

SPS-9600/SPS-9602

High Current Switched Mode Power Supply with Remote Sensing & Control

User Manual

1. INTRODUCTION

These 900W switched mode DC regulated output power supplies provide a high current output with constant current limiting protection. They provide a variable output: 1~15VDC for SPS-9600 and 1~30VDC for the SPS-9602. They are designed with a high efficiency Active Power Factor Correction circuit. Remote sensing terminals are provided to compensate for long output cable losses. The output voltage level can be controlled by the front panel or externally via remote control. A remote ON/OFF is also provided.

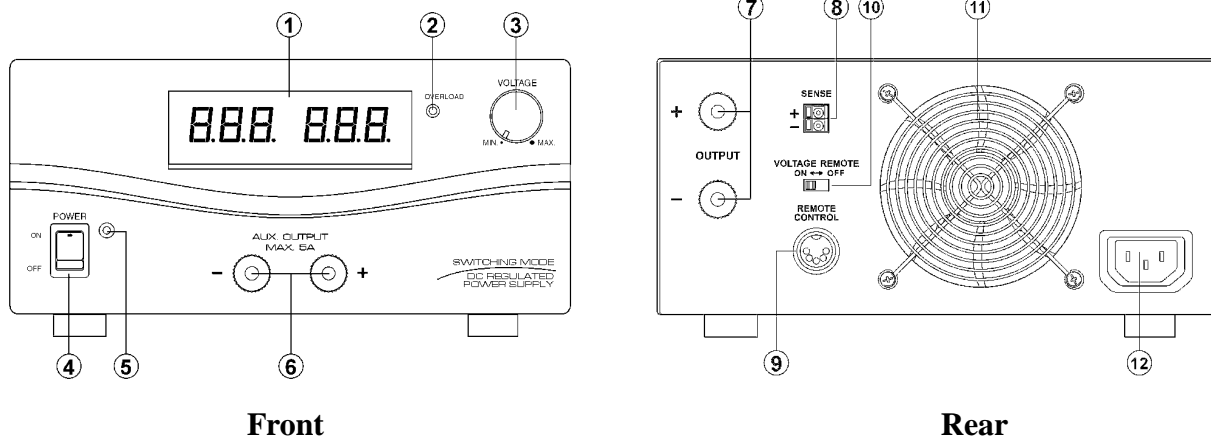
2. PRECAUTIONS

CAUTION! The AC input is internally DOUBLE POLE FUSED

- The power supply is for Indoor Use Only.
- **Never Short the Remote Sensing Terminals**
- **Do not** expose the power supply to direct sun, high humidity or dusty environments.
- **Never** remove the cover of the power supply whilst the AC power is connected.
- **Never** touch the unit when your hands are wet.
- **Never** block the ventilation slots and cooling fan air outlet.
- **Never** attempt to repair the power supply. Refer all servicing to qualified personnel.
- **Never** use the power supply for a load requiring higher current than the maximum rating otherwise it may damage the power supply.
- **Always** place the power supply on a flat surface with sufficient clearance and with dry, dust free surroundings for ventilation.

3. CONTROLS AND INDICATORS

Note: The Main and Auxiliary output terminals are internally connected together.



- (1) Voltage & Ammeter LED Display
- (2) Overload LED Indicator – Overload (Constant Current Limiting) & Short-Circuit Protection
- (3) Output Voltage Control Knob (controls both the main and auxiliary outputs)
- (4) Power ON/OFF Switch
- (5) Power ON/OFF LED
- (6) Auxiliary Output Terminals (Rated 5A for SPS-9600 / Rated 3A for SPS-9602)
- (7) Main Output Terminal (Rated 60A for SPS-9600 / Rated 30A for SPS-9602)
Note: SPS-9600: The Total Rated Current (Aux. + Main) is 60A
SPS-9602: The Total Rated Current (Aux. + Main) is 30A
- (8) Remote Sensing Terminal (**Warning! Never short-circuit the remote sensing terminals**)
- (9) Remote Control Connector
- (10) Remote Control ON/OFF Switch (**Select the OFF position to use the front panel Control**)
- (11) Cooling Fan Air Exhaust
- (12) AC Mains Input Socket (standard IEC 3 pin socket with earth connection)

4. CONNECTION

4.1 The SPS-9600 series has 2 models. Make sure you have purchased the correct one. The models have different output voltage ranges and maximum current as follows:

Model Number	Output Voltage Range	Total Rated Current (Main+Aux)
SPS - 9600	1 ~ 15V	60A
SPS - 9602	1 ~ 30V	30A

4.2 Check the rating label of the power supply and make sure it complies with the AC mains voltage. Connect the power supply to the AC Mains using the power cord provided.

4.3 **REMOTE SENSING** – Take note of all warnings and follow the order of installation exactly.
Warning! Never short the Remote Sensing Terminals.

Connection:

1. First complete the power connections between power supply and your equipment.
2. Check that the power supply's connections are secure.
3. Then complete the connections between Remote Sensing and your equipment.

Warning! CHECK that the Remote Sensing Terminals have the correct polarity!

Dis-connecting:

1. Disconnect the remote sensing connections first.
2. Then disconnect the power connections between the power supply and the equipment.

Fig 3 shows the connections between Remote Sensing, Power output and Equipment.

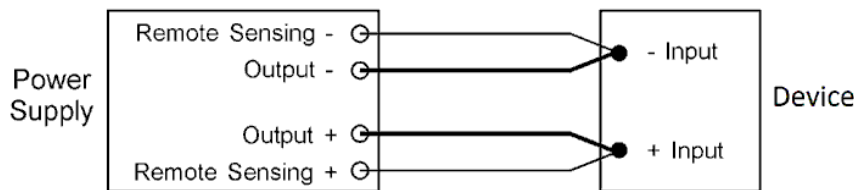


Fig. 3

The remote sensing wire should be AT LEAST 22AWG gauge wire.

4.4 REMOTE CONTROL

There are two methods for the remote control of the voltage using the remote control connector (9). Both methods apply a voltage between 0 and 5 Volts to the control pin 2. One method is to use an external voltage source such as the output from a DAC (Digital to Analogue Converter). The other method is to use the internal +5V DC provided on pin 1 and a 5kΩ potentiometer to provide the 0 to 5 Volts required.

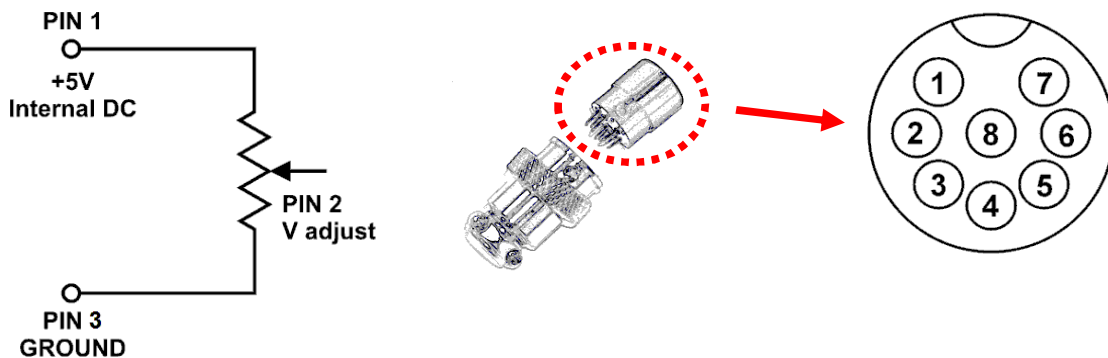


Fig 4. Using one 5k ohm variable resistor or potentiometer to control the output voltage.

NOTE: Switch the Remote Control ON/OFF switch (9), on the rear panel, to the ON position to use the Remote Control option. Switch to the OFF position to use the Voltage Control (3) on the front panel.

Remote Socket Pin Assignment		
PIN	FUNCTIONS	REMARKS
1	Internal DC +5V	Maximum 50mA
2	Voltage Adjust (V)	0 ~ 5V
3	Ground	
4	N.A.	
5	N.A.	
6	N.A.	
7	Output OFF (-)	Open-circuit 5VDC
8	Output OFF (+)	Short-circuit 1.6mA

4.5 REMOTE ON/OFF

The remote on/off can be activated in any mode – Normal or Remote. By default, pins 7 and 8 are open and the output is on. Shorting pins 7 and 8 turns the output off.

5. SPECIFICATIONS

	SPS-9600	SPS-9602
Variable Output Voltage	1 ~ 15V	1 ~ 30V
Total Rated Output Current (Main + Auxiliary Output)	60A	30A
Rated Output Current (Main)	60A	30A
Rated Output Current (Auxiliary)	5A	3A
Ripple and Noise	40mVp-p	
Load Regulation	0.1% + 5mV	
Line Regulation	0.05% + 3mV	
Input Voltage	200~240VAC / 50Hz (or on request)	
Efficiency	>85%	
Dynamic Power Factor Correction	>0.97 at optimal load	
Voltmeter and Ammeter Display	3 digit LED display	
Meter Accuracy	+/-1% + 1 count	
Indicator	Green LED for power on/off indication Red LED for overload/short circuit indication	
Special Feature	Remote Control & Remote Sensing	
Cooling Method	Variable Speed thermal static control fan	
Operating Temperature	0 ~ 40 Degree C	
Protection	Overload (Constant Current Limiting), Short Circuit, OTP (Over Temperature Protection) & OVP (Over Voltage Protection)	
Approvals	CE-EMC: EN 55022 CE-LVD:EN 60950	
Dimensions (WxHxD)	220x110x360mm	
Weight	4.9Kg	