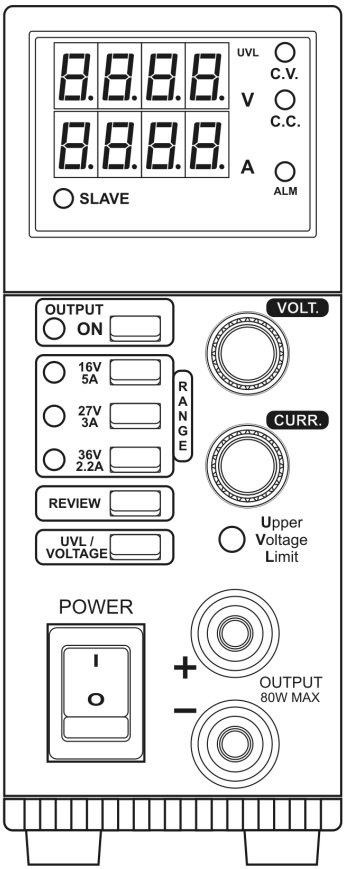
SSP-7080

80W Constant Power Switching Mode Power Supply
with
Master & Slave Remote Sensing

USER MANUAL



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CONTENTS

Keep this manual in a safe place for quick reference at all times.

This manual contains important safety and operation instructions for correct use of the power supply. Read through the manual and pay special attention to the markings and labels of this unit and equipment to be connected.

Pay special attention to these two types of notices used in this manual

WARNING : Failure to observe this warning may cause injury to persons and damage to power supply or connected equipment.

CAUTION : Failure to observe this warning may result in damage to equipment and
Improper functioning of the power supply.

WARNING :

1. Do not use this power supply near water.
2. Do not operate or touch this power supply with wet hands.
3. Do not open the casing of the power supply when it is connected to ac mains.
4. Refer all servicing to qualified service personnel only.
5. Before replacing the AC fuse find out and clear up the cause first.
6. Replace the AC fuse with the same type and rating as the original fuse.

CAUTION :

1. Use a grounded 3 pin AC source .
2. This unit is for indoor use only .
3. Do not operate or place this unit in a humid, dusty, in direct sunlight location or near any heat source.
4. Before plugging into local AC mains, check with the rating label at the back of the unit.
5. Do not block any ventilation openings of the unit.
6. This unit must be used within the specified rating, regular excessive continuous loading may cause damage to the power supply.
7. The gauge size of input power cable must be at least 0.75mmsq and the total length of power cable must not exceed 3m.
8. Input Fuse Recommended: T3AL250V (3A Time-Lag)

Operation environmental condition :

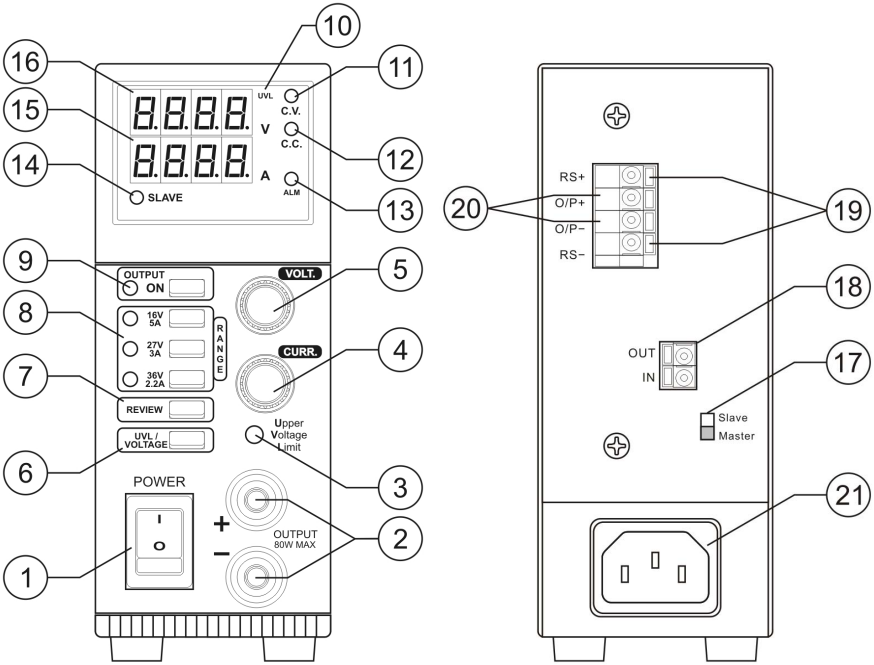
10-80% R.H.
Altitude up to 2000m
Installation category : CAT 2
Pollution degree : 2
Mains supply voltage fluctuation up to ±10% of the specified operating voltage.

Introduction

The 3 selective voltage and current ranges in this constant power switching mode power supply is like having 3 power supplies in one. You can set the current limiting value without any connected load or shorting the output terminal.

The modular design with additional rear output terminals and Master & Slave control allow easy connections of additional Slave units. User preset upper voltage limit to ensure complete protection to voltage sensitive load. Remote sensing and 4 digit LED meters to give precise voltage at the load point.

Front Panel Controls and Indicators



Front Panel Controls and Indicators

1. **Power on off switch**
2. **Front Panel Output Terminal**
3. **Upper Voltage Limit**
   - Upper Voltage Limit adjustment screw
4. **Current Volume**
5. **Voltage Volume**
6. **UVL/VOLTAGE**
   - Push Button to set and view Upper Voltage Limit
7. **REVIEW**
   - Push Button to review the set voltage & current limit for present range
8. **Push Buttons to select V I range & range LED**
9. **Output on-off button**

LED Panel

10. **UVL Upper Voltage Limit Indicator**
11. **C.V. Constant Voltage Indicator**
12. **C.C. Constant Current Indicator**
13. **ALM**
    - Alarm indicates output voltage is either over the set Upper Voltage Limit or power supply is in over temperature protection.
14. **SLAVE indicator power supply in Slave Mode**
15. **4 Digit Ammeter**
16. **4 Digit Voltmeter**

Back Panel Connectors & Switch

17. **Master and Slave Switch**
    - used in "master/slave control" parallel operation in Master/Slave configuration.
    - In normal operation, switch should be set to Master (default).
18. **In /Out** Terminal for Master /Slave operation :
    - Control terminals for use in the Master/Slave control parallel operation mode.
19. **RS+** and **RS -**
    - Remote Sensing Terminal
20. **OUT+** and **OUT -**
    - Alternative Output Terminals
21. **INPUT POWER SOCKET**

Operation Procedure

1. Stand Alone Operation

Check the power supply is set as Stand Alone operation mode with the Master & Slave switch (17) set to Master position. All controls function just like a normal power supply.

Switch on the power supply without any load by pushing (1) and the LED display should light up. There should not be any reading on the voltmeter and the ammeter.

Press the Output On-Off button (9) and its green LED will light up, the voltmeter should show the set output voltage.

Take note of the preset range and its LED, turn the voltage volume to check on the voltmeter reading at the same time.

2. Selection of Voltage and Current Range at (8)

When change to other Voltage and Current range setting (8), take note of the Voltmeter reading changing to zero voltage and LED of Output On-Off button (9) going off.

The output terminal is off automatically when the VI range is changed, this is to safeguard the connected load.

3. PREVIEW button

Press (7) to check the values of VI when output terminal is off.

Press and hold this button will show the output voltage and current limiting values previously set at the selected range even the output terminal is off.

4. Setting the Current Limiting Value

You can set the current limiting value without connecting to the load or shorting the output terminal. Press and hold the **PREVIEW** button (7) and turn the current volume (5) to our desired value.

5. UVL/VOLTAGE button (6) and UVL led (10)

Press UVL/VOLTAGE button to see the default value of Upper Voltage Limit. The led (10) also lights up during this operation.

6. Setting the Upper Voltage Limit UVL value

Press button (6) and insert a small screw driver less than 3mm diameter into (3), slowly turn to clockwise to increase and anti-clockwise to decrease the UVL value .

The UVL is an added protection for voltage sensitive load, only one UVL value can be set for all three ranges. When the output voltage exceeds the set UVL, the output terminal will be off automatically and the ALM (13) led is lit up at the same time.

7. Master & Slave Operation

7.1 Introduction

Two or more units of SSP-7080 can be connected in parallel to increase output current to the sum of connected power supplies. In this mode of operation, the designated Master power supply will control all the settings in voltage and current of the Slave power supplies.

7.2 Preparation and connecting the Control Terminals (19)

Make sure all the power supplies are set to the same UVL by(6) and the same VI Range by (8).
Set the voltage and current limit of all the Slave units to maximum values.
Switch off all power supplies for connection.
Set the switch (17) to Slave position of all the Slave power supplies.
Connect the Master & Slave control circuit as shown in Fig 8.1 and Fig 8.2

7.3 Output terminal connection and operation

You can either use the Output Terminals at the front (2) or at the back (20) to connect to the load as shown in Fig 8.3 depending on your application condition and requirement.
For proper performance, all power cables should be of the same thickness and length.
Double check the maximum voltage and current setting of the Slave units.
Switch on the Master unit first and set to desired voltage, then switch on the Slave units.

The Slave indicator LED (14) should light up in the Slave units as a confirmation of correct connections.
All the output voltages and currents of the Slave units are now controlled by the Master Unit.

Remarks :

When the output current in the Master & Slave connection drops to zero ampere, the output voltage will no longer be controlled by the Master unit.
Make sure to keep a minimum current flowing that is at least several percent of the rated current at all times. This can be done by supplying a small removable load.

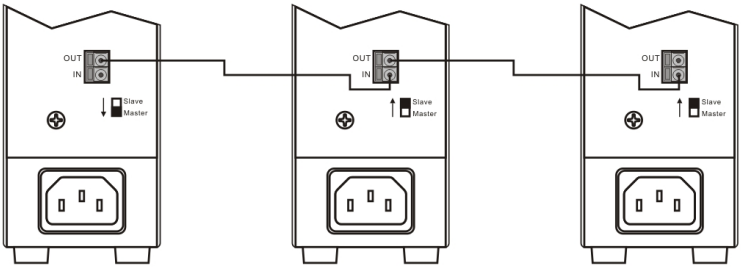


Fig. 8.1

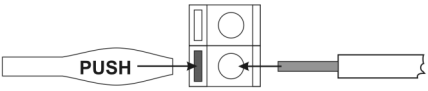
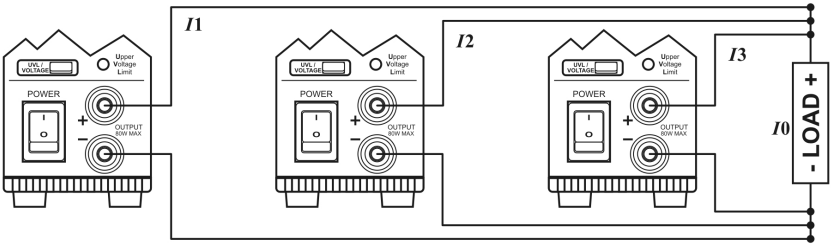


Fig. 8.2



$I0 = I1 + I2 + I3$

Fig. 8.3

8. Remote Sensing Operation

When the output current is large or long connection to load , there is a voltage drop across the connecting cable such that the voltage at load point is less than at the output terminal of the power supply.

By making an extra connection from the remote sensing terminal (19) to the load point (Attention do not reverse polarity) will make up for the load line voltage drop and make the voltage at the load point and output terminal the same. (Make sure to disconnect the wiring to remote sensing first before disconnecting the main output connection).

9. Trouble Shooting

PROBLEM	INDICATIONS	POSSIBLE CAUSES	SUGGESTED SOLUTIONS
Power supply not working	panel display, LED Indicators not on	1. AC power input not connected 2. AC input fuse blown	check AC power connection, contact local agent.
No DC output power	voltage meter zero indication. ALM (13) Alarm led on ALM (13) Alarm led on CC (12) led on	A. output on off button not on . B. UVL (10) protection triggered C. OTP protection triggered D. output short circuit	A. check output LED (9) is on or not, push (9) to on. B. check UVL set voltage by pushing (6), re-set UVL to applicable limit, see section 5 and 6 . C. check vent holes at top and bottom is clear, ambient temperature too high . D. check and undo short circuit of output connection.
Voltage meter read outs grossly inaccurate	actual output voltage is grossly different from the meter read outs	A. volt meter shows not the output voltage. B. possible misalignment in voltmeter calibration	A. check the LED indicator of UVL on the top right hand side of the Volt meter, if it lights up then the volt meter only shows the set UVL value. Push (6) to go back to output voltage. B. contact local agent or send back to local agent for recalibration
Ampere meter reading grossly inaccurate	In CV mode , the actual current measured is grossly different from the Amp meter reading	possible misalignment in calibration .	contact local agent or send back to local gent for recalibration
The activated (auto-cross over) current limiting value is different from the preset cc value	All indicators and display are normal , only CC mode has the problem	For stand alone unit, Master & Slave Switch (17) in wrong position (Slave). Wrong setting or connection in Master & Slave or set up procedure.	Check the Master & Slave switch (17) correct position. Use stand alone mode to check power supply separately without any connection to slave units. Follow the procedure in section 8 carefully and make sure there is only one Master unit.

10. Specifications

Input AC Voltage Range	90 - 264Vac	
No load Input Current at 230Vac	≤0.1A	
Full Load Input Current at 230Vac	≤0.5A	
AC Input Frequency	47 - 63Hz~	
Efficiency	≥75%	
Power Factor	≥0.9	
Constant Voltage and Current Range Selection:		
0-16V / 5A selection I	0 - 16.4V	0 - 5.1A
0-27V / 3A selection II	0 - 27.6V	0 - 3.1A
0-36V / 2.2A selection III	0 - 36.8V	0 - 2.3A
Constant Voltage Characteristics :		
Load Regulation (0-100%)	≤20mV	
Line Regulation (±10%)	≤4mV	
Ripple & Noise (peak to peak)	≤30mV	
Constant Current Characteristics :		
Load Regulation (0-100%)	≤10mA	
Line Regulation (±10%)	≤10mA	
Meter Accuracy :		
Voltmeter Accuracy	±1% +2 counts	
Ammeter Accuracy	±1% +2 counts	
Protection	Adjustable Upper Voltage Limit, Current Limiting Protection, Short Circuit, Overload, Over Temperature Protection	
Output Terminals	Front and Back of housing	
Additional Function	Remote Sensing	
CE Approvals	LVD : EN 61010 , EMC : EN 55011	
Cooling	Natural Convection	
Dimensions in mm (WxHxD)	53.5 x 127 x 330mm / 2 x 5 x 13inch	
Weight in Kg	Approx. 1.9Kgs / 4.2Lbs	