	70% min.
	12-V models		74% min.	76% min.
	24-V models		77% min.	80% min.
Input	Voltage	100 to 240 VAC (85 to 264 VAC)		
	Frequency	50/60 Hz (47 to 450 Hz)		
	Current	100 V input	0.45 A max.	0.9 A max.
		200 V input	0.25 A max.	0.6 A max.
	Power factor	---		
	Harmonic current emissions	Conforms to EN61000-3-2		
	Leakage current	100 V input	0.5 mA max.	
		200 V input	1.0 mA max.	
	Inrush current (See note 1.)	100 V input	25 A max. (for a cold start at 25°C)	
200 V input		50 A max. (for a cold start at 25°C)		
Output	Voltage adjustment range (See note 2.)	-10% to 15% (with V.ADJ) (guaranteed)		
	Ripple	2.0% (p-p) max. (at rated input/output voltage)		
	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.		
	Start up time (See note 1.)	100 ms max. (at rated input/output voltage)	1,000 ms max. (at rated input/output voltage)	
	Hold time (See note 1.)	20 ms min. (at rated input/output voltage)		
Additional functions	Overload protection (See note 1.)	105% to 160% of rated load current, voltage drop, automatic reset	105% to 160% of rated load current, voltage drop, intermittent operation, automatic reset	
	Overvoltage protection (See note 1.)	Yes (a zener diode clamp) (See note 3.)	Yes (See note 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		
	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 EN61204-3 EN55011 Class B and based on FCC Class A	
		Radiated Emissions	Conforms to EN61204-3 EN55011 Class B	
	EMS	Conforms to EN61204-3 Class B		
Approved standards	UL: UL508 (Listing; Class 2: Per UL1310), UL60950-1, UL1604 (Class I/Division2) cUL: CSA C22.2 No.14 (Class 2), No.60950-1, No.213 (Class I/Division2) EN/VDE: EN50178 (=VDE0160), EN60950-1 (=VDE0805) SELV (EN60950/EN50178/UL60950-1) According to VDE0106/P100, IP20			
Weight	160 g max.	180 g max.		

- Note:**
1. Refer to the *Engineering Data* section on page 17 for details.
  2. If the V.ADJ adjuster 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.
  3. The overvoltage protection of the S8VS-015□□□ uses a zener diode clamp. If the internal feedback circuit is destroyed by any chance, the load may be destroyed by the clamped output voltage (approx. 140% to 190% of the rated output voltage).
  4. To reset the protection, turn OFF the power supply for three minutes or longer and then turn the power supply back ON.

# Specifications

## ■ Ratings/Characteristics

Item	Power ratings		60 W			90 W			
	Type		Standard	Maintenance forecast monitor	Total run time monitor	Standard	Maintenance forecast monitor	Total run time monitor	
Efficiency (typical)		78% min.			80% min.				
Input	Voltage		100 to 240 VAC (85 to 264 VAC)						
	Frequency		50/60 Hz (47 to 450 Hz)						
	Current	100 V input	1.7 A max.			2.3 A max.			
		200 V input	1.0 A max.			1.4 A max.			
	Power factor		---						
	Harmonic current emissions		Conforms to EN61000-3-2						
	Leakage current	100 V input	0.5 mA max.						
		200 V input	1.0 mA max.						
Inrush current (See note 1.)	100 V input	25 A max. (for a cold start at 25°C)							
	200 V input	50 A max. (for a cold start at 25°C)							
Output	Voltage adjustment range (See note 2.)		-10% to 15% (with V.ADJ) (guaranteed)						
	Ripple		2.0% (p-p) max. (at rated input/output voltage)						
	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.						
	Start up time (See note 1.)		1,000 ms max. (at rated input/output voltage)						
	Hold time (See note 1.)		20 ms min. (at rated input/output voltage)						
Additional functions	Overload protection (See note 1.)		105% to 160% of rated load current, voltage drop, intermittent, automatic reset						
	Overvoltage protection (See notes 1 and 3.)		Yes						
	Output voltage indication (See note 4.)		No	Yes (selectable) (See note 5.)			No	Yes (selectable) (See note 5.)	
	Output current indication (See note 4.)		No	Yes (selectable) (See note 6.)			No	Yes (selectable) (See note 6.)	
	Peak-hold current indication (See note 4.)		No	Yes (selectable) (See note 7.)			No	Yes (selectable) (See note 7.)	
	Maintenance forecast monitor indication (See note 4.)		No	Yes (selectable)	No	No	Yes (selectable)	No	
	Maintenance forecast monitor output		No				Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)		No
	Total run time monitor indication (See note 4.)		No	Yes (selectable)			No	Yes (selectable)	
	Total run time monitor output		No				Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)		Yes (selectable)
	Undervoltage alarm indication (See note 4.)		No	Yes (selectable)			No	Yes (selectable)	
	Undervoltage alarm output terminals		No				Yes (open collector output) 30 VDC max., 50 mA max. (See note 8.)		
	Parallel operation		No						
Series operation		Yes for up to 2 Power Supplies (with external diode)							
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/ 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: 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						
	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 EN61204-3 EN55011 Class A and based on FCC Class A Conforms to EN61204-3 EN55011 Class B (See note 9.)						
		Radiated Emissions	Conforms to EN61204-3 EN55011 Class A Conforms to EN61204-3 EN55011 Class B (See note 9.)						
	EMS		Conforms to EN61204-3 Class B						
	Approved standards		UL: UL508 (Listing; Class 2: Per UL1310), UL60950 cUL: CSA C22.2 No.14 (Class 2), No.60950 EN/VDE: EN50178 (=VDE0160), EN60950 (=VDE0805) SELV (EN60950/EN50178/UL60950-1) According to VDE0106/P100, IP20			UL: UL508 (Listing), UL60950 cUL: CSA C22.2 No.14, No.60950 EN/VDE: EN50178 (=VDE0160), EN60950 (=VDE0805) SELV (EN60950/EN50178/UL60950-1) According to VDE0106/P100, IP20			
	Weight		330 g max.			490 g max.			

- Note:**
1. Refer to the *Engineering Data* section on page 17 for details.
  2. If the V.ADJ adjuster is turned, the voltage will increase by more than +15% of the voltage adjustment range (by more than +10% for 240-W models). When adjusting the output voltage, confirm the actual output voltage from the Power Supply and be sure that the load is not damaged.
  3. To reset the protection, turn OFF the power supply for three minutes or longer and then turn the power supply back ON.
  4. Displayed on 7-segment LED. (character height: 8 mm)
  5. Resolution of output voltage indication: 0.1 V, Precision of output voltage indication: ±2% (percentage of output voltage value, ±1 digit)
  6. Resolution of output current indication: 0.1 A; Precision of output current indication: ±5% F.S. ±1 digit max. (specified by rated output voltage)
  7. 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
  8. A Type and B Type: Sinking, AP Type and P Type: Sourcing
  9. To ensure the emission rating, a ferrite ring core should be used in all cabling (TDK HF60T, HF70RH or equivalent model).

Item	Power ratings Type	120 W			180 W			240 W				
		Standard	Maintenance forecast monitor	Total run time monitor	Standard	Maintenance forecast monitor	Total run time monitor	Standard	Maintenance forecast monitor	Total run time monitor		
Efficiency (typical)		80% min.										
Input	Voltage		100 to 240 VAC (85 to 264 VAC)									
	Frequency		50/60 Hz (47 to 63 Hz)									
	Current	100 V input	1.9 A max.			2.9 A max.			3.8 A max.			
		200 V input	1.1 A max.			1.6 A max.			2.0 A max.			
	Power factor		0.95 min.									
	Harmonic current emissions		Conforms to EN61000-3-2									
	Leakage current	100 V input	0.5 mA max.									
		200 V input	1.0 mA max.									
Inrush current (See note 1.)	100 V input	25 A max. (for a cold start at 25°C)										
	200 V input	50 A max. (for a cold start at 25°C)										
Output	Voltage adjustment range (See note 2.)		-10% to 15% (with V.ADJ.) (guaranteed)						±10% (with V.ADJ.) (guaranteed)			
	Ripple		2.0% (p-p) max. (at rated input/output voltage)									
	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.									
	Start up time (See note 1.)		1,000 ms max. (at rated input/output voltage)									
	Hold time (See note 1.)		20 ms min. (at rated input/output voltage)									
	Additional functions	Overload protection (See note 1.)		105% to 160% of rated load current, voltage drop, intermittent, automatic reset						105% to 160% of rated load current, voltage drop, automatic reset		
Overvoltage protection (See notes 1 and 3.)		Yes										
Output voltage indication (See note 4.)		No	Yes (selectable) (See note 5.)	No	Yes (selectable) (See note 5.)	No	Yes (selectable) (See note 5.)	No	Yes (selectable) (See note 5.)			
Output current indication (See note 4.)		No	Yes (selectable) (See note 6.)	No	Yes (selectable) (See note 6.)	No	Yes (selectable) (See note 6.)	No	Yes (selectable) (See note 6.)			
Peak-hold current indication (See note 4.)		No	Yes (selectable) (See note 7.)	No	Yes (selectable) (See note 7.)	No	Yes (selectable) (See note 7.)	No	Yes (selectable) (See note 7.)			
Maintenance forecast monitor indication (See note 4.)		No	Yes (selectable)	No	Yes (selectable)	No	Yes (selectable)	No	Yes (selectable)			
Maintenance forecast monitor output		No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)			
Total run time monitor indication (See note 4.)		No	Yes (selectable)	No	Yes (selectable)	No	Yes (selectable)	No	Yes (selectable)			
Total run time monitor output		No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)			
Undervoltage alarm indication (See note 4.)		No	Yes (selectable)	No	Yes (selectable)	No	Yes (selectable)	No	Yes (selectable)			
Undervoltage alarm output terminals		No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)	No	Yes (open collector output), 30 VDC max., 50 mA max. (See note 8.)			
Parallel operation		No										
Series operation		Yes for up to 2 Power Supplies (with external diode)										
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/ 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: 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									
	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 EN61204-3 EN55011 Class A and based on FCC Class A Conforms to EN61204-3 EN55011 Class B (See note 9.)									
		Radiated Emissions	Conforms to EN61204-3 EN55011 Class A Conforms to EN61204-3 EN55011 Class B (See note 9.)									
	EMS		Conforms to EN61204-3 Class B									
	Approved standards		UL: UL508 (Listing), UL60950 cUL: CSA C22.2 No.14, No.60950 EN/VDE: EN50178 (=VDE0160), EN60950 (=VDE0805) SELV (EN60950/UL50178/UL60950-1) According to VDE0106/P100, IP20									
	Weight		550 g max.			850 g max.			1,150 g max.			