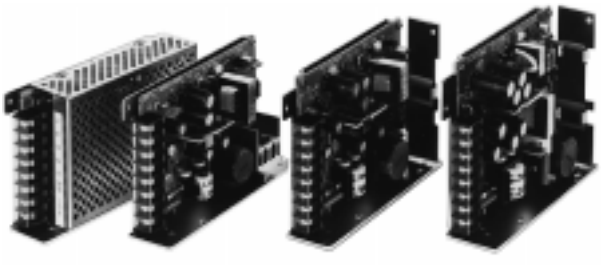
OMRON

Switching Power Supplies

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

SWITCHING POWER SUPPLIES

Type	Control method	Power ratings	Output voltage/current		Part number	
			V_1: DC output	V_2: 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	**S82R-0321**	**S82R-2321**
			5 V, 2 A	24 V, 1 A	**S82R-0322**	**S82R-2322**
		50 W	5 V, 3 A	12 V, 3 A	**S82R-0521**	**S82R-2521**
			5 V, 2 A	24 V, 2 A	**S82R-0522**	**S82R-2522**
		75 W	5 V, 5 A	24 V, 2 A	**S82R-0722**	**S82R-2722**
	Secondary auxiliary control	30 W	12 V, 1.7 A	12 V, 0.8 A	**S82R-0327**	**S82R-2327**
			15 V, 1 A	15 V, 1 A	**S82R-0328**	**S82R-2328**
		50 W	12 V, 3 A	12 V, 1.2 A	**S82R-0527**	**S82R-2527**
			15 V, 1.7 A	15 V, 1.7 A	**S82R-0528**	**S82R-2528**
Covered	Independent control	30 W	5V, 2 A	12 V, 2 A	**S82R-5321**	**S82R-6321**
			5V, 2 A	24 V, 1 A	**S82R-5322**	**S82R-6322**
		50 W	5V, 3 A	12 V, 3 A	**S82R-5521**	**S82R-6521**
			5V, 2 A	24 V, 2 A	**S82R-5522**	**S82R-6522**
		75 W	5V, 5 A	24 V, 2 A	**S82R-5722**	**S82R-6722**
	Secondary auxiliary control	30 W	12 V, 1.7 A	12 V, 0.8 A	**S82R-5327**	**S82R-6327**
			15 V, 1 A	15 V, 1 A	**S82R-5328**	**S82R-6328**
		50 W	12 V, 3 A	12 V, 1.2 A	**S82R-5527**	**S82R-6527**
			15 V, 1.7 A	15 V, 1.7 A	**S82R-5528**	**S82R-6528**

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

DIN Rail

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

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_1: 3.5% max. V_2: 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_1: 0.8% max. (at rated input, 10% to 100% load) V_2: 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 *Engineering Data*					
	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^2 (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.

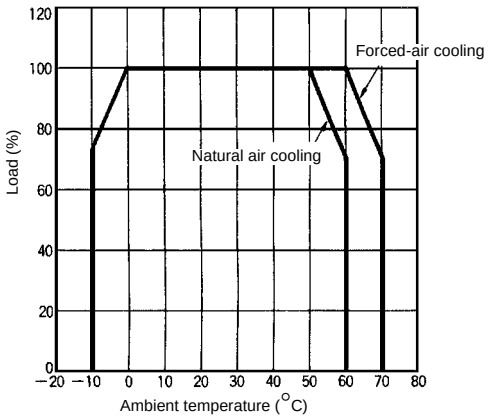
Note: DC inputs are not included in safety standard approvals.

Engineering Data

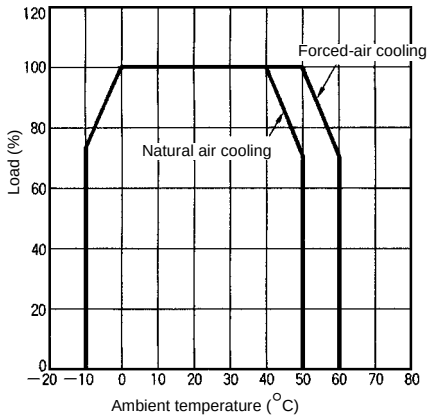
■ DERATING CURVE

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

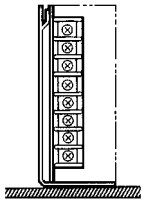
Open-frame Type



Covered Type



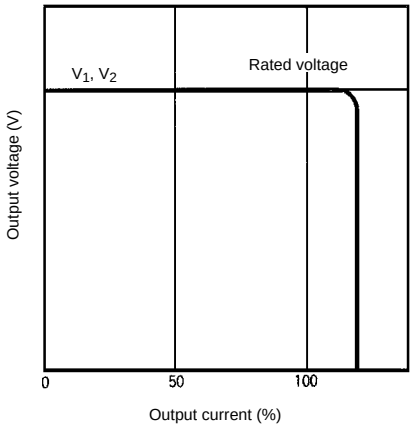
Mounting Position For Standard Installation



■ OVERLOAD PROTECTION

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

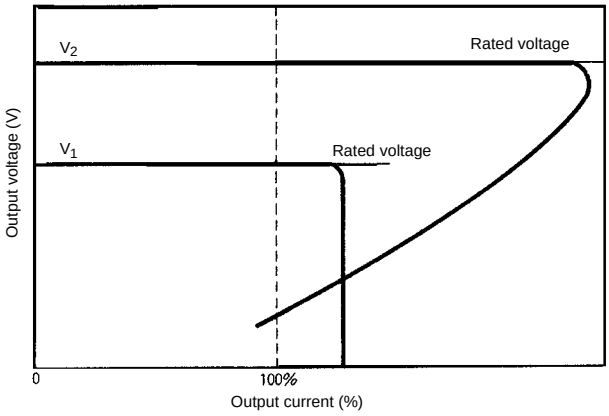
Independent Control Type (S82R-□□21/22)



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)

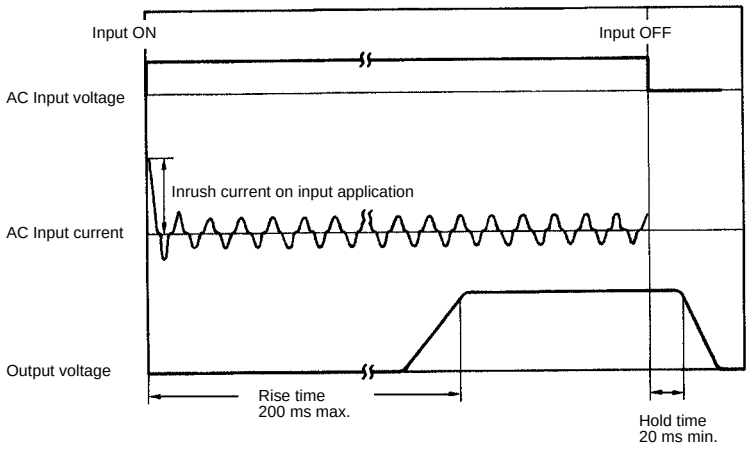


Output	Operation	Detection	Reset
V_1	Decreased	Over 105% of rated load current	Automatically reset by overload reset function.
V_2	Short-circuit protection	----	Automatically reset by overload reset function.

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.

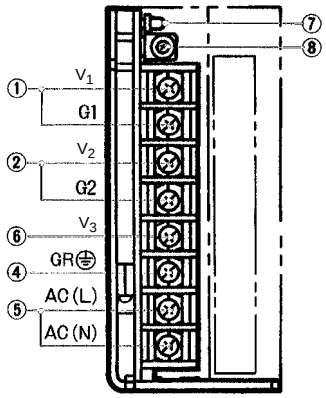
■ INRUSH CURRENT, RISE TIME, HOLD TIME



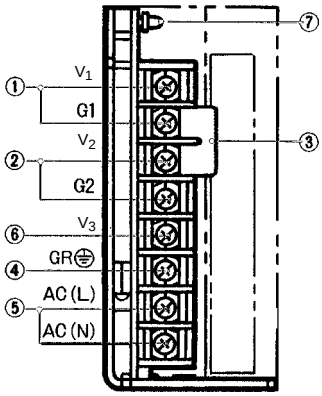
Nomenclature

■ TERMINAL ARRANGEMENTS

S82R-□□21 and -□□22



S82R-□□27 and -□□28



1. **V_1:** DC output terminal
2. **V_2:** DC output terminal

Note: Connect the load lines to V_1 and V_2.

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-□□ as an accessary.)
4. **Ground 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.

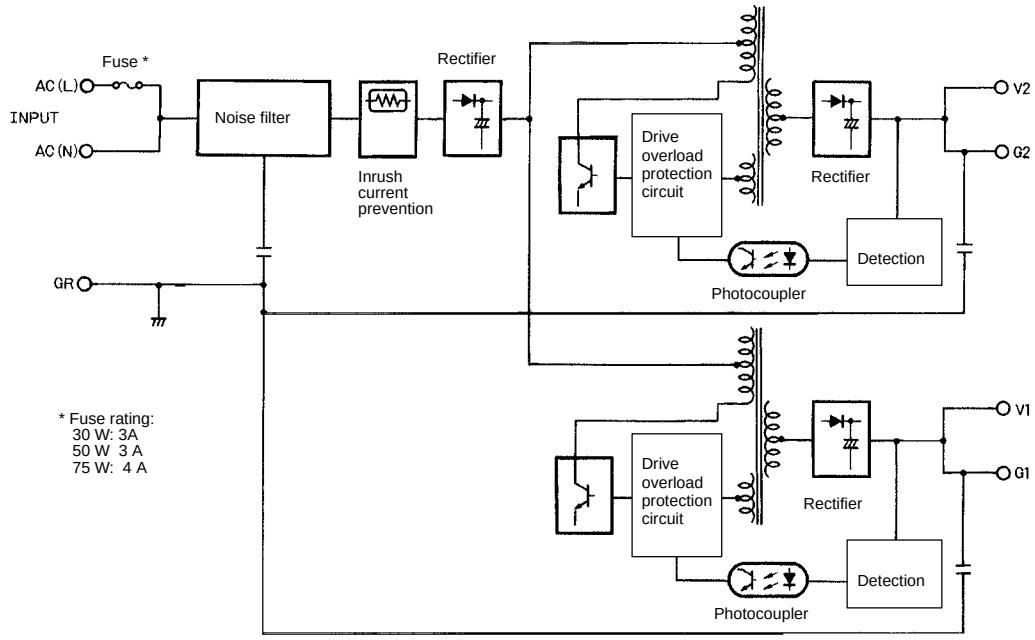
Note: A fuse is connected to AC(L) terminal.

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

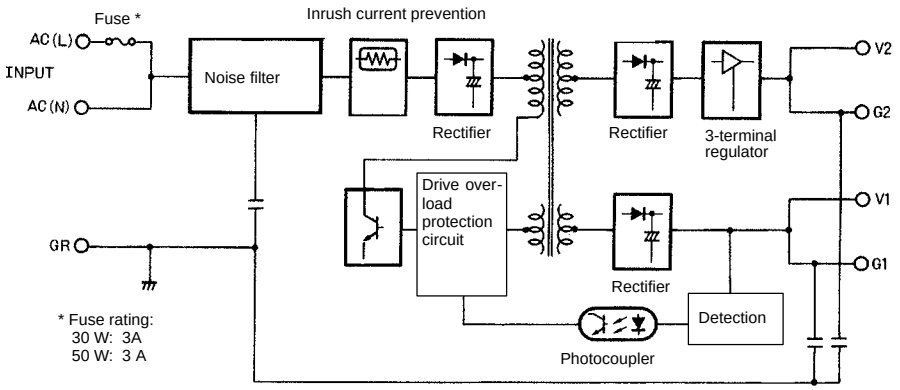
Operation

■ BLOCK DIAGRAM

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 (±)

Models S82R-□□27 and S82R-□□28

The ± 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 ±1% of the rated voltage.
- It can be adjusted to a desired level within ±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 ±5%, do not adjust the voltage to a level exceeding or falling below the ±5% range or the output power may exceed the rated capacity.

■ MINIMUM OUTPUT CURRENT

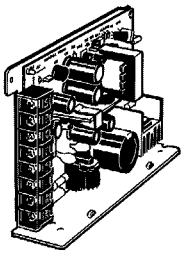
Power supplies S82R-□□27 and S82R-□□28 control V_1 output directly and V_2 indirectly. If V_1 output current becomes less than 10% of rated output current, V_2 output voltage may drop.

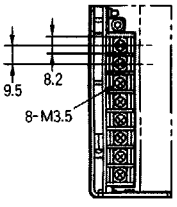
Dimensions

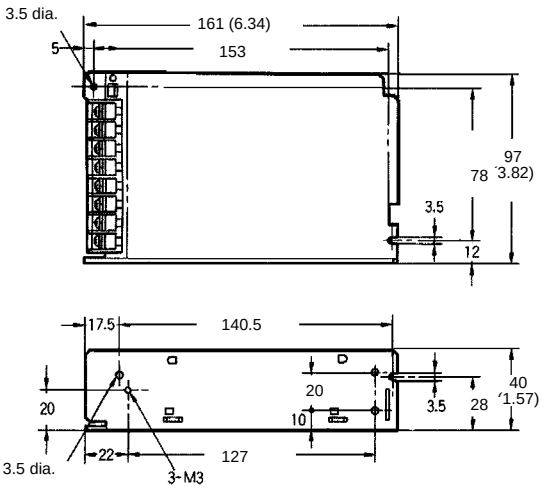
Unit: mm (inch)

■ SWITCHING POWER SUPPLIES

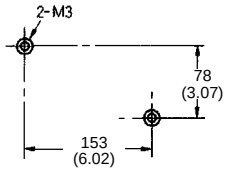
S82R -□□3□□ (30 W)



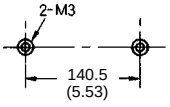




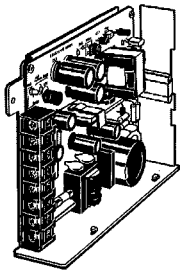
Mounting Holes
Side View

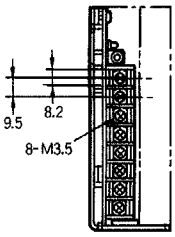


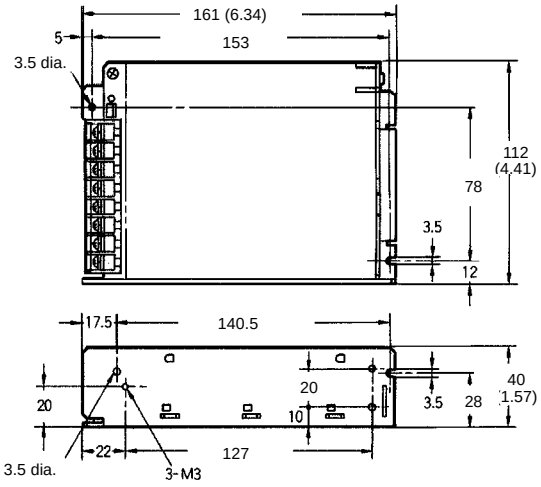
Mounting
Bottom View



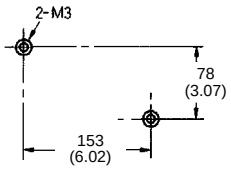
S82R -□□5□□ (50 W)



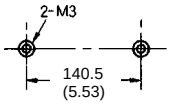




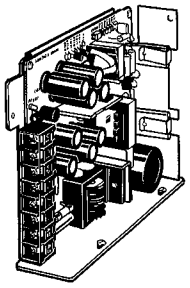
Mounting Holes
Side View

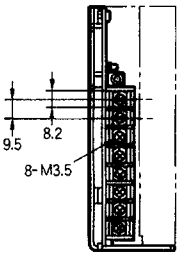


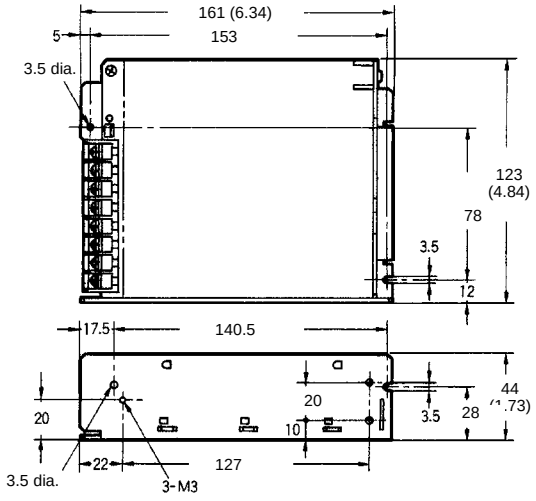
Mounting Holes
Bottom View



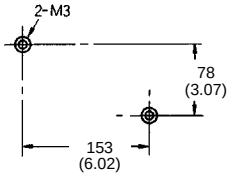
S82R -□□7□□ (75W)



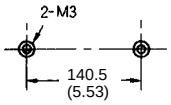




Mounting Holes
Side View



Mounting
Bottom View

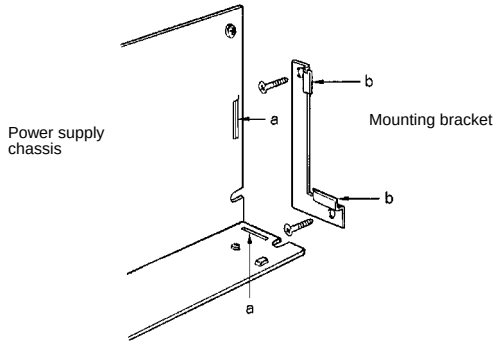


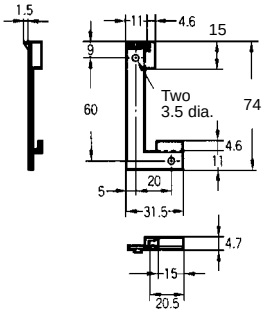
Unit: mm (inch)

■ SURFACE MOUNTING BRACKET

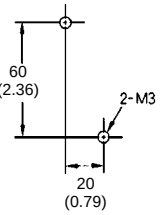
Surface Mounting

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.





Mounting holes

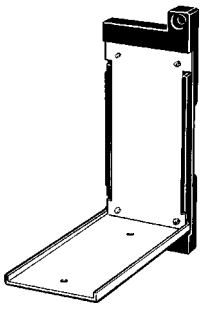


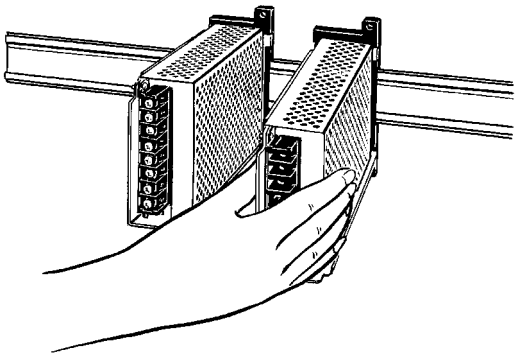
■ OPTIONAL DIN-RAIL MOUNTING BRACKET

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.

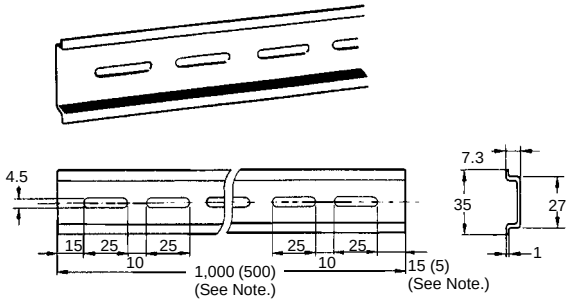




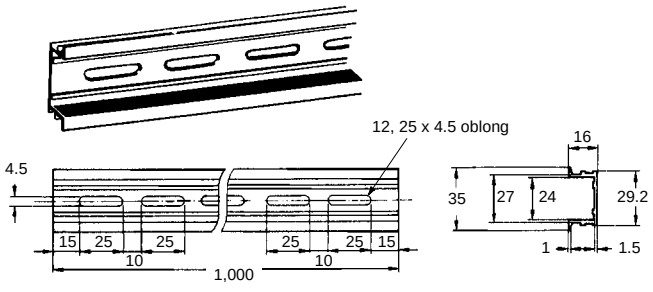
■ ACCESSORIES

DIN-Rail Mounting Track (Order Separately)

PFP-100N/PFP-50N



PFP-100N2



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

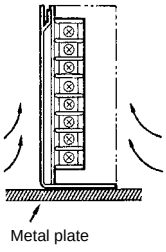
Precautions

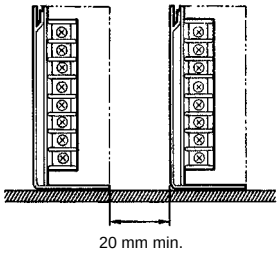
■ MOUNTING

- 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.

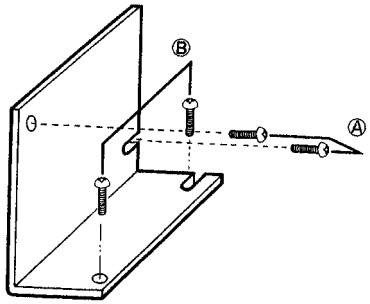




Mounting Procedure

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.*)



NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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OMRON ELECTRONICS, INC.
One East Commerce Drive
Schaumburg, IL 60173
1-800-55-OMRON

OMRON CANADA, INC.
885 Milner Avenue
Scarborough, Ontario M1B 5V8
416-286-6465

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