

SIRIUS MODULE COMBINER

User Manual

Version 1.1; Release Date: February 2020



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(BS-EE, MS-EEE)

1. PACKAGE CONTENTS:

Please check the package contents carefully.



1. Rack
2. Sirius Module Combiner
3. Sirius Module 3550WH,48Vx4
4. RJ11 Cable
5. USB A-B Cable
6. 12V Jack Cable

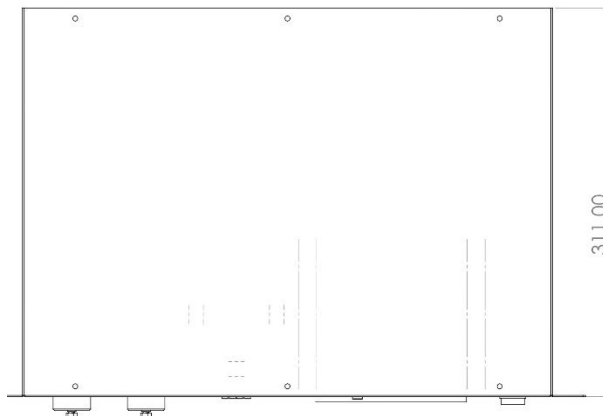
Sirius Module Combiner– User Manual

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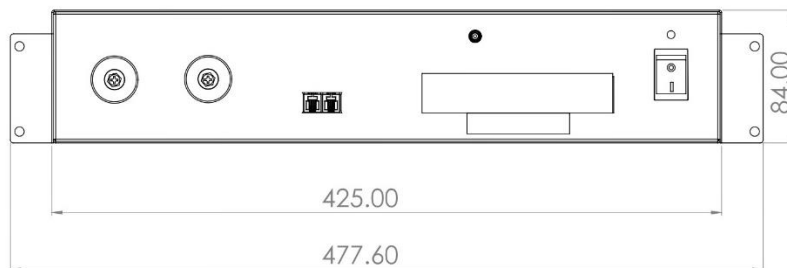
2. Product Mechanical Appearance:



Width	477.60 mm
Depth	311.00 mm
Height	84.00 mm



Top View



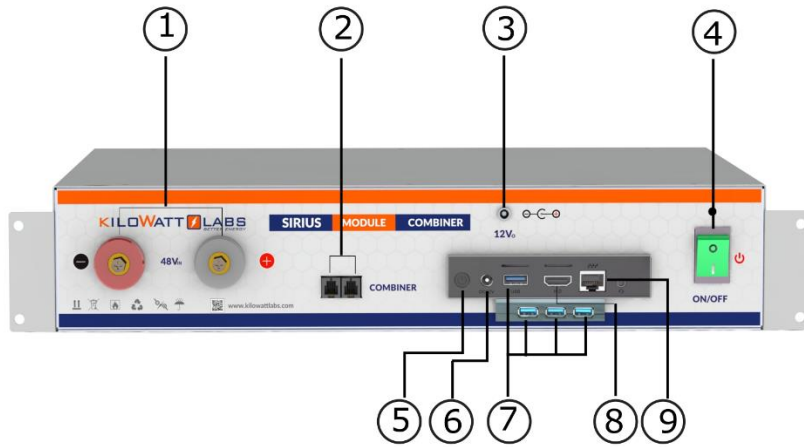
Front View

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3. PRODUCT DESCRIPTION:



Object	Mark	Description
1	48 V terminals	48V DC Input (36V to 75V Range)
2	Aux Combiner	Module Combiner Plug (RJ11)
3	12 V _o	12V DC output to power the controller
4	Switch Button	Switch ON/OFF the Module Combiner
5	Power	Power ON the controller
6	DC 12V	Input from 12V _o
7	USB Port	USB external devices
8	HDMI Connector	Display Interface for HDMI Screen
9	Ethernet Port	External Communication Port

1) 48V Terminals:

F12 terminals are used to power the Module Combiner using the Sirius Module. There are positive and negative cables in the jumper cable set. The **red** one is positive (+), the **black** one is negative (-).



Note:

Never connect the red cable to the negative terminal of the Module.

2) Combiner:

Module Combiner plug is used to daisy chain all Modules connected in parallel or in series.

3) 12Vo:

12Vo is used to power the controller. Do not use this to power anything other than the Module Combiner.

4) Switch Button:

Switch button is used to power ON/OFF the Module Combiner.

5) Power Button:

Power button is used to power ON the controller of the Module Combiner. Hold power button for 3 to 4 seconds to power the controller.

6) DC 12V:

DC 12V is used to take power from 12Vo.

7) USB Port:

USB Port is used for electronic devices interfacing. Module Combiner has only 1 USB port, if you want to connect more than 1 electronic devices (ex. Mouse and Keyboard at the same time), then use USB Hub.

8) HDMI Connector:

Use HDMI Screen to serve as a display panel for the Module Combiner. Any HDMI Panel will work.

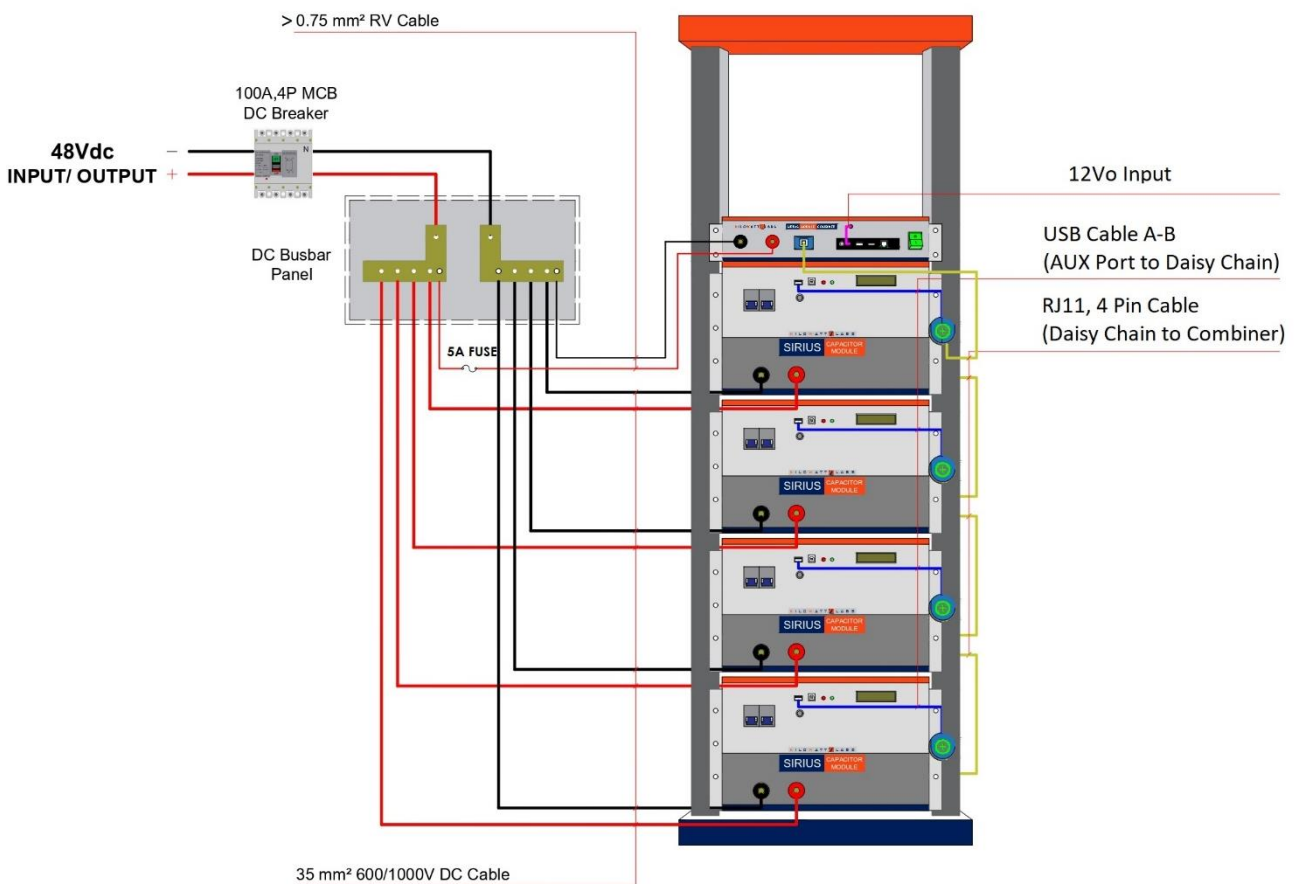
9) Ethernet Port:

Ethernet Port is used to connect the device to a wired network. If you want to connect Sirius Module with Internet then use the Ethernet Port.

4. INSTALLATION:

Please carefully follow the installation instructions:

1. Unpack all Modules and the Module Combiner and mount them in a rack. Tighten all Modules and the Module Combiner in a rack.
2. Connect all Modules in parallel. See the connections in the diagram illustrated below.
3. Switch ON all Modules by turning ON the Circuit breakers. Please refer to section 5 (Operation Procedures) in the user Manual.
4. Turn ON the Module Combiner by turning ON the switch button and click/hold Power Button for about 3 to 4 seconds or until Intel is displayed on the screen.

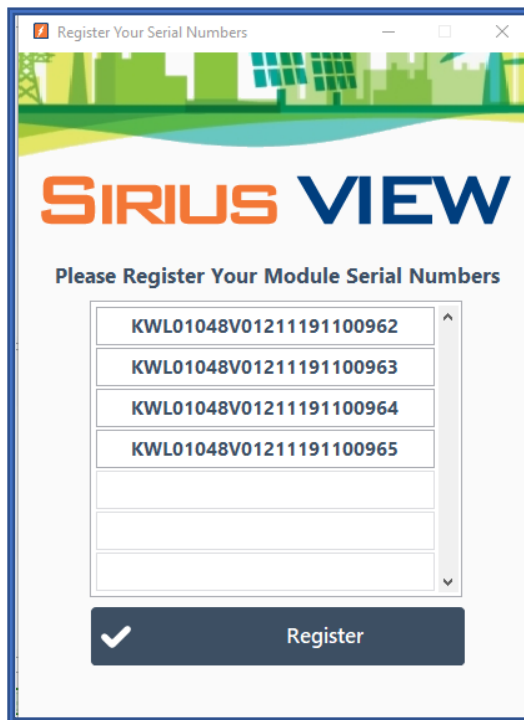


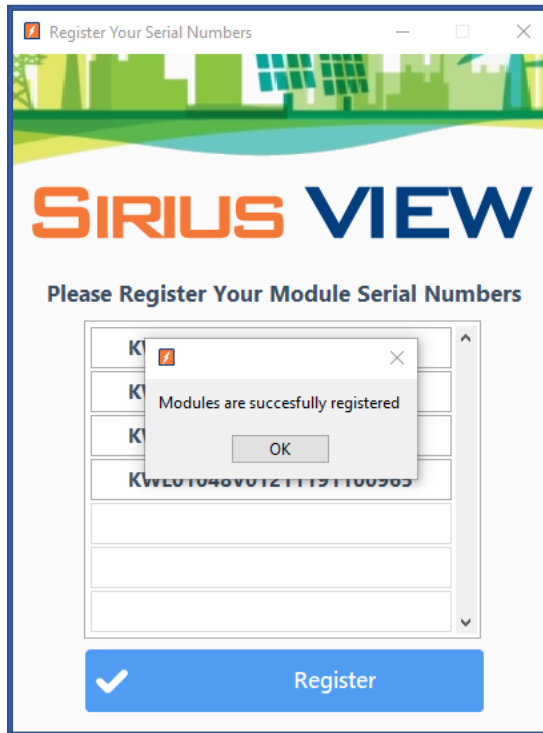
5. Double click on SIRIUS VIEW Monitoring Application to execute it. A Log-in screen will appear as illustrated below.

6. Enter the serial number of all Modules and click on Register button as shown below.

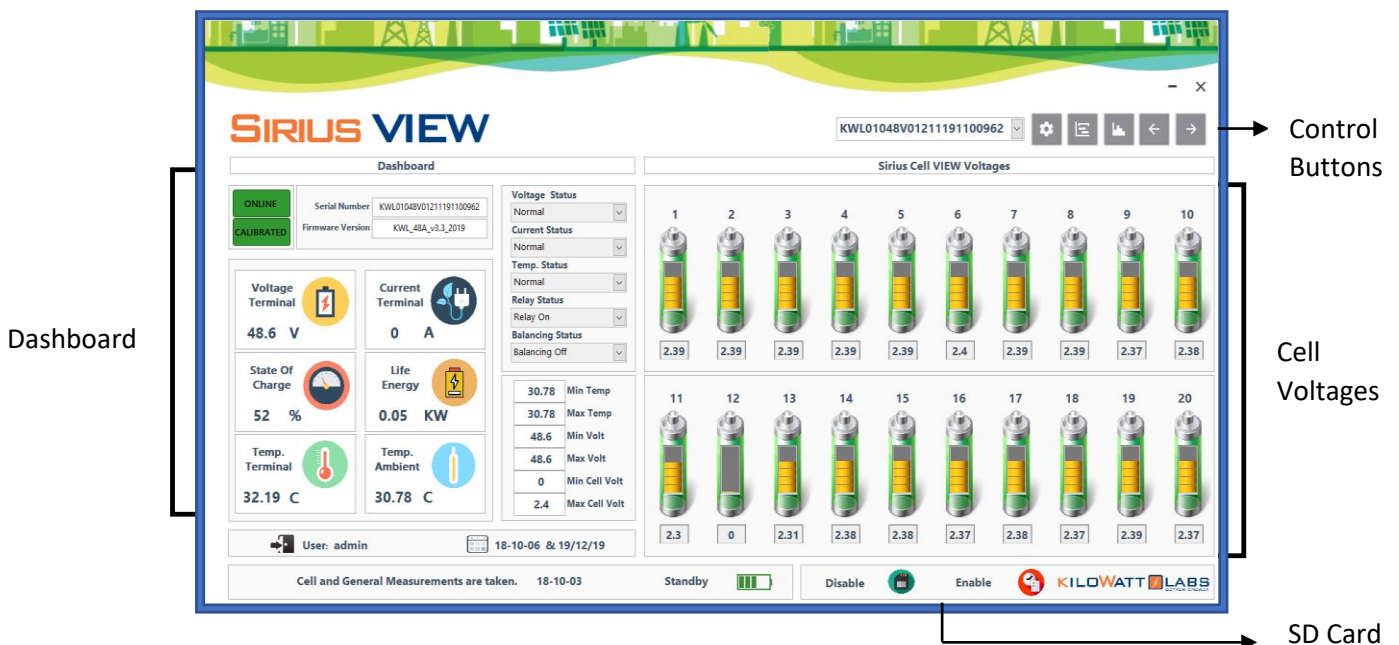


Note: User should enter serial numbers of Modules on rack. This should be done only one time. At execution, application will remember the previous entered serial numbers and user will only need to press register button.





7. Wait till the SIRIUS VIEW gets all the Module details. It takes 2 seconds to get one Module data, so the duration of obtaining data is based on size of Module array on rack.
8. Once all data is obtained, you will see SIRIUS VIEW Screen as shown below.

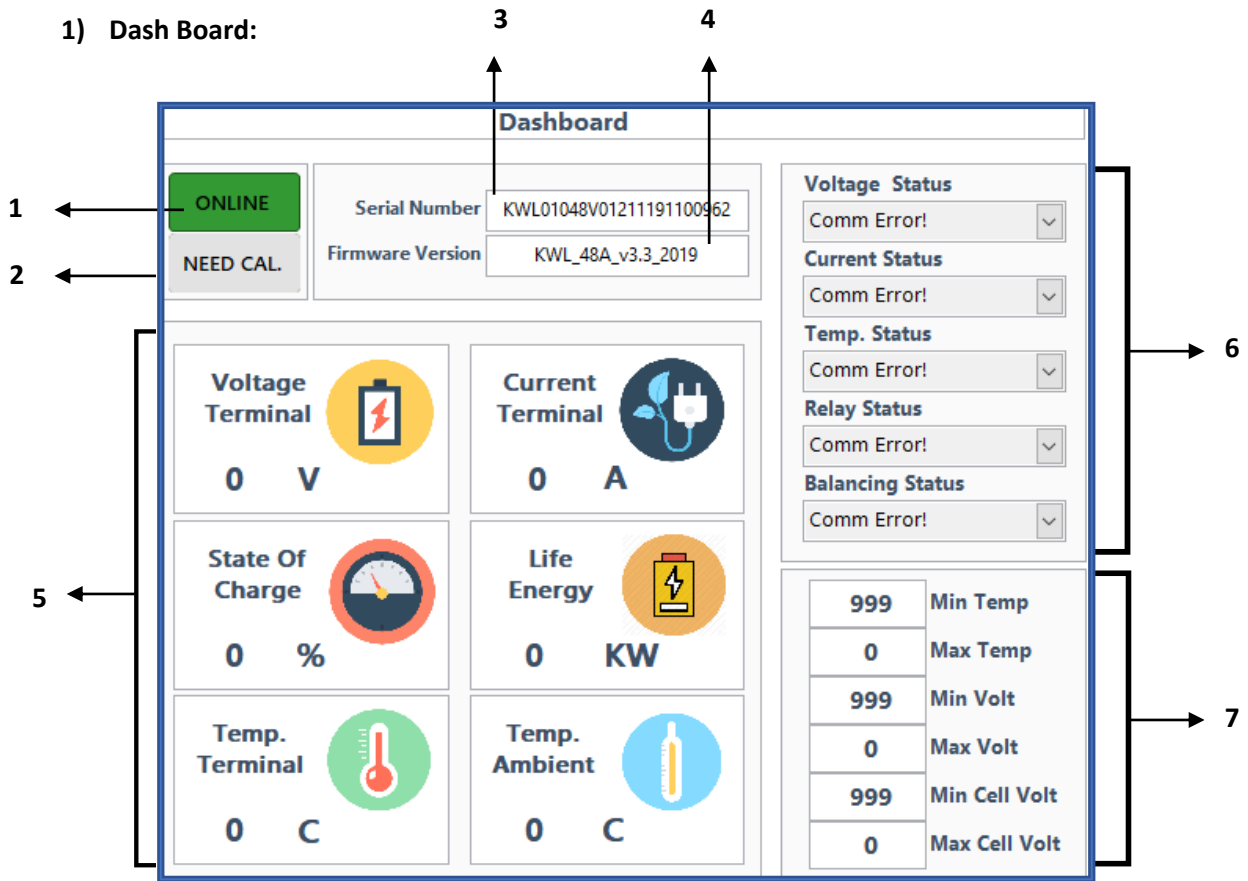


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1) Dash Board:



Number	Feature	Description
1	ONLINE/OFFLINE	Communication Status
2	NEED CALIBRATION	It informs the user about the status of parameter calibration. Calibration: when all parameters are calibrated. NEED CAL.: When all parameters are not calibrated.
3	Serial Number	Serial number of Module
4	Firmware Version	Firmware version of Module

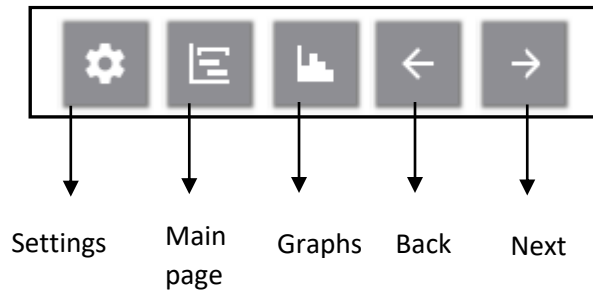
5	Module Parameter Values	Real time measurement of parameters
6	Alarm Status	Status of parameters alarm
7	Statistical Measurement	Maximum and minimum value of parameters

2) Cell Voltages:

This page shows the voltages of the cell no. 1 to cell no. 20 of one Module. If you want to see the cell voltages of the other Modules, select the serial number of Modules from the drop-down menu.



3) Control Buttons:



- **Settings Button:**

By clicking on setting button, the below page will appear as shown below:

Module Serial Number	Parallel Mode	Terminal	SOC%	Current(A)	Voltage(V)	Current Limit (A)	Status
KWL01048V01211191100962	OFF	OFF	51.00	0.00	48.44	125	Standby
KWL01048V01211191100963	OFF	OFF	51.00	0.00	48.44	125	Standby
KWL01048V01211191100964	OFF	OFF	51.00	0.00	48.44	125	Standby
KWL01048V01211191100965	OFF	OFF	51.00	0.00	48.45	125	Standby

→ **Control Panel:**

1. From Control panel, you can Enable/disable parallel balancing by clicking the respective buttons.

Note: If there is less than 1V difference between all Modules, then no need to Enable parallel balancing.

2. If the difference between all Modules is more than 1V, set Current limit and click on Set, then click on Parallel Balancing.

When parallel balancing is enabled, the algorithm starts balancing two Modules having the lowest SOC of all Modules. When the two Modules get balanced, it will look for the third Module having higher SOC than the two Modules and will start balancing them. This process continues until all Modules get balanced, after that the parallel balancing is disabled automatically.

3. If you want to turn ON or turn OFF all Modules at the same time, click on Sync Terminal ON or Sync Terminal OFF respectively.

→ **Parallel Balancing:**

This page shows the status of all Modules like Balancing status, Terminals status, SOC, Voltage, Current and Current limit.

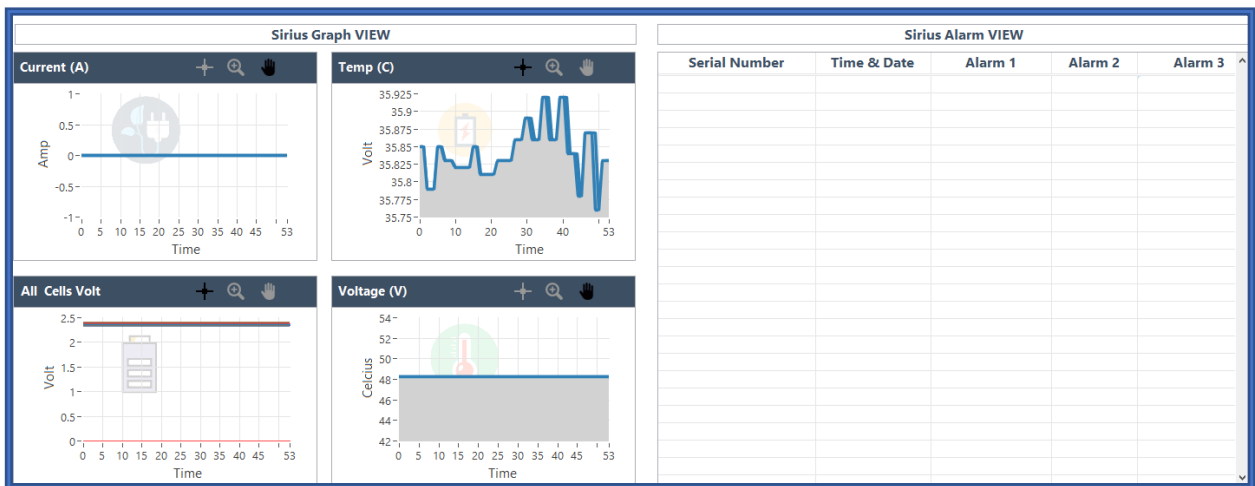
- **Main Page Button:**

Clicking on this button will take you back to the Main page.

- **Graphs:**

By clicking on this button, you will see the following screen.

This page shows the Graphs of Current(A), Temperature(C), All Cells Voltages and Module Voltage of selected Module from drop-down list. You can also see Sirius Alarms to the left side of the Screen.



4) SD Card:

You cannot Enable/Disable or read SD Card from Daisy Chain Monitoring Application. You can Enable/Disable or read SD card only from SIRIUS VIEW Monitoring Application.