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Samlex America SEC-1235M

Samlex SEC-1235M Desktop 30A Switching Power Supply Instruction Manual

Model: SEC-1235M | Brand: Samlex America

Introduction

The Samlex SEC-1235M is a high-efficiency, UL-60950-1 approved AC-DC power converter designed for land mobile radio applications. It provides a highly regulated output DC voltage of 13.8 Volts at 30 Amps from an AC input of 120 Volts, 60 Hz (or 230 Volts, 50 Hz via internal jumper setting). This unit features advanced switch-mode technology, ensuring reliable power with minimal weight and size, and circuit innovations to minimize output voltage ripple and RFI. It includes front panel ammeter and voltmeter, and offers overload, short-circuit, and over-temperature protection.



Image: Front view of the Samlex SEC-1235M Desktop 30A Switching Power Supply, showing the voltmeter and ammeter displays.

Setup and Installation

Before connecting the power supply, ensure the unit is placed on a stable, flat surface with adequate ventilation. Verify the input voltage setting matches your local AC supply.

Input Voltage Selection

The unit is factory-set for 120 VAC, 60 Hz operation (100 VAC to 130 VAC). For 230 VAC, 50 Hz operation (200 VAC to 260 VAC), an internal jumper setting adjustment is required. Refer to the detailed instructions in the full manual for this procedure if necessary.

AC Input Connections

Connect the provided detachable AC power cord to the power supply. The power cord features a male AC inlet connector Type "IEC 320-C14" on the power supply end and a male, 2-pole, 3-wire grounding (3-prong) plug Type "NEMA5-15P" for connection to a standard AC outlet.

- Ensure the AC outlet is properly grounded.
- Do not use extension cords unless absolutely necessary, and ensure they are rated for the power supply's current draw.

DC Output Connections

The DC output is provided via RED (+) and BLACK (-) terminals. These terminals feature a tubular hole and set screw for secure connections. The hole diameter is 0.2 inches (5 mm). A pair of copper terminal lugs is included for crimping to your output wires to connect to the load.

- Connect the RED (+) terminal to the positive input of your DC load.
- Connect the BLACK (-) terminal to the negative input of your DC load.
- Ensure all connections are tight and secure to prevent arcing or power loss.
- Observe correct polarity to avoid damage to the power supply or the connected device.

Operating Instructions

Once the power supply is properly connected to both AC input and DC load, you can begin operation.

Powering On

Turn on the power supply using the main power switch, typically located on the front or rear panel. The front panel voltmeter and ammeter will illuminate, displaying the output voltage and current draw, respectively.

Output Voltage Adjustment

The output voltage can be adjusted from 11.5 VDC to 15.5 VDC using an internal potentiometer. This adjustment should only be performed by qualified personnel. The factory preset output voltage is 13.8 VDC.

Current Limiting

The unit features a constant current limiting function at 35 A with auto-recovery. If the load current exceeds 35 A, the power supply will limit the output current to protect itself and the connected load. Once the overload condition is removed, the power supply will automatically resume normal operation.

Maintenance

The Samlex SEC-1235M is designed for reliable operation with minimal maintenance. Regular checks can help ensure longevity and performance.

Cooling System

The power supply incorporates a temperature-controlled fan for cooling. Ensure that the ventilation openings are not obstructed

to allow for proper airflow. Periodically inspect the fan for dust accumulation and clean as necessary with compressed air.

Input Side Fuse

The unit is protected by an input side fuse (5 mm x 20 mm, glass ferrule, delayed action). The fuse rating depends on the input voltage:

- For 120 VAC input: 250 V, 8 A (Manufacturer: Littelfuse, Model 218008)
- For 230 VAC input: 250 V, 4 A (Manufacturer: Littelfuse, Model 218004)

If the fuse blows, replace it only with a fuse of the identical type and rating to prevent damage or fire hazard. Consult a qualified technician for fuse replacement if you are unsure.

Cleaning

Clean the exterior of the power supply with a soft, dry cloth. Do not use liquid cleaners or solvents, as they may damage the casing or internal components.

Troubleshooting

This section provides guidance for common issues. The SEC-1235M includes several protection features to ensure safe operation.

No Output Power

- **Check AC Input:** Ensure the power cord is securely plugged into both the power supply and a live AC outlet.
- **Check Power Switch:** Verify the power switch is in the "ON" position.
- **Check Fuse:** If there is no power, the input fuse may have blown. Refer to the "Input Side Fuse" section under Maintenance for replacement details.

Overload Protection

The power supply will limit current at 35 A. If the connected load draws more than 35 A, the output voltage may drop, or the unit may enter a protection mode. Reduce the load or ensure the load's current requirements do not exceed the power supply's capacity.

Short Circuit Protection

In the event of a short circuit at the output terminals, the power supply will automatically shut down or limit current to prevent damage. Disconnect the load, resolve the short circuit, and then reconnect the load and power cycle the unit if necessary.

Over Temperature Protection

If the internal temperature exceeds safe operating limits, the unit will reduce output or shut down. Ensure adequate ventilation around the power supply and that the fan is not obstructed. Allow the unit to cool down before resuming operation.

Over Voltage Protection (through PWM controller)

The power supply is equipped with over-voltage protection. If the output voltage exceeds a safe threshold, the unit will protect itself and the connected equipment. This typically indicates an internal fault and may require professional servicing.

Specifications

The following table details the technical specifications for the Samlex SEC-1235M Desktop 30A Switching Power Supply.

MODEL NO.	SEC-1235M (With voltmeter and ammeter)
INPUT VOLTAGE (NOMINAL)	120 VAC, 60 Hz (100 VAC to 130 VAC) - factory present 230 VAC, 50 Hz (200 VAC to 260 VAC) - by internal settings
INPUT CURRENT	7.5 A at 120 VAC, 60 Hz / 3.5 A at 230 VAC 50 / 60 Hz
OUTPUT VOLTAGE	13.8 VDC
OUTPUT VOLTAGE ADJUSTMENT	11.5 VDC to 15.5 VDCwith the help of internal potentiometer
OUTPUT CURRENT, CONTINUOUS	30 A
CURRENT LIMIT	35 A, constant current limiting, auto recovery
NO LOAD CURRENT DRAW	120 mA at 120 VAC
RIPPLE	50 mV peak to peak
NOISE	150 mV peak to peak
PEAK EFFICIENCY	85%
COOLING	Temperature controlled fan
OUTPUT INDICATIONS	Voltmeter and ammeter
PROTECTIONS	Overload, short circuit, over temperature and over voltage (through PWM controller)
ENVIRONMENTAL TEMPERATURE RANGE	0 - 40°C
SAFETY CERTIFICATION	cULUSA, UL60950-1
EMI (EMISSIONS) COMPLIANCE	FCC Part 15 (B) for Class B devices
AC INPUT CONNECTIONS:	Male AC inlet connector Type "IEC 320-C14" Detachable AC power cord with: - Female connector Type "IEC 320-C13" on one end to mate with AC power inlet connector on the power supply - Male, 2 pole 3 Wire grounding (3 prong) plug Type"NEMA5-15P" on the other end for connection to the AC outlet
DC OUTPUT CONNECTIONS:	RED (+) and BLACK (-) terminals with tubular hole and set screw. Hole diameter 0.2 ", (5 mm). Includes a pair of copper terminal lugs for crimping to output wires to the load
INPUT SIDE FUSE: (5 mm x 20 mm, glass ferrule, delayed action)	For 120 VAC input: Rating - 250 V, 8 A, Manufacturer: Littelfuse, Model 218008 For 230 VAC input: Rating - 250 V, 4 A Manufacturer: Littelfuse, Model 218004
DIMENSIONS, MM (W x D x H)	185 x 212 x 61
DIMENSIONS, INCHES (W x D x H)	7.28 x 8.35 x 2.4
WEIGHT, KG	1.5
WEIGHT, LB	3.4

Image: Detailed technical specifications table for the Samlex SEC-1235M power supply, including input/output parameters, protections, dimensions, and weight.

Feature	Specification
Model No.	SEC-1235M (With voltmeter and ammeter)
Input Voltage (Nominal)	120 VAC, 60 Hz (100 VAC to 130 VAC) - factory preset 230 VAC, 50 Hz (200 VAC to 260 VAC) - by internal settings
Input Current	7.5 A at 120 VAC, 60 Hz / 3.5 A at 230 VAC 50/60 Hz
Output Voltage	13.8 VDC
Output Voltage Adjustment	11.5 VDC to 15.5 VDC with internal potentiometer
Output Current, Continuous	30 A
Current Limit	35 A, constant current limiting, auto recovery
No Load Current Draw	120 mA at 120 VAC
Ripple	50 mV peak to peak
Noise	150 mV peak to peak
Peak Efficiency	85%
Cooling	Temperature controlled fan
Output Indications	Voltmeter and ammeter
Protections	Overload, short circuit, over temperature and over voltage (through PWM controller)

Feature	Specification
Environmental Temperature Range	0 - 40°C
Safety Certification	cUL_{USA}, UL60950-1
EMI (Emissions) Compliance	FCC Part 15 (B) for Class B devices
AC Input Connections	Male AC inlet connector Type "IEC 320-C14" Detachable AC power cord with: - Female connector Type "IEC 320-C13" on one end to mate with AC power inlet connector on the power supply - Male, 2 pole 3 Wire grounding (3 prong) plug Type "NEMA5-15P" on the other end for connection to the AC outlet
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Dimensions, MM (W x D x H)	185 x 212 x 61
Dimensions, Inches (W x D x H)	7.28 x 8.35 x 2.4
Weight, KG	1.5
Weight, LB	3.4

Warranty and Support

Specific warranty information for the Samlex SEC-1235M Desktop 30A Switching Power Supply is typically provided with the product packaging or can be found on the official Samlex America website. For technical support, service, or warranty claims, please refer to the contact information provided by Samlex America or your authorized dealer.
For the most up-to-date information, please visit the Samlex America official website.

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