multicomp PRO

80W AUTO RANGER POWER SUPPLY

MP710082

Table of Contents

1 PRECAUTIONS and WARNING

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

1.1 WARNING:

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

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.

1.2 CAUTION:

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

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 over loading may cause damage to the power supply.
7. The gauge size of input power cable must be at least 0.75 mm².
   And the total length of power cable must not exceed 3m.
8. Input Fuse Recommended: T2AL250V (Time-Lag from 2A)

1.3 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.

2 ACCESSORIES

AC power cord

Output cable with right angle safety plug and crocodile clip

Master / Slave connection cable

Terminator for Master/ Slave connection

3 INTRODUCTION

This 80W Constant Power lab. grade power supply has an automatic range of 0.5-36V and 0-5A.

The max. limits of current & voltage are calculated by Imax x Vmax = 80W. So at 36V its maximum current is 80W/ 36V = 2.2A , the max. voltage at 5A = 80W/ 5 = 16V. Its operation voltage and current spectrum is larger than 3 conventional power supplies of the same power rating.

Adjustable upper voltage and current limits are necessary functions to protect sensitive devices against the wide swing of output current or voltage available.

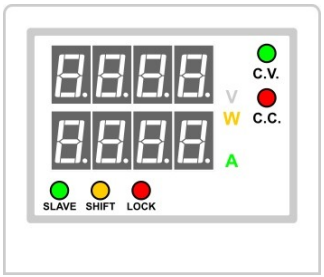
3 user presets of V&I for frequently used output settings.

Master & Slave configuration with either MP710082 or MP710083 as Master for parallel connection of up to 30 Units of either MP710082 or MP710083 as slave units.

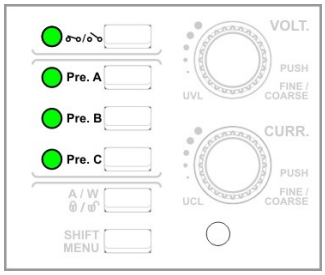
When MP710083 is set as Master, all the special functions e.g. remote program, dc ramp wave form generator and ethernet connectivity are operational with the increase of current output from MP710082 slave units.

4 INDICATORS AND CONTROLS

4.1 Display and Indications



C.V.	**Constant Voltage Mode** Indicates the Power Supply is working in Constant Voltage mode. The output voltage of power supply is kept constant at the set voltage in this mode. The power supply remains in CV as long as the loading current is lower than the set current limit otherwise power supply will cross over to CC mode.
C.C.	**Constant Current Mode** Indicates the Power Supply is working in Constant Current mode. When the loading is higher than the set current limit of the set voltage in CV mode , the Constant Current Mode kicks in.The output current of power supply is kept constant at the set current level provided that the loading is sufficiently large to draw current equal to or larger than set current, otherwise power supply will cross over to CV mode.
W	**Watt-meter** Indicates the lower row of the 4 digit LED is read as watt-meter. The value is showing output power in Watt.
A	**Amp-meter** Indicates the lower row of the 4 digit LED is Amp-meter. The value is showing output Ampere..
SLAVE	**SLAVE** Indicates the Power Supply is in slave mode and controlled by the master unit. The voltage and current setting of slave units are controlled by the master unit. The buttons and knobs of slave units are locked. The master unit controls all units. (Details refer to Master & Slave section)
SHIFT	**SHIFT** Indicates the Shift key is pressed and the second function in orange imprints of buttons & knobs will be activated Quick press on Shift key to activate setting of UVL, UCL, W.
LOCK	**LOCK** Indicates the panel of power supply is being locked. This LED will being ON when press 🔒 / 🔓 button. Then the output is ON.



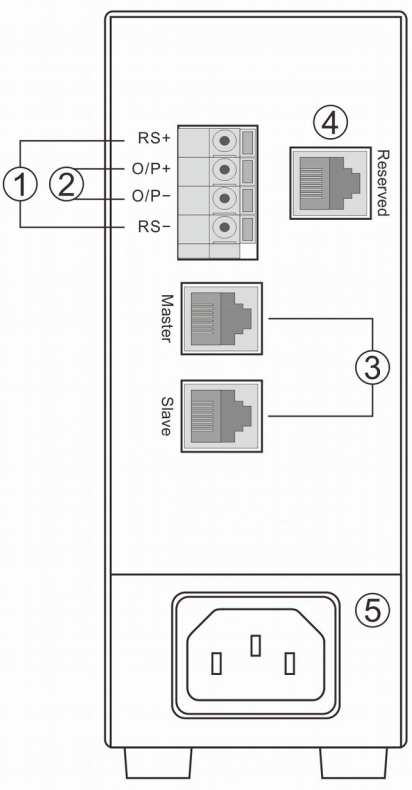
	Output ON/OFF Indicates output ON / OFF status
Pre. A	**Preset A** Indicates Preset A is selected, the output voltage and current are fixed as in preset A settings.
Pre. B	**Preset B** Indicate Preset B is selected, the output voltage and current are fixed as in preset B settings.
Pre. C	**Preset C** Indicate Preset C is selected, the output voltage and current are fixed as in preset C settings.

4.2 Control Buttons and Knobs

The power supply has 2 knobs and 6 buttons.

VOLT. PUSH FINE / COARSE UVL	Voltage adjust knob
CURR. PUSH FINE / COARSE UCL	Current adjust knob
	Output ON / OFF button
Pre. A	Preset A selection button
Pre. B	Preset B selection button
Pre. C	Preset C selection button
A / W	LOCK / UNLOCK button ***OR AS*** Ampere meter / Watt meter selection button
SHIFT MENU	Menu button to enter into setting mode for Master/ Slave. Return to Factory Reset & Power Up Output On/Off. ***OR AS*** SHIFT mode button to set A/W, UVL, UCL

4.3 Back Panel



① Remote sensing terminals

② DC output terminal which has same power rating as the front output

③ Master / Slave connection

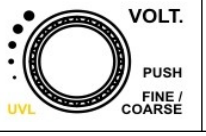
④ Factory reserved

⑤ AC Input socket

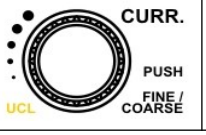
5 OPERATION PROCEDURES

5.1 Adjusting Output Voltage and Current

Adjust Output Voltage:

	Rotate Voltage Knob clockwise to INCREASE output voltage Rotate Voltage Knob anti-clockwise to REDUCE output voltage Press Voltage knob to switch between COARSE and FINE adjustment. When press the knob the digit will be high-lighted for tuning.

Adjust Output Current Limiting

	Rotate Current Knob clockwise to increase output voltage Rotate Current Knob anti-clockwise to reduce output voltage Press Current knob to switch between COARSE and FINE adjustment. When press the knob the digit will be high-lighted for tuning.

5.2 Setting the Upper Voltage Limit and theUpper Current Limit

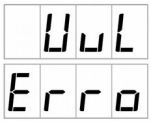
Upper Voltage Limit (UVL)

This safety feature prevents test piece expose to damaging high voltage due to changes in load or current setting. Also the warning [UuL] comes up with the set voltage value to remind user that the newly adjusted output voltage has exceeded the UVL.

Adjusting the Upper Voltage Limit:

- The second function of Voltage Knob is for UVL adjustment.
- Press SHIFT MENU and SHIFT LED will ON.
- Then press Voltage Knob. The display will show as follow;

- Rotate Voltage Knob to adjust the **UVL** value.
- Press SHIFT MENU to confirm setting. If the new UVL value is lower than set output voltage, it will show UVL Error alert.



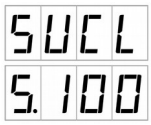
Just reduce the set output voltage to lower than the UVL value. Then the UVL Error will be OFF.

Upper Current Limit (UCL)

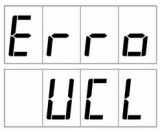
The Upper Current Limit is feature to let user to set maximum value for current adjustment. This feature can help to prevent unintentional setting for maximum output current to damage test piece.
When increasing output current and hit the UCL threshold limit the display will show you alert as following

Adjusting the Upper Current Limit:

- The second function of Current Knob is for UCL adjustment.
- Press SHIFT MENU and see SHIFT LED ON
- Then press Current Knob. The display will show as following;



- Rotate Current Knob to adjust the value.
- Press SHIFT MENU to confirm setting. If the new UCL value is lower than set output current, it will show UCL Error alert.



Just reduce the set output current to lower than the UCL value. Then the UCL Error will OFF.

5.3 Select and adjust 3 preset value of Voltage and Current

This power supply has 3 preset of Voltage and Current value for quick recall to use.
To selection preset ,just press Pre1/Pre2/Pre3.
To adjust value of preset
After the preset is selected, use Voltage and Current knob to adjust value for that preset program.
The new setting will be saved automatically.
The values can be reset to factory default in menu. (See Factory reset section)

5.4 Output ON/OFF (include power up ON/OFF setting)

The power supply has feature to switch output ON/OFF by pressing button.
The LED will be ON when the output is ON. The display will show the actual output voltage & current or watt.

Setting Power Up with Output ON or OFF status

The default setting is output OFF when power supply is powered up.
The output on/off status can be set to keep the last status just before the power supply is switched off..

Steps to change setting;

Step 1 - Press and hold SHIFT MENU to enter menu mode
Step 2 - Rotate Volt. Knob to select PU menu. The display shows PU SET
Step 3 - Press Volt. Knob to enter PU setting. The display show PU OFF
Step 4 - Rotate Curr. Knob to change setting to PU LAST. The output is set to as same as last status.
Step 5 - Press Volt. Knob to confirm.
Step 6 - Press SHIFT MENU to exit menu

5.5 Lock/ Unlock of front panel

In case the front panel is locked, only the A/W button is functional. All other buttons and knobs are locked.
Press A/W to LOCK the front panel and the LOCK LED is on.
Press again to UNLOCK it and LOCK LED is off.

5.6 Watt-meter and Amp-meter selection

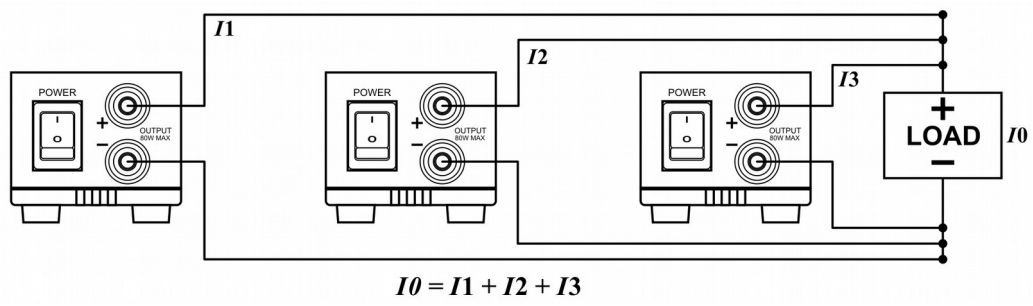
The lower row 4 digit display can use as Watt-meter or Amp-meter.
- Press SHIFT MENU and check SHIFT LED ON
- Press A/W to switch to Watt-meter
Press SHIFT MENU and check SHIFT LED ON
Press A/W to switch back to Amp-meter

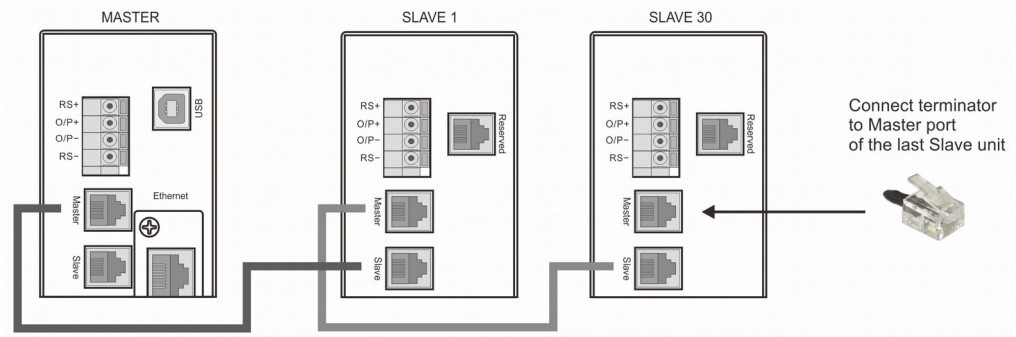
Steps for Changing the address ID;

Step 1 – Press and hold SHIFT MENU button to enter setting menu.
Step 2 – Rotate VOLT. knob to select address menu. The display shows Add SET
Step 3 – Press VOLT. knob to enter address menu.
Step 4 – Rotate CURR knob to change address ID.
Step 5 – Press VOLT. knob to confirm.
Step 6 – Press SHIFT MENU to exit menu.

5.7 Master/Slave configuration

The power supply can be configured for Master/Slave connection either with the same model or in combination of both models.
Every slave unit should be assigned an unique Address ID from 1-30.
The Master unit must be assigned an Address ID=0 (factory default)
The load current is shared equally by all units and the Master's output voltage is the output voltage of all units.
All the functions of the Master supply can be utilized.
Example: one MP710083 as Master and 3 MP710082 Slave units, the max. combined output current is 20 Amp and functions of MP710083 are usable.





Wiring of Master & Slave Units

1. Make sure that the output cables from each power supply must be of the same length and thickness. You can use power distribution block from car audio shop to tidy up the wiring.
2. Always double check if the terminator plug is installed at the last slave unit.
3. Look for the SLAVE GREEN LED which lights up to indicate that Master & Slave connection is correct.
4. The full Master & Slave operation begins when output cables are connected to the load and the Master output is switched to ON.
5. The current reading on the Master Unit X the total number of units connected = Total Current to the Load.

5.8 Remote Sensing Operation

When the output current is large or long cable to load, there is a voltage drop across the connecting cable such that the voltage at the load point is less than at the output terminal of the power supply. By connecting the Remote Sense terminals to the load point, the voltage reading at the output display and the voltage at the load point will be the same.

Connecting remote sensing
1. Connect the power supply output terminals to the load (use the front or rear O/P terminals)
2. Connect the Remote Sensing terminals to the Load
3. Connect RS+ to the Positive (+) connection at the load
4. Connect RS- to the Negative (-) connection at the load

5.9 Factory reset

The Factory reset feature is reset the Preset program, UVL, UCL to factory default setting.

Steps for Factory reset;

Step 1 – Press and hold SHIFT MENU button to enter setting menu.

Step 2 – Rotate VOLT. knob to select factory reset menu. The display shows FACS SEt

Step 3 – Press VOLT. knob to enter address menu. The display shows FACS no

Step 4 – Rotate CURR knob to change from no to YES

Step 5 – Press CURR. knob to reset unit.

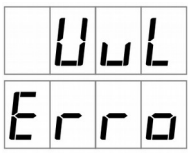
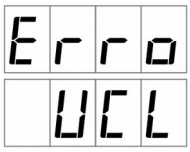
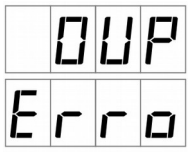
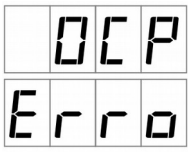
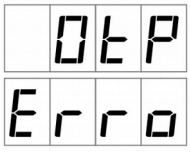
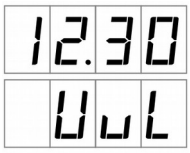
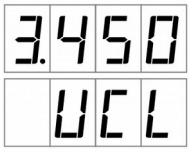
The power will reset immediately.

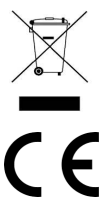
6 SPECIFICATIONS

Models	MP710082
Input Voltage Range	100 – 240VAC
No Load Input Current at 230VAC	≤150mA
Full Load Input Current at 230VAC	≤500mA
AC input Frequency	50 – 60 Hz~
Efficiency	≥78%
Power Factor	≥0.9
Constant Voltage and Current Range Selection:	
0.5-36V / 0-5A	Auto range with maximum output power 80W (V x A ≤80W)
Constant Voltage Characteristics:	
Adjust Resolution	10mV
Load Regulation (10 – 90%)	≤30mV
Line Regulation (±10%)	≤4mV
Ripple & Noise (peak-peak)	≤35mA
Constant Current Characteristics:	
Adjust Resolution	10mA
Load Regulation (10 – 90%)	≤10mA
Line Regulation (±10%)	≤10mA
Meter Accuracy	
Voltage Meter Accuracy	±(0.5% +5counts)
Current Meter Accuracy	±(0.5% +5counts)
User adjustable upper voltage & current limit	Yes
Number of frequently used V & I presets	3
Remote Sensing	Yes
Protection	Tracking Over Voltage Protection, Current Limiting Protection, Short Circuit, Overload, Over Temperature, Upper Voltage Limit, Upper Current Limit.
Additional Function	Master/Slave Control
Cooling Method	Natural Convection
Dimensions (WxHxD)	53.5 x 127 x 330mm 2 x 5 x 13 inch
Weight	Approx. 1.9kgs 4.2lbs

- All values are based on the Standard ambient Temperature 25°C and Pressure 0.1Mpa.
- SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

7 TROUBLE SHOOTING

Error Message	Description	Resolve
	UVL (Upper Voltage Limit) setting error. This error message indicates that you try to set a value of UCL which is less than the output current set value. e.g. Set Output Voltage is 15V. Set UVL to 12V, this error message comes out.	Solution 1 - Rotate Volt knob clockwise. Both UVL and Output will be set to new UVL setting 12V as in the example. Solution 2 - Reset Unit by Off &On Power Switch same result as Solution 1.
	UCL (Upper Current Limit) setting error. This error message indicate that you try to set a value of UCL which is less than the output current set value. e.g. Output Current is set to 3A. Then you try to set UCL to 2A.	Solution 1 - Rotate Volt knob clockwise.Both UCL and Output will be set to new UCL setting 12V as in the example. Solution 2 - Reset Unit by Off &On Power Switch same result as Solution 1.
	OuP (Output Over Voltage Protection error) This error message indicates that the detected voltage at output terminal is higher than the set voltage.	Step 1: Switch off Power supply. Step 2: Disconnect load. Step 3: Switch on Power supply. (If this error show again, please contact the shop for inspection.)
	Output Over Current Protection error. This error message indicates that the detected output current is higher than the set current.	Step 1: Switch off Power supply. Step 2: disconnect load. Step 3: Switch on Power supply. (If this error show again, please contact the shop for inspection.)
	System Over Temperature Protection error. This error message indicates that the detected the system internal temperature is too higher.	Step 1: Switch off Power supply. Step 2: disconnect load. Step 3: wait for 30 minutes to cool down the power supply Step 4: Switch on power supply. (If this error show again, please contact the shop for inspection.)
Warning	**Message**	
	You cannot increase your voltage setting as you have reached the Upper Voltage Limit. Reset and increase the Upper Voltage Limit or decrease your output voltage setting.	
	You cannot increase your current setting as you have reached the Upper Current Limit. Reset and increase the Upper Current Limit or decrease your output current setting.	



INFORMATION ON WASTE DISPOSAL FOR CONSUMERS OF ELECTRICAL & ELECTRONIC EQUIPMENT. When this product has reached the end of its life it must be treated as Waste Electrical & Electronics Equipment (WEEE). Any WEEE marked products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used. Contact your local authority for details of recycling schemes in your area.

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LS12 2QQ