

# Switching Power Supply S82S

## Miniature DIN-Rail Mount DC-DC Converters

- 3-W and 7.5-W models
- Wide input voltage ranges: 10.2 to 27.6 VDC
- UL 508 approved
- DC-DC models
- Outputs: 5, 12, 15, 24, +12 V/-12 V, and +15 V/-15 V
- Ideal for applications with limited space
- 3-year warranty



## Ordering Information

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

Power ratings	Output voltage	Output current	Part number
			DC input
3 W	5 V	0.6 A	<b>S82S-7305</b>
	12 V	0.25 A	<b>S82S-7312</b>
	15 V	0.2 A	<b>S82S-7315</b>
	24 V	0.13 A	<b>S82S-7324</b>
7.5 W	5 V	1.5 A	<b>S82S-7705</b>
	12 V	0.6 A	<b>S82S-7712</b>
	15 V	0.5 A	<b>S82S-7715</b>
	24 V	0.3 A	<b>S82S-7724</b>
	+12 V/-12 V	0.3 A/0.2 A	<b>S82S-7727</b>
	+15 V/-15 V	0.2 A /0.2 A	<b>S82S-7728</b>

### ■ ACCESSORIES (SOLD SEPARATELY)

**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>

### ■ MODEL NUMBER LEGEND

S82S - 

--	--	--	--

1 2 3

**1. Input voltage**

7: 12 to 24 VDC

**2. Power ratings**

3: 3 W

7: 7.5 W

**3. Output voltage**

05: 5 V

12: 12 V

15: 15 V

24: 24 V

27: ±12 V

28: ±15 V

# Specifications

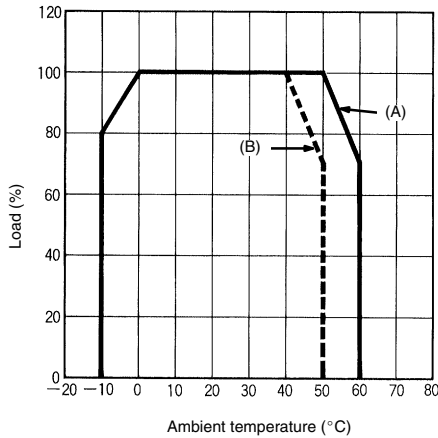
Input type		DC input	
		3 W	Single output 7.5 W      ±Output 7.5 W
Efficiency (typical)		68% to 71%	68% to 74%
Life expectancy		8 years minimum (used at 40°C at the rated input with a 50% load)	
<b>Input</b>			
Voltage	AC	—	
	DC	10.2 to 27.6 V	
Frequency		—	
Current with rated I/O		0.5 A max.	1.2 A max.
Leakage current	120 V input	—	
	240 V input	—	
Inrush current	120 V input	—	
	240 V input	—	
Noise filter		Yes	
<b>Output</b>			
Voltage adjustment range		±5%	(See Note.)
Ripple		2% peak to peak max.	
Input variation influence		0.5% max. (10.2 to 27.6 VDC input, 100% load)	
Load variation influence		1.5% max.	+V: 1.5% max. -V: 3% max.
Temperature variation influence		0.05% per °C max.	
Rise time		—	
Hold time		—	
<b>Additional functions</b>			
Overload protection		105% min. of rated load current (typical), drop type, automatic reset	
Ambient temperature	Operating	See the derating curve in <i>Engineering Data</i> section	
<b>Characteristics</b>			
Ambient temperature	Storage	-25° to 65°C (-13° to 149°F)	
Ambient temperature	Operating	25% to 85%	
	Storage	20% to 90%	
Dielectric strength		1,500 VAC, 50/60 Hz for 1 minute between all inputs and outputs and ground terminal 500 VDC for 1 minute between all inputs and outputs and ground	
Insulation resistance		100 MΩ minimum at 500 VDC between all outputs and inputs and ground terminal	
Vibration resistance		Malfunction: 10 to 55 Hz, 0.75 mm double amplitude (approx. 4.5G) each in X, Y, and Z directions for 2 hours	
Shock resistance		Malfunction: Approximately 30G, 3 times in each X, Y, and Z directions	
Output indicator		Green LED	
Approved standards		UL 508, CSA 22.2, No. 14	
Weight		150 g (5.29 oz.) max.	

Note: The output voltage is factory set as follows: +V: ±1% of the rated value; and, -V: ±5% of the rated value

# Engineering Data

## DERATING CURVE

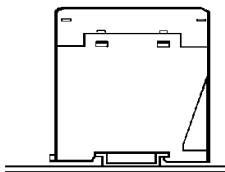
Note: The derating curve depends on the mounting position of the power supply.



### Mounting Position

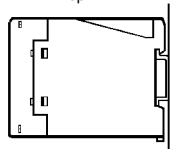
(A): Standard (Vertical) Installation

Top



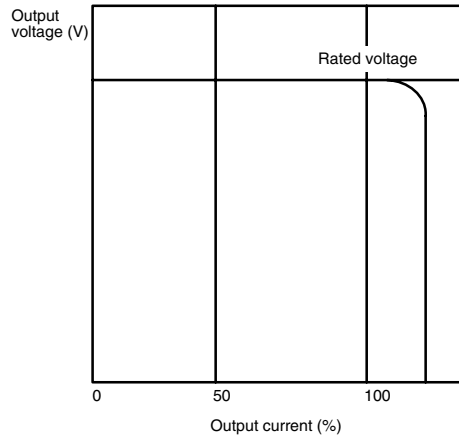
(B): Horizontal Installation

Top

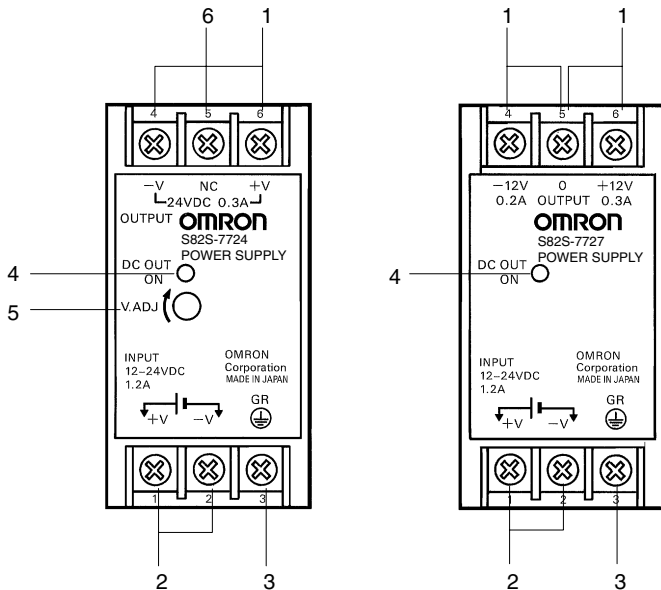


## OVERLOAD PROTECTION

The power supply is provided with an overload protection function that protects the load and the power supply from possible damage by overcurrent. When the output current rises above a set value (105% of the rated output 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.



# Nomenclature

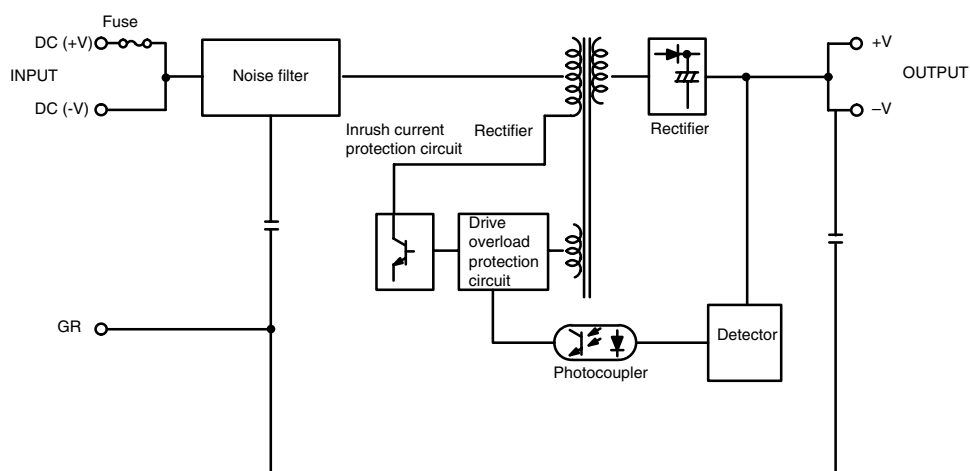


1. **DC Output Terminals:** Connect load wiring.
2. **Input Terminals:** Connect input wiring.
3. **Ground Terminals:** Connect ground wiring.
4. **Output LED Indicator:** Lights when DC current is being output.
5. **V. ADJ Adjuster:** Use to adjust the output voltage.
6. **NC Terminals:** Vacant terminals.

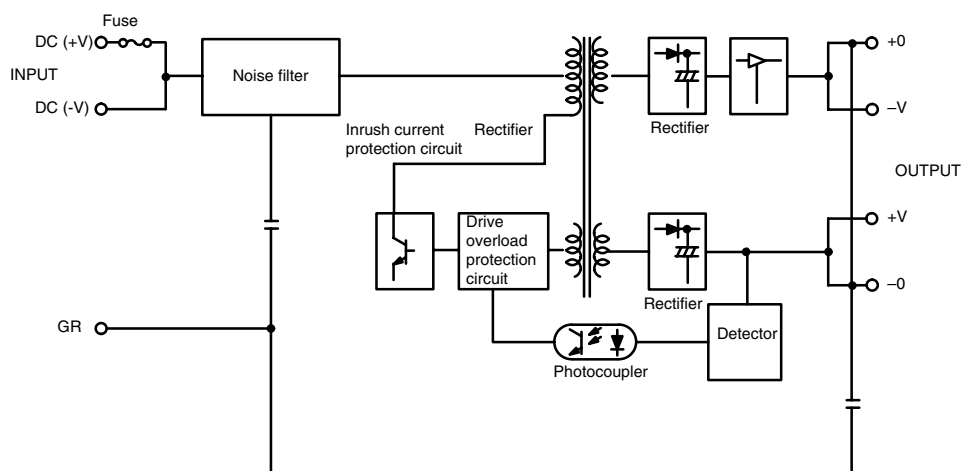
# Operation

## ■ BLOCK DIAGRAMS

### Single Output



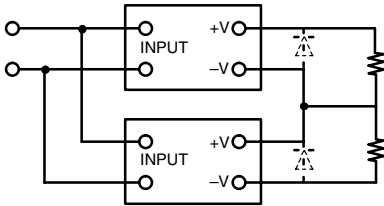
### ± Outputs



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

An output of  $\pm$  can be generated by using two power supplies as shown below, because the power supply produces a floating output.

When connecting the power supplies in series with an operation amplifier, connect diodes to the output terminals (as shown by the dotted lines in the figure). Contact your OMRON representative for details on connecting diodes.



### ■ SERIES OPERATION

The output of two S82S Power Supplies cannot be combined in series.

### ■ PARALLEL OPERATION

The output of two S82S Power Supplies cannot be combined in parallel.

### ■ INPUT TERMINALS

Do not connect the input line to the other terminals of the power supply or the power supply will be damaged. The input terminals of DC input models have polarity markings. If the input polarities are reversed, the power supply will be damaged.

### ■ MINIMUM OUTPUT CURRENT

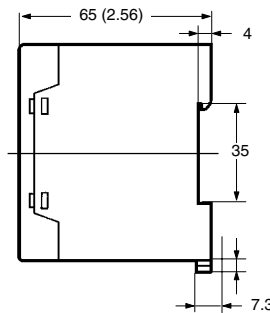
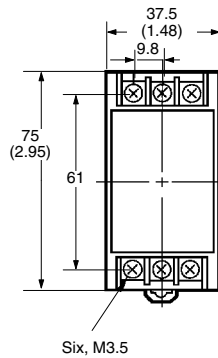
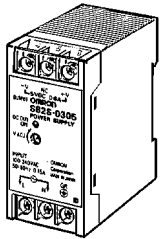
The minimum output current for  $\pm$  output power supplies is restricted by the output voltage and control method. All these outputs are controlled by the  $\pm$ -V output. If the +V output current falls to 10% or less of the rated output, the -V output voltage may drop.

## Dimensions

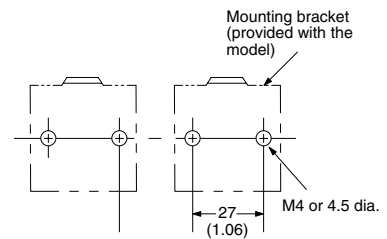
Unit: mm (inch)

### ■ SWITCHING POWER SUPPLIES

S82S-□3□□ (3 W)  
S82S-□7□□ (7.5 W)



#### Mounting Holes



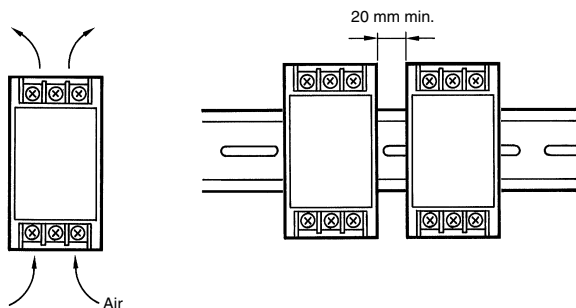
# Precautions

## ■ MOUNTING

- Providing adequate cooling when installing the power supply will extend its long-term reliability.
- As shown in the diagram below, the power supply is cooled by natural air currents, so install the unit in a location with adequate air flow.
- It is recommended to install the power supply on a metal plate, and to use forced-air cooling.

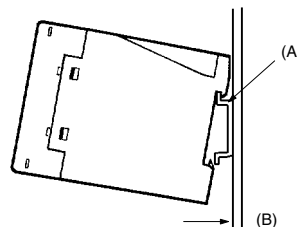
### Mounting Two or More Side-by-Side

- When installing two or more power supplies side-by-side, allow at least 20 mm (0.79 in) spacing between them, as shown in the diagram below.

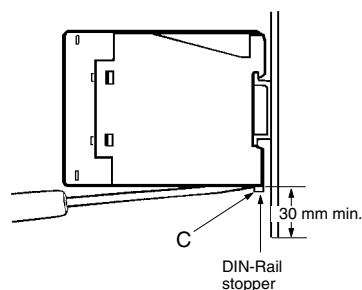


## ■ DIN-RAIL MOUNTING

To mount the power supply on a DIN-rail, hook portion (A) of the power supply to the track and press the power supply toward direction (B).



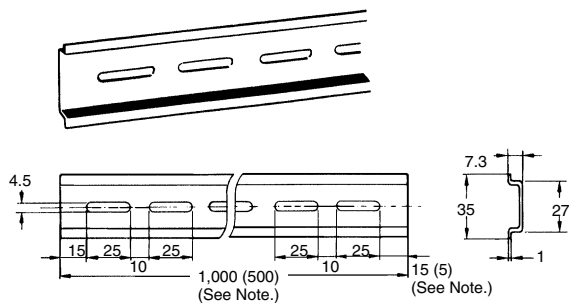
To remove the power supply, pull down portion (C) with a flat-blade screwdriver and pull out the power supply.



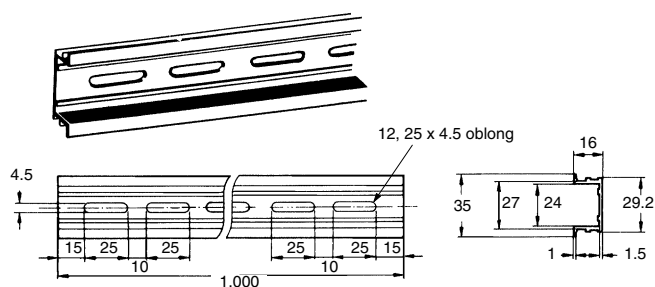
## ■ ACCESSORIES

### DIN Rail Mounting Track (Order Separately)

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



#### PFP-100N2



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

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

**OMRON**<sup>®</sup>

**OMRON ELECTRONICS LLC**

One Commerce Drive  
Schaumburg, IL 60173

**847-843-7900**

For US technical support or other inquiries:

**800-556-6766**

**OMRON CANADA, INC.**

885 Milner Avenue  
Toronto, Ontario M1B 5V8

**416-286-6465**

**OMRON ON-LINE**

Global - <http://www.omron.com>  
USA - <http://www.omron.com/oei>  
Canada - <http://www.omron.ca>