

# Switch Mode Power Supply

# S82S (3/7.5-W Models)

CSM\_S82S\_DS\_E\_4\_3



## Miniature DIN Rail Mounting DC-DC Power Supplies

- 65 mm depth enables mounting onto control panels with 100 mm depth.
- Inputs: 10.2 to 27.6 VDC (DC input)
- 7.5-W models provide both  $\pm 12$ -V and  $\pm 15$ -V outputs.
- A complete lineup with 10 different models.
- UL and CSA approved.
- RoHS-compliant



Refer to *Safety Precautions for All Power Supplies*.

## Model Number Structure

### Model Number Legend

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

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:  $\pm 12$  V

28:  $\pm 15$  V

## Ordering Information

### List of Models

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

| Power ratings | Output voltage | Output current              | Model     |
|---------------|----------------|-----------------------------|-----------|
| 3 W           | 5 V            | 0.6 A                       | S82S-7305 |
|               | 12 V           | 0.25 A                      | S82S-7312 |
|               | 15 V           | 0.2 A                       | S82S-7315 |
|               | 24 V           | 0.13 A                      | S82S-7324 |
| 7.5 W         | 5 V            | 1.5 A                       | S82S-7705 |
|               | 12 V           | 0.6 A                       | S82S-7712 |
|               | 15 V           | 0.5 A                       | S82S-7715 |
|               | 24 V           | 0.3 A                       | S82S-7724 |
|               | $\pm 12$ V     | 0.3 A (+12 V)/0.2 A (-12 V) | S82S-7727 |
|               | $\pm 15$ V     | 0.2 A (+15V)/0.2A (-15 V)   | S82S-7728 |

# Specifications

## ■ Ratings/Characteristics

| Item                    |                                   |            | DC input  |                              |                    |
|-------------------------|-----------------------------------|------------|---|------------------------------|--------------------|
|                         |                                   |            | 3 W   | Single output 7.5 W          | Dual Output 7.5 W  |
| Efficiency (typical)    |                                   |            | 60% min.  | 66% min.                     | 64% min.           |
| Input                   | Voltage                           | AC         | No  |                              |                    |
|                         |                                   | DC         | 10.2 to 27.6 VDC  |                              |                    |
|                         | Current (See note 1.)             | 0.6 A max. | 1.2 A max.  |                              |                    |
| Output<br>(See note 2.) | Voltage adjustment range          |            | ±5% (See note 3.)   |                              | None (See note 4.) |
|                         | Ripple (See note 1.)              |            | 2% (p-p) max.   |                              |                    |
|                         | Input variation influence         |            | 0.5% max.   |                              |                    |
|                         | Load variation influence          |            | 1.5% max.   | +V: 1.5% max.<br>-V: 3% max. |                    |
|                         | Temperature variation influence   |            | 0.05%/°C max.   |                              |                    |
| Additional function     | Overload protection (See note 5.) |            | 105% min., voltage drop, automatic reset  |                              |                    |
| Other                   | Ambient operating temperature     |            | Refer to the derating curve in <i>Engineering Data</i>  |                              |                    |
|                         | Storage temperature               |            | -25 to 65°C   |                              |                    |
|                         | Ambient operating humidity        |            | 25% to 85% (storage humidity: 20% to 90%)   |                              |                    |
|                         | Dielectric strength               |            | 1.5 kVAC for 1 min. (between all input terminals and all output terminals/PE terminals), current off: 10 mA |                              |                    |
|                         | Insulation resistance             |            | 100 MΩ min. (between all output terminals and all input terminals/PE terminals) at 500 VDC                  |                              |                    |
|                         | Vibration resistance              |            | 10 to 55 Hz, 0.375-mm single amplitude for 2 hours each in X, Y, and Z directions                           |                              |                    |
|                         | Shock resistance                  |            | 294 m/s <sup>2</sup> , 3 times each in ±X, ±Y, ±Z directions  |                              |                    |
|                         | Output indicator                  |            | Yes (color: green)  |                              |                    |
|                         | Approved standards                |            | Refer to <i>List of Certified Models</i> for details.   |                              |                    |
|                         | Weight                            |            | 150 g max.  |                              |                    |

**Note:** 1. A 100% load for rated input voltage.

2. Output characteristics are measured at the power supply output terminals.

3. If the output voltage adjuster (V.ADJ) is turned, the voltage will increase by more than 50% 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.

4. The settings for the output voltage must be within the following range:

+V: ±1% of the rated value

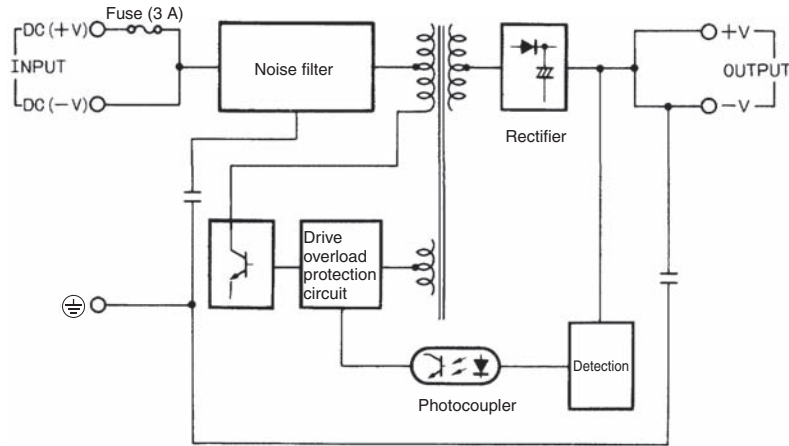
-V: ±5% of the rated value

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

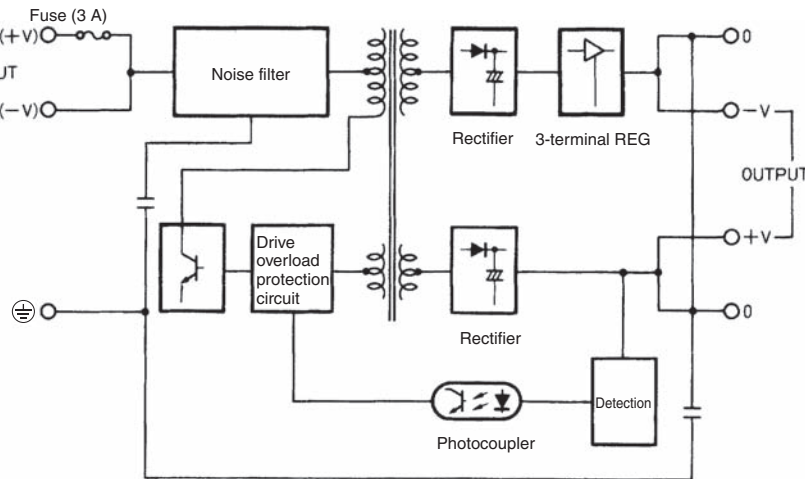
# Connections

## Block Diagrams

### Single Output



### Dual Outputs



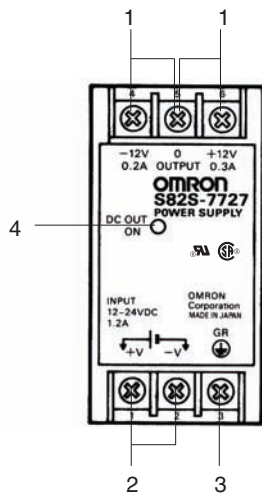
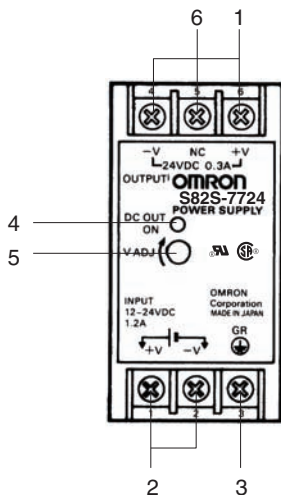
# Construction and Nomenclature

## Nomenclature

### Terminal Arrangement

Single Output Models

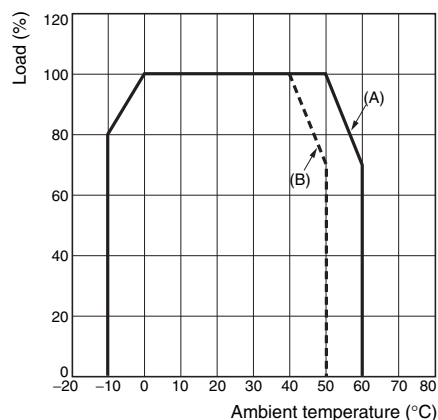
Dual Output Models



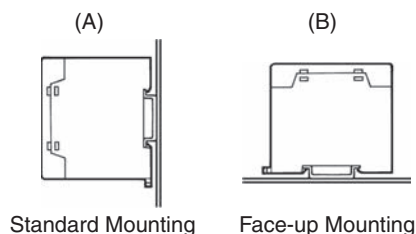
1. **DC Output Terminals:** Connect the load lines to these terminals.
2. **Input Terminals:** Connect the input lines to these terminals.  
**Note:** The fuse is located on the (+V) side. It is NOT user replaceable.
3. **Protective earthing terminal:** Connect a ground line to this terminal.
4. **Output LED Indicator (DC OUT ON):** Lights while a DC output is ON (for the Dual Output Models, this indicator is lit when the +V DC output is ON).
5. **Output voltage adjuster (V. ADJ):** Use to adjust the output voltage.
6. **NC Terminals:** Vacant terminals.

## Engineering Data

### Derating Curve

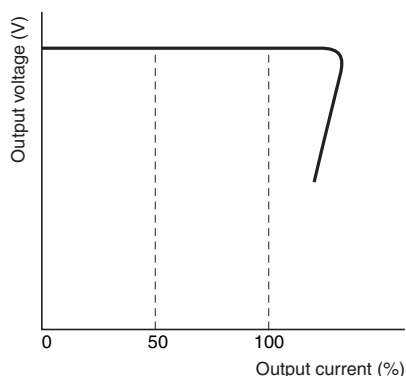


**Note:** The derating curve depends on the mounting direction of the Power Supply



### 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 to 105% or higher of the rated current, the protection function is triggered, automatically decreasing the output voltage. When the output current falls within the rated range, the overload protection function is automatically cleared.



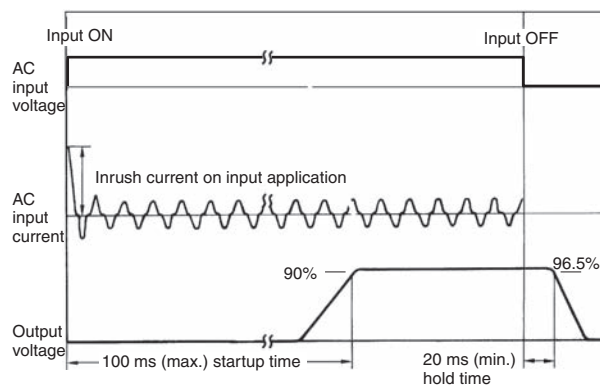
The values shown in the above diagram are for reference only.

**Note:** Internal parts may occasionally deteriorate or be damaged if a short-circuit or other overcurrent state continues during operation. Eliminate the overcurrent state as soon as possible.

### Dual Output Models

The total output power for the +V output and -V output is detected for the protection operation (i.e., total overcurrent protection), but this condition varies depending on -V output status. -V output has an independent short-circuit protection feature.

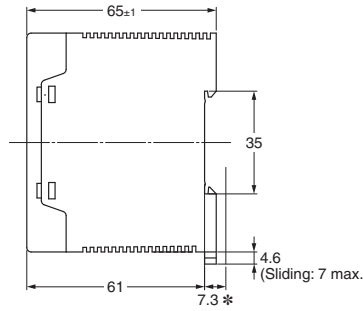
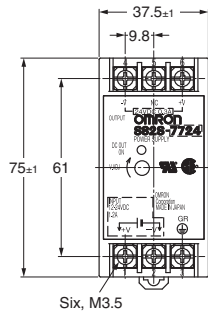
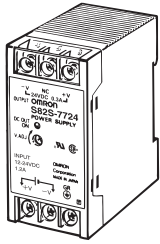
### Inrush Current, Startup Time, Hold Time



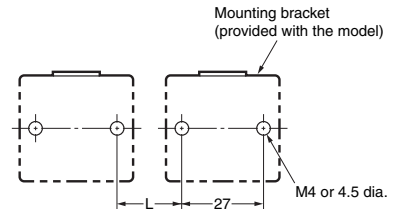
# Dimensions

Note: All units are in millimeters unless otherwise indicated.

S82S-73□□ (3W)  
S82S-77□□ (7.5W)



### Mounting Holes



Note: If more than one Power Supply is installed in a row, keep a distance of 20 mm min. (L = 20 mm min.) between each adjacent Power Supply.

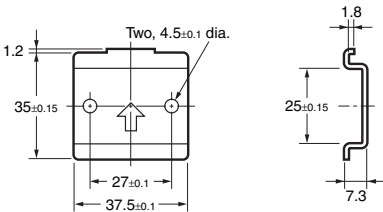
\* A distance of 7.3 mm is required between the model and the mounting surface when the mounting bracket provided with the model is used.

## Accessories

Note: All units are in millimeters unless otherwise indicated.

### Mounting Bracket

Used when not mounting the Power Supply directly on the DIN Rail.

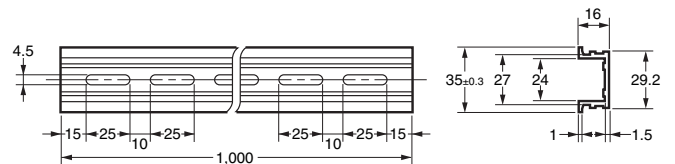
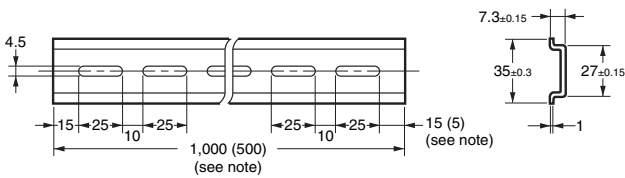
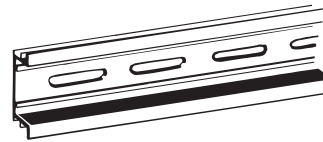
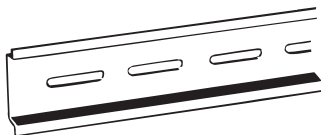


## DIN Rail (Order Separately)

### Mounting Rail (Material: Aluminum)

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 of 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.



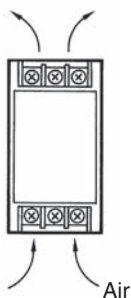
Minor electric shock, fire, or Product failure may occasionally occur. Do not allow any pieces of metal or conductors or any clippings or cuttings resulting from installation work to enter the Product.



## Mounting

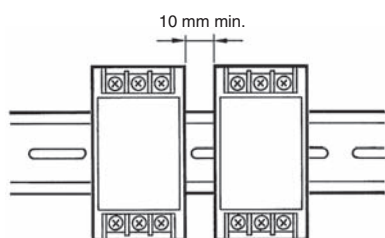
To improve and maintain the reliability of the power supply over a long period of time, adequate consideration must be given to heat radiation.

The power supply is designed to radiate heat by means of natural air-flow. Therefore, mount the power supply so that air flow takes place around the power supply.



When mounting two or more power supplies side-by-side, allow at least 10 mm spacing between them, as shown in the following diagram.

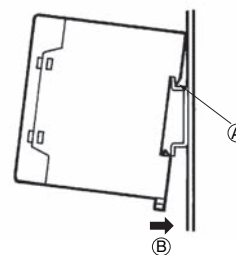
Forced air-cooling is recommended.



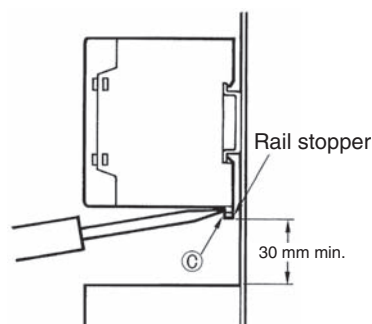
## Wiring

Do not apply more than 75-N force to the terminal block when tightening it.

## DIN Rail Mounting



When mounting to a DIN Rail, lower the S82S onto the Rail until the Rail stopper clicks into space, hook section A over the edge of the Rail, and push in the direction of B.



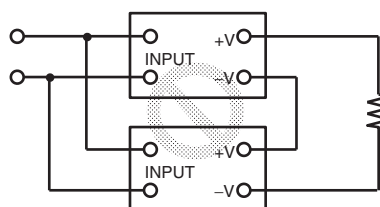
To remove the S82S from the DIN Rail, insert a screwdriver into section C and pull the S82S away from the Rail.

## Serial or Parallel Operation

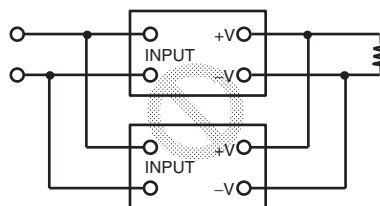
No serial or parallel operation is available.

The positive and negative output terminals of a Dual Output Model cannot be connected in series to operate.

### Incorrect



### Incorrect



## Minimum Output Current

### (S82S-7727 and S82S-7728)

The minimum output current of the S82S-7727 and S82S-7728 is restricted by the output voltage and control method.

**Note:** All the outputs of the S82S-7727 and S82S-7728 are controlled by the +V output. If the +V output current falls to 10% or less of the rated output, the -V output voltage may drop.

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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2017.4

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