



samlexpower

**Desktop Switching
Power Supplies**

**Owner's
Manual**

Please read this
manual before
operating your
unit

**Model:
SEC-1212
SEC-1223**

CAUTION !



**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



WARNING—TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. THERE ARE NO USER SERVICEABLE PARTS INSIDE—REFER TO QUALIFIED SERVICE PERSONNEL.

IMPORTANT SAFETY INSTRUCTIONS

Please read before using your power supply.

- 1.) It is recommended that you return your power supply to a qualified dealer for any service or repair. Incorrect assembly may result in electric shock or fire.
- 2.) To reduce the risk of electric shock, unplug the power supply from the outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- 3.) An extension cord should not be used unless absolutely necessary. **If an extension cord must be used make sure that the pins on the plug are the same number, size and shape as those of the original power supply plug.**
- 4.) Place the unit in an area that will allow air to flow freely around the unit. **DO NOT** block or obstruct vent openings on the side/bottom of the unit.
- 5.) Keep the unit away from moisture and water.
- 6.) **NEVER OPERATE THE UNITS IN PARALLEL**

WARNING

Your power supply should be grounded to reduce the risk of electric shock. The power supply is equipped with grounding conductor and grounding plug.

The cord must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. Never alter the AC cord or plug provided. If the cord will not fit the outlet, have a proper outlet installed by a qualified electrician. Improper connection can result in risk of electric shock.

DO NOT USE THE POWER SUPPLY FOR DIRECT CHARGING OF BATTERY OR DIRECT CONNECTION TO A BATTERY FOR BATTERY BACK-UP. (Please read the section on Battery Back-up).

DESCRIPTION

SEC-1212/SEC-1223 are switched mode power supplies which convert 120 VAC, 60 HZ to regulated 13.8 VDC based on pulse width modulation (PWM) control.

FEATURES

- + BASED ON SWITCHED MODE TECHNOLOGY AND PWM CONTROL
- + COMPACT AND LIGHTWEIGHT
- + HIGH EFFICIENCY AND LESS HEAT DISSIPATION
- + PROTECTED AGAINST SHORT CIRCUIT, OVER CURRENT AND OVER VOLTAGE (THROUGH PWM CONTROLLER)
- + SEC-1212 IS CONVECTION COOLED. SEC1223 HAS FORCED AIR COOLING AND OVER TEMPERATURE SHUT DOWN
- + UL LISTED & APPROVED
- + COMPLIES WITH FCC PART 15(B) FOR RADIATED & CONDUCTED NOISES FOR CLASS-B DIGITAL DEVICES

CONNECTION AND OPERATION

WARNING ! Before plugging the unit to the AC outlet, please check that your local supply voltage is 120 VAC.

NOTE: The DC output connector (RED + & BLACK -) has a tubular hole of dia. 0.2”(5mm) with a set screw. For a firm connection, crimp/solder a pin type copper terminal on the cable ends of your 12V DC device.

Ensure that the power supply's ON/OFF switch is off and it is unplugged from the AC outlet.. Switch off your 12 V DC device and connect it's positive and negative to the RED (Positive) and BLACK (Negative) terminals respectively. Ensure that the connections are secure and tight. Plug the power supply into the AC outlet. Press the ON/Off switch of the power supply to ON and observe that the neon indicator in the switch illuminates. If the indicator fails to light , recheck the connection, AC outlet and the fuse inside the power supply.

Your 12 V DC device may now be switched on.

COOLING (SEC-1212)

SEC-1212 is cooled by convection. Operate the unit in a cool, well ventilated space.

COOLING AND FAN CONTROL / THERMAL SHUT DOWN (SEC-1223)

SEC-1223 is cooled by convection and forced air. A temperature controlled fan has been provided to improve cooling at higher loads. The fan is controlled by a sensor mounted on the power transformer. **THE FAN WILL BE OFF AT LOWER LOADS.** It will come on only when the temperature of the power transformer is above 70°C due to higher loads. In case the fan fails or the air flow is blocked, a second temperature sensor mounted on the power transformer will activate over temperature shut down at 100°C. The output voltage will be automatically resumed once the unit cools down.

OPERATE THE UNIT IN A WELL VENTILATED OPEN AND COOL AREA. DO NOT BLOCK THE OPENINGS AT THE FAN DISCHARGE ON THE BOTTOM AND THE SUCTION OPENINGS ON THE SIDES .

BATTERY CHARGING AND BATTERY BACK-UP



WARNING ! THESE UNITS ARE POWER SUPPLIES AND NOT BATTERY CHARGERS. DO NOT CONNECT THESE UNITS DIRECTLY TO A BATTERY

These units should **NOT BE DIRECTLY CONNECTED TO A BATTERY** for charging or for battery back-up. Battery charging and battery back-up may be undertaken only when the battery is connected through suitable external isolating diodes and charge limiting resistor. The isolating diode will ensure that the battery does not back power the power supply. When a battery is deeply discharged, it will initially draw a very large charging current and thus, will force the power supply into current limit mode for prolonged periods. This is harmful for the power supply. The charge limiting resistor will limit the charging current, thereby, ensuring that the maximum charging current is well below the current limit value of the power supply. **It is recommended that optional battery back-up module BBM-1225 may be used to convert SEC-1212/SEC-1223 for battery back-up application.**

TROUBLESHOOTING - GENERAL

PROBLEM : Power ON/OFF switch does not illuminate when turned on.

PROBABLE CAUSE

SUGGESTED REMEDY

No power in the AC outlet

Check there is power in the outlet.

AC side fuse inside the power supply is blown

Replace the fuse inside the unit.

PROBLEM : AC side fuse blows as soon as power is turned on.

PROBABLE CAUSE

SUGGESTED REMEDY

PROBLEM : The output voltage is 0 V or very low

PROBABLE CAUSE

SUGGESTED REMEDY

Input voltage is very low

Check that the input voltage is 120VAC

The unit is in current limit condition due to overload caused by large reactive loading or by the output being short circuited

Check the output terminals are not shorted. Remove the load. If the output voltage gets restored, the load is shorted or is offering large reactive impedance.

Unit is shut down due to over temp. (SEC-1223)

Check that the fan has not failed or the vent openings are not blocked

PROBLEM : Output voltage drops as soon as the load is switched on

PROBABLE CAUSE

SUGGESTED REMEDY

The unit is going into current limit protection mode


Reduce the load current to less than the current limit value. Motors, pumps, compressors, relays, incandescent and halogen lamps and large capacitors in the input section of the DC devices draw very high inrush or starting currents of up to 10 times their normal operating currents. Ensure that these inrush/starting currents are below the current limit value of the power supply.

LIMITING ELECTROMAGNETIC INTERFERENCE (EMI)

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15(B) of the FCC Rules. These limits are designed to provide reasonable protection against a harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, this does not guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

SPECIFICATIONS

INPUT VOLTAGE(nominal)	120 VAC, 60 HZ	
OUTPUT VOLTAGE	13.8 VDC	
OUTPUT RIPPLE & NOISE (On Full Load)	150 mV PEAK TO PEAK	
OUPUT CURRENT, CONTINUOUS	SEC-1212	10 A
	SEC-1223	23A
CURRENT LIMIT	SEC-1212	14A
	SEC-1223	25A
COOLING	SEC-1212 - CONVECTION COOLED SEC-1223 - TEMPERATURE CONTROLLED FAN	
PROTECTIONS	OVER CURRENT, SHORT CIRCUIT AND OVER VOLTAGE (Through PWM Controller) OVER TEMPERATURE SHUT DOWN (SEC-1223)	
ENVIRONMENTAL TEMP. RANGE	SEC-1223	0 - 40°C
	SEC-1212	0 - 30°C
CONNECTIONS	DETACHABLE POWER CORD C/W NEMA 5-15P PLUG TERMINALS WITH TUBULAR HOLE DIA. 0.2" (5mm) WITH SET SCREW	
FUSE RATING	5 MM X 20 MM GLASS FUSE, 125V or 250 V (Time Delay / Slow Blow)	
		<u>Bussmann</u> <u>Littelfuse</u>
	SEC-1212 - 3A	GDC-3 239003
	SEC-1223 - 6.3 A	GDC-6.3 21806.3
DIMENSIONS (W X D X H), INCHES	7.0 X 8.25 X 2.2	
WEIGHT	SEC-1212	3 LBS. NET
	SEC-1223	3.5 LBS. NET
SAFETY CERTIFICATION		UL60950-1, E179076
EMC CONFORMITY	FCC Part 15(B), Class B Digital Device	

NOTE: SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE