Multi-Output Switch Mode Power Supply
S82R (30/50/75-W Models)

Economical, Easy-to-use Multi-Output Power Supply

- 30 W, 50 W, and 75 W, two-channel multi-output power supply
- Unified depths and mounting dimensions. Three mounting methods, including front mounting.
- ±12-V or ±15-V output; ideal for operational amplifiers.
- UL and CSA approved.
- RoHS-compliant

Note: Refer to *Safety Precautions* on page 8.

Model Number Structure

■ Model Number Legend

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

S82R-□□□□
1 2 3 4

1. Input Voltage/Configuration

Number	Input voltage	Configuration
0	100 VAC	Open-frame
2	200 VAC	Open-frame
5	100 VAC	Covered
6	200 VAC	Covered

2. Power Rating

Number	Power ratings
3	30 W
5	50 W
7	75 W

3. Number of Outputs

Number	Number of outputs
2	2

4. Output Voltage

Number	Output voltage	
	V_1	V_2
1	5 V	12 V
2	5 V	24 V
7	12 V	12 V
8	15 V	15V

Ordering Information

■ List of Models

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

Type	Capacity	Output voltage/current		Model	
		V_1	V_2	100 VAC input type	200 VAC input type
Open-frame type	30 W	5V, 2A	12V, 2A	S82R-0321	S82R-2321
		5V, 2A	24V, 1A	S82R-0322	S82R-2322
	30 W	12V, 1.7A	12V, 0.8A	S82R-0327	S82R-2327
		15V, 1A	15V, 1A	S82R-0328	S82R-2328
	50 W	5V, 3A	12V, 3A	S82R-0521	S82R-2521
		5V, 2A	24V, 2A	S82R-0522	S82R-2522
	50 W	12V, 3A	12V, 1.2A	S82R-0527	S82R-2527
		15V, 1.7A	15V, 1.7A	S82R-0528	S82R-2528
	75 W	5V, 5A	24V, 2A	S82R-0722	S82R-2722
Covered type	30 W	5V, 2A	12V, 2A	S82R-5321	S82R-6321
		5V, 2A	24V, 1A	S82R-5322	S82R-6322
	30 W	12V, 1.7A	12V, 0.8A	S82R-5327	S82R-6327
		15V, 1A	15V, 1A	S82R-5328	S82R-6328
	50 W	5V, 3A	12V, 3A	S82R-5521	S82R-6521
		5V, 2A	24V, 2A	S82R-5522	S82R-6522
	50 W	12V, 3A	12V, 1.2A	S82R-5527	S82R-6527
		15V, 1.7A	15V, 1.7A	S82R-5528	S82R-6528
	75 W	5V, 5A	24V, 2A	S82R-5722	S82R-6722

Specifications

■ Characteristics

Input			100 V input			200 V input		
Power rating			30 W	50 W	75 W	30 W	50 W	75 W
Efficiency (typ.)			68% min. (depending on model)					
Input	Voltage (See note 1.)	AC	85 to 132 V			170 to 264 V		
		DC	110 to 170 V (See note 2.)			Not available		
	Frequency (See note 1.)		50/60 Hz (47 to 450 Hz)					
	Current (See note 3.)		1.1 A max.	1.4 A max.	2 A max.	0.7 A max.	0.8 A max.	1.1 A max.
	Leakage current (See note 3.)		0.5 mA max.			1 mA max.		
	Inrush current (See note 3.)		30 A max. (for a cold start at 25°C)			60 A max. (for a cold start at 25°C)		
	Noise filter		Yes					
Output	Voltage accuracy		V_1: 3.5% max. V_2: 5% max. (with input, load, and temperature within permissible fluctuation ranges)					
	Voltage adjustment range (See note 4.)		Fixed except for 5-V output which can be adjusted by ±5% (with V. ADJ)					
	Ripple (See note 3.)		2% (p-p) max.					
	Input variation influence		0.4% max. (at 85 to 132 V input, 100% load)			0.4% max. (at 170 to 264 V input, 100% load)		
	Load variation influence		V_1: 0.8% max. (at rated input, 10% to 100% load) V_2: 2% max.					
	Temperature variation influence		0.05%/°C max. (at rated input/output)					
	Startup time		200 ms max. (Up to 90% of output voltage at rated input and output)					
	Hold up time (See note 3.)		20 ms min.					
Ancillary function	Overload protection (See note 5.)		105% min. of rated current, voltage drop, automatic reset					
	Overvoltage protection		No					
Others	Operating temperature		Refer to the derating curve in *Engineering Data* (with no icing or condensation).					
	Storage temperature		–25°C to 65°C					
	Operating humidity		25% to 85% (storage humidity: 20% to 90%)					
	Dielectric strength		2.0 kVAC, 50/60 Hz, for 1 minute (between input terminals and output terminals/PE terminal)					
	Insulation resistance		100 MΩ min. (between output terminals and input terminals/PE terminal at 500 VDC)					
	Vibration resistance		10 to 55 Hz, 0.75 mm single amplitude for 2 hours each in X, Y, and Z directions					
	Shock resistance		294 m/s^2, 3 times each in ±X, ±Y, ±Z directions					
	Output indicator		V1 output indicator only (color: red)					
	Approved standards	UL CSA	UL1012 E.B.1402C					
	Weight (See note 6.)		400 g max.	500 g max.	550 g max.	400 g max.	500 g max.	550 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. These Power Supplies do not comply with safety standards if a DC power supply is used.

3. Defined with a 100% load at the rated input voltage (100 or 200 VAC).

4. If the output voltage adjuster (V. ADJ) is turned, the voltage will increase by more than 5% 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.

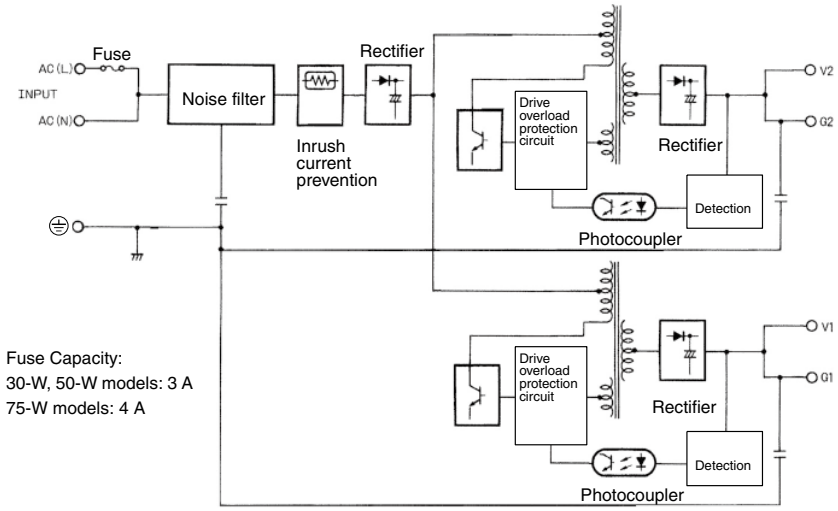
5. Refer to *Overload Protection* on page 4 for details.

6. Weights are given for the covered type.

Connections

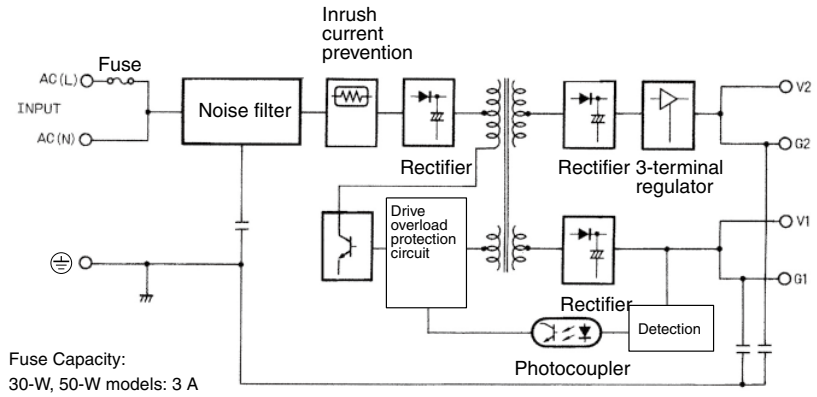
■ Block Diagrams

S82R-□□21
S82R-□□22



Fuse Capacity:
30-W, 50-W models: 3 A
75-W models: 4 A

S82R-□□27
S82R-□□28

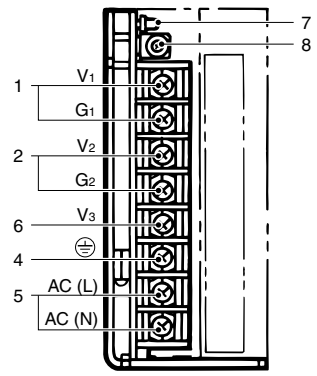


Fuse Capacity:
30-W, 50-W models: 3 A

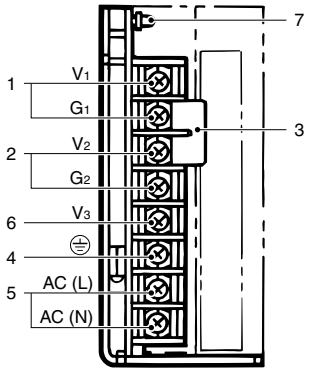
Construction and Nomenclature

■ Nomenclature

S82R-□□21
S82R-□□22



S82R-□□27
S82R-□□28



1. V_1 (+), G_1 (–)
2. V_2 (+), G_2 (–)

} DC output terminals: Connect load lines.

3. Short bar: Provided to make + outputs. Without it V_1 and V_2 outputs can be used as independent outputs. (Supplied only for S82R-□□27 and S82R-□□28 as an accessory.)
4. Protective Earthing terminal (⏚): This terminal is short circuited to the frame and must be connected to a ground line.
5. Input terminal: Connect the input lines to these terminals

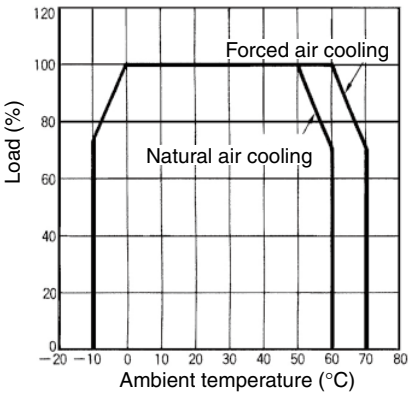
Note: A fuse is located on the AC(L) side. It is NOT user replaceable.

6. V3 terminal: Vacant terminal
7. Output indicator: Lights while V_1 DC voltage is being output.
8. Output voltage adjuster (V.ADJ): Adjusts the output voltage (provided only for 5-V output type). (S82R-□□21 and S82R-□□22)

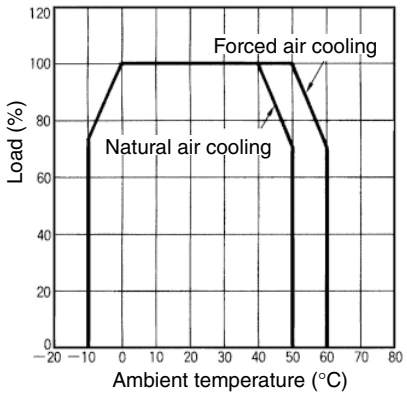
Engineering Data

■ Derating Curve (Standard Installation)

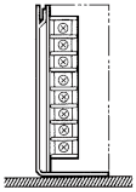
Open-frame Type



Covered Type



Mounting View

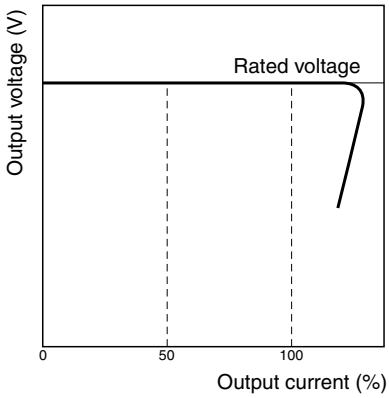


Note: The values here apply to standard installation conditions. Derating curves vary according to installation conditions.

■ Overload Protection

This function protects the load and the Power Supply from possible damage by overcurrent. Overload detection and reset are as shown below.

S82R-□□21 and □□22



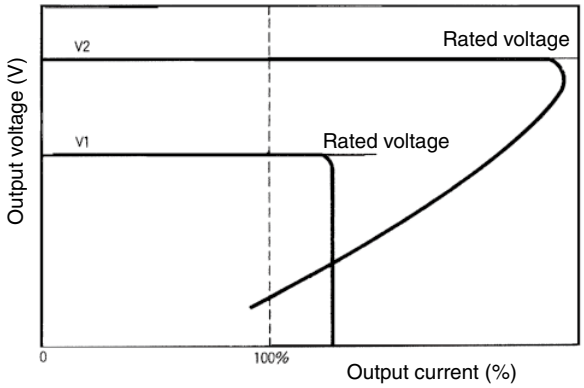
The values shown in the above diagram are for reference only.

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

Output	Operation	Detection	Reset
V_1	Voltage drop	105% of rated load current or higher	Automatically reset by overload reset function.

Note: V_1 and V_2 are independent, and they are detected (output shut OFF) and reset separately.

S82R-□□27 and □□28



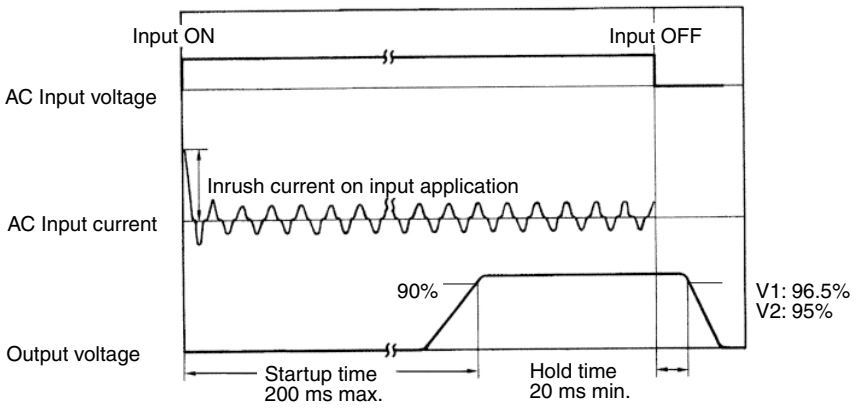
The values shown in the above diagram are for reference only.

Output	Operation	Detection	Reset
V_1	Voltage drop	105% of rated load current or higher	Automatically reset by overload reset function.
V_2, V_3	Short-circuit protection	---	Automatically reset by overload reset function.

Note: 1. When an overload is detected for V_1, both outputs (V_1 and V_2) are shut OFF. Both outputs are reset automatically. Overload detection for the V_1 output uses the sum of the output voltages of the V_1 and V_2 outputs. Overload detection thus depends on the output current (output power) of the V_2 output.

2. V_2 is independent, and it is detected (output shut OFF) and reset separately.

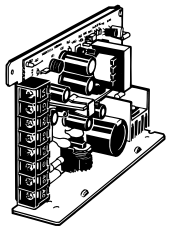
■ Current, Startup Time, Output Hold Time

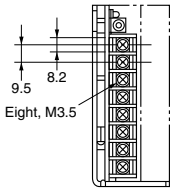


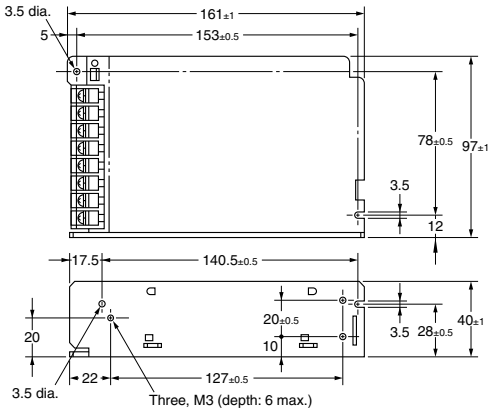
Dimensions

Note: All units are in millimeters unless otherwise specified.

S82R-□3□□ (30W)

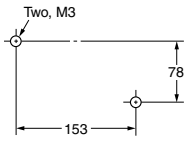




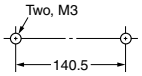


Mounting Holes

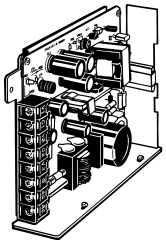
Side View

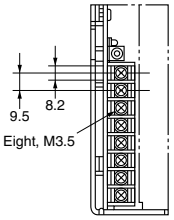


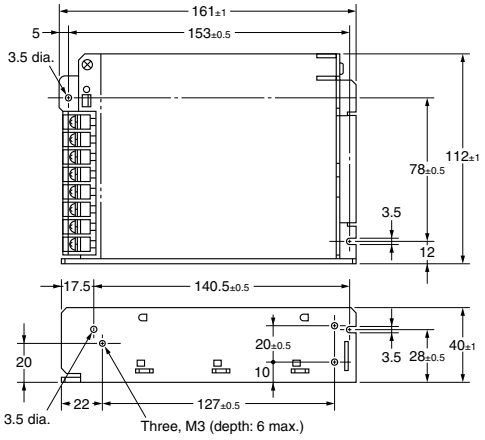
Bottom View



S82R-□5□□ (50W)

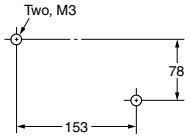




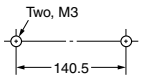


Mounting Holes

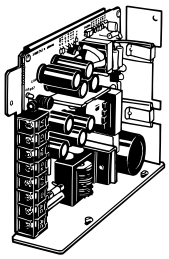
Side View

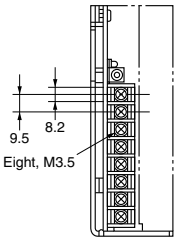


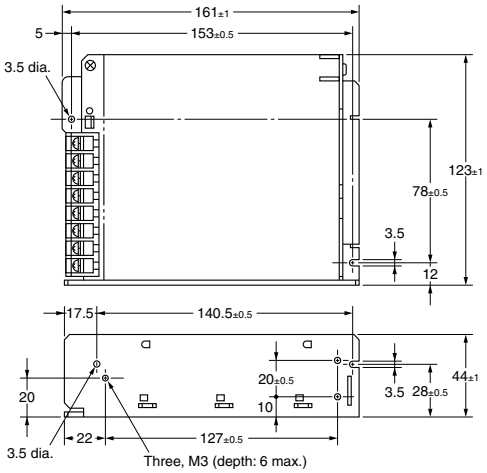
Bottom View



S82R-□7□□ (75W)

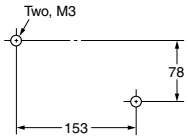




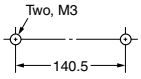


Mounting Holes

Side View



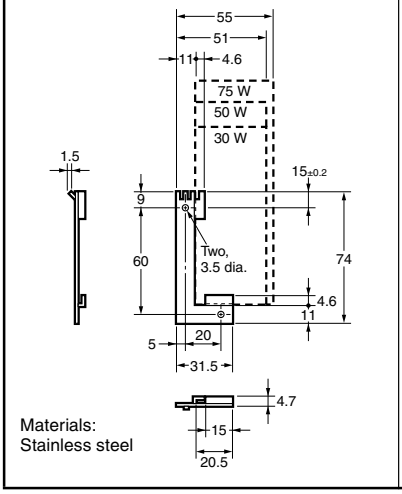
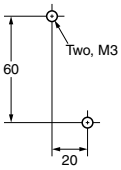
Bottom View



Installation

■ Front Mounting Bracket

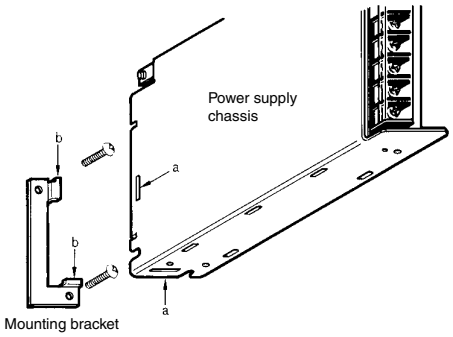
Note: The Mounting Bracket is supplied with the Power Supply.

Dimensions	Mounting holes
	

Front Mounting

Attach the enclosed Mounting Bracket temporarily to the mounting surface, the hook the rectangular holes on the Power Supply (a) on the hooks on the Bracket (b), and then tighten the two mounting screws.

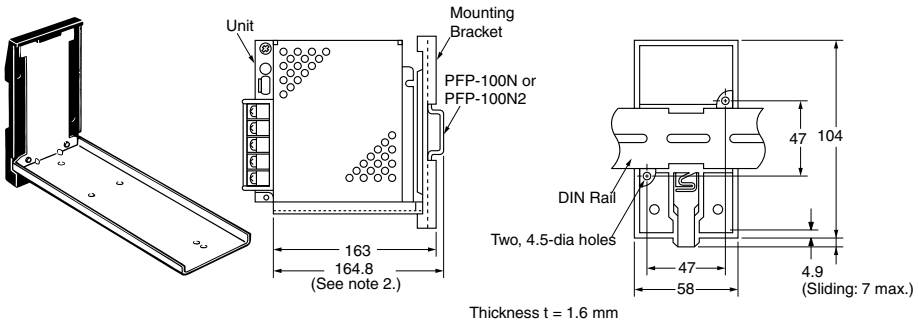
Note: The mounting screws are not included.



■ DIN Rail Mounting Bracket (Order Separately)

To mount the Power Supply to DIN Rail, use the DIN Rail Mounting Bracket.

S82Y-05N



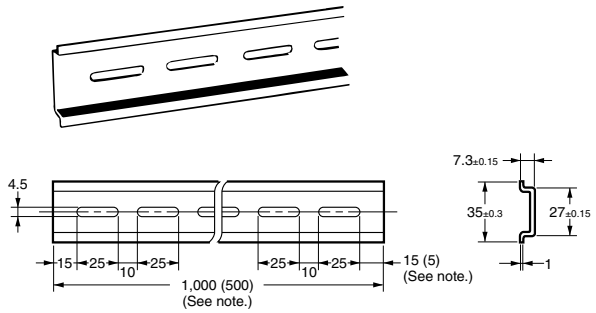
Note: 1. All units are in millimeters unless otherwise indicated.

2. Add 10.5 mm to length in the diagram if the PFP-100N2 is used.

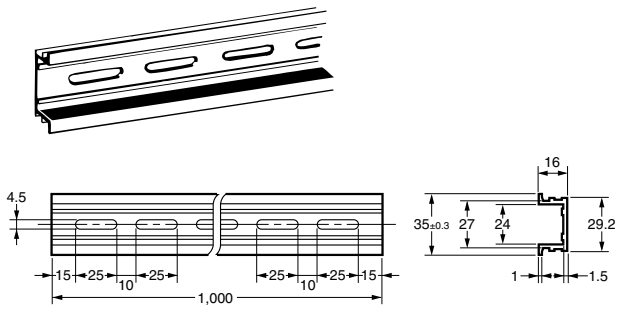
■ DIN Rail (Order Separately)

Mounting Rail (Material: Alminum)

PFP-100N
PFP-50N



PFP-100N2



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

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 0.74 N·m (M3.5).	
Minor injury due to electric shock may occasionally occur. Do not touch the terminals while power is being supplied.	
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

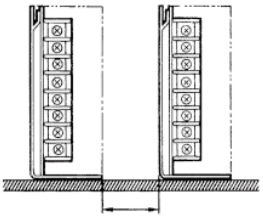
Mounting

Install the power supply so that heat is effectively dissipated, to extend the life expectancy and improve the reliability of the power supply.

Install the power supply so that air convection takes place around the power supply as the power supply is designed for natural convection.

Provide a distance of at least 20 mm between the power supplies.

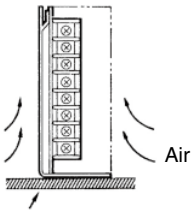
When installing two or more power supplies side-by-side, note the following points.



20 mm min.

Provide a distance of at least 20 mm between the power supplies.

Forced air cooling is strongly recommended.



Metal plate

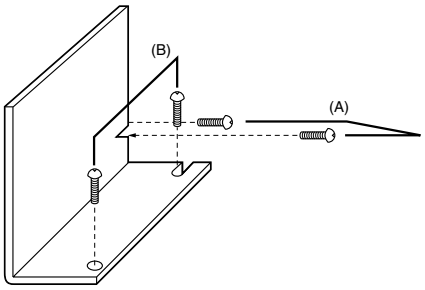
Mounting Method

The Power Supply can be mounted in three different mounting styles, as follows:

(A) Side mounting

(B) Bottom mounting

(C) Front mounting
For details, refer to *Front Mounting Bracket* on page 7.

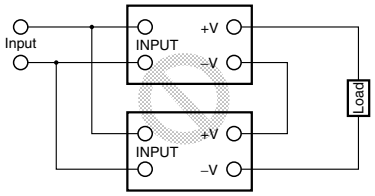


■ Serial Operation

The V_1 output and V_2 output cannot be operated in series.

The V_1 or V_2 output and other power supplies cannot be operated in series.

Incorrect

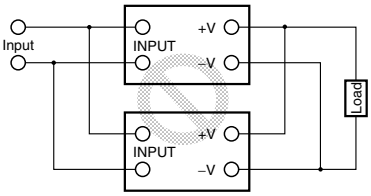


■ Parallel Operation

The V_1 output and V_2 output cannot be operated in parallel.

Furthermore, the V_1 or V_2 output and other power supplies cannot be operated in parallel.

Incorrect

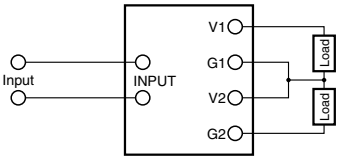


■ Generating Output Voltages (±)

(S82R-□□27 and S82R-□□28)

± outputs can be made with V_1 and V_2 outputs by attaching the supplied short bar.

Correct



■ Output Voltage Adjustment

(S82R-□□21 and S82R-□□22)

Only the 5-V output can be adjusted. (Other outputs are fixed.)

The output voltage is factory set within ±1% of the rated voltage.

It can be adjusted to a desired level within ±5% of the rated output voltage by using the output voltage adjuster (V. ADJ).

Note: Although it is possible to adjust the output voltage in a wider range than ±5%, do not adjust the voltage to a level exceeding or falling below the ±5% range; otherwise, the output power may exceed the rated capacity.

■ Minimum Output Current

The minimum output current is restricted by the output voltage and control method.

Model	V_1 output	V_2 output
S82R-□□21 S82R-□□22	No limitation	No limitation
S82R-□□27 S82R-□□28	With limitation (See note.)	No limitation

Note: S82R-□□27 and S82R-□□28 control V_1 output directly and V_2 indirectly. Therefore, if V_1 output current falls to 10% or less of rated output current, V_2 output voltage may drop.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
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