

HCS-USB Series PC Interface Software

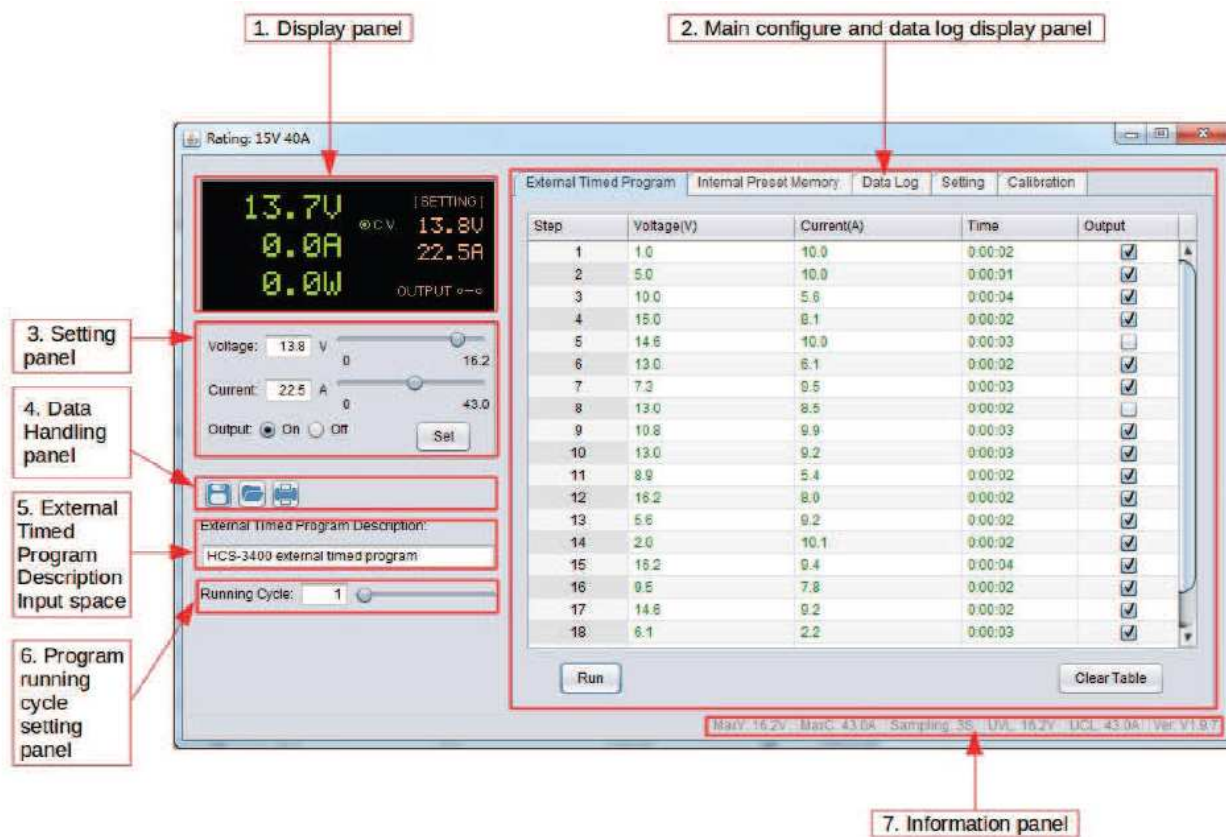
Supports: Windows XP/Vista/7/8/10 (32bit/64bit)

Driver: Silicon Lab CP210x USB driver

To execute the program, run: <CDROM Drive>:\pccs\pccs.bat

NOTE: For convenience, copy the files on the CDROM to the hard drive and create a shortcut.

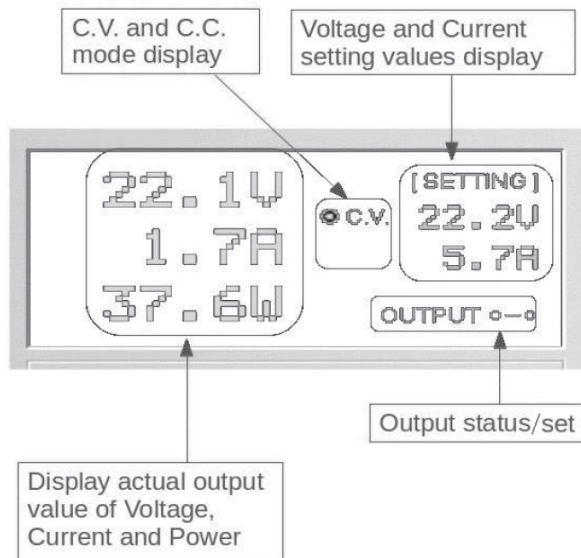
A. Main Display



The main software interface is divided into 7 panels.

1. Display panel – used to display real-time information from the power supply.
2. Main configuration and data log display panel – used to set the programmed sequence and display logged results.
3. Voltage and Current setting panel – used to set the V and C output values and turn the output On/Off manually.
4. Data handling panel – used to Save, Load and Print data.
5. External Timed Program Description – use to enter a title for the programmed sequence.
6. Running cycle setting panel – use this to set the running cycle for the External Timed Program.
7. Information panel – used to display Maximum voltage/current, sample time, upper voltage/current limits and the software version.

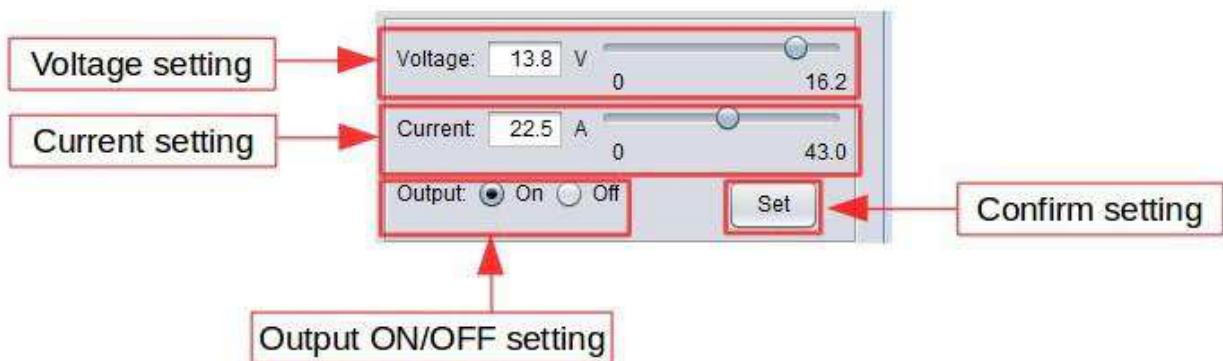
B. Display Panel



The display panel shows the following information...

- Output Voltage
- Output Current
- Output Power
- Output On/Off status (click to change)
- Constant Voltage (C.V.) or Constant Current (C.C.) operation
- Set values for Voltage and Current

C. Setting Panel



To set the voltage and current, adjust the slide-bars (using the mouse or left and right cursor keys) or enter the values numerically. To turn the output on or off, click the appropriate button. When ready, click the 'Set' button to transmit the settings to the power supply. The output can also be toggled On/Off by clicking the 'Output Status' switch contact symbol on the Display Panel (see B above).

D. External Timed Program Tab

Step	Voltage(V)	Current(A)	Time	Output
1	1.0	10.0	0:00:02	<input checked="" type="checkbox"/>
2	5.0	10.0	0:00:01	<input checked="" type="checkbox"/>
3	10.0	5.0	0:00:04	<input checked="" type="checkbox"/>
4	15.0	8.1	0:00:02	<input checked="" type="checkbox"/>
5	14.6	10.0	0:00:03	<input type="checkbox"/>
6	13.0	8.1	0:00:02	<input checked="" type="checkbox"/>
7	7.3	9.5	0:00:03	<input checked="" type="checkbox"/>
8	13.0	8.5	0:00:02	<input type="checkbox"/>
9	10.8	8.9	0:00:03	<input checked="" type="checkbox"/>
10	13.0	9.2	0:00:03	<input checked="" type="checkbox"/>
11	8.9	5.4	0:00:02	<input checked="" type="checkbox"/>
12	16.2	8.0	0:00:02	<input checked="" type="checkbox"/>
13	5.6	9.2	0:00:02	<input checked="" type="checkbox"/>
14	2.0	10.1	0:00:02	<input checked="" type="checkbox"/>
15	16.2	0.4	0:00:04	<input checked="" type="checkbox"/>
16	9.5	7.8	0:00:02	<input checked="" type="checkbox"/>
17	14.6	9.2	0:00:02	<input checked="" type="checkbox"/>
18	6.1	2.2	0:00:03	<input checked="" type="checkbox"/>

The External Timed Program is controlled by the PC. The PC monitors the time duration and changes the voltage and current settings of the power supply according to the data entered.

Select 'External Timed Program' tab to view the 20 step Program Table.

- Double click on the cell that you would like to set the value. For example, Step 2 Voltage.
- Slide the bar to set the value.
- Repeat for Current




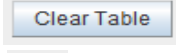


Step	Voltage	Current	Time	Output
1	10.0	1.00	0:00:15	<input checked="" type="checkbox"/>
2	20.0	0.00	0:00:00	<input checked="" type="checkbox"/>
3	0.0	0.00	0:00:00	<input checked="" type="checkbox"/>

- The time duration for the step can also be set by double clicking the Time cell. The time range is between 0 and 9hours 59 minutes 59 seconds. Click to select the Hours, Minutes or Seconds element and then the up/down buttons to change the setting or the value may be entered numerically. If set to 0:00:00, the step will be skipped.

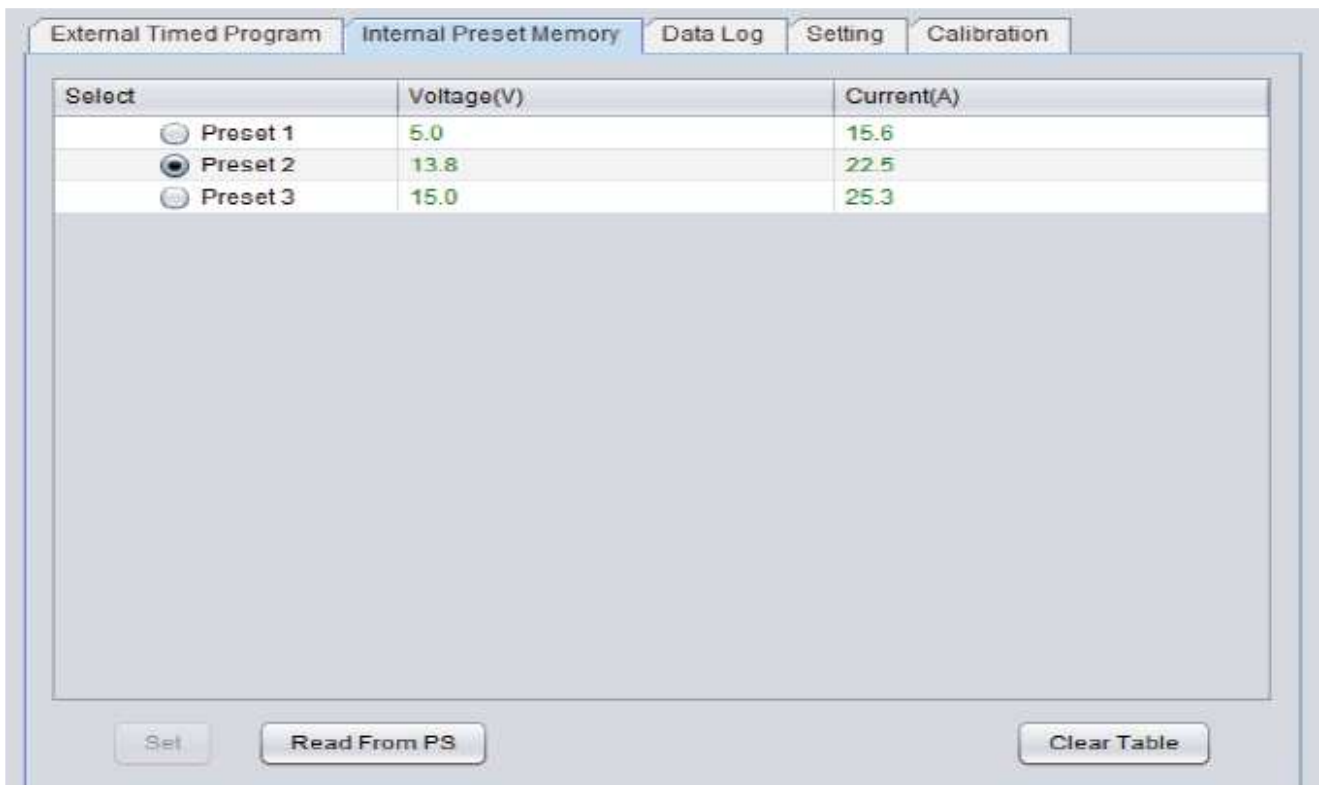
Step	Time	Out
1	0:00:05	<input checked="" type="checkbox"/>
2	9:59:59	<input checked="" type="checkbox"/>
3	0:00:03	<input checked="" type="checkbox"/>
4	0:00:00	<input type="checkbox"/>

- The Output may be turned on or off by clicking the box on the right-hand-side.
- Select running cycle between 0-999. You can use the slide bar to select the value or directly input the value numerically in the box. An input of zero will run the program repeatedly until it is halted manually.


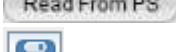

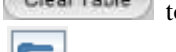


Running Cycle:

- Click  to start running the cycle.
- Click  to stop the program at any step.
- Click  and enter a suitable filename to save the Timed Program as a CSV file. A description, in the box provided, may also be entered prior to saving the file.
- Click  to clear the Timed Program.
- Click  to load a previously saved Program. Note, the retrieved data will be in red if it exceeds the preset upper-limits of voltage or current.
- Click  to print the Timed Program table.

E. Internal Preset Memory Tab



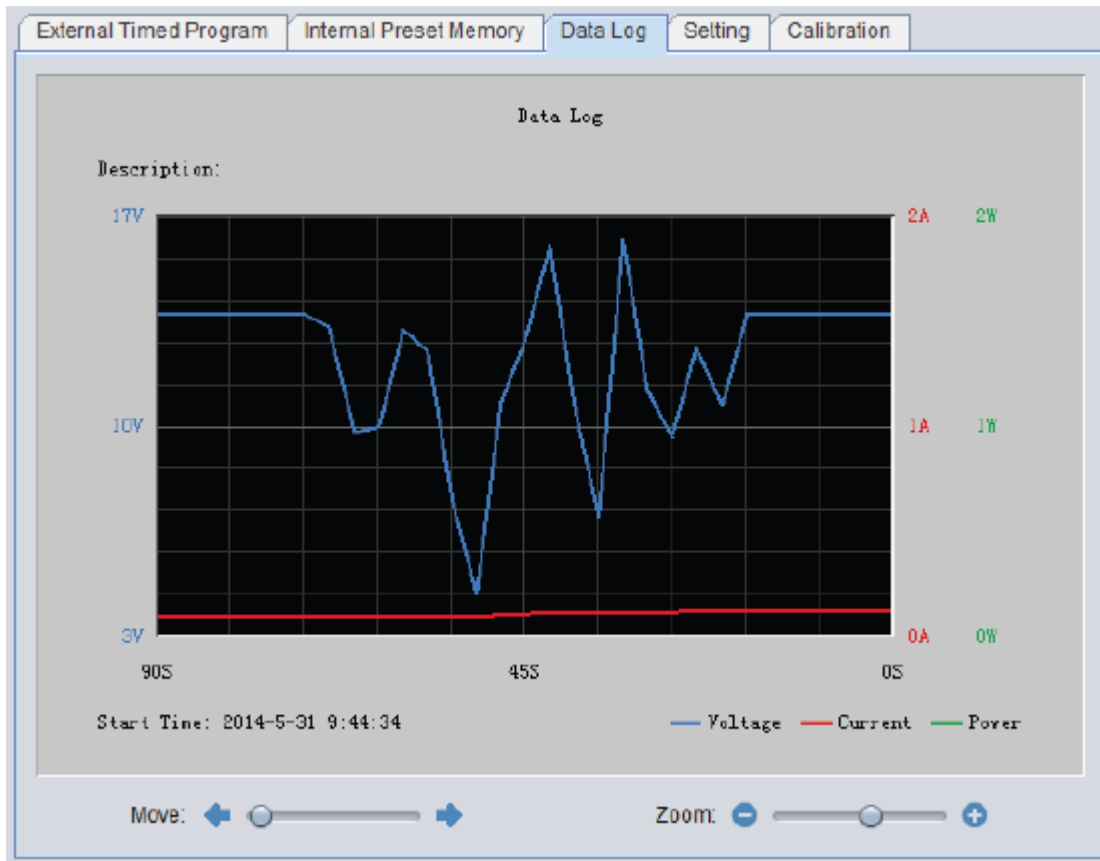
The power supply's internal preset values may be adjusted and selected by the PC under the 'Internal Preset Memory' tab. Enter Voltage and Current settings by double clicking on the table entry and adjust the value as previously.

- Click  button to download the preset values to the power supply.
- Click  to get the preset values from the power supply.
- Click  and enter a suitable filename to save the Presets as a CSV file.
- Click  to clear the Preset entries ready for new data entry.
- Click  to load a previously saved Preset file. Note, the retrieved data will be in red if it exceeds the preset upper-limits of voltage or current.
- Click  to print the Presets table.

Click on the Select Preset 1, 2 or 3 button to set the power supply to the corresponding voltage and current.




F. Data Log Tab

Data Log window

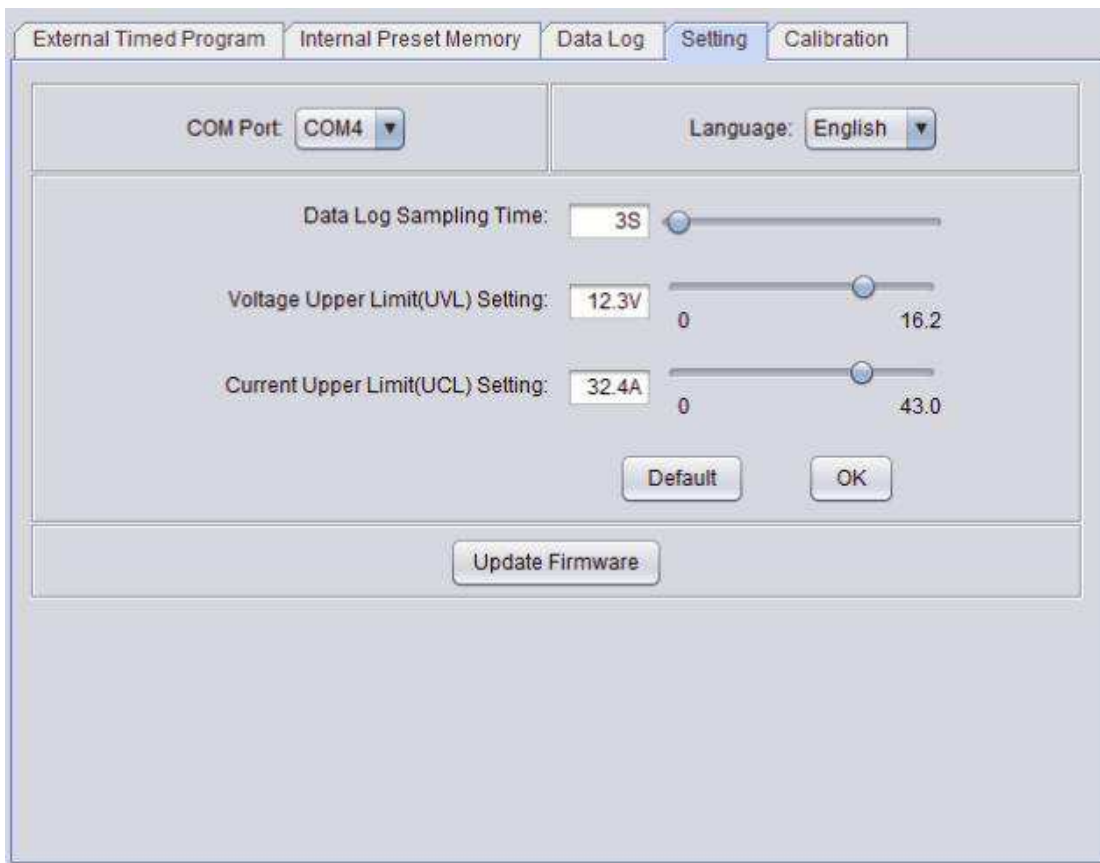


The data log window is used to display the output Voltage, Current and Power against time in a graphical readout. The display may be moved left and right by adjusting the 'Move' slide bar. The display may be zoomed in and out by adjusting the 'Zoom' slide bar.

Any data collected may be saved in CSV format for later analysis. Files may be read directly into Excel.


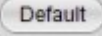
- Click  to save Data log to CSV file.
- Click  to open and load data from previously saved file for analysis.
- Click  to print the graphical display window.

H. Setting Tab



In the 'Setting' tab, a number of parameters may be adjusted.

1. Selection of the language for the program.
2. Selection of the COM Port for the power supply under external control.
3. Adjustment of the sampling time for data logging.
4. Adjustment of the output voltage upper limit (UVL) value to safeguard sensitive equipment.
5. Adjustment of the output current upper limit (UCL) value to safeguard sensitive equipment.

- Click  button to accept the new settings.
- Click  button to restore all values to the default setting.

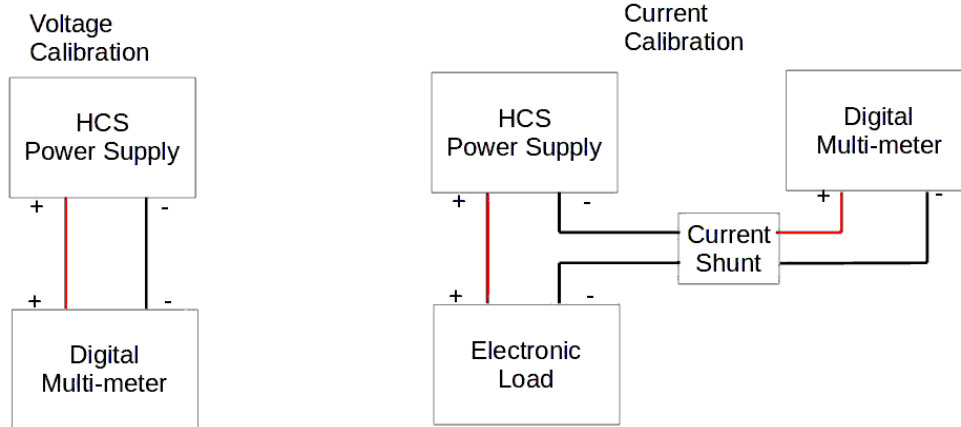
6. Update the power supply's firmware (firmware version 3.1 and above).

I. Power Supply Calibration (firmware version 3.1 and above)

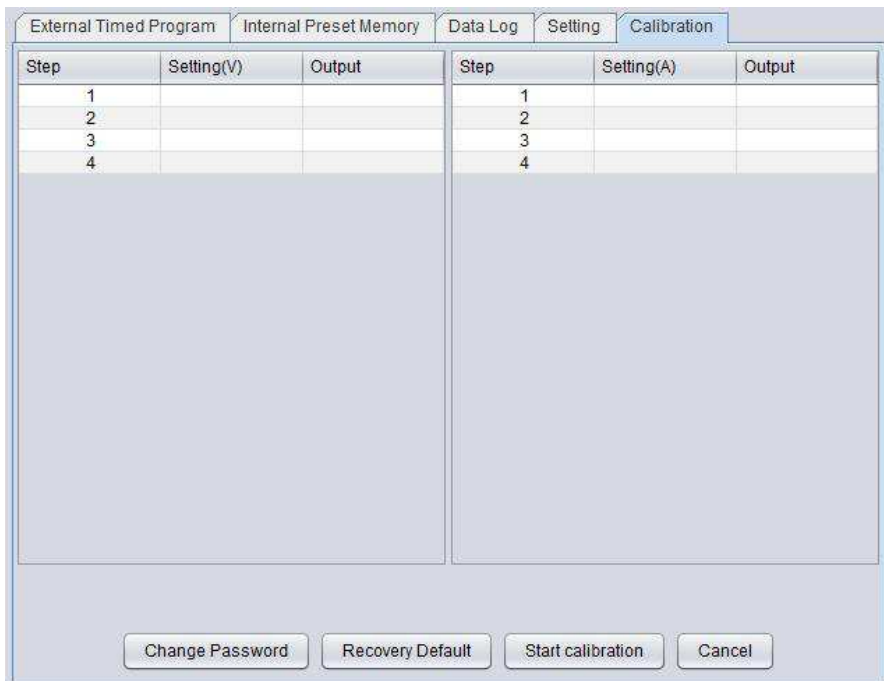
*** WARNING: IT IS HIGHLY RECOMMENDED THAT THE CALIBRATION PROCEDURE IS PERFORMED BY EXPERIENCED TECHNICAL PERSONAL.**

The HCS power supply can be calibrated by using Manson PC control software. A Digital Multi-meter (DMM) and a DC Electronic Load are required for calibration.

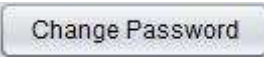
Please connect as shown below for Voltage and Current Calibration:

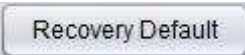


Select the 'Calibration' tab...

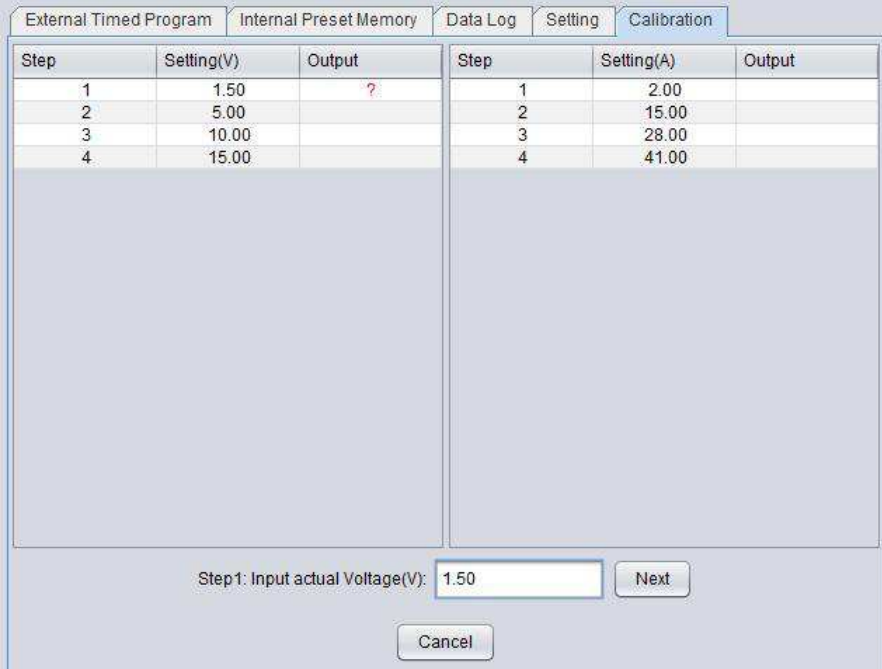


A password must be entered; the default password is 'password'.



After login, you can change the password by clicking  .

The default factory shipped calibration can be recovered by clicking on the  button.

Click  to run the calibration process.

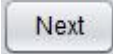


Step	Setting(V)	Output	Step	Setting(A)	Output
1	1.50	?	1	2.00	
2	5.00		2	15.00	
3	10.00		3	28.00	
4	15.00		4	41.00	

Step 1: Input actual Voltage(V):  

There are total eight steps to the calibration procedure, four steps for Voltage and four steps for Current. Follow all these steps in sequence to complete the calibration process.

Voltage calibration is first. **DO NOT CONNECT ANY LOAD** during Voltage calibration. As shown in the above figure, the power supply will automatically set the output voltage for each step. Measure the actual output by using the Digital

multimeter (DMM) and enter the actual Voltage, then click  to continue to the next step.

After the Voltage calibration, the Current calibration will start. **CONNECT THE ELECTRONIC LOAD** as shown for the current calibration. The calibration steps are similar to the voltage calibration.

Click  to terminate calibration at anytime.