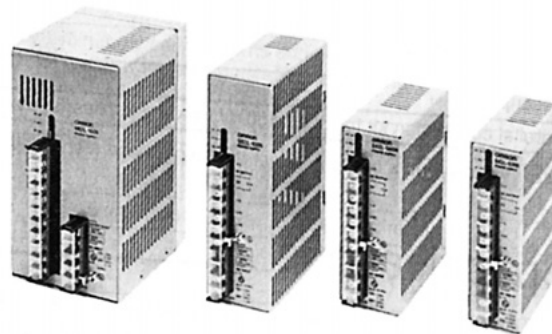


Switching Power Supply

S82L

Highly Reliable Power Supply Offers 15-Year Service Life

- Model ranges from 30 to 150 W with 5, 12, 15, or 24 V output voltages.
- 85 to 132 VAC or 170 to 264 VAC selectable input voltage.
- Equipped with overvoltage and overload protection, remote sensing and remote control functions.
- Parallel connection of two 150-W power supplies possible for loads drawing high current.
- 7-year warranty.



Ordering Information

■ SWITCHING POWER SUPPLIES

Stock Note: Shaded models are normally stocked.

Rated input voltage	Power ratings	Output		Part number
		Voltage	Current	
120/240 selectable	30 W	5 VDC	6 A max.	S82L-0305
		12 VDC	2.5 A max.	S82L-0312
		15 VDC	2 A max.	S82L-0315
		24 VDC	1.3 A max.	S82L-0324
	60 W	5 VDC	12 A max.	S82L-0605
		12 VDC	5 A max.	S82L-0612
		15 VDC	4 A max.	S82L-0615
		24 VDC	2.5 A max.	S82L-0624
	100 W	5 VDC	20 A max.	S82L-1005
		12 VDC	9 A max.	S82L-1012
		15 VDC	7.2 A max.	S82L-1015
		24 VDC	4.6 A max.	S82L-1024
	150 W	5 VDC	30 A max.	S82L-1505
		12 VDC	13.5 A max.	S82L-1512
		15 VDC	10.8 A max.	S82L-1515
		24 VDC	7 A max.	S82L-1524

Note: Mounting brackets are provided with each power supply in the table above. For accessories, refer to the *Accessories* Section on the following page.

MODEL NUMBER LEGEND

S82L -

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1
2

1. Power ratings

03: 30 W
 06: 60 W
 10: 100 W
 15: 150 W

2. Output voltage

05: 5 V
 12: 12 V
 15: 15 V
 24: 24 V

ACCESSORIES

Stock Note: Shaded models are normally stocked.

Description	Part number
Parallel connection kit for S82L 150-W Power Supplies (see note)	S82Y-L15A

Note: Kit includes a bar to connect the outputs and a shielded wire to connect the current balance and -S terminals.

Specifications

Power Rating		30 W	60 W	100 W	150 W
Efficiency (typical)		74% to 83% (depending on types)			
Life expectancy		15 yrs. min. (Used at 40°C at the rated input with a 50% load.)			
Input					
Voltage (AC only)		120 V (85 to 132 V) or 240 V (170 to 264 V) selectable			
Frequency		47 to 450 Hz			
Current	120 V input	0.95 A max.	1.5 A max.	2.5 A max.	3.5 A max.
(with rated I/O)	240 V input	0.6 A max.	0.8 A max.	1.4 A max.	2.1 A max.
Leakage current	120 V input	0.5 mA max.			
(with rated I/O)	240 V input	1 mA max.			
Inrush current	120 V input	15 A max.			
(with rated I/O)	240 V input	30 A max.			
Noise filter		Yes			
Output					
Voltage fluctuation		2% max. (combined input, load, and temperature variations)			
Voltage adjustment range		±10% adjustable with variable resistor (V.ADJ)			
Ripple		1% (p-p) max.			
Input variation influence		0.3% max. (85 to 132 VAC/170 to 264 VAC input, 100% load)			
Load variation influence		0.4% max. (with rated input, 0% to 100% load)			
Temperature variation influence		0.02%/°C max. (0° to 55°C, with rated input and output)			
Rise time		300 ms max. (output voltage rise to 90%, with rated input and output)			
Hold time		20 ms min.			
Additional functions					
Overload protection		105% max. of rated load current (typical), inverted L drop, automatic reset (output shut off after 5 s, reset by input reset)			
Overvoltage protection		120% of rated output voltage (typical), shut-off type, reset by input reset			
Remote sensing		Yes			
Remote control		Yes			
Parallel connection		No			Yes

(This table continues on the next page.)

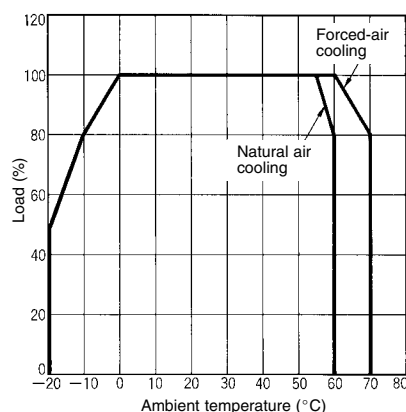
Specifications Table – continued from previous page

Power Rating		30 W	60 W	100 W	150 W
Characteristics					
Ambient temperature	Operating	See the derating curve in the <i>Engineering Data</i> section			
	Storage	–25° to 85°C (–13° to 185°F)			
Ambient humidity	Operating	25% to 85%			
	Storage	20% to 95%			
Dielectric strength		3.75 VAC, 50/60 Hz for 1 min (between all inputs and outputs) 2.5 VAC, 50/60 Hz for 1 min (between all inputs and the housing) 500 VDC for 1 min (between all outputs and the housing)			
Insulation resistance		100 MΩ min. at 500 VDC (between all outputs and inputs/housing)			
Vibration resistance		Malfunction: 10 to 55 Hz, 0.825 mm double amplitude (approx. 5G) each in X, Y, and Z directions for 2 hrs.			
Shock resistance		Malfunction: 294 m/s ² (30G), 3 times each in ±X, ±Y, and ±Z directions			
Input indicator		Orange LED			
Output indicator		Green LED			
Electromagnetic interference		Meets FCC class B standards			
Approved standards		UL 1012, CSA E.B.1402, VDE 0160, VDE 0805, and EN60950 (IEC 950)			
Weight		910 g max.	990 g max.	1.1 kg max.	2.2 kg max.

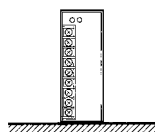
Engineering Data

DERATING CURVE

Note: The derating curve differs depending on the mounting position of the Power Supply. The curve shown here was obtained with the Power Supply mounted in the standard position.



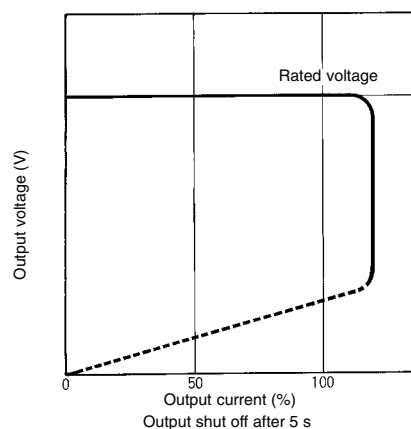
Mounting Position for Standard Installation



OVERLOAD PROTECTION

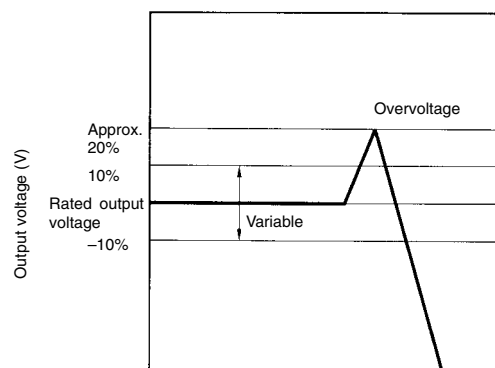
Overload protection prevents damage to the load as well as the Power Supply itself due to current overload. If the load current rises above the overload set value (105% to 135% of the rated load current), the protective function will engage and the voltage will be reduced. Reset is automatic, so the power supply will return to normal operation when the overload condition is corrected.

If an overload condition continues for more than 5 s, the output will be shut off. In this situation, reset is not automatic. The input power must be turned off for at least 30 s, and then turned on again to reset the power supply.

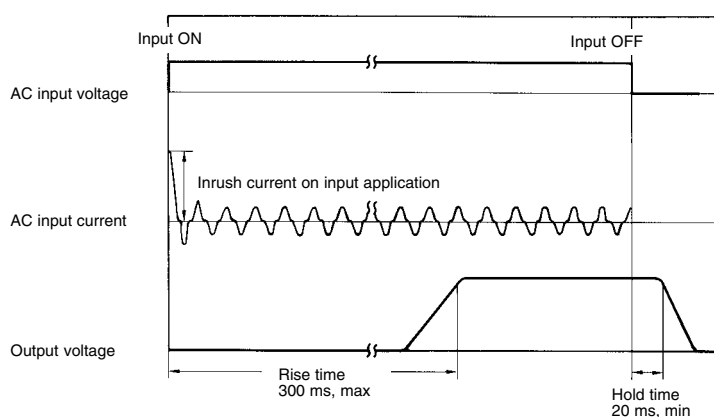


■ OVERVOLTAGE PROTECTION

The protective function prevents damage to the load as well as the power supply itself due to overvoltage. The output is shut off if the output voltage rises above about 120% of the rated voltage. The input power must be turned off for at least 30 s, and then turned on again to reset the power supply.

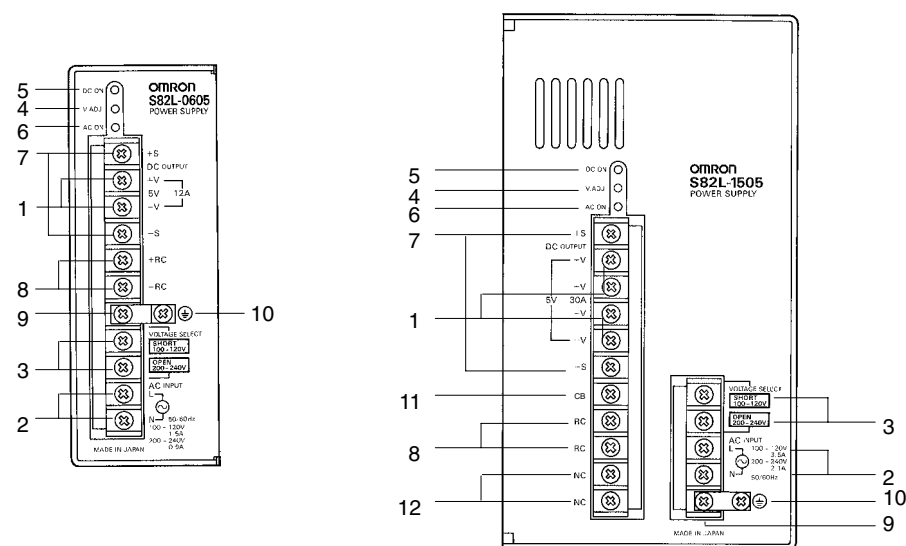


■ INRUSH CURRENT, START UP TIME, HOLD TIME



Nomenclature

■ S82L SWITCHING POWER SUPPLY

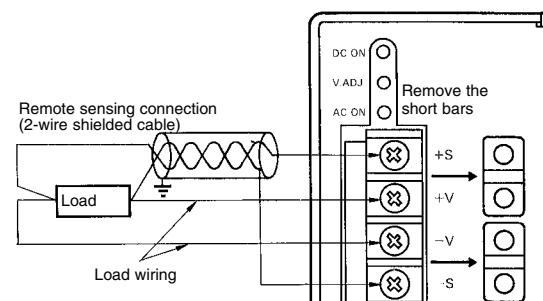


1. **DC Output Terminals:** Connect load wiring.
2. **Input Terminals:** Connect input wiring.
3. **Input Voltage Selector Terminals:** Switch the input voltage by connecting or removing the short bar. (short circuited: 100 to 120 V; open: 200 to 240 V)
4. **V. ADJ Adjuster:** Use to adjust the output voltage.
5. **Output LED Indicator:** Lights when DC current is being output.
6. **Input LED Indicator:** Lights when input is supplied.
7. **Remote Sensing Terminals:** Correct the voltage drop in the load lines. Shorted for normal operation.
8. **Remote Control Terminals:** Connected to an external device to enable remote control of the output while the input voltage is being applied.
9. **ACG Terminal:** The intermediate point of the input filter. Shorted to FG terminal for normal operation.
10. **FG Terminal:** Shorted to the housing, and connected to a ground line.
11. **Current Balance Terminal:** Connected to the CB terminal of another Power Supply wired in parallel.
12. **NC Terminals:** Leave unconnected.

Operation

■ REMOTE SENSING FUNCTION

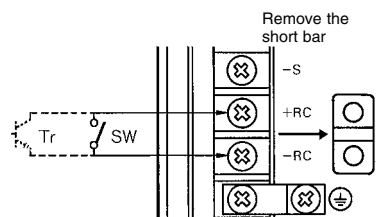
This function corrects a voltage drop in the load wiring. When using the remote sensing function, remove the short bars from the remote sensing terminals as shown in the diagram provided here.



- Note:
1. Be sure to use high capacity wiring: When the voltage drop in the load wiring is large, the overvoltage protection function might engage due to the increase in voltage to correct the voltage drop.
 2. If the +S and -V terminals are left unconnected, the overvoltage protection function will engage and the output voltage will be cut off. If the -S and -V terminals are left unconnected, the output voltage will increase about 5%.

■ REMOTE CONTROL FUNCTION

This function allows the output voltage to be turned on and off with an external signal (as long as the input voltage is being applied). When using the remote control function, remove the short bar from the remote control terminals and connect a switch or transistor as shown in the diagram provided here.



Use a transistor with $V_{CE} > 20\text{ V}$ and $I_c > 5\text{ mA}$.

Voltage level	Output voltage
Low (0.8 V max.)	ON
High (2 V min.)	OFF

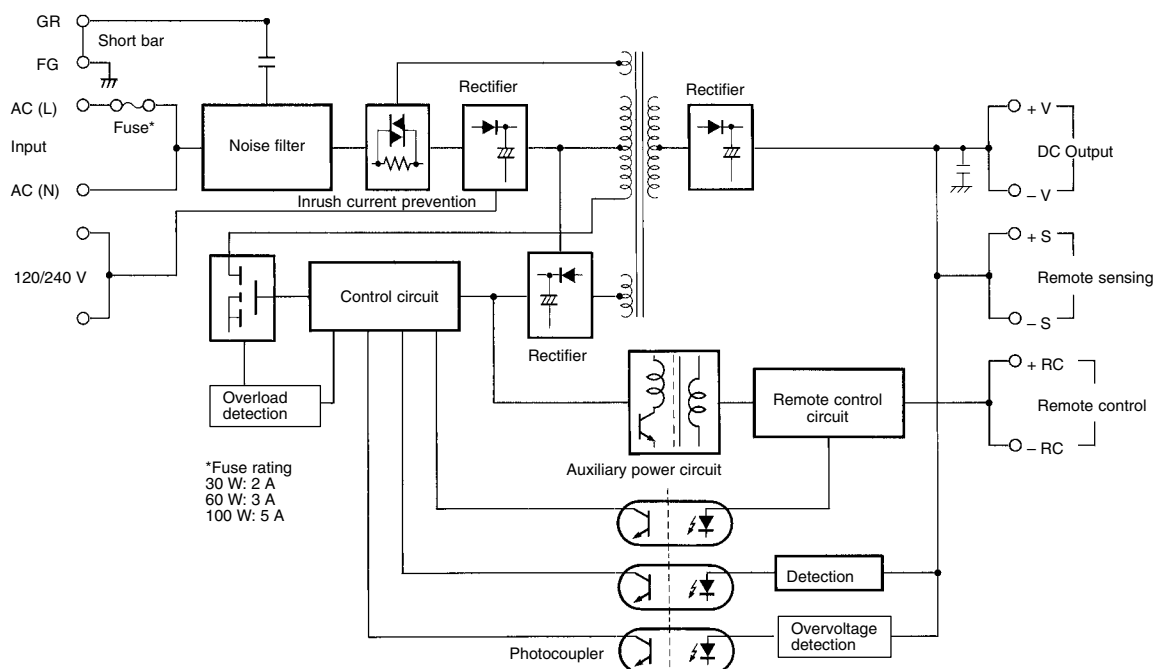
Note: The remote control circuit is insulated from input, output, and GR.

■ BLOCK DIAGRAM

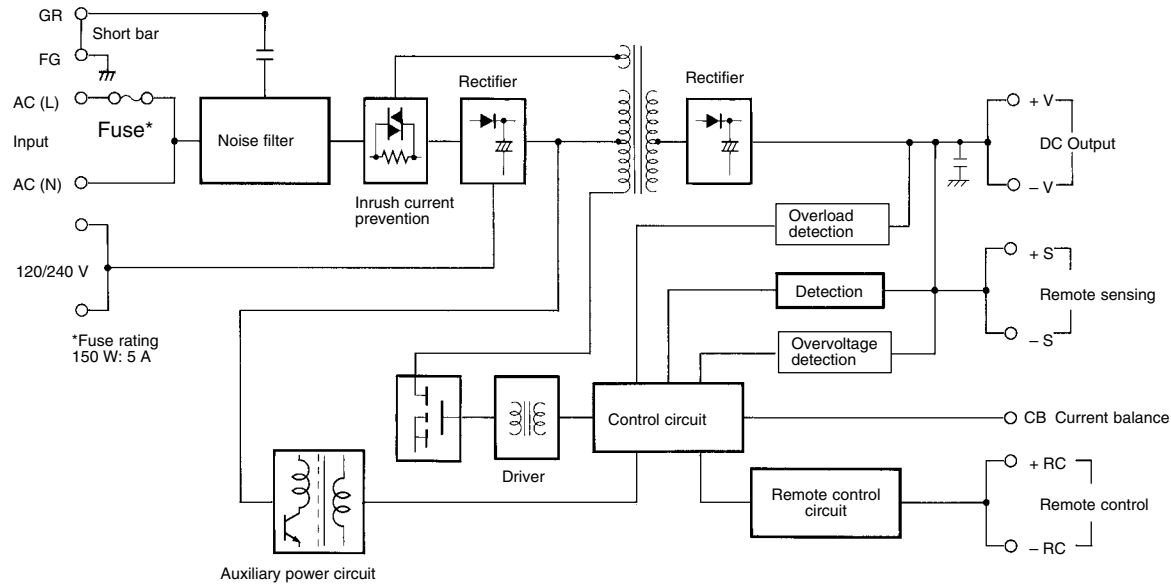
S82L-03□□ (30 W)

S82L-06□□ (60 W)

S82L-10□□ (100 W)



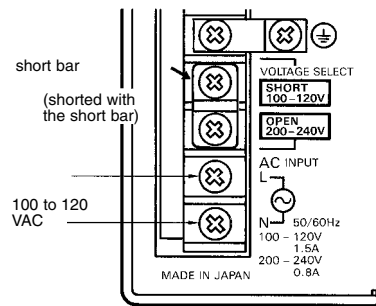
S82L-15□□ (150 W)



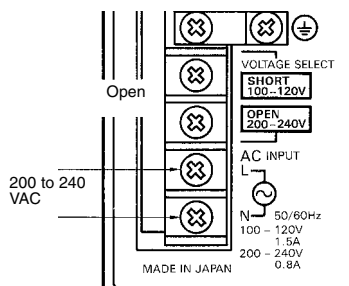
SWITCHING THE INPUT VOLTAGE BETWEEN 100 TO 120 V AND 200 TO 240 V

Select 100 to 120 V or 200 to 240 V input voltage by shorting or opening the input voltage switching terminals, as shown in the diagram below. (Factory set to 200 to 240 V operation.)

100 to 120 V Input

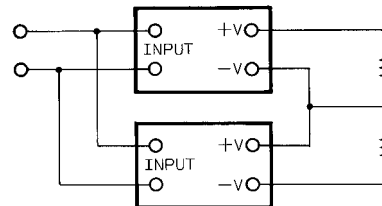


200 to 240 V Input



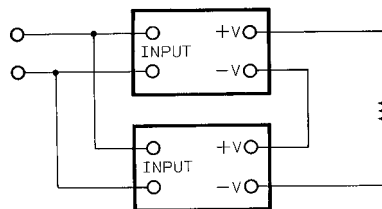
GENERATING OUTPUT VOLTAGES (\pm)

S82L power supplies may be connected to provide floating output voltages (\pm) as shown below.



SERIES CONNECTION

The output of two power supplies can be combined in series to double the output voltage as shown below.

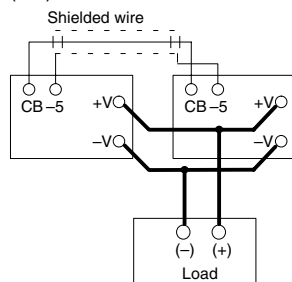


■ PARALLEL CONNECTION (MASTER/SLAVE OPERATION) 150 W MODELS ONLY

The model S82L power supply has a built-in current balance function, allowing two units to be connected in parallel (master/slave operation) increasing the output current.

Master/Slave Operation

When connecting two Power Supplies for master/slave operation, use shielded wire to connect the current balance (CB) and -S terminals as shown below.



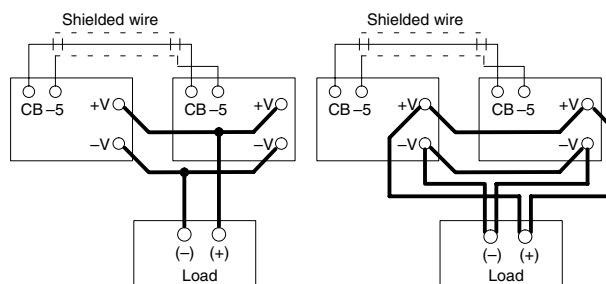
In master/slave operation, the power supply with the lower voltage adjustment set value (controlled by V. ADJ) is the master unit, and the power supply with the higher voltage adjustment set value is the slave unit.

Note: A maximum of two units can be connected in parallel.

Wiring

Use high capacity wiring between the power supplies and the load in order to minimize voltage drops due to wire resistance. The parallel connection kit S82Y-L15A includes a bar to connect the outputs, and shielded wire to connect the current balance and S terminals.

To ensure that the voltage drop is the same between each power supply and load, the length and cross sectional area of the wires used should be uniform, and the system should be wired as in the figure shown.



■ ADJUSTING THE OUTPUT VOLTAGE

Follow the procedure below when adjusting the output voltage of a master/slave system.

1. Connect the two power supplies in parallel and decide which unit will be the master.
2. Turn the voltage adjuster (V. ADJ) of the slave unit all the way clockwise.
3. Adjust the voltage adjuster (V. ADJ) of the master unit to the desired voltage.
4. Slowly turn the voltage adjuster (V. ADJ) of the slave unit counterclockwise and set value just before output voltage drop.

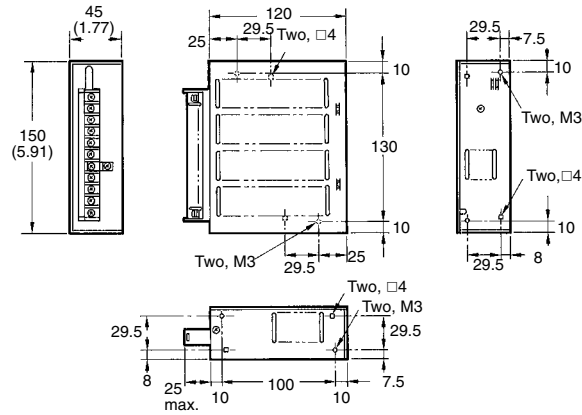
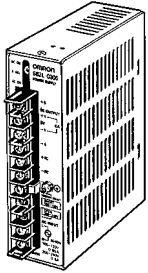
- Note:
1. We recommend setting equal output voltages to both power supplies for safety reasons. If the master power supply stops operation by input failure or breakage, the set output value of the slave power supply will be output.
 2. Even if one power supply fails to operate, both output LED indicators may be lit if the other power supply is in operation.
 3. 30, 60, and 100 W type power supplies cannot perform parallel operation as they are not provided with current balance function.
 4. Be sure to use shielded wires when connecting CB and -S terminals to prevent noise interference with operation.

Dimensions

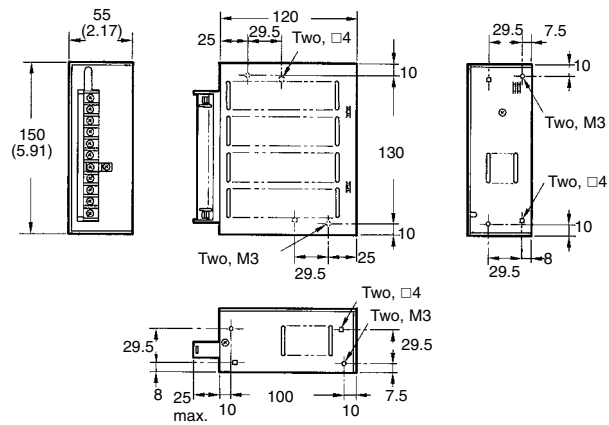
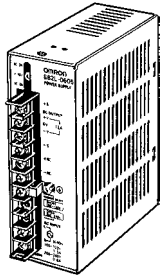
Unit: mm (inch)

SWITCHING POWER SUPPLIES

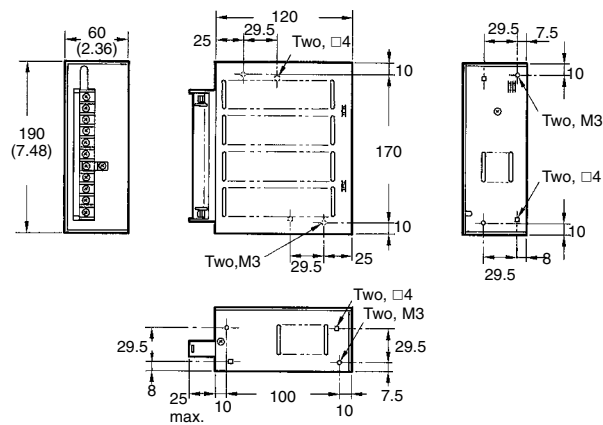
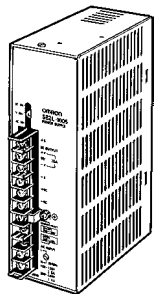
S82L-03□□



S82L-06□□

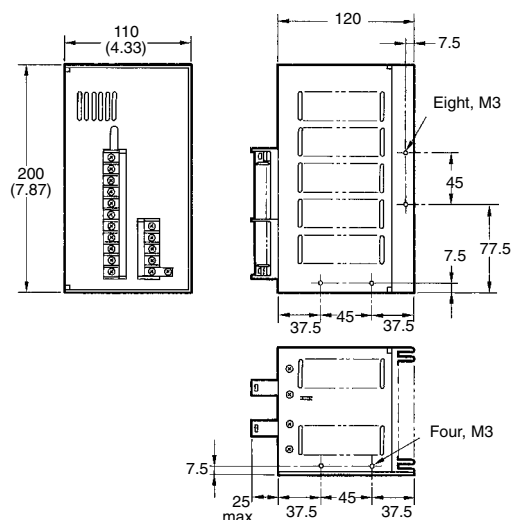
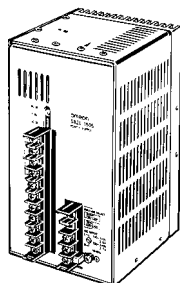


S82L-10□□



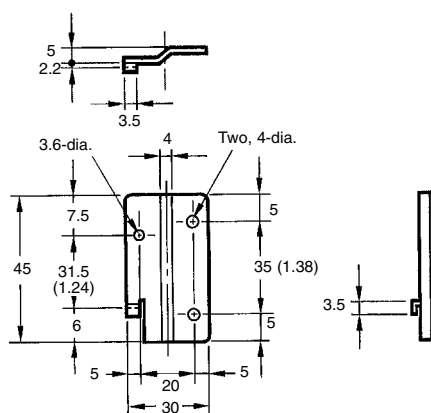
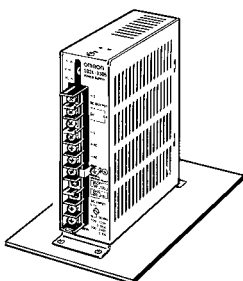
Unit: mm (inch)

S82L-15 □ □

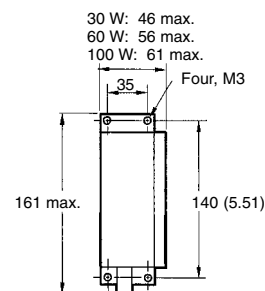


■ MOUNTING BRACKETS (INCLUDED WITH POWER SUPPLIES)

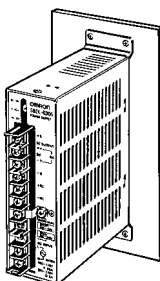
30/60/100 W
Bottom Mounting



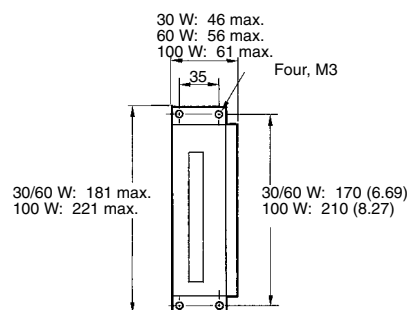
Mounting Holes –
Bottom Mounting



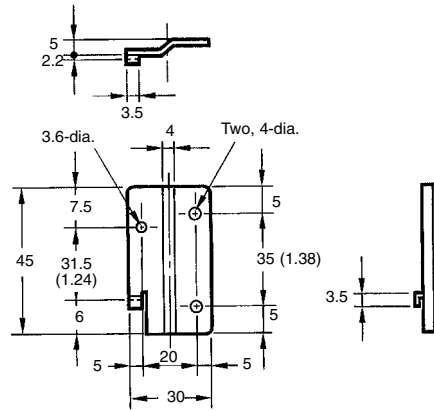
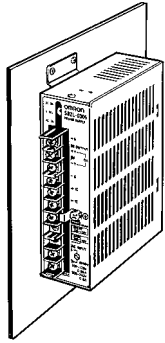
Front Mounting



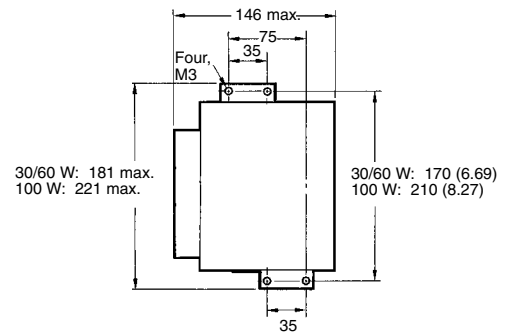
Mounting Holes –
Front Mounting



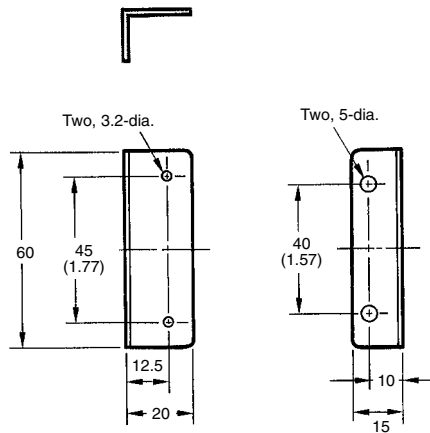
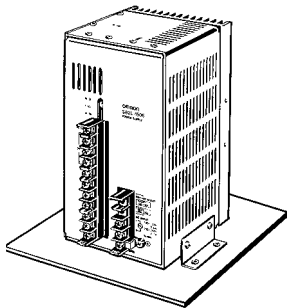
**30/60/100 W
Side Mounting**



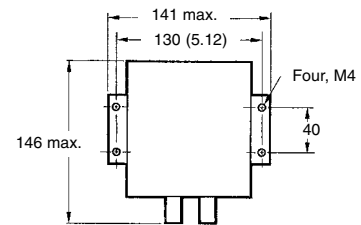
**Mounting Holes –
Side Mounting**



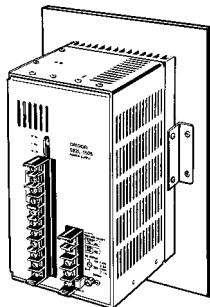
**150 W
Bottom Mounting**



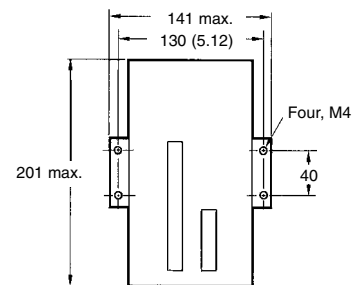
**Mounting Holes –
Bottom Mounting**



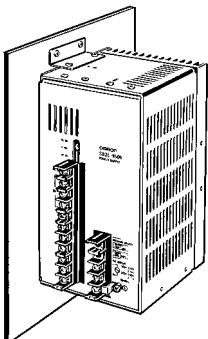
Front Mounting



**Mounting Holes –
Front Mounting**

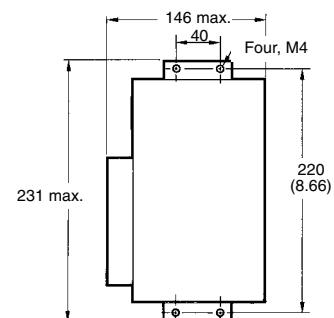


Side Mounting



Note: The power supply will be separated from the mounting surface by 5 mm when the mounting brackets are used.

**Mounting Holes –
Side Mounting**



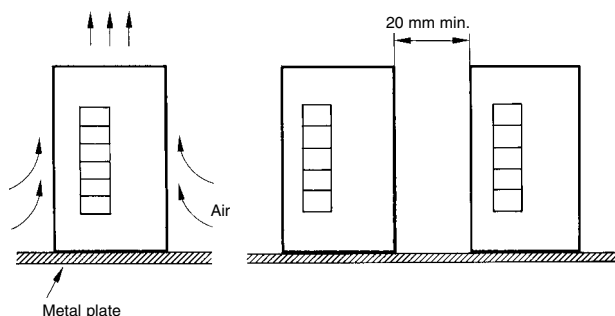
Precautions

■ MOUNTING

- Providing adequate cooling when installing the power supply will extend its long-term reliability.
- Install the unit in a location with adequate air flow. As shown in the diagram below, the power supply is cooled by natural air currents.

Installing Two or More Power Supplies

- When installing two or more power supplies side-by-side, allow at least 20 mm (0.79 in) space between them, as shown in the diagram below.
- Install the power supply on a metal plate and use forced-air cooling.



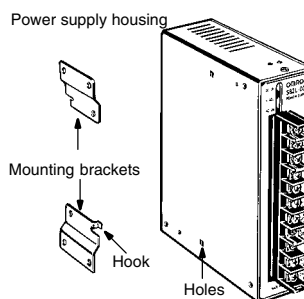
Attaching Mounting Brackets

30/60/100 W

Insert the hook on the corner of the bracket into the hole provided in the power supply housing. First, attach the bracket to the unit with one screw and then install the unit.

150 W

Insert the hook on the corner of the bracket into the hole provided in the power supply housing. Screw in both screws for each bracket and install the unit.



Conditions of Guarantee

The guarantee on these products is valid for 7 years from the date of shipment from the factory.

The following conditions apply to the guarantee:

1. The average ambient temperature must be 40°C max.
2. The average load must be 80% max.
3. Standard installation (bottom mounting).

Note: The maximum values must remain within the limits of the derating curve.

If product failure is caused by OMRON within the term of guarantee, OMRON shall be responsible for replacement or repairs.

Exclusions

Failure under any of the following circumstances is excluded from the guarantee.

1. Inappropriate handling or usage.
2. Failure resulted from other causes than those from this product.
3. Modification or repair applied to the product by other than OMRON-certified servicemen.
4. Failure caused by natural disaster, war, riot, etc.

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



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