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Switch Mode Power Supply

S8JX (50/100/150-W Models)

Low-profile Power Supply to Help Reduce Panel Depth

- Easy Mounting:
  Mounting Bracket provided as a standard feature.
  Mounts to DIN Rail.
  Screw-mount at the top.
- Safety standards:
  UL 508/60950-1
  cUL CSA C22.2 No. 107.1
  cUR CSA C22.2 No. 60950-1
  EN 50178 (= VDE 0160)
  EN 60950-1 (= VDE 0805 Teil 1)
- EMC: Conforms to EN 61204-3 Class A.
- Two-year warranty.

⚠ Refer to Safety Precautions on page 11.

Model Number Structure

Model Number Legend

Note: Not all model number combinati ons are available. Refer to List of Models in Ordering Information , on next page.

S8JX-G □□□ □□ □ □
1 2 3 4

1. Power Ratings
   050: 50 W
   100: 100 W
   150: 150 W
2. Output Voltage
   05: 5 V
   12: 12 V
   24: 24 V
3. Configuration
   None: Open-frame
   C: Covered
4. Configuration/mounting
   None: Front-mounting
   D: DIN Rail-mounting

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	Model
Open-frame Power Supplies	Front-mounting	100 to 240 VAC (free)	50 W	5 V	10 A	**S8JX-G05005**
				12 V	4.2 A	**S8JX-G05012**
				24 V	2.1 A	**S8JX-G05024**
			100 W	5 V	20 A	**S8JX-G10005**
				12 V	8.5 A	**S8JX-G10012**
				24 V	4.5 A	**S8JX-G10024**
			150 W	24 V	6.5 A	**S8JX-G15024**
Covered Power Supplies			50 W	5 V	10 A	**S8JX-G05005C**
				12 V	4.2 A	**S8JX-G05012C**
				24 V	2.1 A	**S8JX-G05024C**
			100 W	5 V	20 A	**S8JX-G10005C**
				12 V	8.5 A	**S8JX-G10012C**
				24 V	4.5 A	**S8JX-G10024C**
			150 W	24 V	6.5 A	**S8JX-G15024C**
Open-frame Power Supplies	DIN Rail-mounting		50 W	5 V	10 A	**S8JX-G05005D**
				12 V	4.2 A	**S8JX-G05012D**
				24 V	2.1 A	**S8JX-G05024D**
			100 W	5 V	20 A	**S8JX-G10005D**
				12 V	8.5 A	**S8JX-G10012D**
				24 V	4.5 A	**S8JX-G10024D**
			150 W	24 V	6.5 A	**S8JX-G15024D**
Covered Power Supplies			50 W	5 V	10 A	**S8JX-G05005CD**
				12 V	4.2 A	**S8JX-G05012CD**
				24 V	2.1 A	**S8JX-G05024CD**
			100 W	5 V	20 A	**S8JX-G10005CD**
				12 V	8.5 A	**S8JX-G10012CD**
				24 V	4.5 A	**S8JX-G10024CD**
			150 W	24 V	6.5 A	**S8JX-G15024CD**

Ratings, Characteristics, and Functions

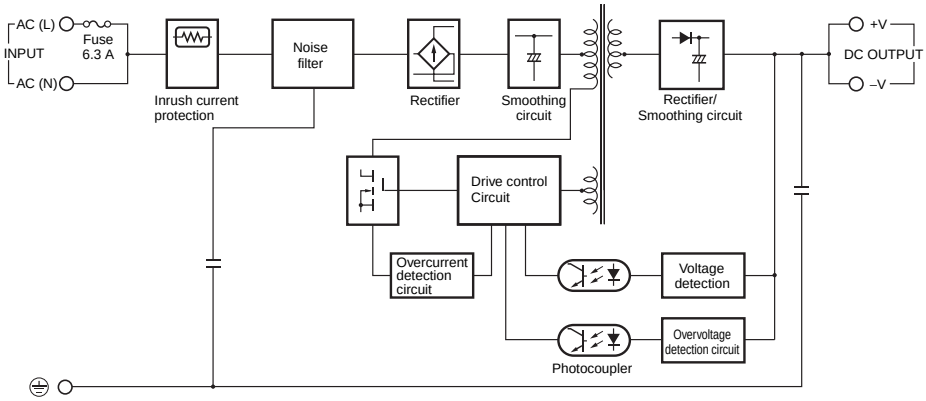
Item			Input specification / Power ratings ✻1	100 to 240 V input		
				50 W	100 W	150 W
Efficiency (typical)				76% min.		86% min.
Input	Voltage ✻2			100 to 240 VAC (85 to 264 VAC)		
				100 to 370 VDC **Note:** This range is not applicable for the safety standards.		
	Frequency ✻2			50/60 Hz (47 to 450 Hz)		
	Current ✻3	100 V input		1.4 A	2.5 A	3.5 A
		200 V input		0.8 A	1.5 A	2.1 A
	Power factor			---		
	Harmonic current emissions			---		
	Leakage current ✻3	100 V input		0.5 mA max.		
		200 V input		1 mA max.		
	Inrush current (for a cold start at 25°C) ✻3	100 V input		20 A max.		
		200 V input		40 A max.		
	Noise filter			Yes		
Output ✻4	Voltage adjustment range ✻5			–10% to 15% (with V. ADJ)		
	Ripple ✻3			2% (p-p) max.		
	Input variation influence			0.4% max.		
	Load variation influence			0.8% max. (0 to 100% load, rated input voltage)		
	Temperature variation influence			0.05%/°C max. (at rated input and output)		
	Startup time			500 ms max. (up to 90% of output voltage at rated input and output)		
	Hold time ✻3			20 ms min.		
Additional functions	Overload protection ✻6			105% to 160% of rated load current, voltage drop, intermittent, automatic reset		
	Overvoltage protection ✻7			Yes		
	Overheat protection			No		
	Parallel operation			No		
	Series operation			Yes (For up to two Power Supplies; external diodes required.)		
	Protective circuit operation indicator			No		
Other	Ambient operating temperature			Refer to the derating curve in *Engineering Data* on page 5 (with no icing or condensation)		
	Storage temperature			–25 to 65°C (with no icing or condensation)		
	Ambient operating 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 2h each in X, Y, and Z directions		
	Shock resistance			150m/s^2, 3 times each in ±X, ±Y, ±Z directions		
	Output indicator			Yes (Color: Green)		
	Conducted Emissions ✻3			Conforms to EN 55011 Group 1 Class A and based on FCC Class A		
	Radiated Emissions			Conforms to EN 55011 Group 1 Class A		
	Approved standards			UL 508 (Listing), UL 60950-1 cUL: CSA C22.2 No.107.1 cUR: CSA C22.2 No. 60950-1 EN/VDE: EN50178 (= VDE 0160), EN 60950-1 (= VDE 0805 Teil 1) (Terminal block: Based on VDE 0106/P100)		
	SEMI			SEMI F47-0200 (200-VAC input)		
	Weight ✻8			300 g max.	550 g max.	600 g max.

✻1. When a load is connected that has a built-in DC-DC converter, the overload protection may operate at startup and the Power Supply may not start. Refer to *Overload Protection* on page 6.
✻2. 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.
✻3. Rated input voltage: 100 or 200 VAC at 100% load.
✻4. Output characteristics: Specified at power supply output terminals.
✻5. 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 load is not damaged.
✻6. For details, refer to *Overload Protection* on page 6.
✻7. To reset the protection, turn OFF the input power for seven minutes or longer and then turn it back ON.
✻8. The weight indicated is for Front-mounting, Open-frame Power Supplies.

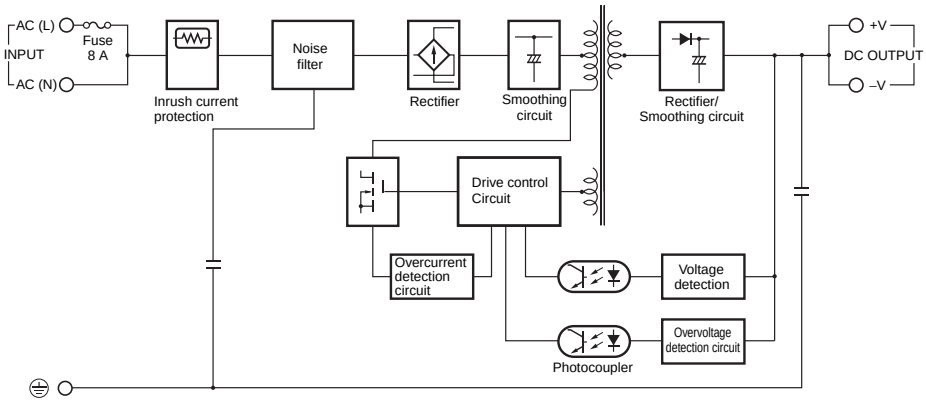
Connections

Block Diagrams

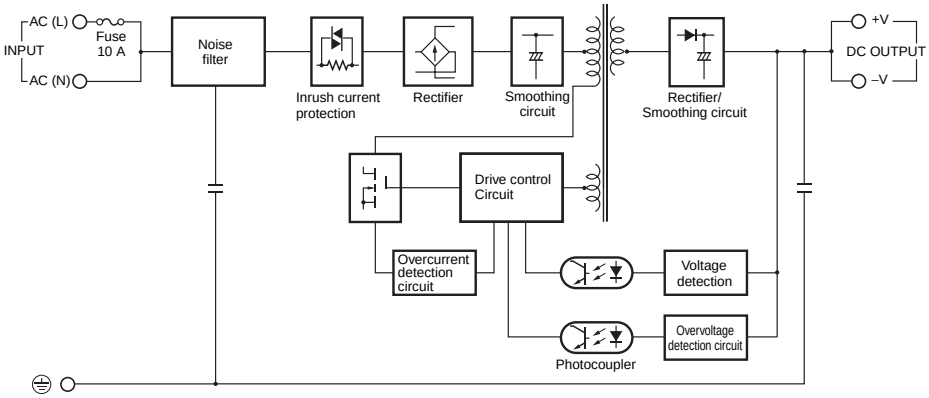
S8JX-G050□□□□ (50 W)



S8JX-G100□□□□ (100 W)



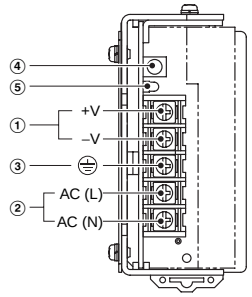
S8JX-G15024□□ (150 W)



Construction and Nomenclature

Nomenclature

50/100/150-W Power Supplies



No.	Name	Function
1	DC output terminals (–V), (+V)	Connect the load lines to these terminals.
2	AC input terminals (L), (N)	Connect the input lines to these terminals. ✻1
3	Protective Earth terminal (PE) (⏚)	Connect the ground line to these terminals. ✻2
4	Output voltage adjuster (V. ADJ)	Use to adjust the voltage.
5	Output indicator (DC ON: Green)	Lights green while a direct current (DC) output is ON.

✻1. The fuse is located on the (L) side.
✻2. This is the protective earth terminal specified in the safety standards. Always ground this terminal.

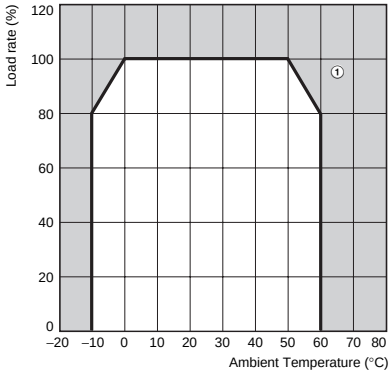
Note: The S8JX-G05024CD is shown above.

Engineering Data

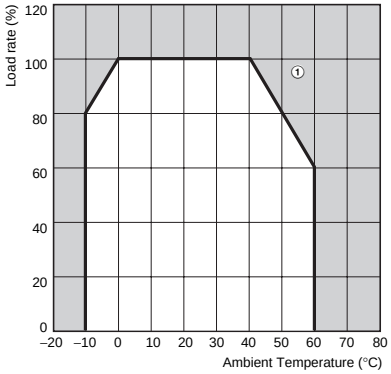
Derating Curves (Standard Mounting)

50/100/150-W Power Supplies

Open-frame Power Supplies



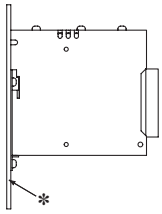
Covered Power Supplies



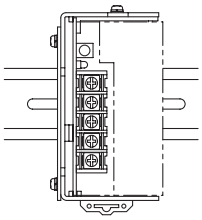
Note: 1. Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply in areas outside the derating curve (i.e., the area shown by shading ① in the above graph).
2. If there is a derating problem, use forced air-cooling.

Mounting

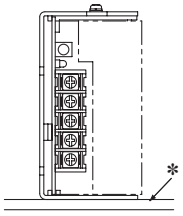
Standard Mounting: Front-mounting



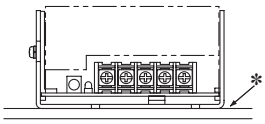
Standard Mounting: DIN Rail-mounting



Standard Mounting: Bottom-mounting



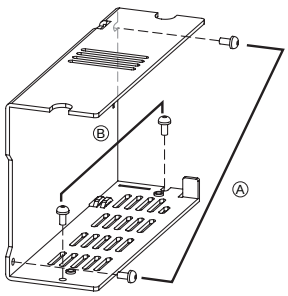
Standard Mounting: Horizontal-mounting



Note: 1. Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the standard mounting method only.
2. When mounting the Power Supply, mounting it to a metal plate (✻) is recommended.
3. Install the Power Supply so that the air flow circulates around the Power Supply, as the Power Supply is designed to radiate heat by means of natural air flow.

Mounting (50/100/150-W Power Supplies)

The following three mounting methods are possible.
A. Side-mounting
B. Bottom-mounting
C. Front-mounting: See information on mounting bracket.

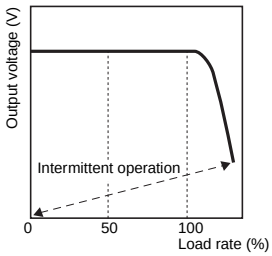


Overload Protection

The Power Supply is provided with an overload protection function that protects the power supply from possible damage by overcurrent. When the output current rises above 105% min. of the rated current, the protection function is triggered, decreasing the output voltage. When the output current falls within the rated range, the overload protection function is automatically cleared.

(Reference value)

50 W to 150 W



Note: 1. When a load is connected that has a built-in DC-DC converter, the overload protection may operate at startup and the power supply may not start.

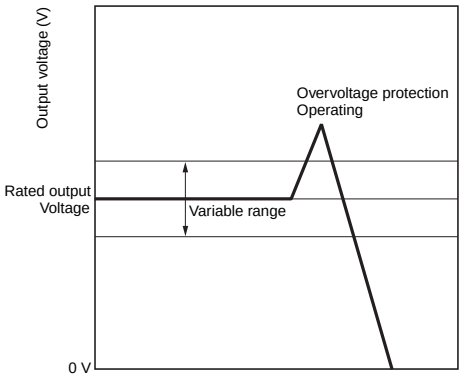
2. Internal parts may occasionally deteriorate or be damaged if a short-circuited or overcurrent state continues during operation.

3. Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.

Overvoltage Protection

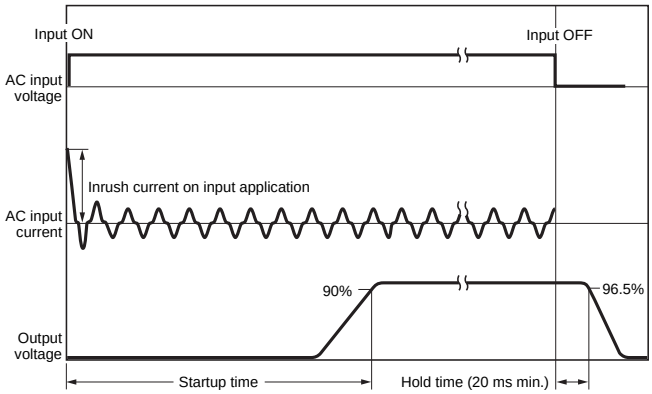
Consider the possibility of an overvoltage and design the system so that the load will not be subjected to an excessive voltage even if the feedback circuit in the power supply fails. When an excessive voltage that is approximately 130% of the rated voltage or more is output, the output voltage is shut OFF, preventing damage to the load due to overvoltage. Reset the input power by turning it OFF for at least seven minutes and then turning it back ON again.

(Reference value)



Note: Do not turn ON the power again until the cause of the overvoltage has been removed.

Inrush Current, Startup Time, Output Hold Time



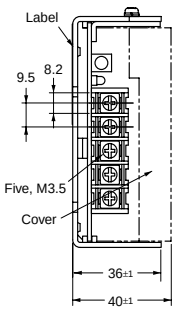
Note: A maximum startup time of 500 ms is required. Construct a system configuration that considers the startup time of other devices.

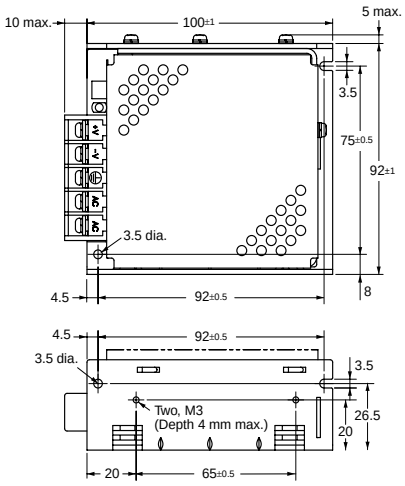
Dimensions

(Unit: mm)

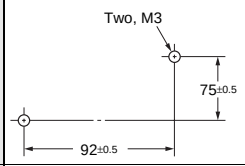
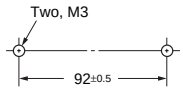
Front-mounting Models

S8JX-G050□□ (50 W)
S8JX-G050□□C (50 W)

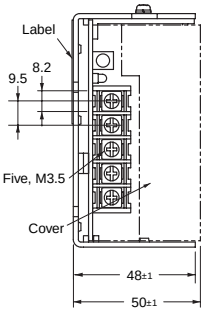


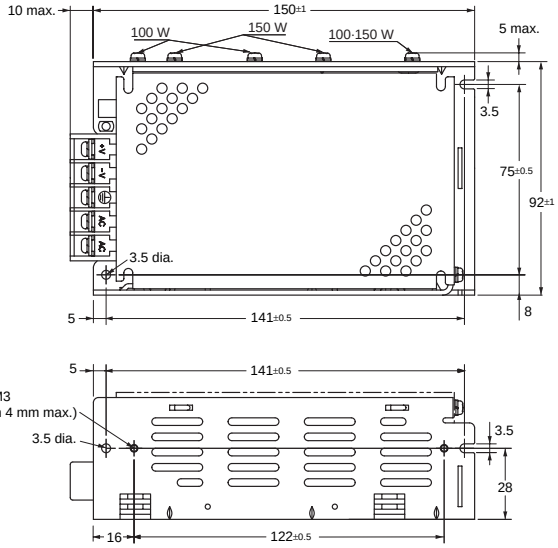


Panel mounting holes dimensions

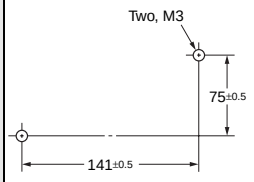
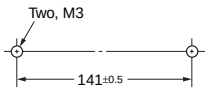
	Surface screw mounting
Side Mounting	
Bottom Mounting	

S8JX-G100□□ (100 W)
S8JX-G100□□C (100 W)
S8JX-G15024 (150 W)
S8JX-G15024C (150 W)





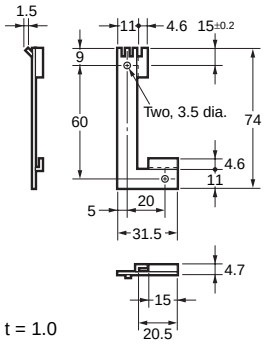
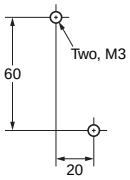
Panel mounting holes dimensions

	Surface screw mounting
Side Mounting	
Bottom Mounting	

Mounting Bracket Provided with Front-mounting Power Supplies

50 to 150 W (Provided)

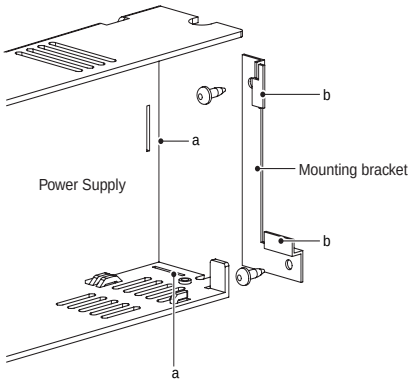
Front-mounting Bracket

Dimensions	Mounting dimensions
 t = 1.0 Material: Stainless steel	

Front-mounting Method

Temporarily attach the enclosed mounting bracket as shown in the illustration on the right, hook the holes (parts a) in the Power Supply on hooks on the mounting bracket (parts b), and secure the Power Supply with two mounting screws.

Note: Mounting screws are not provided.



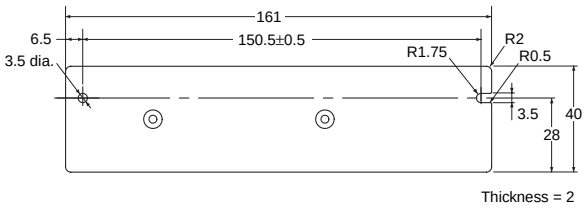
Mounting Brackets (Order Separately)

Name	Model
Mounting Bracket A (bottom mounting for 50-W models)	**S82Y-JX05B**
Mounting Bracket B (bottom mounting for 100-W 24-V models)	**S82Y-JX10B**
Mounting Bracket C (bottom mounting for 100-W 5-V and 12-V models and 150-W models)	**S82Y-JX15B**
Mounting Bracket D (front mounting for 100-W 5-V and 12-V models and 150-W models)	**S82Y-JX15F**

Note: Mounting brackets (A, B, C, and D) are compatible with the mounting holes of the S82J.

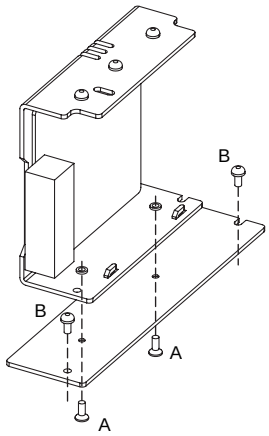
Mounting Bracket A (Bottom-mounting for 50-W Models)

S82Y-JX05B



Thickness = 2

Using the Mounting Bracket



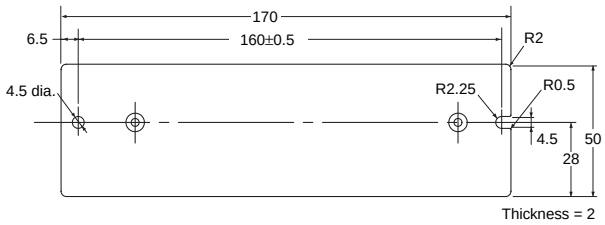
Screws Used

A: Enclosed (two places)
Be sure to use the enclosed screws.
Mounting screw tightening torque (recommended): 0.49 N·m

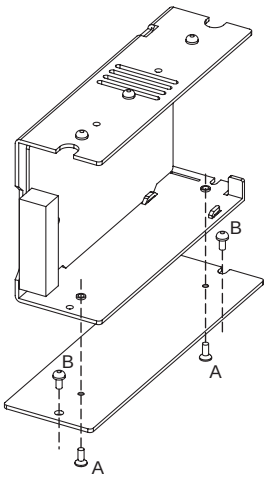
B: M3 (two places)

Mounting Bracket B (Bottom-mounting for 100-W 24-V Models)

S82Y-JX10B



Using the Mounting Bracket



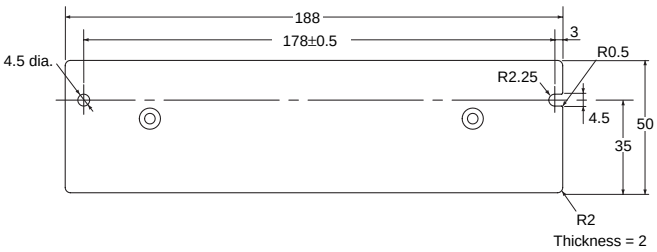
Screws Used

A: Enclosed (two places)
Be sure to use the enclosed screws.
Mounting screw tightening torque (recommended): 0.49 N·m

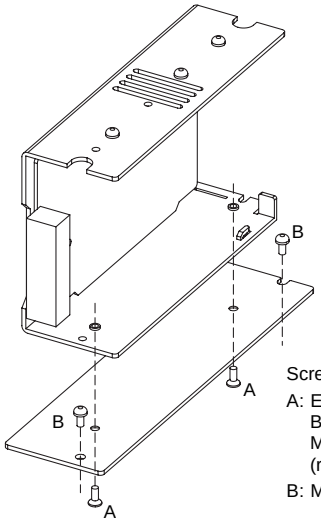
B: M4 (two places)

Mounting Bracket C (Bottom-mounting for 100-W 5-V and 12-V Models and 150-W Models)

S82Y-JX15B



Using the Mounting Bracket



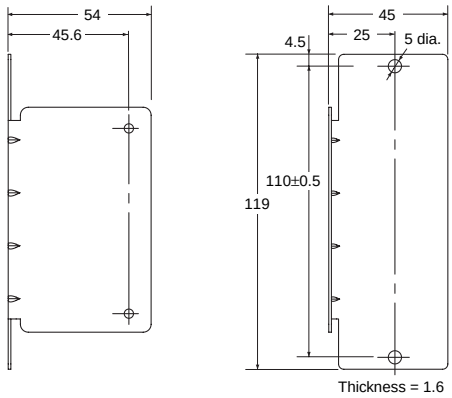
Screws Used

A: Enclosed (two places)
Be sure to use the enclosed screws.
Mounting screw tightening torque (recommended): 0.49 N·m

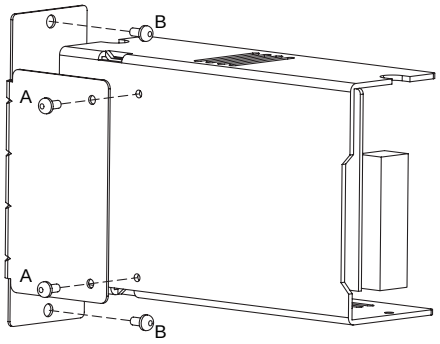
B: M4 (two places)

Mounting Bracket D (Front-mounting for 100-W 5-V and 12-V Models and 150-W Models)

S82Y-JX15F



Using the Mounting Bracket



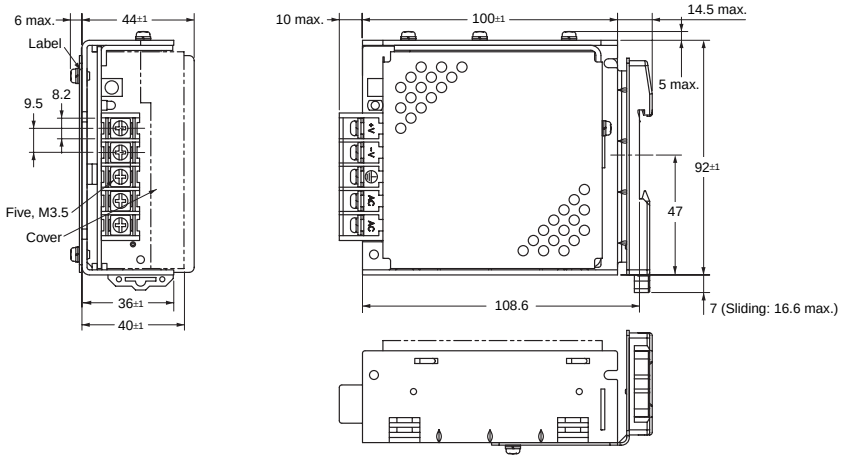
Screws Used

A: Enclosed (two places)
Be sure to use the enclosed screws.
Mounting screw tightening torque (recommended): 0.49 N·m

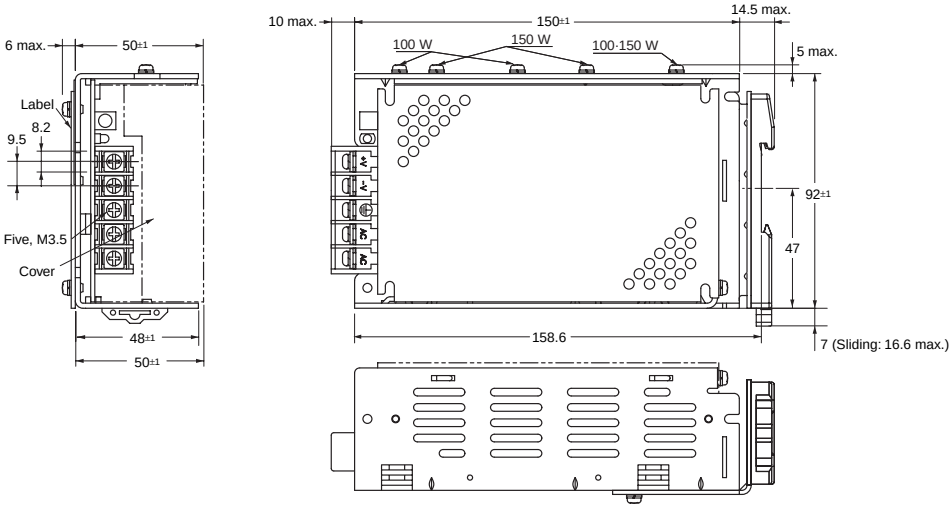
B: M4 (two places)

DIN Rail-mounting Models

S8JX-G050□□D (50 W)
S8JX-G050□□CD (50 W)

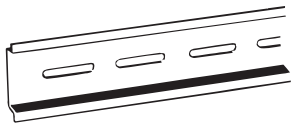


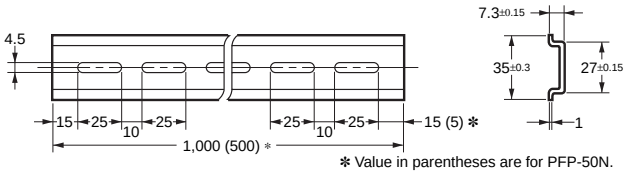
S8JX-G100□□D (100 W)
S8JX-G100□□CD (100 W)
S8JX-G15024D (150 W)
S8JX-G15024CD (150 W)



DIN Rail (Order Separately)

Mounting Rail (Material: Aluminum)

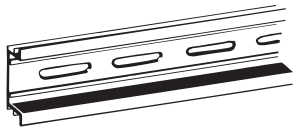


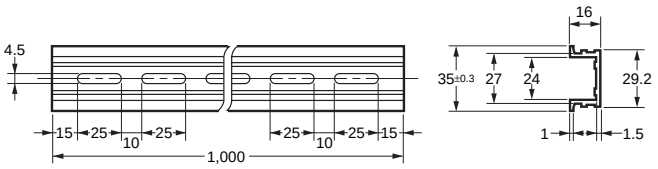


✻ Value in parentheses are for PFP-50N.

Model
PFP-100N
PFP-50N

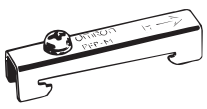
Mounting Rail (Material: Aluminum)

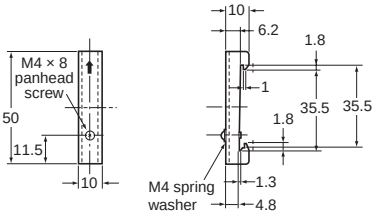




Model
PFP-100N2

End Plate





Model
PFP-M

Note: 1. If there is a possibility that the Unit will be subject to vibration or shock, use a steel DIN Rail. Otherwise, metallic filings may result from aluminum abrasion.
2. If the Unit may be subjected to sliding to either side, attach an End Plate (model PFP-M) on each side of the Unit.

Safety Precautions

Refer to *Safety Precautions for All Power Supplies*.

⚠ CAUTION

Minor electric shock, fire, or Product failure may occasionally occur. Do not disassemble, modify, or repair the Product to 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 of 1.13 N·m.

Minor injury due to electric shock may occasionally occur. Do not touch the terminals while power is being supplied. Always close the terminal cover after wiring.

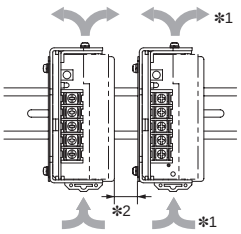
Minor electric shock, fire, or Product failure may occasionally occur. Do not allow any pieces of metal or conductors or any clippings or cuttings resulting from installation work to enter the Product.

Precautions for Safe Use

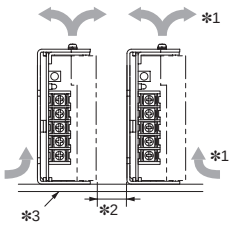
Mounting

- Take adequate measures to ensure proper heat dissipation to increase the long-term reliability of the Product.
- Be sure to allow convection in the atmosphere around devices when mounting. Do not use in locations where the ambient temperature exceeds the range of the derating curve.
- When cutting out holes for mounting, make sure that cuttings do not enter the interior of the Products.
- Improper mounting will interfere with heat dissipation and may occasionally result in deterioration or damage of internal parts. Use the standard mounting method only.
- The internal parts may occasionally deteriorate and be broken due to adverse heat radiation. Do not loosen the screw on the side face of the main body.
- When mounting two or more Power Supplies side-by-side, allow at least 20 mm spacing between them.
- Use the metal plate as the mounting panel.

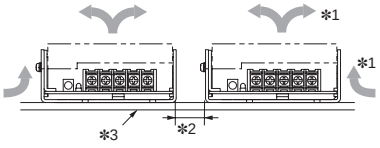
Standard Mounting
(Front-mounting and DIN Rail-mounting)



Standard Mounting
(Bottom-mounting)



Standard Mounting
(Horizontal Mounting)



∗1. Convection of air
∗2. 20 mm max.
∗3. Use a metal plate as the mounting surface.

Wiring

- Connect the ground completely. A protective earthing terminal stipulated in safety standards is used. Electric shock or malfunction may occur if the ground is not connected completely.
- Minor fire may possibly occur. Ensure that input and output terminals are wired correctly.
- Do not apply more than 75 N force to the terminal block when tightening it.
- Be sure to remove the sheet covering the Product for machining before power-ON so that it does not interfere with heat dissipation.
- Use the following material for the wires to be connected to the S8JX to prevent smoking or ignition caused by abnormal loads.

Recommended Wire Type

- Use a wire size of AWG12 to AWG16 (a cross section of 1.309 to 3.309 mm^2).
- Use wires with a UL-certified temperature of a t least 60°C or 60/75°C.
- Use copper conductors only.

Installation Environment

- Do not use the Power Supply in locations subject to shocks or vibrations. In particular, install the Power Supply as far away as possible from contactors or other devices that are a vibration source.
- Install the Power Supply well away from any sources of strong, high-frequency noise and surge.

Ambient Operating and Storage Environments

- Store the Power Supply at a temperature of –25 to 65°C and a humidity of 25% to 90%.
- The Internal parts may occasionally deteriorate or be damaged. Do not use the Power Supply outside the derating range (i.e., the area shown by shading ① in the derating curve diagram on page 5.)
- Use the Power Supply at a humidity of 25% to 85%.
- Do not use the Power Supply in locations subject to direct sunlight.
- Do not use locations where liquids, foreign matter, or corrosive gases may enter the interior of the Product.

Overload Protection

- Internal parts may possibly deteriorate or be damaged if a short-circuited or overload state continues during operation.
- Internal parts may possibly deteriorate or be damaged if the Power Supply is used for applications with frequent inrush current or overloading at the load end. Do not use the Power Supply for such applications.

Charging a Battery

When connecting a battery at the load, connect an overcurrent limiting circuit and overvoltage protection circuit.

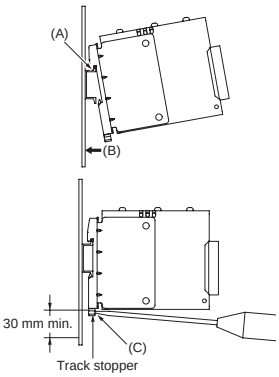
Output Voltage Adjuster (V.ADJ)

- The output voltage adjuster (V.ADJ) may possibly be damaged if it is turned with unnecessary force. Do not turn the adjuster with excessive force.
- After completing output voltage adjustment, be sure that the output capacity or output current does not exceed the rated output capacity or rated output current.

DIN Rail-mounting

To mount the Power Supply to a DIN Rail, pull down the rail stopper until you hear it clicks open, hook portion (A) of the Power Supply onto the DIN Rail, press the Power Supply in direction (B), and then push up the rail stopper to lock the Power Supply in place.

To dismount the Power Supply, pull down portion (C) with a flat-blade screwdriver and pull out the Power Supply.



In Case There Is No Output Voltage

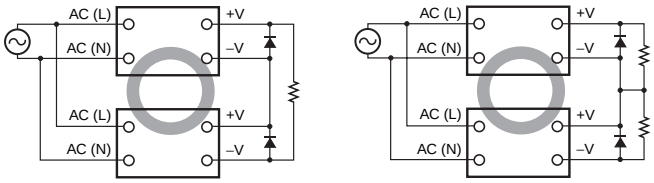
The possible cause for no output voltage may be that the overcurrent or overvoltage protection has operated. The internal protection may operate if a large amount of surge voltage such as a lightening surge occurs while turning ON the Power Supply.
In case there is no output voltage, please check the following points before contacting us:

- Checking overcurrent protected status:
  Check whether the load is in overcurrent status or is short-circuited. Remove wires to load when checking.
- Checking overvoltage or internal protection:
  Turn the power supply OFF once, and leave it OFF for at least 7 minutes. Then turn it ON again to see if this clears the condition.

Series Operation

Two power supplies can be connected in series. The (±) voltage output can be accomplished with two Power Supplies.

Series Operation **Output Voltage (±)**



Note: 1. If the load is short-circuited, a reverse voltage will be generated inside the Power Supply. If this occurs the Power Supply may possibly deteriorate or be damaged. Always connect a diode as shown in the figure. Select a diode having the following ratings.

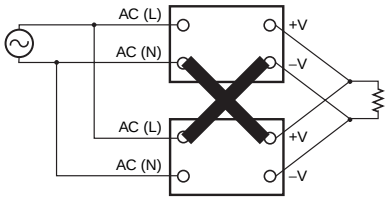
Type	Schottky Barrier diode
Dielectric strength (V_{RRM})	Twice the rated output voltage or above
Forward current (I_F)	Twice the rated output current or above

2. Although Products having different specifications can be connected in series, the current flowing through the load must not exceed the smaller rated output current.

Parallel Operation

The Product is not designed for parallel operation.

Parallel Operation



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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   (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this Product.
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