

SIM-9106/9303

High Current Switching Mode Power Supply with C.C., C.V., Remote Control & Sensing User Manual

1. INTRODUCTION

This family of high power remote sensing, remote control, switching mode CC\CV power supply offers unique solution for various loading conditions and appliances.

The remote control functionality makes :

1. output power on/off possible without turning the power on/of switch of the unit
2. adjusting the output voltage and current without turning the control of the unit.

The remote sensing capability is important for load away from the power supply or when load current becomes erratic.

It is ideal for applications that require precise voltage at the point of regulation.

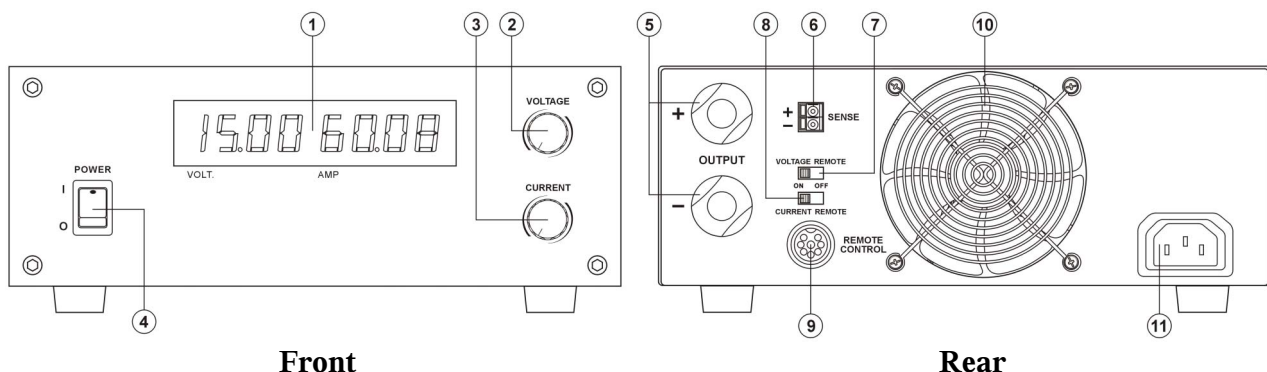
When using it as a normal power supply, the 10-turn potentiometers provide precise output voltage and current control. The 4 digit LED meters will clear indication of automatic cross over of CC and CV mode provide easy read outs.

It is suitable for a wide range of applications such as production testing, laboratory, field test of voltage critical distant load, telecommunication, powering of dc network and etc...

2. PRECAUTIONS CAUTION! : The AC Input is DOUBLE POLE FUSING

- Never Short the Remote Sensing Terminal
- Never use the same ground for voltage remote control and current remote control
- This power supply is for Indoor Use Only.
- Do not expose the power supply to sun, high humid and dusty environment.
- Never remove the metal cover of the power supply while AC power is connected.
- Never touch the unit when your hands are wet.
- Never block the ventilation slots and cooling fan air intake window
- Never attempt to repair the power supply. Incorrect re-assembly may result in a risk of electric shock or fire.
- Never use the power supply for the load requiring higher current than the designed value otherwise it may damage the power supply.
- Place the power supply on a flat surface with sufficient clearance, dry, dust free surroundings for ventilation.

3. CONTROLS AND INDICATORS



- (1) Voltage & Ammeter LED Display with CC\CV Indicator
- (2) Output Voltage Control Knob
- (3) Output Current Control Knob
- (4) Power ON/OFF Switch
- (5) Output Terminal (Rated 60A for SIM-9106 / Rated 30A for SIM-9303)

- (6) Remote Sensing Terminal (Warning! : Never short the remote sensing terminal, Never connect the Remote Sensing Terminal in reverse polarity)
- (7) Voltage Remote Control ON/OFF Switch
- (8) Current Remote Control ON/OFF Switch
- (9) Remote Control Terminal
- (10) Cooling Fan Air Intake Grille
- (11) AC Input Plug

4. CONNECTION

4.1 This series has 2 models. Make sure you have purchased the correct one. They have different output voltage range and current as following:

Model Number	Output Voltage Range	Total Rated Current
SIM - 9106	1 ~ 15V	60A
SIM - 9303	1 ~ 30V	30A

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

Steps 4.3 & 4.4 explain how to use the special features: remote sensing and remote control.

You can use the 2 features at the same time or separately.

Please go to step 4.5 if you do not use the 2 features and make sure both voltage and current remote control ON/OFF switches are in OFF position(rear panel).

4.3 If you do not use the remote control feature, make sure both voltage and current remote control ON/OFF switch is in OFF position(Rear panel).

4.4 Switch on the power supply and the power ON/OFF LED should light up in green. Then, adjust the output voltage to the desired voltage and switch off the power supply.

4.5 Connect the equipment to the power supply. Red (+) is connected to the positive polarity input of the equipment and Black (-) is connected to the negative polarity input of the equipment.

4.6 Switch on the power supply first and the LED Indicator should light up in green.

4.7 Switch on the equipment and the LED Indicator should still remain in green.

4.8 You can now operate the equipment. When an operation is finished, switch off the equipment first and then switch off the power supply.

4.9 When disconnecting the power supply from the unit, disconnect the remote sensing wire first, then disconnect the output cables.

5. **REMOTE SENSING** – Take note of the warning and follow the order of installation.
Warning!:Never short the Remote Sensing Terminal

Connection:

1. First complete the power connections between power supply and equipment.
2. Check and make sure the power connections are secure.
3. Then make connections between Remote Sensing and equipment.

Warning!:Never short the Remote Sensing Terminal

Never connect the Remote Sensing Terminal in reverse polarity

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

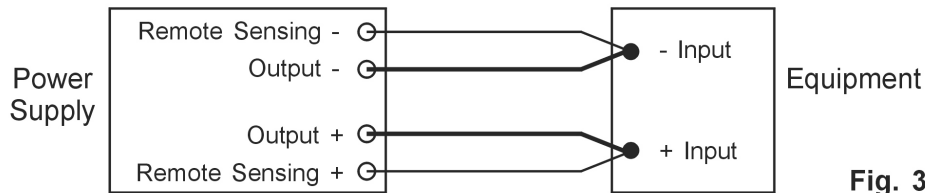


Fig. 3

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

Dis-connection:

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

6. REMOTE CONTROL

You can use the voltage and current remote control at the same time or separately.

Warning!: The voltage remote control and current remote control must NOT common ground.

6.1 VOLTAGE REMOTE CONTROL

Set up the provided remote connector plug

(a) Remove the black portion of the remote control connector plug by removing the screw as Fig 4.

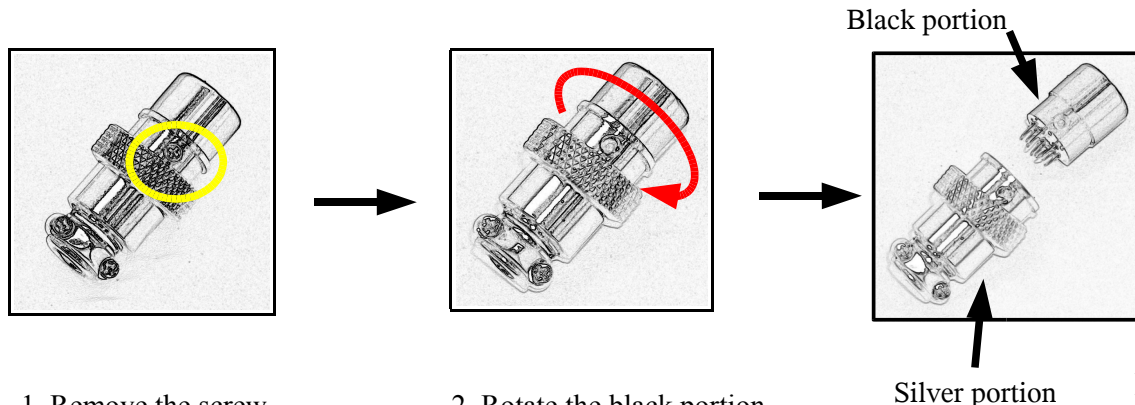


Fig. 4

1. Remove the screw
2. Rotate the black portion

(b) Solder 3 wires(22AWG) to PORT 1, 2 & 3 of black portion as shown in Fig.5.

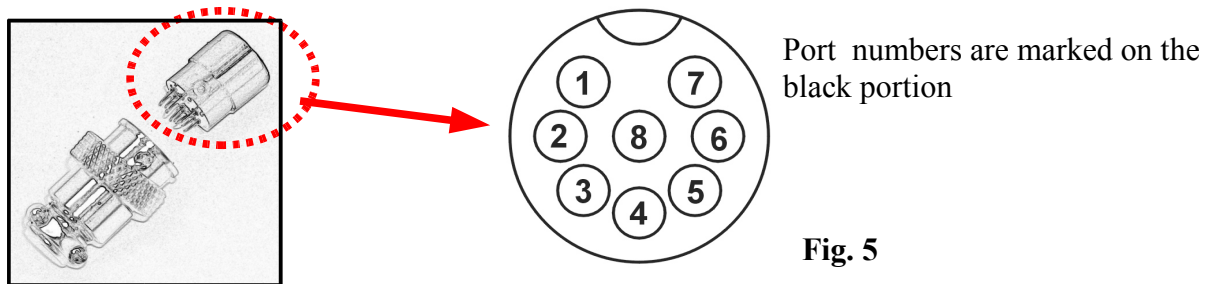


Fig. 5

- (c) Make sure the load is disconnected and the power supply is OFF.
- (d) Plug the remote connector plug into the remote control terminal of the power supply.
- (e) Secure the remote connector plug to the terminal socket by locking connector ring(Fig 6).

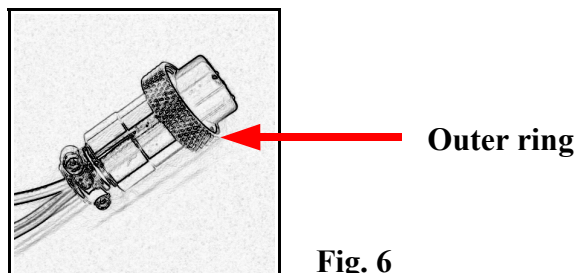


Fig. 6

Then, you can choose either method A or B below to use the remote control feature:

Method A : Using Voltage Source

A variable external voltage source of 0 ~ 5V is fed into the remote control terminal to adjust the output voltage level.

Warning! : Do not input higher than 5V, otherwise the OverVoltage Protection(OVP) will be triggered.

- A**
- (i) Make sure the load is disconnected and the power supply is OFF.
 - (ii) Use ONLY wires from port 2 and 3. Then, connect port 2 to positive polarity of the external voltage source and port 3 to negative polarity of the external voltage source.
 - (iii) Turn the Voltage Remote Control ON/OFF Switch to ON position.
 - (iv) Switch on the power supply.
 - (v) Vary the external input voltage 0 – 5V to check and verify for the full output voltage range of power supply.
 - (vi) Switch off the power supply.

Method B: Using 5kohm Variable Resistor

- B**
- (i) Make sure the load is disconnected and the power supply is OFF.
 - (ii) Prepare a 5kohm variable resistor and use wires from port 1, 2 and 3 as shown in Fig.7.

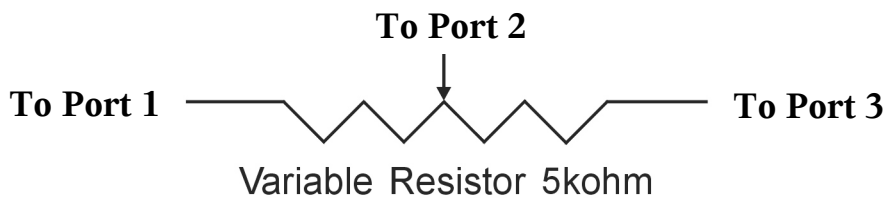


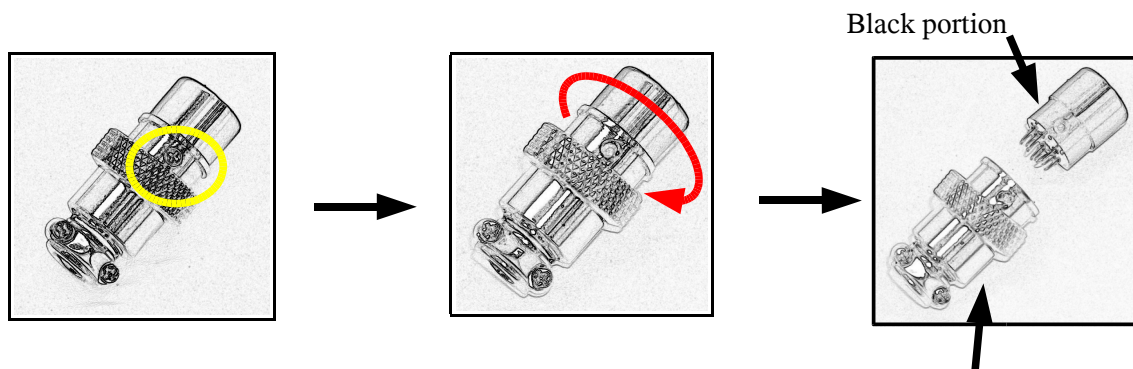
Fig. 7

- (iii) Turn the the Remote Control ON/OFF Switch to ON position.
- (iv) Switch on the power supply.
- (v) Adjust the 5kohm variable resistor from one end to other end to check and verify for the full output voltage range of power supply.
- (vi) Switch off the power supply.

6.2 CURRENT REMOTE CONTROL

- (a)** Using the same connector plug in section 4.4.1.

Remove the black portion of the remote control connector plug by removing the screw as Fig 8.



1. Remove the screw

2. Rotate the black portion

Silver portion

Fig. 8

(b) Solder 3 wires(22AWG) to PORT 4, 5 & 6 of black portion as shown in Fig.9.

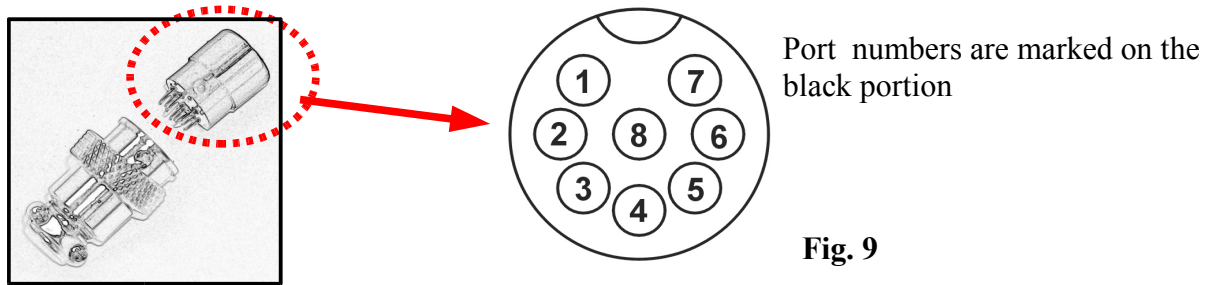


Fig. 9

(c) Make sure the load is disconnected and the power supply is OFF.

(d) Plug the remote connector plug into the remote control terminal of the power supply.

(e) Secure the remote connector plug to the terminal socket by locking connector ring(Fig 10).

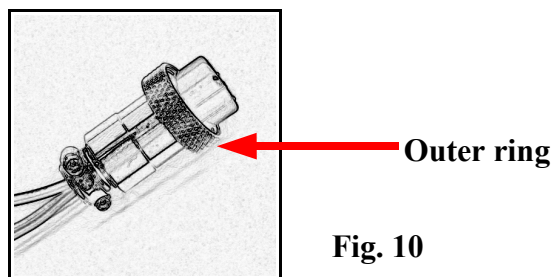


Fig. 10

Then, you can choose either method A or B below to use the remote control feature:

Method A : Using Voltage Source

A variable external voltage source of 0 ~ 2.5V is fed into the remote control terminal to adjust the constant current level.

Warning! : Do not input higher than 2.5V, otherwise it may damage the unit.

- A**
- (i) Make sure the load is disconnected and the power supply is OFF.
 - (ii) Use ONLY wires from port 5 and 6. Then, connect port 5 to positive polarity of the external voltage source and port 6 to negative polarity of the external voltage source.
 - (iii) Turn the Current Remote Control ON/OFF Switch to ON position.
 - (iv) Use a 8AWG Wire to short circuit the main output terminal in the rear panel.
 - (v) Switch on the power supply.
 - (vi) Vary the external input voltage 0 – 2.5V to check and verify for the full output current range of power supply.
 - (vii) Switch off the power supply and disconnect the 8AWG Wire.

Method B: Using 0-5kohm Variable Resistor

- B**
- (i) Make sure the load is disconnected and the power supply is OFF.
 - (ii) Prepare a 5kohm variable resistor and use wires from port 4, 5 and 6 as shown in Fig. 11.

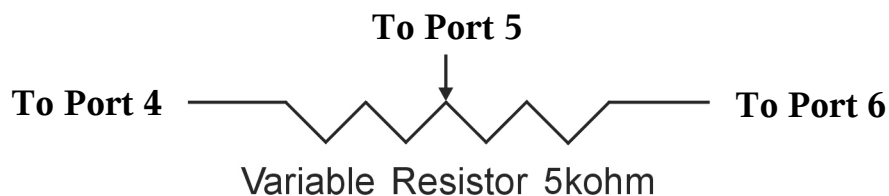


Fig. 11

- (iii) Turn the the Remote Control ON/OFF Switch to ON position.
- (iv) Use a 8AWG Wire to short circuit the main output terminal in the rear panel.
- (v) Switch on the power supply.
- (vi) Adjust the 5kohm variable resistor from one end to other end to check and verify for the full output current range of power supply.
- (vii) Switch off the power supply and disconnect the 8AWG Wire.

6.3 ENABLE AND DISABLE THE OUTPUT

You can use Port 7 and 8 to remote control the OUTPUT ON/OFF.

a) Open Port 7 and 8 if you want to ENABLE the output (by default).

b) Short Port 7 and 8 if you want to DISABLE the output.

7. SPECIFICATIONS

	SIM-9106	SIM-9303
Variable Output Voltage	1 ~ 15V	1 ~ 30V
Total Rated Output Current	60A	30A
Rated Output Current (Main)	60A	30A
Ripple and Noise	50mVp-p	
Load Voltage Regulation(0-100% sense)	0.1% + 5mV	
Load Voltage Regulation(0-100% no sense)	0.1% + 5mV	
Line Voltage Regulation	0.05% + 3mV	
Line Current Regulation	0.1% + 5mA	
Load Current Regulation	0.2% + 5mA	
Input Voltage	100 – 240 VAC	
Efficiency	≥82%	
Dynamic Power Factor Correction	>0.97 at optimal load	
Voltmeter and Ammeter Display	3 digit LED display	
Meter Accuracy	±1% + 1 count	
Indicator	Constant Voltage (C.V.) and Constant Current(C.C.) Indicator	
Special Feature	Remote Control & Remote Sensing	
Cooling Method	Variable Speed thermal static control fan	
Operating Temperature	0 ~ 40 °C	
Protections	Overload(Constant Current Limiting), Short Circuit, Overtemperature and OVP	
Input Fuse	20A (T20AL250V)	
Approvals	CE-EMC: EN 55011 CE-LVD:EN 61010	
Dimension	220 (W) x (H)110 x 360(D) mm	
Weight	5.8Kg	