Switch Mode Power Supply
S8VM (15/30/50/100/150/300/600/1,500-W Models)

CSM_S8VM_DS_E_8_1

Power Supply Featuring OMRON's Unique, New Undervoltage Alarm Function with Compact Body Contributing to Machine Downsizing

- New undervoltage alarm function assists in determining causes of errors (S8VM-□□□24A□/P□ only).
- Power failure alarm function provides notification of output voltage errors (300-, 600-, and 1,500-W models only).
- Broad range of possibilities with 8 capacities and 29 models to choose from.
- RoHS-compliant
- New, attentive design prevents screws from falling out of terminal block (except for output terminals of 300-, 600-, and 1,500-W models).
- Finger protection prevents electric shock.
- DIN Rail mounting.
- Safety standards: UL508/60950-1/1604, CSA C22.2 No. 14/No. 60950-1/No. 213, EN50178, EN60950-1 (The 300-, 600-, and 1,500-W models will not conform to safety standards if the customer replaces the fan.)
- Conforms to SEMI F47-0200 (when 200-V input is used).
- Harmonic current emissions: Conforms to EN61000-3-2 (except for 15- and 30-W models).

⚠ Refer to *Safety Precautions for All Power Supplies* and *Safety Precautions* on page 32.

Model Number Structure

■ Model Number Legend

Note: Not all combinations are possible. Refer to *List of Models* in *Ordering Information* on page 2.

S8VM- □□□□□□□
1 2 3 4

1. Power Ratings

015: 15 W
030: 30 W
050: 50 W
100: 100 W
150: 150 W
300: 300 W
600: 600 W
152: 1,500 W

2. Output Voltage

05: 5 V
12: 12 V
15: 15 V
24: 24 V

3. Configuration/Functions

None:	Open-frame type	Standard type
C:	Covered type	Standard type
A:	Covered type	Undervoltage alarm type (Sinking) (See note 2.)
P:	Covered type	Undervoltage alarm type (Sourcing) (See note 2.)

4. Configuration

None: Bottom mounting type (See note 3.)
D: DIN Rail mounting bracket type

Note: 1. A forced-air cooling method with a fan is used with 300-, 600-, and 1,500-W models.
2. The housing and terminal of the connector for the undervoltage alarm output are provided with the S8VM-05024A□/P□, S8VM-10024A□/P□ and S8VM-15024A□/P□.
3. Bottom mounting models cannot be used for front mounting. For a front mounting configuration, use a DIN Rail Mounting Bracket model or Mounting Brackets (sold separately).

Ordering Information

■ List of Models

Note: For details on normal stock models, contact your nearest OMRON representative.

Configuration	Power ratings	Input voltage	Output voltage	Output current	Bottom mounting			DIN Rail mounting bracket		
					Standard model	Undervoltage alarm model		Standard model	Undervoltage alarm model	
						Sinking	Sourcing		Sinking	Sourcing
Open-frame type	15 W	100 to 240 VAC	5 V	3 A	S8VM-01505	---	---	S8VM-01505D	---	---
			12 V	1.3 A	S8VM-01512	---	---	S8VM-01512D	---	---
			15 V	1 A	S8VM-01515	---	---	S8VM-01515D	---	---
			24 V	0.65 A	S8VM-01524	---	---	S8VM-01524D	---	---
	30 W		5 V	6 A	S8VM-03005	---	---	S8VM-03005D	---	---
			12 V	2.5 A	S8VM-03012	---	---	S8VM-03012D	---	---
			15 V	2 A	S8VM-03015	---	---	S8VM-03015D	---	---
			24 V	1.3 A	S8VM-03024	---	---	S8VM-03024D	---	---
	50 W		5 V	10 A	S8VM-05005	---	---	S8VM-05005D	---	---
			12 V	4.3 A	S8VM-05012	---	---	S8VM-05012D	---	---
			15 V	3.5 A	S8VM-05015	---	---	S8VM-05015D	---	---
			24 V	2.2 A	S8VM-05024	---	---	S8VM-05024D	---	---
	100 W		5 V	20 A	S8VM-10005	---	---	S8VM-10005D	---	---
			12 V	8.5 A	S8VM-10012	---	---	S8VM-10012D	---	---
			15 V	7 A	S8VM-10015	---	---	S8VM-10015D	---	---
			24 V	4.5 A	S8VM-10024	---	---	S8VM-10024D	---	---
	150 W		5 V	27 A	S8VM-15005 (See note 2.)	---	---	S8VM-15005D (See note 2.)	---	---
			12 V	12.5 A	S8VM-15012	---	---	S8VM-15012D	---	---
			15 V	10 A	S8VM-15015	---	---	S8VM-15015D	---	---
			24 V	6.5 A (See note 6.)	S8VM-15024	---	---	S8VM-15024D	---	---
Covered type	15 W	100 to 240 VAC	5 V	3 A	S8VM-01505C	---	---	S8VM-01505CD	---	---
			12 V	1.3 A	S8VM-01512C	---	---	S8VM-01512CD	---	---
			15 V	1 A	S8VM-01515C	---	---	S8VM-01515CD	---	---
			24 V	0.65 A	S8VM-01524C	S8VM-01524A (See note 1.)		S8VM-01524CD	S8VM-01524AD (See note 1.)	
	30 W		5 V	6 A	S8VM-03005C	---	---	S8VM-03005CD	---	---
			12 V	2.5 A	S8VM-03012C	---	---	S8VM-03012CD	---	---
			15 V	2 A	S8VM-03015C	---	---	S8VM-03015CD	---	---
			24 V	1.3 A	S8VM-03024C	S8VM-03024A (See note 1.)		S8VM-03024CD	S8VM-03024AD (See note 1.)	
	50 W		5 V	10 A	S8VM-05005C	---	---	S8VM-05005CD	---	---
			12 V	4.3 A	S8VM-05012C	---	---	S8VM-05012CD	---	---
			15 V	3.5 A	S8VM-05015C	---	---	S8VM-05015CD	---	---
			24 V	2.2 A	S8VM-05024C	S8VM-05024A	S8VM-05024P	S8VM-05024CD	S8VM-05024AD	S8VM-05024PD
	100 W		5 V	20 A	S8VM-10005C	---	---	S8VM-10005CD	---	---
			12 V	8.5 A	S8VM-10012C	---	---	S8VM-10012CD	---	---
			15 V	7 A	S8VM-10015C	---	---	S8VM-10015CD	---	---
			24 V	4.5 A	S8VM-10024C	S8VM-10024A	S8VM-10024P	S8VM-10024CD	S8VM-10024AD	S8VM-10024PD
	150 W		5 V	27 A	S8VM-15005C (See note 2.)	---	---	S8VM-15005CD (See note 2.)	---	---
			12 V	12.5 A	S8VM-15012C	---	---	S8VM-15012CD	---	---
			15 V	10 A	S8VM-15015C	---	---	S8VM-15015CD	---	---
			24 V	6.5 A (See note 6.)	S8VM-15024C	S8VM-15024A	S8VM-15024P	S8VM-15024CD	S8VM-15024AD	S8VM-15024PD
	300 W (See note 4.)		5 V	60 A	S8VM-30005C	---	---	---	---	---
			12 V	27 A	S8VM-30012C	---	---	---	---	---
			15 V	22 A	S8VM-30015C	---	---	---	---	---
			24 V	14 A Peak current: 16.5 A (200 VAC)	S8VM-30024C	---	---	---	---	---
	600 W (See note 4.)		5 V	120 A	S8VM-60005C	---	---	---	---	---
			12 V	53 A	S8VM-60012C	---	---	---	---	---
			15 V	43 A	S8VM-60015C	---	---	---	---	---
			24 V	27 A Peak current: 31 A (200 VAC)	S8VM-60024C	---	---	---	---	---
	1,500 W (See note 4.)		24 V	65 A (100 VAC) 70 A (200 VAC) Peak current: 105 A (200 VAC)	S8VM-15224C (See note 3.)	---	---	---	---	---

Note: 1. No outputs are built into these models.

2. The output capacity of the S8VM-15005□□ is 135 W.

3. M8 bolts and nuts for the output terminals are not included with the S8VM-15224C.

4. The 300-, 600-, and 1,500-W models use a forced cooling method with built-in fans.

5. To perform front mounting using the bottom mounting models, use the Mounting Brackets (S82Y-VM□□F, sold separately).

6. The output current for UL1604 certification is 6.3 A.

Specifications

■ Ratings/Characteristics

Item		Power rating	15 W	30 W	50 W	100 W	150 W
Efficiency		5-V models	75% min.	75% min.	80% min.	81% min.	81% min.
		12-V models	78% min.	79% min.	79% min.	81% min.	81% min.
		15-V models	78% min.	79% min.	79% min.	81% min.	81% min.
		24-V models	80% min.	81% min.	80% min.	82% min.	83% min.
Input	Voltage (See note 1.)		100 to 240 VAC (85 to 264 VAC)				
	Frequency (See note 1.)		50/60 Hz (47 to 63 Hz)				
	Current	100-V input	0.5 A max.	0.9 A max.	0.8 A max.	1.4 A max.	2.0 A max.
		200-V input	0.25 A max.	0.45 A max.	0.4 A max.	0.7 A max.	1.0 A max.
	Power factor	100-V input	---		0.98 min.		
		200-V input	---		0.94 min.		
	Harmonic current emissions		---		Conforms to EN 61000-3-2		
	Leakage current	100-V input	0.4 mA max. (at rated output)				
		200-V input	0.75 mA max. (at rated output)				
	Inrush current (See note 2.)	100-V input	17.5 A max. (for cold start at 25°C)				
		200-V input	35 A max. (for cold start at 25°C)				
Output	Voltage adjustment range (See note 3.)		–20% to 20% (with V. ADJ) (S8VM-□□□24A□/P□: –10% to 20%)				
	Ripple		3.2% (p-p) max. (5 V), 1.5% (p-p) max. (12 V), 1.2% (p-p) max. (15 V), 1.0% (p-p) max. (24 V), (at rated input/output voltage)		3.2% (p-p) max. (5 V), 1.5% (p-p) max. (12 V), 1.2% (p-p) max. (15 V), 0.75% (p-p) max. (24 V), (at rated input/output voltage)		
	Input variation influence		0.4% max. (at 85 to 264 VAC input, 100%)				
	Load variation influence (rated input voltage)		0.8% max. (with rated input, 0 to 100% load)				
	Temperature variation influence		0.02%/°C max.				
	Startup time (See note 2.)		1,100 ms max. (at rated input/output voltage)		800 ms max. (at rated input/output voltage)		
	Hold time (See note 2.)		20 ms typ. (15 ms min.) (at rated input/output voltage)				
Additional functions	Overload protection (See note 2.)		105% to 160% of rated load current, voltage drop, intermittent, automatic reset		105% to 160% of rated load current, voltage drop (12 V, 15 V, and 24 V), voltage drop, intermittent (5 V), automatic reset		
	Overvoltage protection (See note 2.)		Yes (See note 4.)				
	Undervoltage alarm indication		Yes (color: Yellow (DC LOW1), red (DC LOW2)) (S8VM-□□□24A□/P□ only)				
	Undervoltage alarm output		No		Yes (S8VM-□□□24A□/P□ only) (Transistor output), 30 VDC max., 50 mA max. (See note 8.)		
	Series operation		Yes (Up to 2 units; external diodes required.)				
	Parallel operation		No				
	Remote sensing function		No			Yes	
Other	Ambient operating temperature		Refer to the derating curve in *Engineering Data (15-W, 30-W, 50-W, 100-W, 150-W Models)*. (with no icing or condensation) (See note 2.)				
	Storage temperature		–25 to 65°C				
	Ambient operating humidity		30% 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/FG terminals; detection current: 20 mA) 500 VAC for 1 min. (between all outputs and PE/FG terminals; detection current: 100 mA) 500 VAC for 1 min. (between all outputs (except the detection output terminals) and detection output terminals; detection current: 20 mA) (S8VM-□□□24A□/P□ only)				
	Insulation resistance		100 MΩ min. (between all outputs and all inputs, PE/FG terminals) at 500 VDC				
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 hours each in X, Y, and Z directions				
	Shock resistance		150 m/s², 3 times each in ±X, ±Y, ±Z directions				
	Output indicator		Yes (color: Green)				
	EMI	Conducted Emission	Conforms to EN61204-3 EN55011 Class B and based on FCC Class B (See note 5.)				
		Radiated Emission	Conforms to EN61204-3 EN55011 Class B (See note 6.)				
	EMS		Conforms to EN61204-3 High severity levels				
	Approved standards	UL cUL cUR EN/TÜV	UL508 (Listing), UL60950-1, UL1604 (Listing; Class I/Division 2, Group A, B, C, D Hazardous Locations) (See note 9.) CSA C22.2 No.14, No. 213 (Class I/Division 2, Group A, B, D, D Hazardous Locations) CSA No. 60950-1 EN50178, EN60950-1 SELV (EN60950-1) According to VDE0160/P100				
		SEMI	SEMI F47-0200 (200 VAC input)				
	Weight (See note 7.)		180 g max.	220 g max.	290 g max.	460 g max.	530 g max.

Note: 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. Refer to *Engineering Data (15-W, 30-W, 50-W, 100-W, 150-W Models)* on page 9 to 11 for details.
3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +20% of the voltage adjustment range. If the adjuster is turned too far, it may activate the overvoltage protection function and interrupt the output.
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. Conducted emissions: The noise value is affected by factors such as the wiring method. The Power Supply conforms to Class B when the aluminum plate is laid under the Power Supply. For 15-W models, insert a clamp filter (ZCAT2436-1330 by TDK: 50 Ω min. [50 to 500 MHz], or the equivalent) in the output wire to reduce noise.
6. Radiated emissions: The noise value is affected by factors such as the wiring method. The Power Supply conforms to Class B when the aluminum plate is laid under the Power Supply. For 150-W models, insert a clamp filter (ZCAT2017-0930 by TDK: 35 Ω min. [50 to 500 MHz], or the equivalent) in the input wire to reduce noise.
7. The weight indicated is for bottom mounting, open-frame models.
8. A□: Sinking type (NPN)
P□: Sourcing type (PNP)
9. With the S8VM-15024□□, the output current for UL1604 certification is 6.3 A.

Item		Power rating	300 W	600 W	1,500 W
Efficiency		5-V models	77% min.	77% min.	---
		12-V models	78% min.	79% min.	---
		15-V models	79% min.	80% min.	---
		24-V models	81% min.	81% min.	82% min.
Input	Voltage (See note 1.)		100 to 240 VAC (85 to 264 VAC)		100 to 240 VAC (85 to 265 VAC)
	Frequency (See note 1.)		50/60 Hz (47 to 63 Hz)		
	Current	100-V input	4.0 A max. (5 V) 4.3 A max. (12 V, 15 V, and 24 V)	8.0 A max. (5 V) 8.3 A max. (12 V, 15 V, and 24 V)	20.0 A max.
		200-V input	2.0 A max. (5 V) 2.2 A max. (12 V, 15 V, and 24 V)	4.0 A max. (5 V) 4.2 A max. (12 V, 15 V, and 24 V)	11.0 A max.
	Power factor	100-V input	0.98 min.		0.97 min.
		200-V input	0.94 min.		0.93 min.
	Harmonic current emissions		Conforms to EN61000-3-2		
	Leakage current	100-V input	0.4 mA max.		1.5 mA max.
		200-V input	0.75 mA max.		1.5 mA max.
	Inrush current (See note 2.)	100-V input	20 A max. (for cold start at 25°C)		
		200-V input	40 A max. (for cold start at 25°C)		
Output	Voltage adjustment range (See note 3.)		–20% to 20% (with V. ADJ)		
	Ripple		3.8% (p-p) max. (5 V), 2.0% (p-p) max. (12 V), 2.0% (p-p) max. (15 V), 1.25% (p-p) max. (24 V), (at rated input/output voltage)		1.25% (p-p) max. (See note 7.), (at rated input/output voltage)
	Input variation influence		0.4% max. (at 85 to 264 VAC input, 100%)		
	Load variation influence (rated input voltage)		0.6% max. (with rated input, 0 to 100% load)		
	Temperature variation influence		0.02%/°C max.		
	Startup time (See note 2.)		1,000 ms max. (at rated input/output voltage)		
	Hold time (See note 2.)		20 ms typ. (15 ms min.) (at rated input/output voltage)		
Additional functions	Overload protection (See note 2.)		105% to 160% of rated load current (5 V, 12 V, and 15 V), 120% to 160% of rated load current (S8VM-30024C), 115% to 160% of rated load current (S8VM-60024C), voltage drop (12 V, 15 V, and 24 V), voltage drop, intermittent (5 V), automatic reset		105% to 160% of rated load current (100 VAC), 155% to 200% of rated load current (200 VAC), voltage drop, automatic reset (Turns OFF when continuous for 5 s min.) (See note 4.)
	Overvoltage protection (See note 2.)		Yes (See note 4.)		
	Overheat protection (See note 2.)		Yes (See note 4.)		
	Undervoltage alarm indication		No		
	Undervoltage alarm output		No		
	Power failure alarm indication		Yes (color: Red)		
	Power failure alarm output		Yes (Transistor output), 30 VDC max., 50 mA max.		
	Series operation		Yes (Up to 2 units; external diodes required.)		
	Parallel operation		Yes (Up to 2 units)		
	Remote sensing function		Yes		
	Remote control function		Yes		
Other	Ambient operating temperature		Refer to the derating curve in *Engineering Data (300-W, 600-W, 1,500-W Models).* (with no icing or condensation) (See note 2.)		
	Storage temperature		–25 to 65°C		
	Ambient operating humidity		30% 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) 500 VAC for 1 min. (between all outputs and PE terminals; detection current: 100 mA) 100 VAC for 1 min. (between all outputs and RC terminals; detection current: 100 mA) 500 VAC for 1 min. (between all outputs and PF terminals; detection current: 20 mA)		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 FG terminals; detection current: 20 mA) 500 VAC for 1 min. (between all outputs and FG terminals; detection current: 300 mA) 100 VAC for 1 min. (between all outputs and RC terminals; detection current: 100 mA) 500 VAC for 1 min. (between all outputs and PF terminals; detection current: 20 mA)
	Insulation resistance		100 MΩ min. (between all outputs and all inputs, PE terminals) at 500 VDC		100 MΩ min. (between all outputs and all inputs, FG terminals) at 500 VDC
	Vibration resistance		10 to 55 Hz, 0.375-mm single amplitude for 2 hours each in X, Y, and Z directions		10 to 55 Hz, 0.15-mm single amplitude for 2 hours each in X, Y, and Z directions
	Shock resistance		150 m/s^2, 3 times each in ±X, ±Y, ±Z directions		
	Output indicator		Yes (color: Green)		
	EMI	Conducted Emission	Conforms to EN61204-3 EN55011 Class B and based on FCC Class B (See note 5.)		Conforms to EN61204-3 EN55011 Class A and based on FCC Class A (See note 6.)
		Radiated Emission	Conforms to EN61204-3 EN55011 Class B (See note 5.)		Conforms to EN61204-3 EN55011 Class A (See note 6.)
	EMS		Conforms to EN61204-3 High severity levels		
	Approved standards (See note 8.)	UL cUR cUR EN/TÜV	UL508 (Recognition) (5 V, 12 V, and 15 V) UL508 (Listing) (24 V), UL60950-1 UL1604 (Listing; Class I/Division 2, Group A, B, C, D Hazardous Locations) (24 V) CSA C22.2 No.14, No. 213 (Class I/Division 2, Group A, B C, D Hazardous Locations) (24 V) CSA No. 60950-1 EN50178, EN60950-1 SELVE (EN60950-1)		UL508, UL60950-1 CSA C22.2 No.14, CSA No. 60950-1 EN50178, EN60950-1 SELVE (EN60950-1)
		SEMI	SEMI F47-0200 (200-VAC input)		
	Weight		1,100 g max.	1,700 g max.	3,800 g max.

Note: **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. Refer to *Engineering Data (300-W, 600-W, 1,500-W Models)* on page 15 to 17 for details.

3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than +20% of the voltage adjustment range. If the adjuster is turned too far, it may activate the overvoltage protection function and interrupt the output. 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. Alternatively, turn OFF the remote control signal and then turn it back ON again.

5. Conducted emissions: The noise value is affected by factors such as the wiring method. The Power Supply conforms to Class B when the aluminum plate is laid under the Power Supply. For 600-W models, insert a clamp filter (ZCAT3035-1330 by TDK: 100 Ω min. [50 to 500 MHz], or the equivalent) in the input wire, and ring core (HF60T38X14X22 by TDK: 16 Ω typ. [1 MHz], 46 Ω typ. [10 MHz], or the equivalent) in the output wire to reduce noise

6. Radiated emissions: The noise value is affected by factors such as the wiring method. The Power Supply conforms to Class A when the aluminum plate is laid under the Power Supply (1,500-W models).

7. The measuring method conforms to JEITA standard RC-9131A. Refer to *Ripple* under *Safety Precautions* on page 32.

8. The Power Supply will not conform to safety standards if the customer replaces the fan.