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Switch Mode Power Supply
S8PS (50/100/150/300/600-W Models)

Compact DIN Rail-mounting Power Supplies

- Complies with EN 61000-3-2 harmonic current standards.
- Safety standards: UL, CSA, and EN/VDE.
- Complies with EN 61204-3 Class B.
- Mounting Bracket included for front mounting or DIN Rail mounting.
- RoHS-compliant

Note: Refer to *Safety Precautions* on page 12.



Model Number Structure

■ Model Number Legend

Note: Not all combinations are possible. Refer to *List of Models* in *Ordering Information*, below.

S8PS-□□□□□□
1 2 3

1. Power Ratings
050: 50 W
100: 100 W
150: 150 W
300: 300 W
600: 600 W

2. Output Voltage
05: 5 V
12: 12 V
24: 24 V

3. Configuration
C: Covered type with Front Mounting Bracket
D: Open-frame type with DIN Rail Mounting Bracket
CD: Covered type with DIN Rail Mounting Bracket
None: Open-frame type with Front Mounting Bracket

Ordering Information

■ List of Models

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

Configuration	Input voltage	Power ratings	Output voltage	Output current	Front-mounting Model	DIN Rail-mounting Model
Covered type	100 to 240 VAC	50 W	5 V	10 A	S8PS-05005C	S8PS-05005CD
			12 V	4.2 A	S8PS-05012C	S8PS-05012CD
			24 V	2.1 A	S8PS-05024C	S8PS-05024CD
		100 W	24 V	4.5 A	S8PS-10024C	S8PS-10024CD
		150 W	24 V	6.5 A	S8PS-15024C	S8PS-15024CD
		300 W	24 V	14 A	S8PS-30024C	S8PS-30024CD
		600 W	24 V	27 A	S8PS-60024C	---
Open-frame type	100 to 240 VAC	50 W	5 V	10 A	S8PS-05005	S8PS-05005D
			12 V	4.2 A	S8PS-05012	S8PS-05012D
			24 V	2.1 A	S8PS-05024	S8PS-05024D
		100 W	24 V	4.5 A	S8PS-10024	S8PS-10024D
		150 W	24 V	6.5 A	S8PS-15024	S8PS-15024D

■ Options (Order Separately)

Name	Model
Fan	S82Y-JFAN

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Specifications

■ Ratings/Characteristics

Item			50 W	100 W	150 W	300 W	600 W
Efficiency (typical)			74% to 80% (depends on the model)				
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 (See note 2.)	**100-V input**	0.9 A max.	1.8 A max.	2.7 A max.	5.4 A max.	10 A max.
		200-V input	0.45 A max.	0.9 A max.	1.4 A max.	2.7 A max.	5 A max.
	Leakage current (See note 2.)	**100-V input**	0.5 mA max.				
		200-V input	1.0 mA max.				
	Inrush current (See note 2.)	**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)				
	Power factor (See note 2.)		0.95 typical				
	Harmonic current standards		Based on EN 61000-3-2	Complies with EN 61000-3-2			
Output	**Voltage adjustment range (See note 3.)**		–5% to 10%				
	Ripple (See note 2.)		2% (p-p) max.				
	Input variation influence		0.4% max. (at 85 to 132 VAC input/at 170 to 264 VAC input, 100% load)				
	Load variation influence		0.8% max. (with rated input, 0 to 100% load)				
	Temperature variation influence (See note 2.)		0.05%/°C max.				
	Startup time		1,000 ms max. (up to 90% of output voltage at rated output voltage/current)			1,500 ms max.	
	Hold time (See note 2.)		20 ms min.				
Additional function	**Overload protection**		105% min., voltage drop, intermittent operation (With the 600-W model, output is turned OFF at 5 s min.)				
	Overvoltage protection (See note 5.)		Yes				
	Overheat protection		No				Yes
	Protection-ON alarm indicator		No			Yes (color: red)	
	Parallel operation		No			Yes, 2 units max.	
Other	**Heat radiation**		Natural air-cooling				Built-in fan
	Ambient operating temperature		Refer to the derating curve in *Engineering Data* (with no icing or condensation).				
	Storage temperature		–25 to 65°C				
	Ambient operating humidity		25% to 85%				
	Dielectric strength		3.0 kVAC for 1 min. (between all inputs and outputs) 2.2 kVAC for 1 min. (between all inputs and PE terminal) 1.0 kVAC for 1 min. (between all outputs and PE terminal)				
	Insulation resistance		100 MΩ min. (between all outputs and inputs/PE terminal at 500 VDC)				
	Vibration resistance		10 to 55 Hz, 0.75-mm amplitude for 2 h each in X, Y, and Z directions				
	Shock resistance		300 m/s^2, 3 times each in ±X, ±Y, and ±Z directions				
	Output indicator		Yes (color: green)				
	EMI	**Conducted Emission (See note 2.)**	Conforms to EN61204-3 EN55011 Class B and based on FCC Class B				
		Radiated Emission	Conforms to EN61204-3 EN55011 Class B				
	EMS		Conforms to EN61204-3 High severity levels				
	Approved standards	**UL cUL cUR EN/VDE**	UL508, UL1012, UL60950-1 CSA C22.2 No. 14 CSA No. 60950-1 EN50178 (=VDE0160), EN60950-1 (=VDE0805 Teil 1)				
	Weight (See note 6.)		420 g max.	600 g max.	735 g max.	2,200 g max.	3,500 g max.
	Mounting method		Front Mounting Bracket or DIN Rail Mounting Bracket				Front Mounting Bracket

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. A 100% load for rated input voltage (100 VAC or 200 VAC).

3. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than 10% 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. The output will shut off and the protection-ON alarm indicator will simultaneously light. Turn OFF the input power supply, wait 1 min., and then turn ON the input power supply to recover normal operation.

5. Turn OFF the input power supply, wait 1 min., and then turn ON the input power to recover normal operation. (For 300-W and 600-W models, the output will shut off and the protection-ON indicator will simultaneously light.)

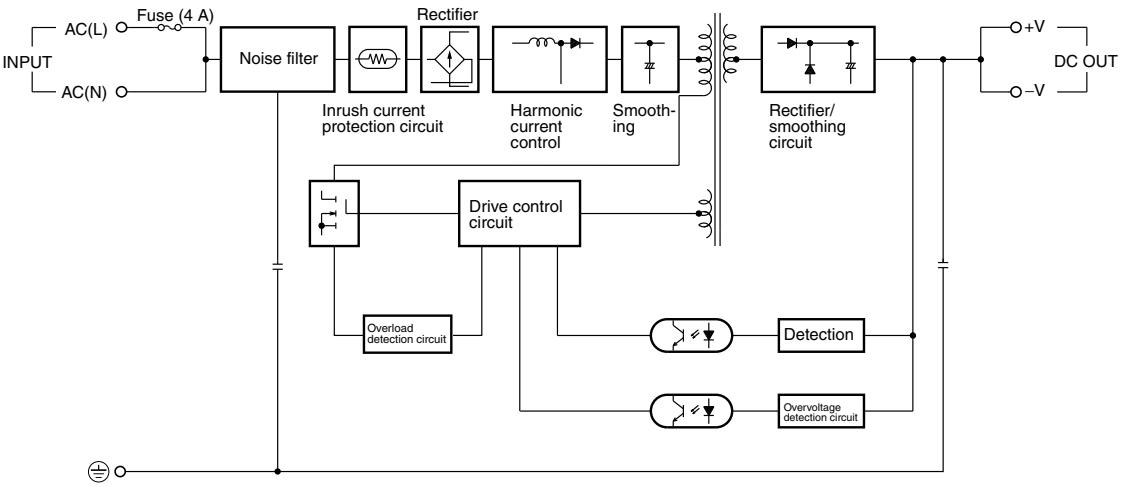
6. The weight indicated is for a front-mounting open-frame model. (includes the cover for 300-W and 600-W front-mounting models.)

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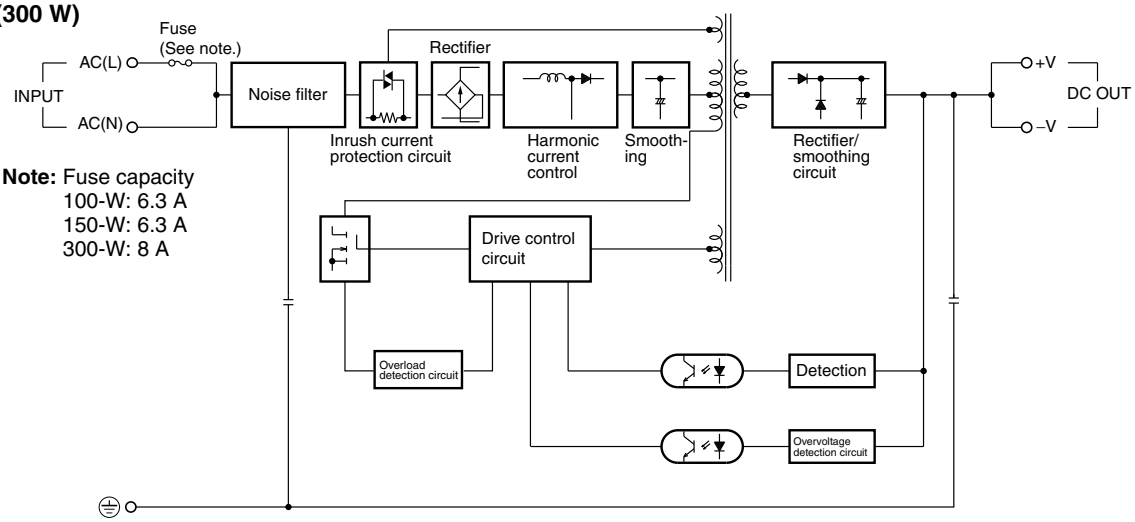
Connections

■ Block Diagrams

S8PS-050□□□□ (50 W)

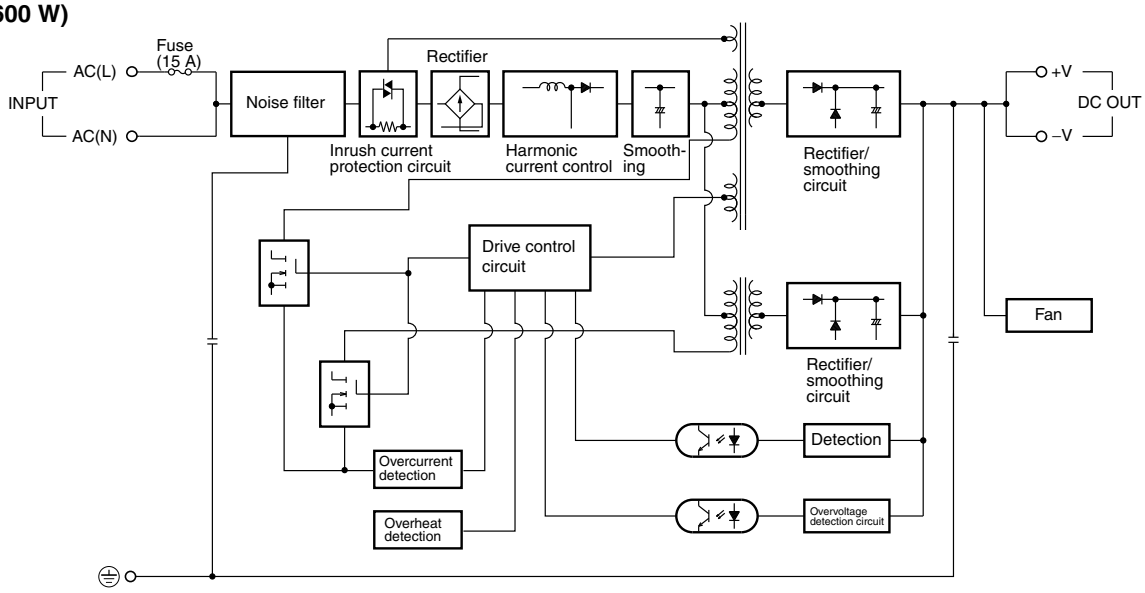


S8PS-10024□□ (100 W)
S8PS-15024□□ (150 W)
S8PS-30024□□ (300 W)



Note: Fuse capacity
100-W: 6.3 A
150-W: 6.3 A
300-W: 8 A

S8PS-60024C (600 W)

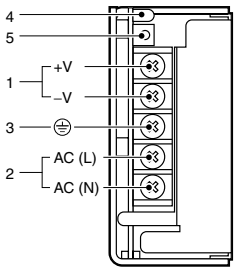


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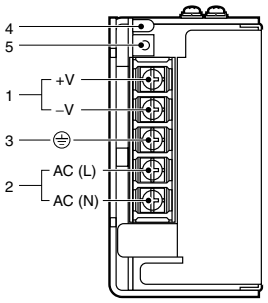
Construction and Nomenclature

■ Nomenclature

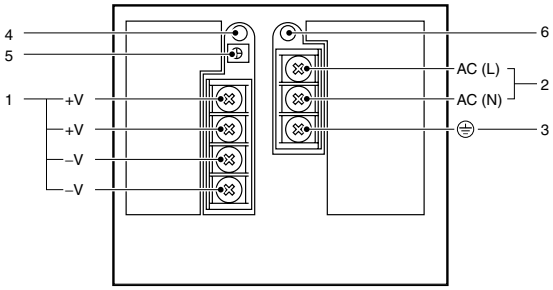
50-W Models



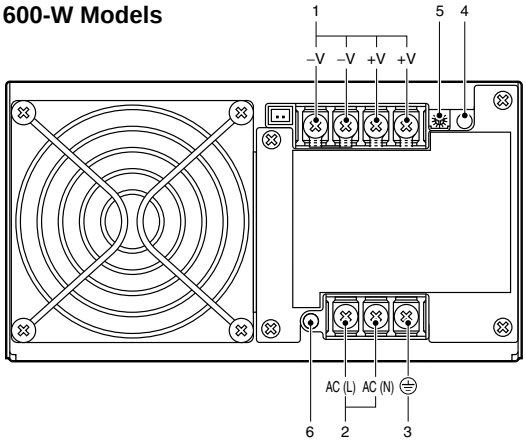
100-/150-W Models



300-W Models



600-W Models



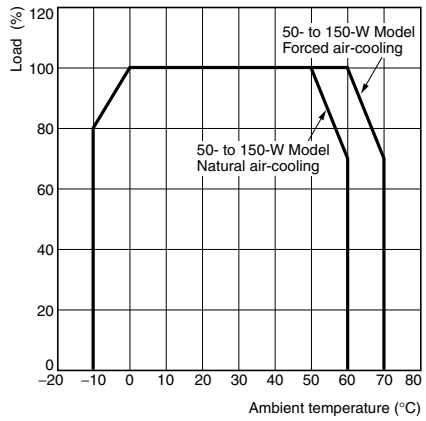
1. **DC Output Terminals (+V, –V):** Connect the load lines to these terminals.
2. **Input Terminals (L, N):** Connect the input lines to these terminals.
   Note: A fuse is located on the (L) side. It is NOT user replaceable.
3. **Protective Earthing Terminal ⏚ :** Connect a ground line to this terminal.
4. **Output Indicator (DC ON: Green):** Lights (green) while a direct current (DC) output is ON.
5. **Output Voltage Adjuster (V.ADJ):** It is possible to increase or decrease the output voltage by –5% to +10%.
6. **Protection-ON Alarm Indicator (Red):** The red indicator will be lit if the overvoltage (for a 300-/600-W model) or overheat protection (for a 600-W model) circuit is triggered. This indicator will also be lit when overcurrent (for a 600-W model) is detected.

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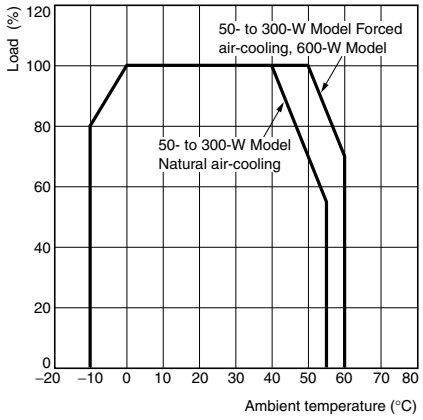
Engineering Data

■ Derating Curve (Standard Installation)

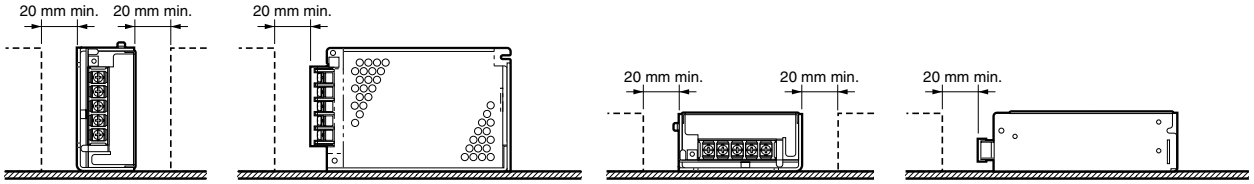
Open-frame Type



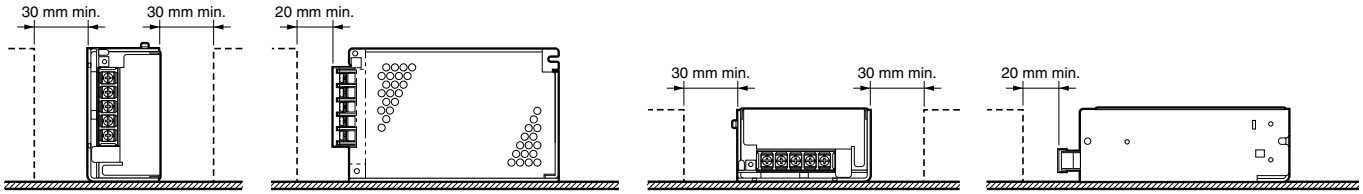
Covered Type



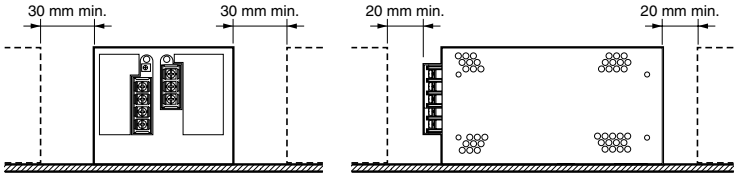
Standard Installation (50-W Model)



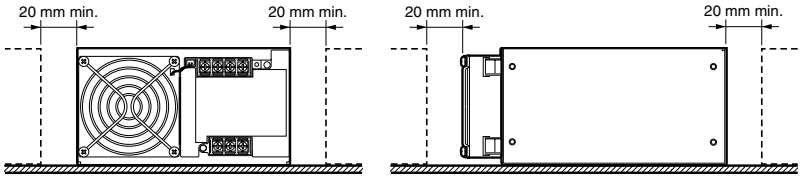
Standard Installation (100/150-W Model)



Standard Installation (300-W Model)



Standard Installation (600-W Model)



Note: 1. Forced air-cooling must be provided with an air volume of 1 m^3/mm min.

2. The derating curve shown is for standard installation. The derating curve depends on the mounting direction of the Power Supply.

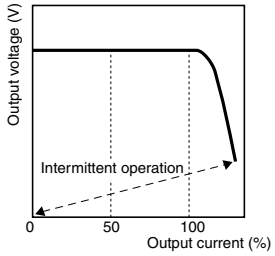
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■ Overload Protection

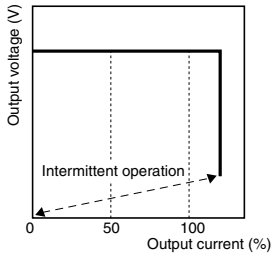
50- to 300-W Models

The Power Supply is provided with an overload protection function that protects the power supply from possible damage from an overload. The protection function operates when the load current rises above an overcurrent detection value (105% of the rated load current except for 300-W models, for which the value is 101%). For a short-circuit or overload lasting less than 20 seconds, output voltage is decreased to protect equipment. When the output current falls within the rated range, the overload protection function is automatically cleared.

50-, 100-, 150-W Models



300-W Model

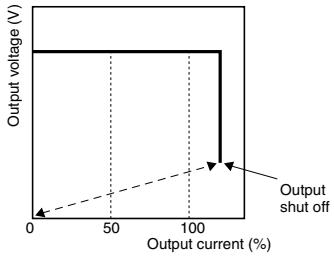


The valves shown in the above diagrams are for reference only.

Note: If a short-circuit or overload lasts 20 seconds or longer, internal circuits may deteriorate or be damaged.

600-W Model

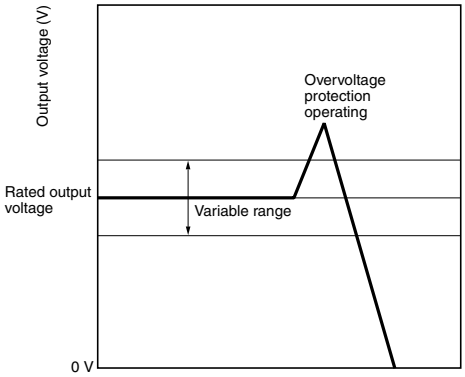
If the overload state continues for 5 seconds or longer, the output will shut off and the protection-ON alarm indicator will simultaneously light. Reset the input power by turning it OFF for at least one minute and then turning it back again.



Note: Internal parts may occasionally deteriorate or be damaged if a short-circuited or other overcurrent state continues during operation.

■ Overvoltage Protection

The Power Supply is provided with an overvoltage protection function that protects the Power Supply from possible damage by overvoltage. When the output voltage rises above a set value (115% of the rated output voltage), the protection function is triggered, shutting OFF the output voltage. Reset the input power by turning it OFF for at least one minute and then turning it back again.



The valves shown in the above diagram are for reference only.

300- and 600-W Models

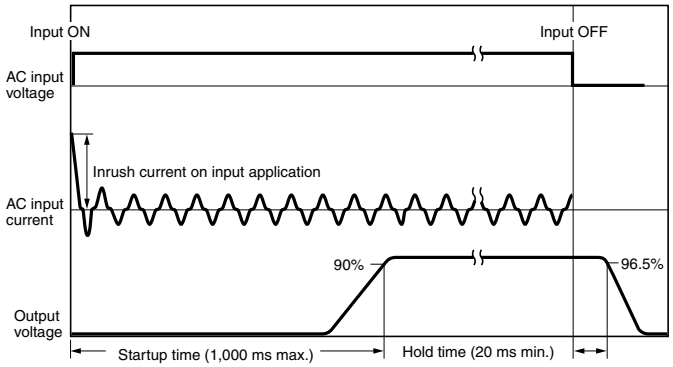
If more than approx. 115% of the rated output voltage is output, the output will be shut off and simultaneously the protection-ON alarm indicator will light. Reset the input power by turning it OFF for at least one minute and then turning it back again.

■ Overheat Protection Function

600-W Model Only

If the internal temperature of the S8PS rises excessively as a result of fan failure or any other reason, the overheat protection circuit will be triggered to protect the internal parts of the S8PS and simultaneously a protection-ON alarm indicator will be lit. Reset the input power by turning it OFF for at least one minute and then turning it back again.

■ Inrush Current, Startup Time, Hold Time



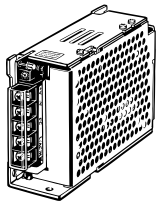
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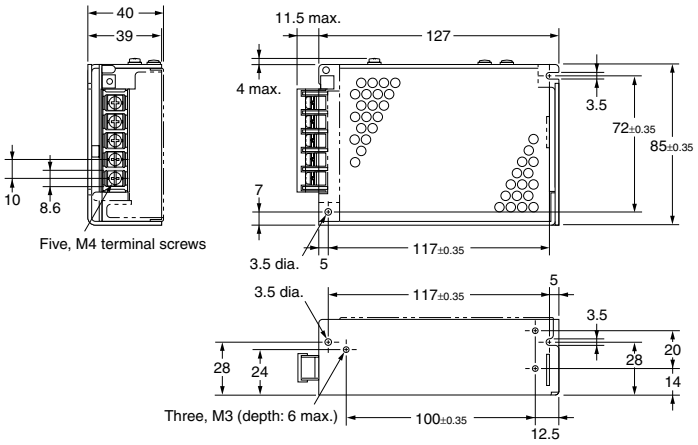
Dimensions

Note: All units are in millimeters unless otherwise indicated.

■ Front-mounting Models

S8PS-050□□ (50 W)
S8PS-050□□□C (50 W)

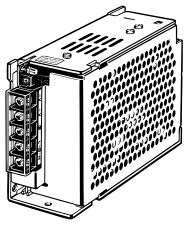


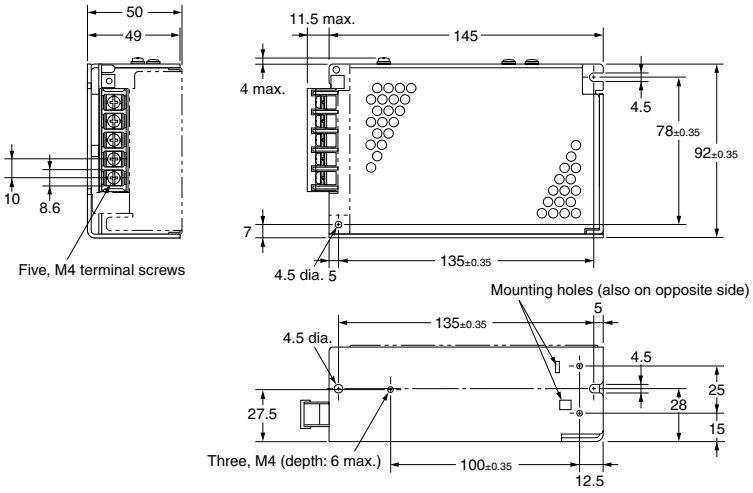


Mounting Holes

	Front Screw Mounting
Side Mounting	Two, M3 72±0.35 117±0.35
Bottom Mounting	Two, M3 117±0.35

S8PS-10024 (100 W)
S8PS-10024C (100 W)

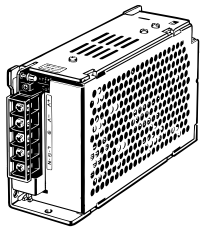


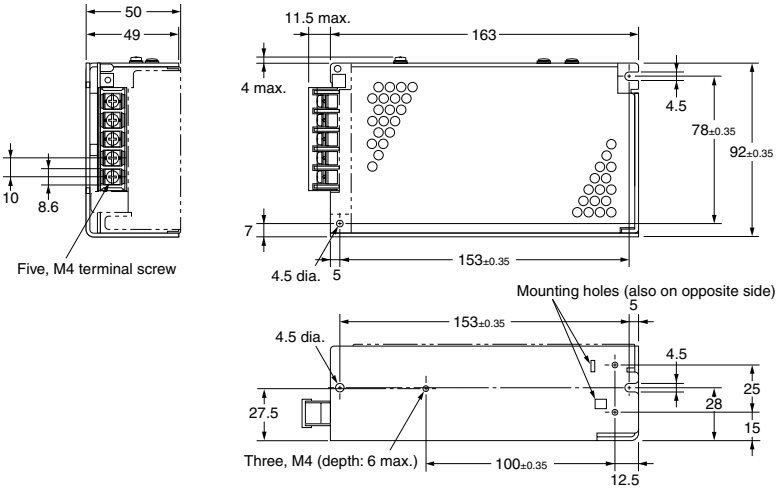


Mounting Holes

	Front Screw Mounting
Side Mounting	Two, M4 78±0.35 135±0.35
Bottom Mounting	Two, M4 135±0.35

S8PS-15024 (150 W)
S8PS-15024C (150 W)



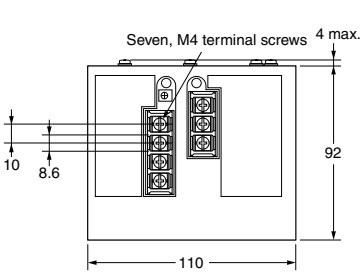


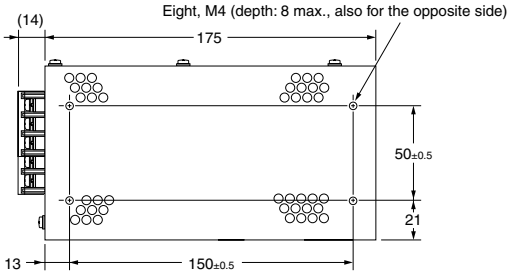
Mounting Holes

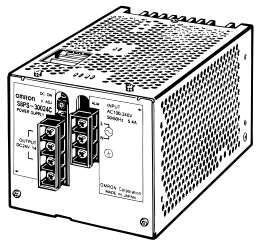
	Front Screw Mounting
Side Mounting	Two, M4 78±0.35 153±0.35
Bottom Mounting	Two, M4 153±0.35

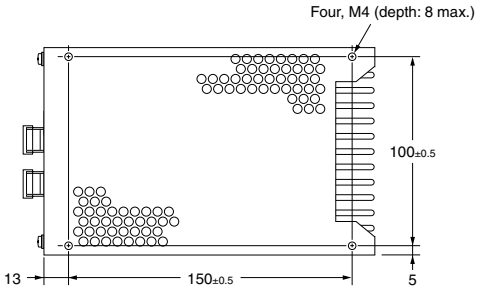
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S8PS-30024C (300 W)

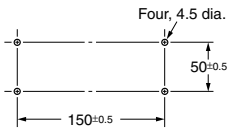
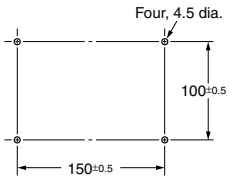




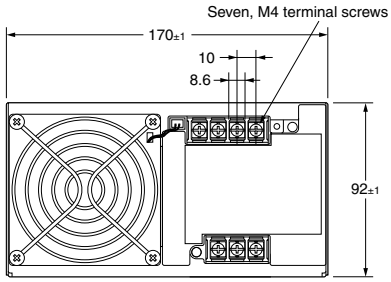


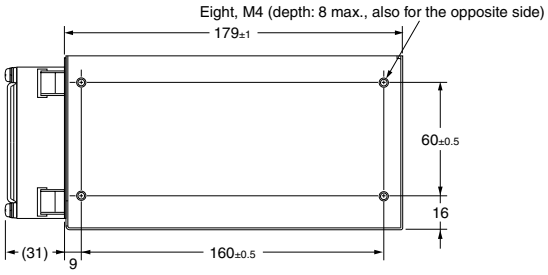


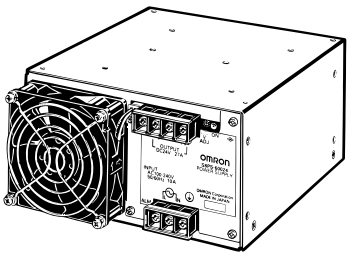
Mounting Holes

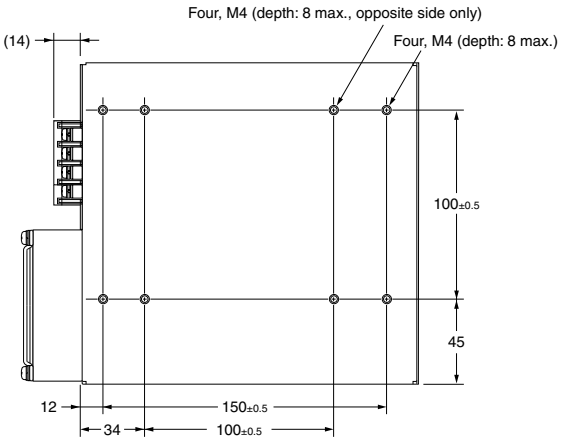
	Front Screw Mounting
Side Mounting	
Bottom Mounting	

S8PS-60024C(600 W)

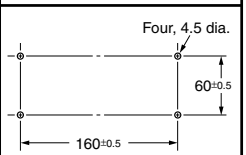
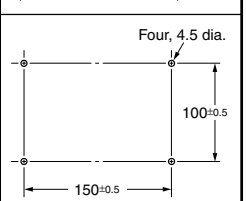








Mounting Holes

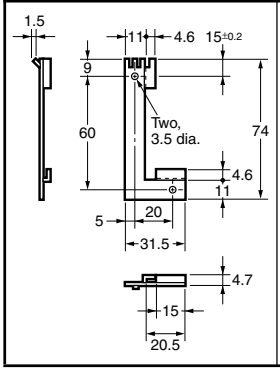
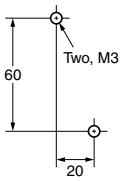
	Front Screw Mounting
Side Mounting	
Bottom Mounting	

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■ Front Mounting Brackets

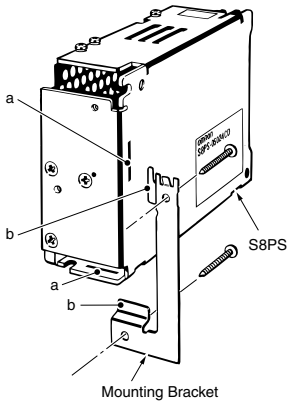
Note: Screws for fixing the Bracket to the panel are not provided.

Front Mounting Bracket for 50-W Models

Demensions	Mounting Holes
	

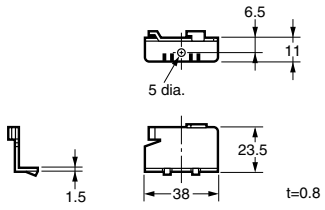
Using the Mounting Bracket

Attach the Mounting Bracket to the panel and loosely tighten the two screws. Insert the projected parts of the Bracket (b) to the square holes of the power supply (a). Then securely tighten the screws.

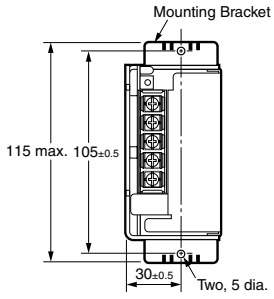


Front Mounting Bracket for 100/150-W Models

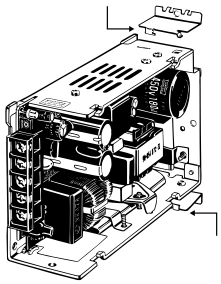
Appearance and Mounting Dimensions



Dimensions with Mounting Bracket

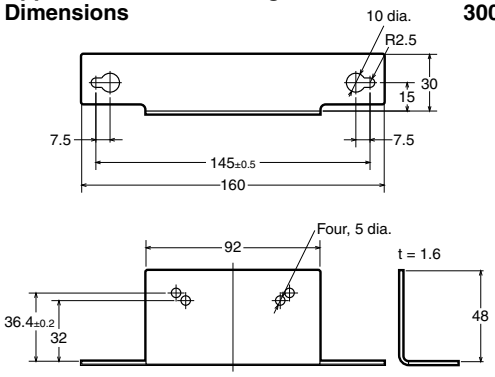


Using the Mounting Bracket

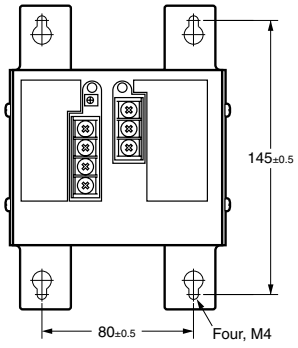


Front Mounting Bracket for 300/600-W Models

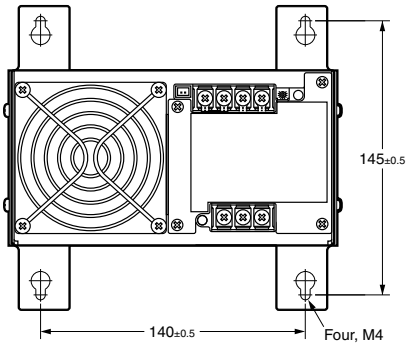
Appearance and Mounting Dimensions



Dimensions with Mounting Bracket 300-W Models

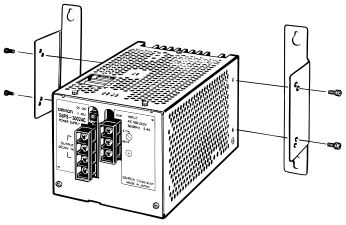


600-W Models



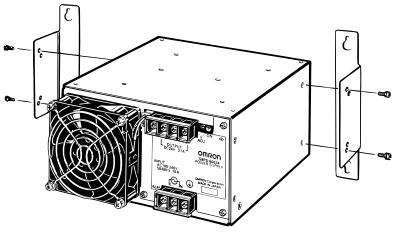
Using the Mounting Bracket

300-W Models



Note: Mount the Unit 21.6 mm away from the mounting surface in order to provide air ventilation on the rear side.

600-W Models

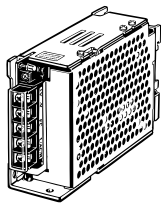


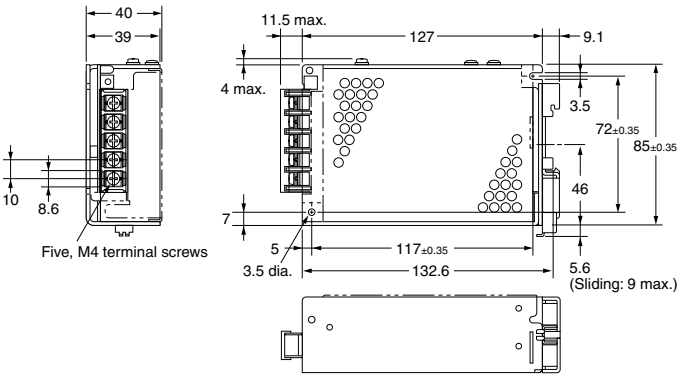
Note: Mount the Unit 28 mm away from the mounting surface in order to provide air ventilation on the rear side.

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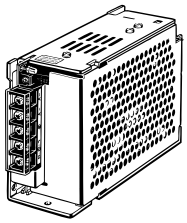
■ DIN Rail-mounting Models

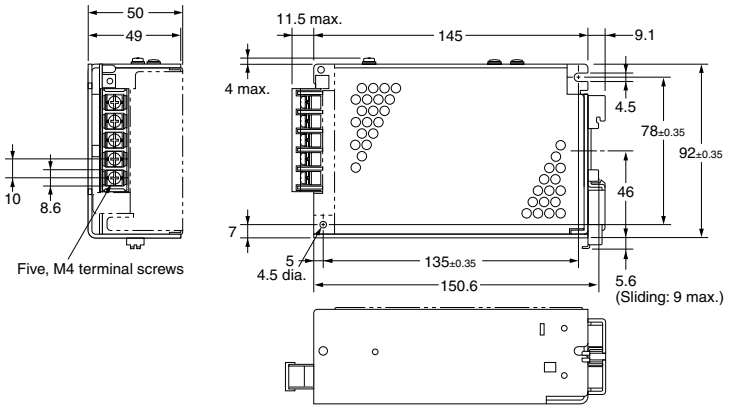
S8PS-050□□D (50 W)
S8PS-050□□CD (50 W)



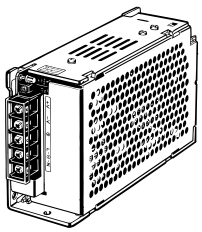


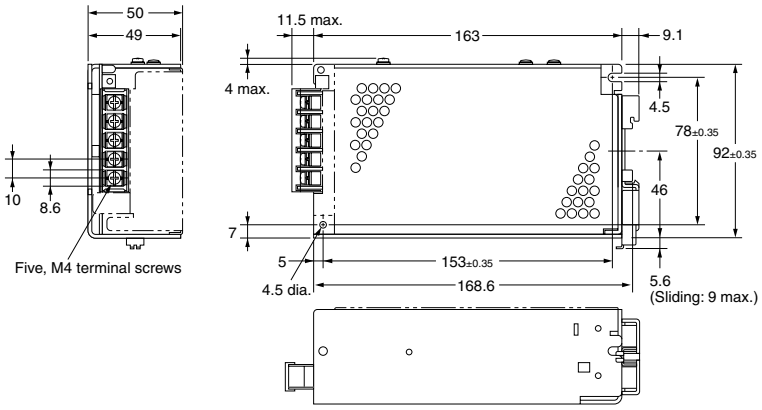
S8PS-10024D (100 W)
S8PS-10024CD (100 W)



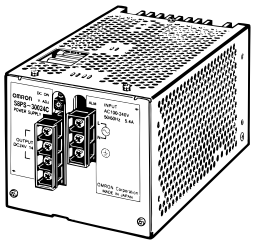


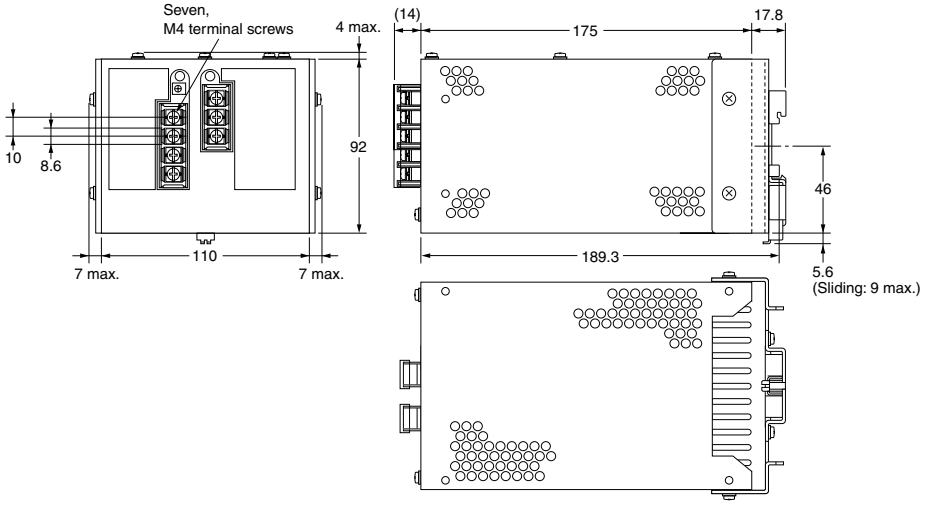
S8PS-15024D (150 W)
S8PS-15024CD (150 W)





S8PS-30024CD (300 W)



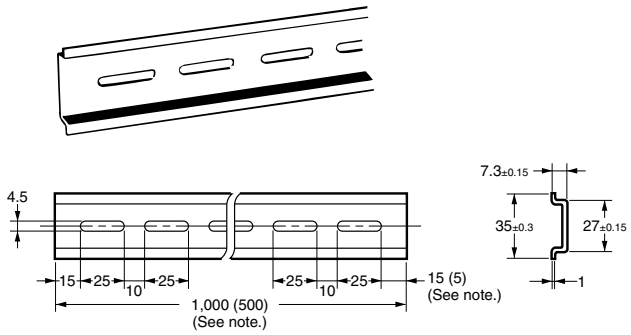


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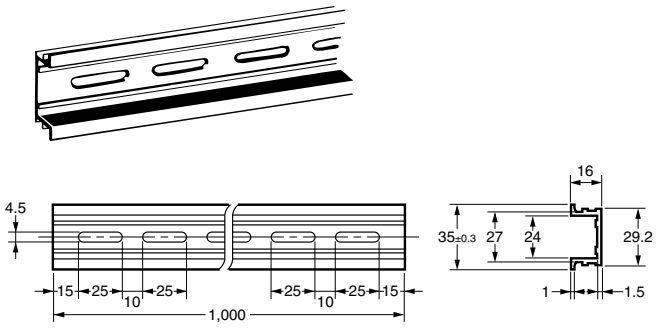
■ Accessories

Mounting Rail (Order Separately)

PFP-100N
PFP-50N



PFP-100N2



Note: The values shown in parentheses are for the PFP-50N.

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Safety Precautions

⚠ CAUTION	
Minor electric shock, fire, or Product failure may occasionally occur. Do not disassemble, modify, or repair the Product or touch the interior of the Product.	
Minor burns may occasionally occur. Do not touch the Product while power is being supplied or immediately after power is turned OFF.	
Fire may occasionally occur. Tighten terminal screws to the specified torque 1.08 N·m (M4).	
Electric shock due to residual voltage may occoccur. Do not touch the Product for at least 1 minute after the input power is turned OFF.	
Minor electric shock, fire, or Product failure may occasionally occur. Do not allow any pieces of metal or conductors or any clippings or cuttings resulting from installation work to enter the Product.	

■ Precautions for Safe Use

Mounting

To improve and maintain the reliability of the Power Supply over a long period of time, adequate consideration must be given to heat radiation.

The Power Supply is designed to radiate heat by means of natural air-flow. Therefore, mount the Power Supply so that air flow takes place around the Power Supply.

Use a metal plate as the mounting panel.

Forced air-cooling is highly recommended.

Wiring

Connect the ground completely. Electric shock may occur if the ground is not connected completely.

Do not apply more than 75-N force to the terminal block when tightening it.

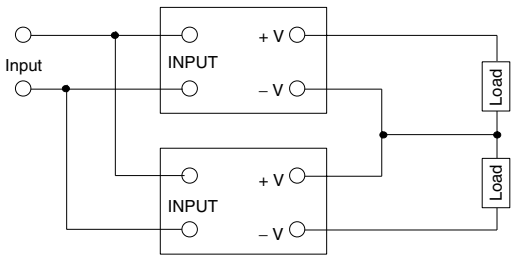
Buzzing Noise When the Input Is Turned ON

A harmonic current suppression circuit is built into the input power. This circuit can create noise when the input is turned ON, but it will last only until the internal operation stabilizes and does not indicate any problem in the Power Supply.

Generating Output Voltage (±)

An output of ± can be generated by using two Power Supplies as shown below, because the Power Supply produces a floating output.

Correct

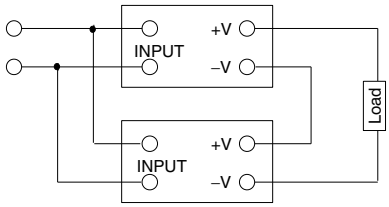


Series Operation

All models allow series operation.

As shown in the following diagram, the output voltage from each Switching Power Supply can be added.

Correct

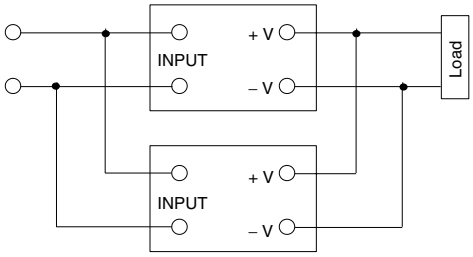


Parallel Operation

Only 300- and 600-W models can be in parallel operation. Do not operate any other models in parallel. (A maximum of two Power Supplies can be used in parallel operation and they must have the same model number.)

Make sure that the thickness and the length of all wires connected to the load are the same to ensure that the wires will have no voltage drop differences.

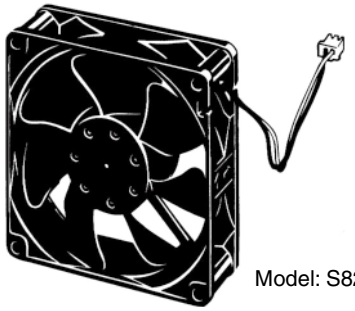
Correct



Fan Replacement

The service life of the fan is approximately 50,000 hours (at 25°C). The service life varies, however, depending on the ambient temperature or other surrounding environmental conditions such as dust. As a preventive maintenance measure, replace the fan within two years if it is used at an ambient temperature of 40°C.

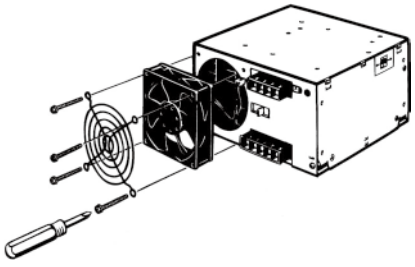
Fans are available as replacements.



Model: S82Y-JFAN

Fan Set:
Fan (above), four M4 x 35 sems screws, instruction sheet, and packing case

Replace the fan as shown in the following illustration.



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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
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