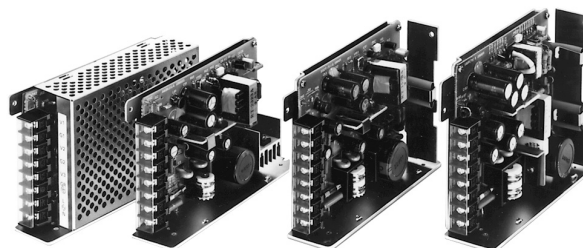


# Switching Power Supply

# S82R

## Easy-to-Use, Multi-Output Power Supply Offered in Two Control Types

- 30 W, 50 W, and 75 W, two-channel output power supply
- Surface-, bottom- or side-mounting possible
- Two control types available to meet your application needs: Independent or Secondary Auxiliary control
- Conforms with UL and CSA standards
- 3-year warranty



## Ordering Information

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

### ■ SWITCHING POWER SUPPLIES

Type	Control method	Power ratings	Output voltage/current		Part number	
			V <sub>1</sub> : DC output	V <sub>2</sub> : DC output	100 to 120 VAC input	200 to 240 VAC input
Open frame	Independent control	30 W	5 V, 2 A	12 V 2A	<b>S82R-0321</b>	<b>S82R-2321</b>
			5 V, 2 A	24 V, 1 A	<b>S82R-0322</b>	<b>S82R-2322</b>
		50 W	5 V, 3 A	12 V, 3 A	<b>S82R-0521</b>	<b>S82R-2521</b>
			5 V, 2 A	24 V, 2 A	<b>S82R-0522</b>	<b>S82R-2522</b>
		75 W	5 V, 5 A	24 V, 2 A	<b>S82R-0722</b>	<b>S82R-2722</b>
	Secondary auxiliary control	30 W	12 V, 1.7 A	12 V, 0.8 A	<b>S82R-0327</b>	<b>S82R-2327</b>
			15 V, 1 A	15 V, 1 A	<b>S82R-0328</b>	<b>S82R-2328</b>
		50 W	12 V, 3 A	12 V, 1.2 A	<b>S82R-0527</b>	<b>S82R-2527</b>
			15 V, 1.7 A	15 V, 1.7 A	<b>S82R-0528</b>	<b>S82R-2528</b>
Covered	Independent control	30 W	5V, 2 A	12 V, 2 A	<b>S82R-5321</b>	<b>S82R-6321</b>
			5V, 2 A	24 V, 1 A	<b>S82R-5322</b>	<b>S82R-6322</b>
		50 W	5V, 3 A	12 V, 3 A	<b>S82R-5521</b>	<b>S82R-6521</b>
			5V, 2 A	24 V, 2 A	<b>S82R-5522</b>	<b>S82R-6522</b>
		75 W	5V, 5 A	24 V, 2 A	<b>S82R-5722</b>	<b>S82R-6722</b>
	Secondary auxiliary control	30 W	12 V, 1.7 A	12 V, 0.8 A	<b>S82R-5327</b>	<b>S82R-6327</b>
			15 V, 1 A	15 V, 1 A	<b>S82R-5328</b>	<b>S82R-6328</b>
		50 W	12 V, 3 A	12 V, 1.2 A	<b>S82R-5527</b>	<b>S82R-6527</b>
			15 V, 1.7 A	15 V, 1.7 A	<b>S82R-5528</b>	<b>S82R-6528</b>

Note: Refer to the *Accessories Section* on the following page to order the DIN-rail mounting bracket for all S82R power supplies.

## MODEL NUMBER LEGEND

S82R - 

		2	
1	2	3	4

### 1. Input Voltage and type

- 0: 100 to 120 VAC, Open-frame
- 2: 200 to 240 VAC, Open-frame
- 5: 100 to 120 VAC, Covered
- 6: 200 to 240 VAC, Covered

### 2. Power Ratings

- 3: 30 W
- 5: 50 W
- 7: 75 W

### 3. Number of Outputs

- 2: 2 outputs

### 4. Output Voltage and Control Method

- 1: 5 V, 12 V Independent control
- 2: 5 V, 24 V Independent control
- 7: 12 V, 12 V Secondary auxiliary control
- 8: 15 V, 15 V Secondary auxiliary control

## ACCESSORIES

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

### DIN Rail

Item	Length	Width	Part number
DIN-rail (See <i>Dimensions</i> section for details.)	0.5 m (1.64 ft)	7.3 mm (0.29 in)	<b>PFP-50N</b>
	1 m (3.28 ft)	7.3 mm (0.29 in)	<b>PFP-100N</b>
	1 m (3.28 ft)	16 mm (0.63 in)	<b>PFP-100N2</b>
DIN-rail mounting bracket for all S82R power supplies			<b>S82Y-05N</b>

## Specifications

Power rating	30 W	50 W	75 W	30 W	50 W	75 W
Input voltage	100 to 120 V input			200 to 240 V input		
Efficiency	74% to 80% typical (depending on types)					
Life expectancy	8 years min. (with rated input and a 50% load at 40°C)					
Input						
Voltage (See Note.)	AC	85 to 132 V			170 to 264 V	
	DC	110 to 170 V			Not available	
Frequency	47 to 450 Hz					
Current (at rated input voltage and rated output voltage/current)	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 (at rated input voltage and rated output voltage/current)	0.5 mA max.			1 mA max.		
Inrush current (at rated input voltage and rated output voltage/current)	30 A max.			60 A max.		
Noise filter	Yes					
Output						
Voltage accuracy	V <sub>1</sub> : 3.5% max. V <sub>2</sub> : 5% max. (with input, load, and temperature within permissible fluctuation ranges)					
Voltage adjustment	Fixed except for 5-V output which can be adjusted by ±5%					
Ripple and noise	2% (p-p) max.					
Regulation, line	0.4% max. (at 85 to 132 V input, 100% load)			0.4% max. (at 170 to 264 V input, 100% load)		
Regulation, load	V <sub>1</sub> : 0.8% max. (at rated input, 10% to 100% load) V <sub>2</sub> : 2% max.					
Temperature coefficient	0.05%/°C max. (at rated input/output)					
Rise time	200 ms max. (90% output voltage rise at rated input voltage and rated output voltage/current)					
Hold up time	20 ms min.					

(This table continues on the next page.)

Note: DC inputs are not included in safety standard approvals.

Specifications Table – continued from previous page

Power rating	30 W	50 W	75 W	30 W	50 W	75 W	
Input voltage	100 to 120 V input			200 to 240 V input			
Additional functions							
Overload protection	105% of rated output current typ., trailing, automatic reset						
Overvoltage protection	No						
Characteristics							
Temperature	Operating	See Derating Curve in <i>Engineering Data</i>					
	Storage	–25°C to 65°C (–13°F to 149°F)					
Humidity	Operating	25% to 85%					
	Storage	20% to 90%					
Dielectric strength		2,000 VAC, 50/60 Hz, for 1 minute (between input terminals and output terminals/housing)					
Insulation resistance		100 MΩ min. (between output terminals and input terminals/housing at 500 VDC)					
Vibration		10 to 55 Hz, 0.75 mm double amplitude (approx. 4.5 G) in 3 directions for 2 hours each					
Shock		294 m/s <sup>2</sup> (30 G) in 6 directions 3 times each					
Output LED indicator		Red					
Common mode noise		4 V (p-p) max.					
Electro magnetic interference		FCC Class A					
Approved standards	UL	E105544					
	CSA	LR82164					
Weight (covered type)		400 g max.	500 g max.	550 g max.	400 g max.	500 g max.	550 g max.

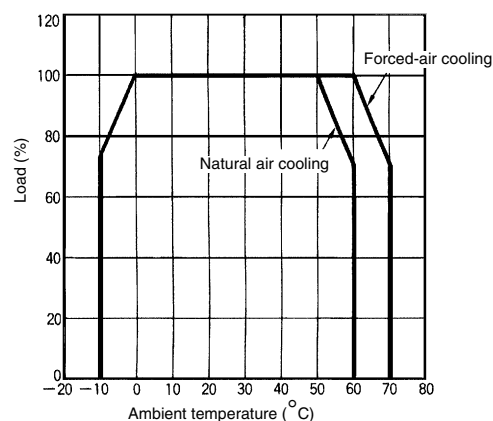
Note: DC inputs are not included in safety standard approvals.

## Engineering Data

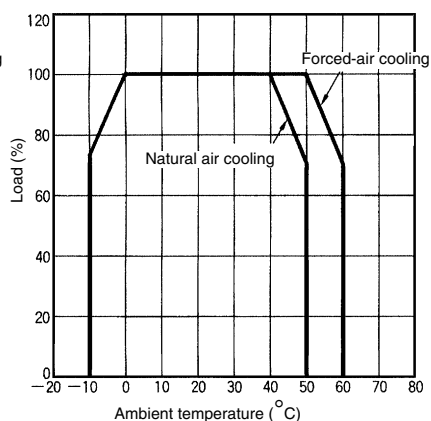
### ■ DERATING CURVE

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

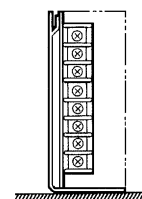
Open-frame Type



Covered Type



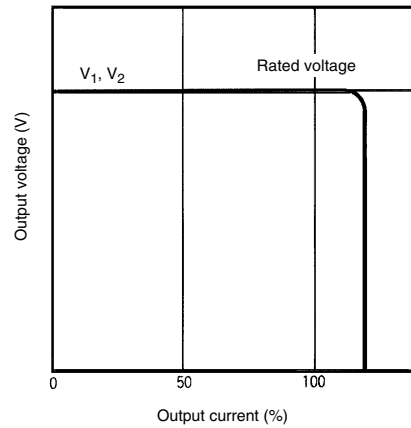
Mounting Position  
For Standard Installation



## OVERLOAD PROTECTION

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

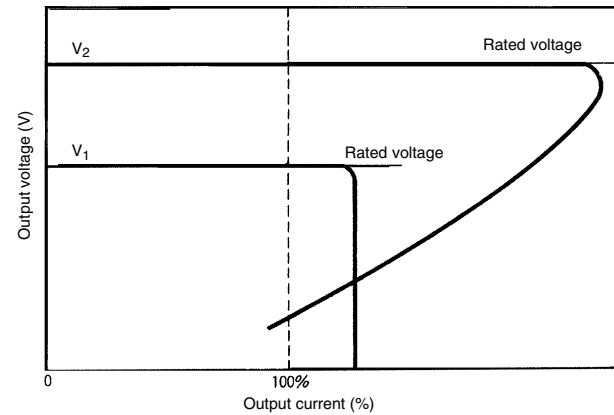
### Independent Control Type (S82R-□□21/22)



Output	Operation	Detection	Reset
$V_1$ and $V_2$	Decreased	Over 105% of rated load current	Automatically reset by overload reset function.

Note: As  $V_1$  and  $V_2$  are independent, output decrease and reset takes place separately.

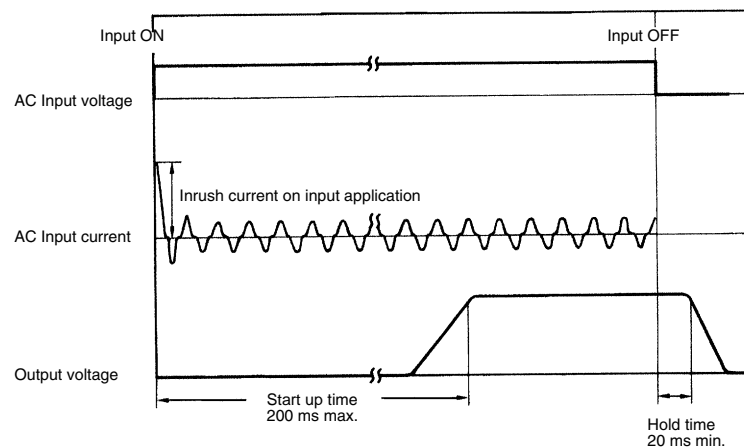
### Secondary Auxiliary Control Type (S82R-□□27/28)



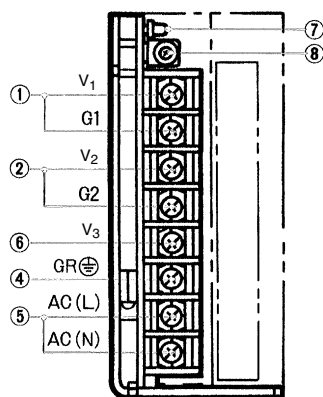
Output	Operation	Detection	Reset
$V_1$	Decreased	Over 105% of rated load current	Automatically reset by overload reset function.
$V_2$	Short-circuit protection	—	Automatically reset by overload reset function.

- Note: 1. Both outputs ( $V_1$  and  $V_2$ ) are decreased and automatically reset when  $V_1$  output detects an overload. As the overload detection of the  $V_1$  output detects the total load value of the  $V_1$  and  $V_2$  outputs, the condition varies depending on  $V_2$  output.
2. As  $V_2$  is independent, output decrease and reset takes place separately.

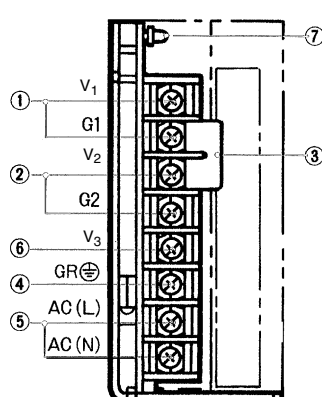
## INRUSH CURRENT, START TIME, HOLD TIME



**S82R-□□21 and -□□22**



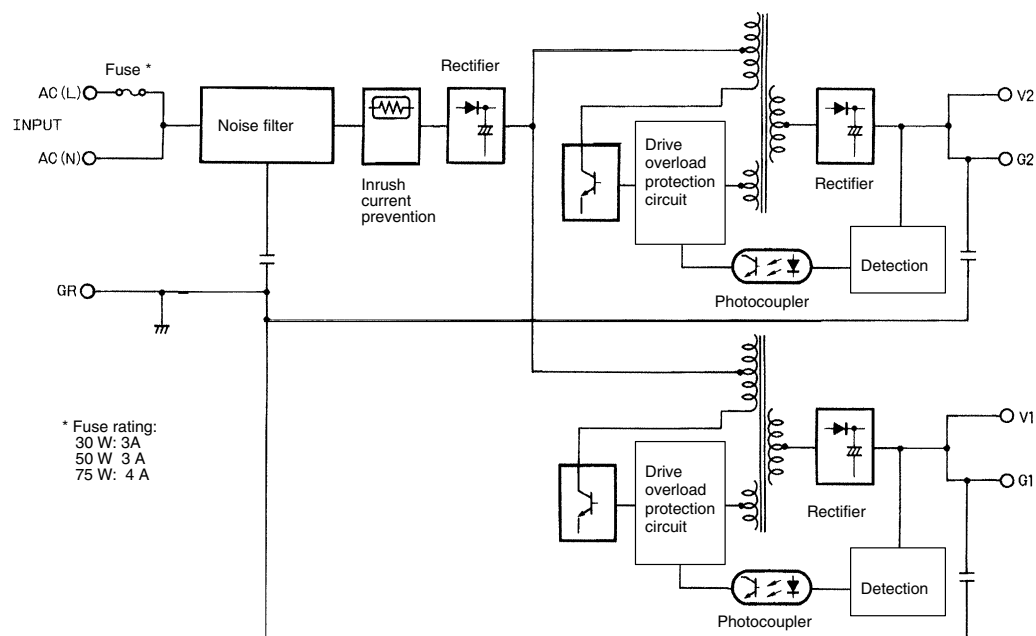
**S82R-□□27 and -□□28**



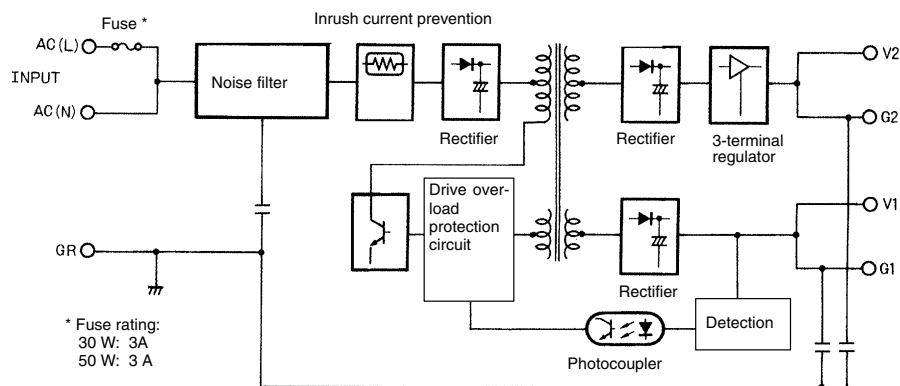
- 8. Voltage adjuster:** Adjusts the output voltage (provided only for 5-V output type). (S82R-□□21 and S82R-□□22)

# Operation

### S82R –□□21 and –□□22 (Independent Control Type)



## S82R-□□27 and -□□28 (Secondary Auxiliary Control Type)



### ■ SERIAL AND PARALLEL OPERATION

The output of two S82R cannot be operated in series or parallel.

### ■ GENERATING OUTPUT VOLTAGES ( $\pm$ )

#### Models S82R-□□27 and S82R-□□28

The  $\pm$  outputs can be made with  $V_1$  and  $V_2$  outputs by attaching the short bar provided.

### ■ OUTPUT VOLTAGE ADJUSTMENT

#### Models S82R-□□21 and S82R-□□22

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

- The output voltage is factory set within  $\pm 1\%$  of the rated voltage.
- It can be adjusted to a desired level within  $\pm 5\%$  of the rated output voltage by using the V.ADJ adjuster.

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

### ■ MINIMUM OUTPUT CURRENT

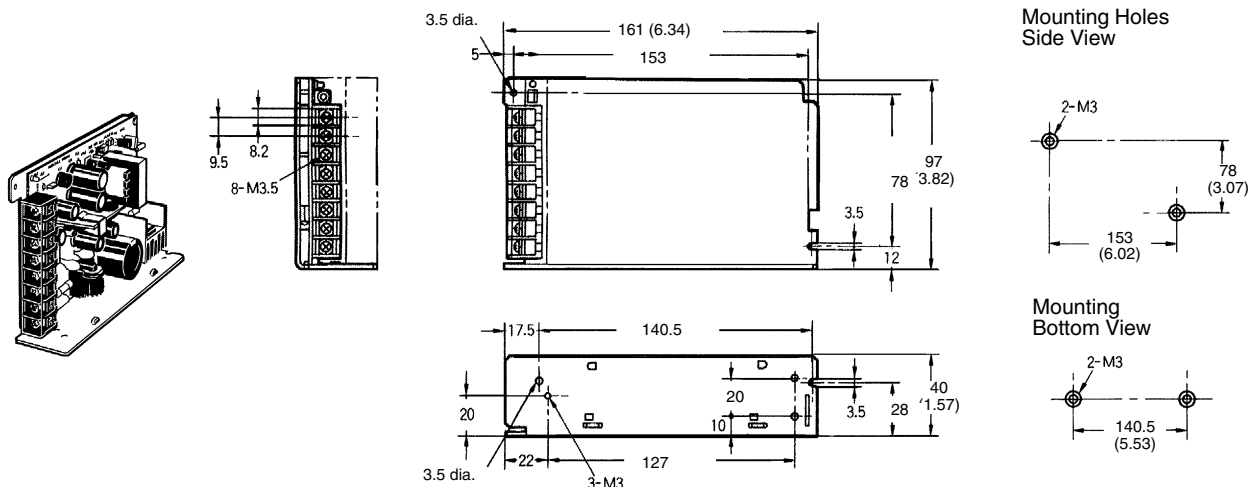
Power supplies S82R-□□27 and S82R-□□28 control  $V_1$  output directly and  $V_2$  indirectly. If  $V_1$  output current becomes less than 10% of rated output current,  $V_2$  output voltage may drop.

## Dimensions

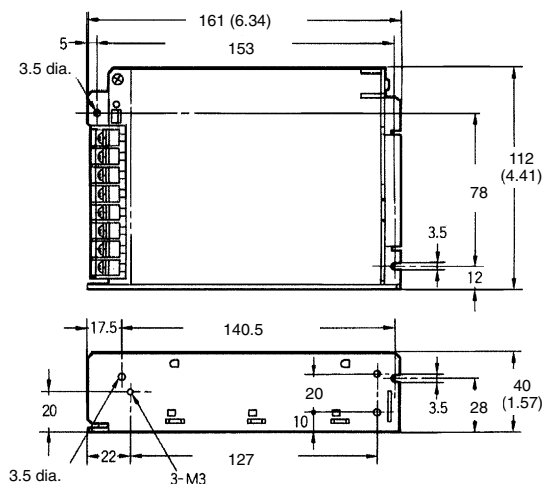
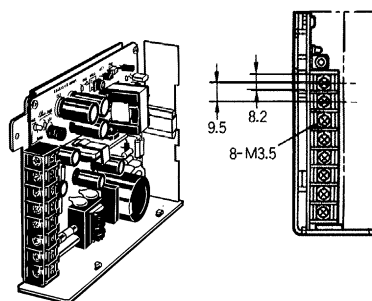
Unit: mm (inch)

### ■ SWITCHING POWER SUPPLIES

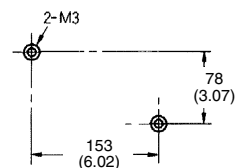
#### S82R-□□3□□ (30 W)



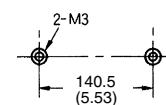
**S82R-□□5□□ (50 W)**



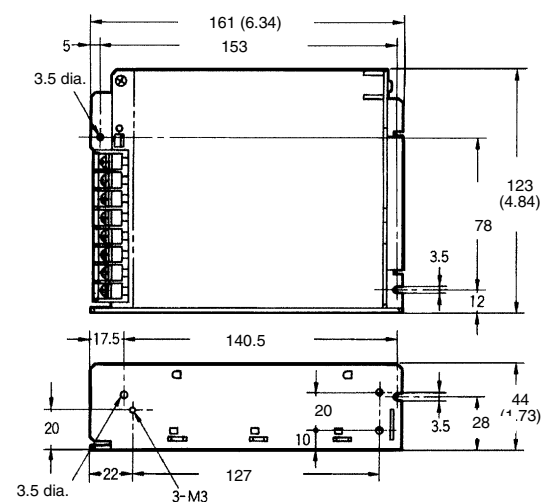
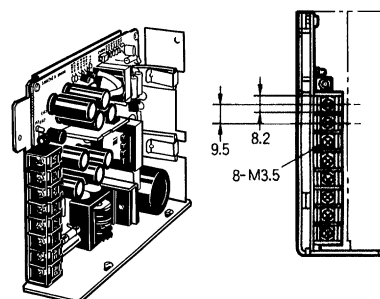
Mounting Holes  
Side View



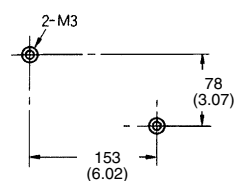
Mounting Holes  
Bottom View



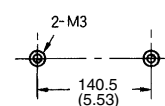
**S82R-□□7□□ (75W)**



Mounting Holes  
Side View



Mounting  
Bottom View

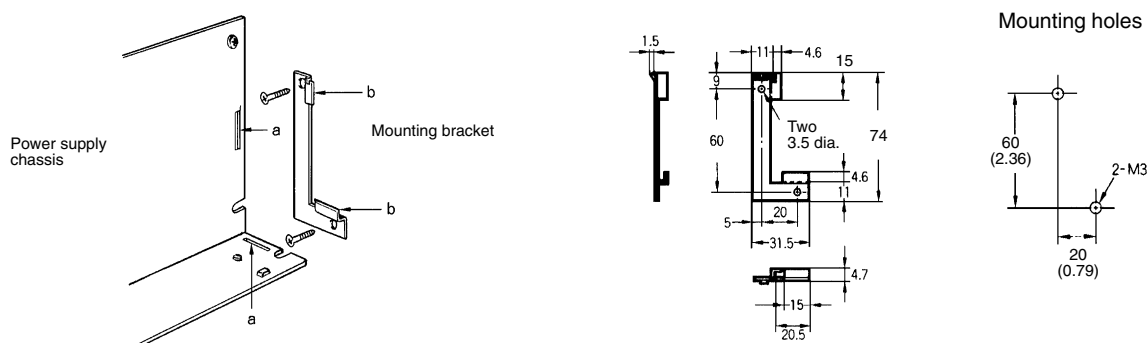


Unit: mm (inch)

## ■ SURFACE MOUNTING BRACKET

### Surface Mounting

Attach the bracket to the mounting panel with screws already inserted. Install the power supply to the bracket with the projected parts (b) inserted in the slots (a) as illustrated. Then, turn the screws until tight.

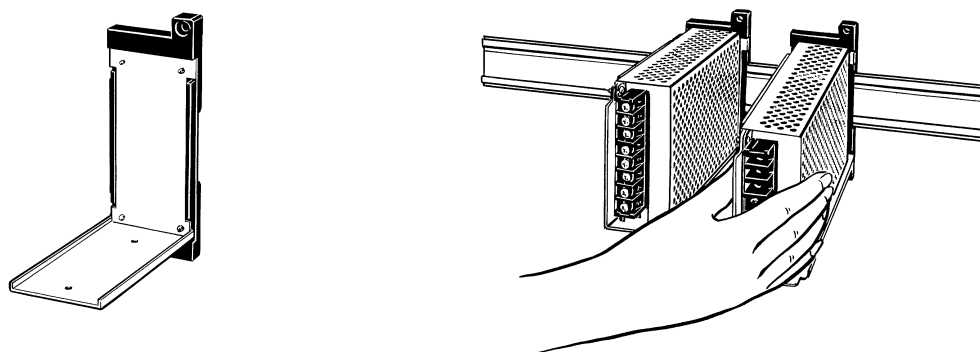


## ■ OPTIONAL DIN-RAIL MOUNTING BRACKET

### S82Y-05N

A power supply mounted in the S82Y-05N bracket can be easily mounted to a DIN-rail or cabinet surface.

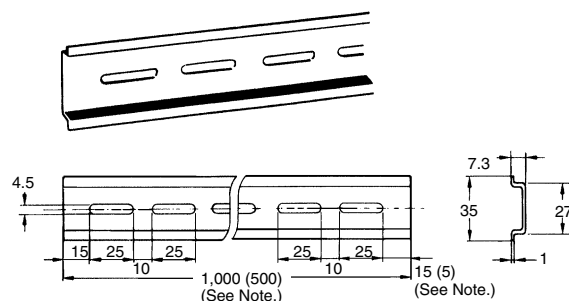
Note: For more details, see *Ordering Information* and *Specifications* found in the S82Y section (a separate product section) of this catalog.



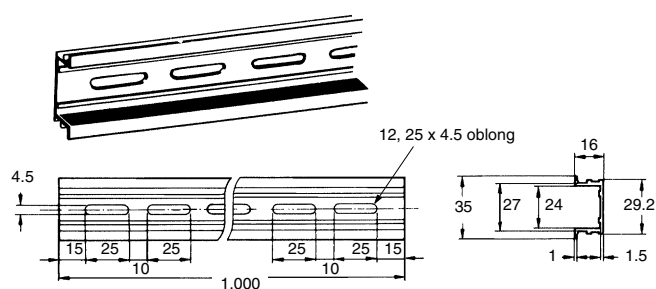
## ■ ACCESSORIES

### DIN-Rail Mounting Track (Order Separately)

#### PFP-100N/PFP-50N



#### PFP-100N2



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



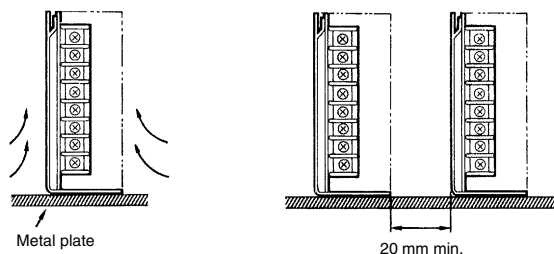
# Precautions

## ■ MOUNTING

- Install the power supply so that heat is effectively dissipated, to extend the life expectancy and improve the reliability of the power supply.
- When installing, allow space for air convection to take place around the power supply. The power supply is designed for natural convection.

### Installing Two or More Power supplies Side-by-Side

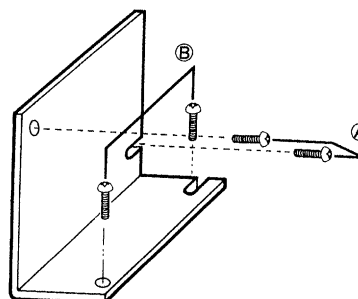
- Provide a distance of at least 20 mm (0.79 in) between the power supplies.
- Forced-air cooling is strongly recommended.



## Mounting Procedure

The power supply can be mounted in three different mounting styles, as follows:

- (A) Side mounting
  - (B) Bottom mounting
  - (C) Surface mounting
- (See details in the *S82R Dimensions Section*.)



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4

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