



Instructions for Inverter Monitoring Software

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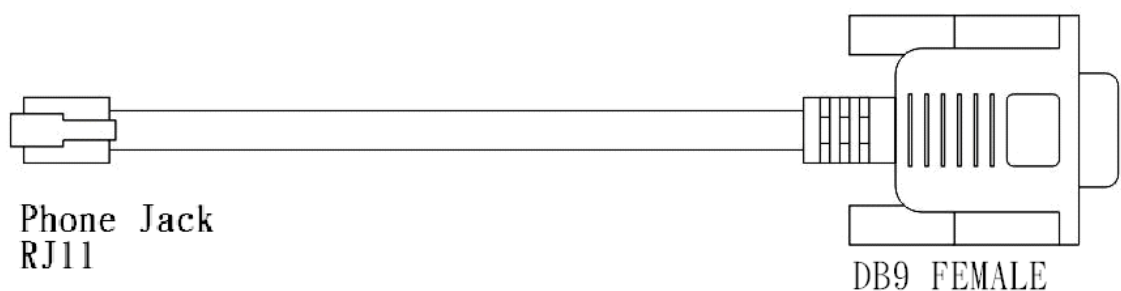
1. Introduction :

The goal of inverter monitoring software is to provide a user friendly interface. After installing this software on a PC, the user will be able to monitor inverter status from a remote area and remotely turn the unit ON/OFF. User will have the flexibility to change between operating modes (USP or energy saving), voltage, and frequency setting anytime they feel the need to.

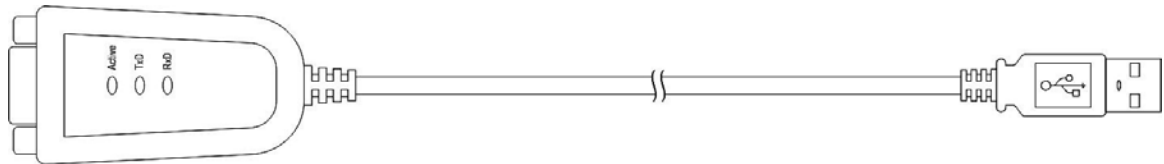
2. Installation & wiring :

1. Accessories (RJ11~RS-232 cable and RS-232~USB converter can be optionally purchased)

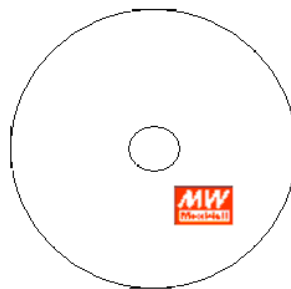
- RJ11~RS-232 cable



- RS-232~USB converter (MOXA UPort 1110)



- Monitoring software CD



- RS-232~USB Driver CD

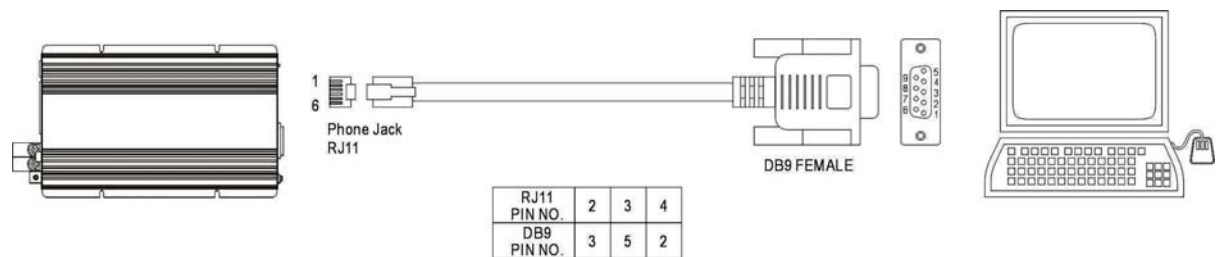


2. Instructions on installation

• Hardware assembly

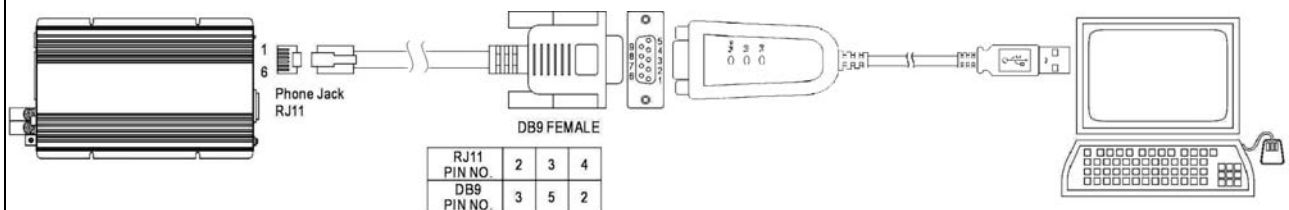
(A) PC/Notebook with RS-232 COM port

First make sure the inverter is operating normally then attach the RJ-11 - RS-232 cable between the inverter (RJ-11) and PC (RS-232). Refer to the diagram below:



(B) PC/Notebook with USB COM port

In case the PC/Notebook does not provide RS-232 COM port and only has USB available, an USB - RS-232 converter can be used. The RS-232 - USB converter and RS-232 - RJ-11 cable can first be connected in series before connecting between inverter (RJ-11) and PC/notebook (USB). Refer to the diagram below:



When a MOXA converter is used to achieve connection between inverter and PC, the PC should be powered-on first before inserting the USB end of the MOXA converter, otherwise proper communication link can not be made.

- Install software

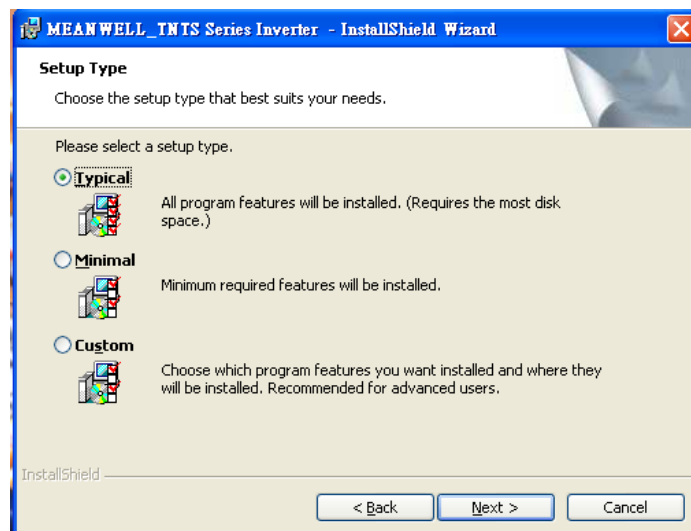
Step 1. Insert the monitoring software CD into the CD-rom drive of the PC. Hit “setupxxx” (xxx represents the version no.) to install.



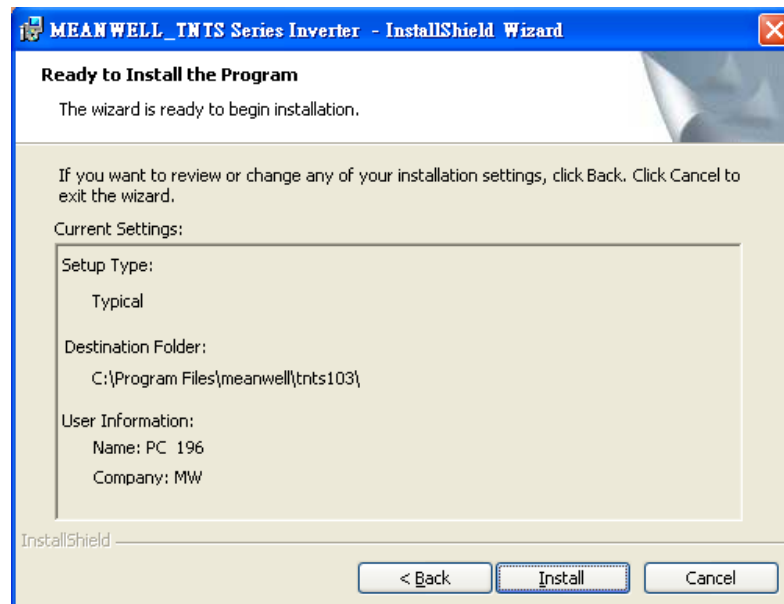
Step 2. Click on ” Next” to advance to next step



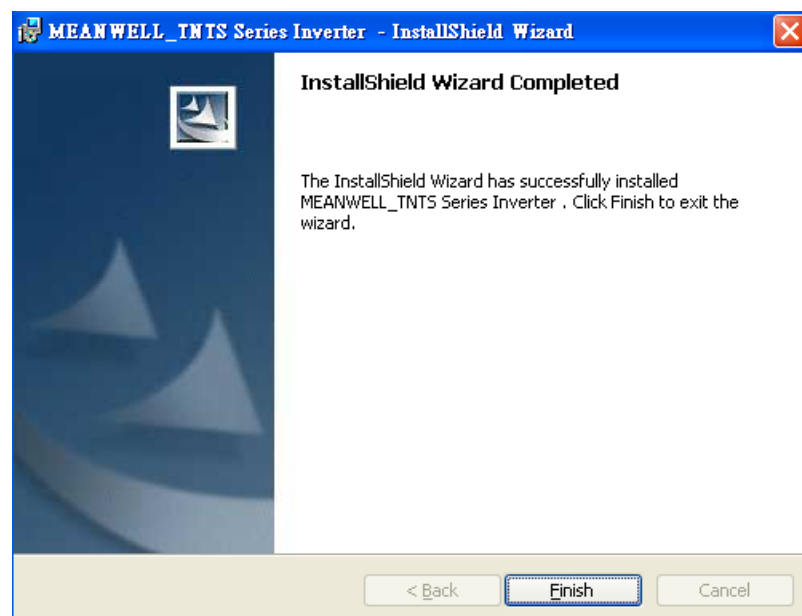
Step 3. Please choose “typical” as the setup type



Step 4. click-on " Install" to proceed with installation



Step 5. When installation is complete, click-on " Finish" to close window



※ This software is only suitable for Microsoft operating system. It is not compatible with Linux.

※ If USB - RS-232 converter is required, please remember to install the driver software for the MOXA USB converter.

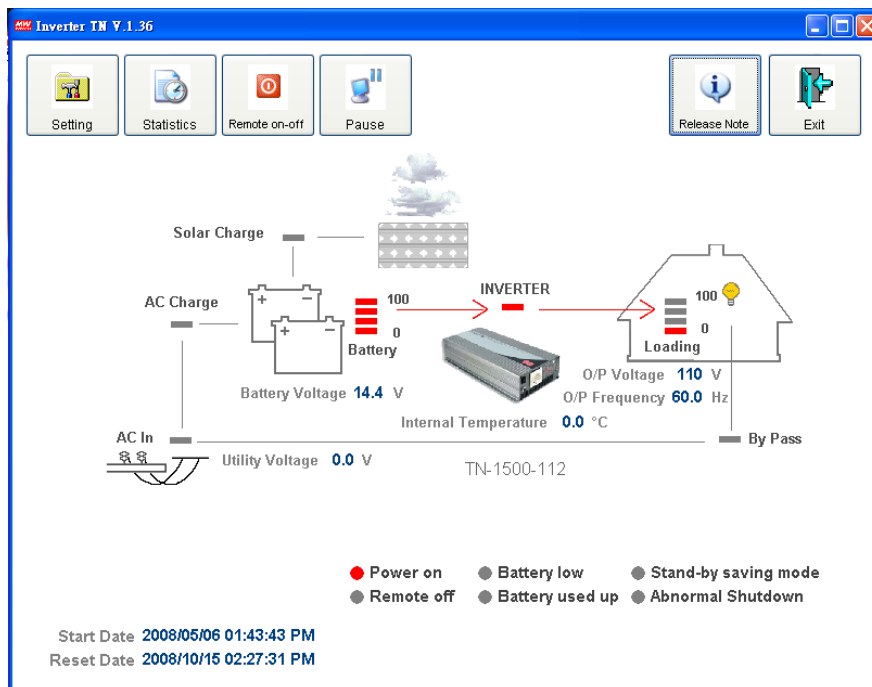
2. Run software - start up the monitoring menu :

After the monitoring software is installed, a short-cut will appear on the Window desktop. Click-on the following icon to run the software.



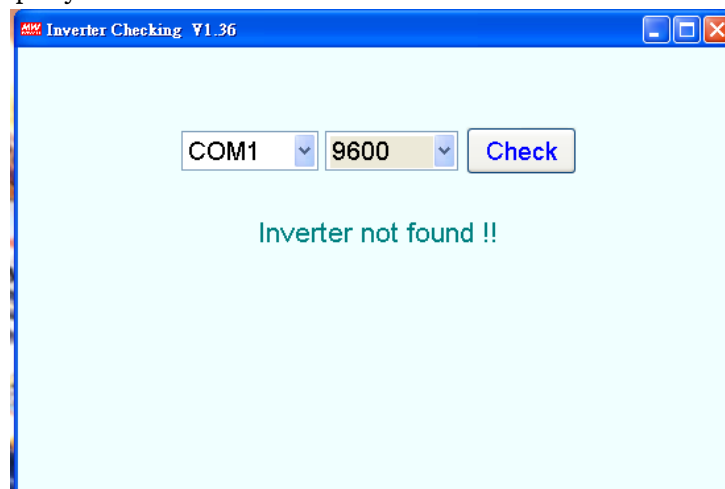
1. Establish communication :

While starting the monitoring software, a communication check between the inverter and PC/notebook will automatically be performed. When inverter is detected, the monitoring menu will pop up:



2. Communication failure :

If there is a failure in communication, the message “inverter not found” will be displayed:



To bypass error: First make sure the COM port setting are the same for both the software and PC/notebook. This can be done by checking the PC' s hardware manager. Also, check for possible loose cable connection.

4. Operating instructions:

1. **Setting:** Click to enter setting menu (gray background means that particular setting is not adjustable)



File Name D:\WORKFILE\FOUNG_TEST\TN-1500\BTLD_TEST\DOC\TNF\TN_1KE

Model name TN-1500-112

Manufacture MEANWELL

Revision REV:1.10

I/O Type 112 **Equalization Volt.** 14.3 V 13.5V ~ 15.0V

Voltage 110 V **Floating Volt.** 13.3 V 13.0V ~ 13.5V

Frequency 60 Hz **Alarm Volt.** 11.3 V 11.0V ~ 11.5V

Stand-by saving mode ☐ On ☒ Off **Shutdown Volt.** 10.5 V 10.0V ~ 11.0V

Energy saving mode ☒ On **Transfer Volt.** 11.0 V 11.0V ~ 12.0V

UPS mode ☐ On

Comm Ports 1 **Bauds Rate** 9600

Read **Write** **Load** **Test** **Exit**

Read OK!!

File Name:

Directory for loading in a file.

Model Name:

Inverter model

Manufacture :

Product manufacturer (Mean Well).

Revision :

Inverter firmware version

I/O Type :

Inverter IP/OP type

Voltage :

Output voltage selection. User can choose between 100/110/115/120V or 200/220/230/240V .

Frequency :

Output frequency selection. User can choose between 50Hz or 60Hz .

Stand-by saving mode :

It can be activated to save battery power when no load is connected ($\leq 5W$). The factory setting is ON.

Energy saving mode :

Solar input will have priority (either energy saving or USP can be selected)

UPS mode:

AC utility will have priority (the factory default is UPS mode, mode adjustment can easily be made depending on actual operating requirement)

Equalization Volt. :

Quick charge voltage. It is user adjustable.

Floating Volt. :

Fully charged voltage. It is user adjustable.

Alarm Volt. :

Alarm for battery under voltage. It is user adjustable.

Shutdown Volt. :

Battery low shutdown. It is user adjustable.

Transfer Volt. :

The by pass battery voltage for energy saving mode.

Comm Ports :

PC to TN-1500 COM port setting. Both software and hardware must match.

Bauds Rate :

Date transfer rate. The factory default is 9600.

Read :

To check current setting of the inverter, click-on the **Read** icon and inverter status will be displayed on screen.

Write :

Click-on **Write** to write new setting into the inverter. User must wait 10 seconds for the inverter to restart before execution other commands.

Load :

Load previously saved setting file (*.TNF)

Test :

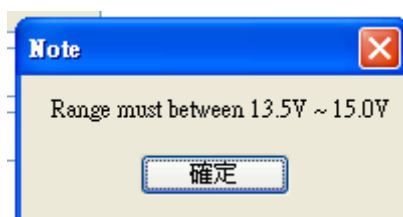
After loading in a file by clicking the **Load** icon, the Test function can be performed to check if current inverter settings and the loaded settings are the same.

Exit:

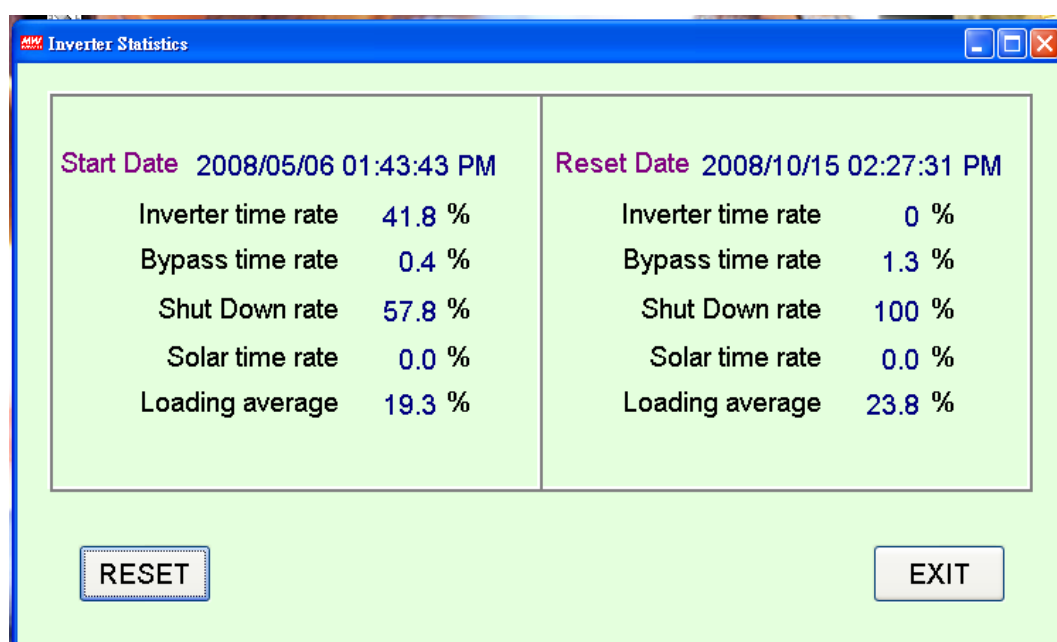
Exit setting menu

Note : When implementing the Read / Write command, if EEPROM ERROR message appears, first make sure whether the inverter is in the stand-by saving mode or not. If yes, disabling the saving mode will allow proper execution of the Read / Write command.

Explanation: User will be able to change the equalization, float, alarm, and shutdown setting for the battery as long as it is within the predefined range. When the range is exceeded a warning message will appear on screen (see below). Correction must be made prior to writing in the new setting.



2. Record of data communication (Statistics) : Click to enter Statistics menu.



Start Date (Installation date) : Statistics is accumulated from the day of installation.

Reset Date: The restart date for data accumulation. Restart occurs when the **RESET** icon is pressed or when the inverter shuts down and restarts.

Inverter time rate : Inverter mode percentage

Bypass time rate : Bypass mode percentage

Shutdown rate : Shutdown mode percentage

Solar time rate : Solar mode percentage

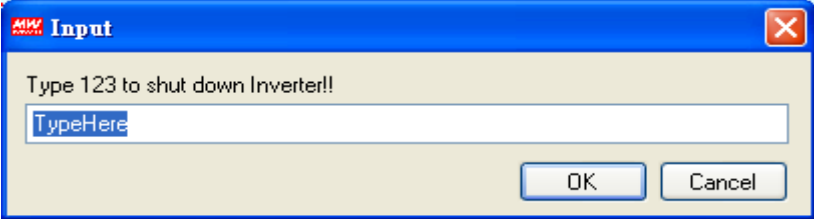
Loading average : Loading percentage

※ Inverter mode + Bypass mode + Shutdown mode = 100%

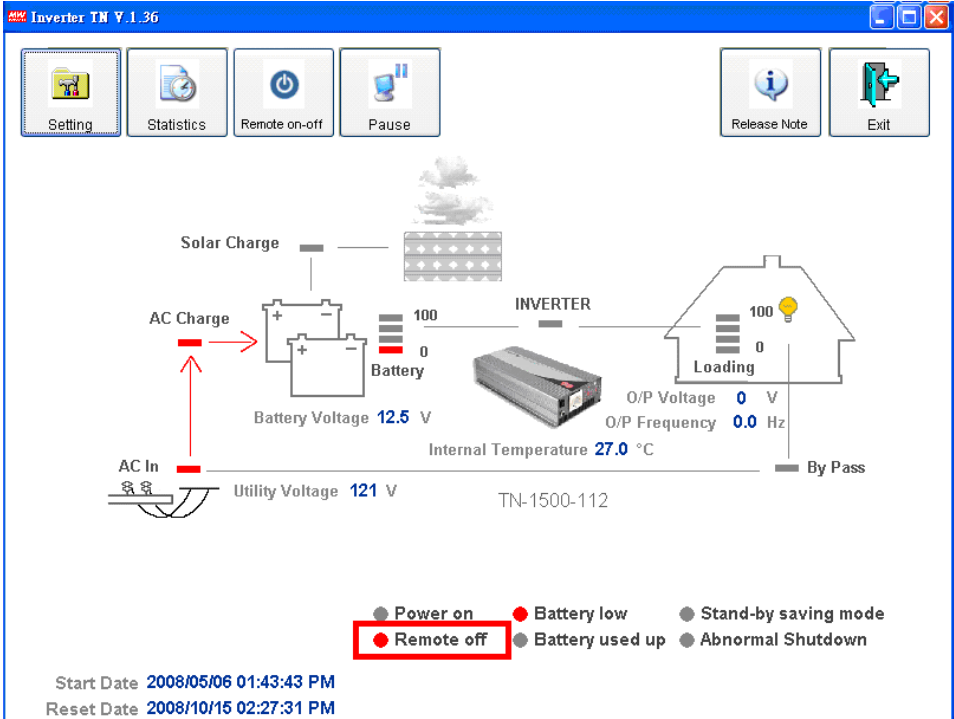
3. **Remote on-off :** Remote on/off icon allows for inverter ON/OFF control from a remote PC platform



After clicking the Remote on/off icon, the following window will appear.



At TypeHere enter “123” then press OK and the inverter will turn OFF after it gives out a “beep.” The Remote ON indication on the monitoring menu will now change to Remote OFF which confirms it’ s off status. Refer to the menu below :



To turn the inverter back ON, click-on the Remote on-off icon, the inverter will come back online after a “beep.” The “Remote off” indication on the monitoring menu will change back to “Remote on” confirming the ON status.
Note : After executing Remote off, the load indicator on the TN-1500 face plate will signal 1010 with red LED in a flashing pattern.

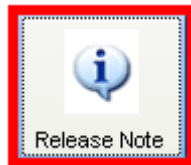
Load



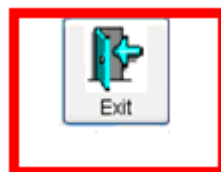
- 3. Pause :** Click on the Pause icon to freeze monitoring of inverter. To continue, click on the icon once more.



- 5. Release Note :** Click for software info.



- 6. Exit :** Click to exit software program.





5. Explanation of various monitoring status

1. **INVERTER** : User will be able to see on the monitoring menu whether output voltage is provided through AC utility or inverter. The indicating method is as follows:

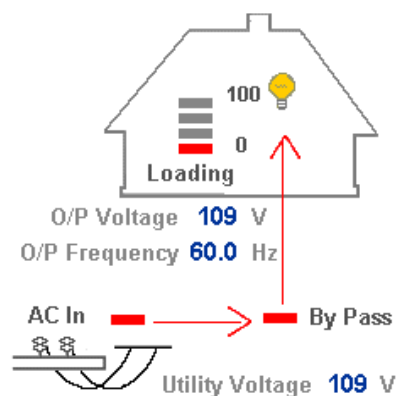


Internal Temperature **14.0 °C**

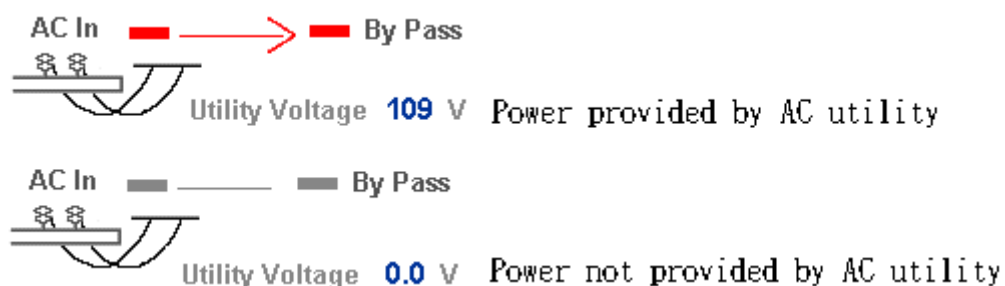
Explanation of indicator :

-  Output power provided by bypass AC utility
-  Output power provided by inverter

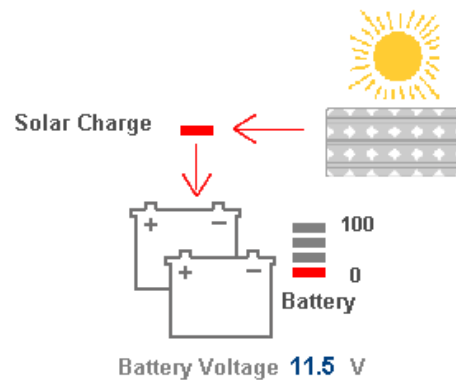
2. **By Pass** : Inverter status such as output voltage, frequency, activation of Bypass mode can be checked by viewing the monitoring menu. It will be presented in the following manner.



Explanation of indicator :



- 4. Solar Charge :** On a clear day, the symbol “bright sun” will appear on the monitoring menu letting the user know that battery charging is provided through the solar panel. On a cloudy day, the symbol “clouds” will appear on the monitoring menu letting the user know that the solar panel has ceased charging the battery.



Explanation of indicator :

Solar Charge 



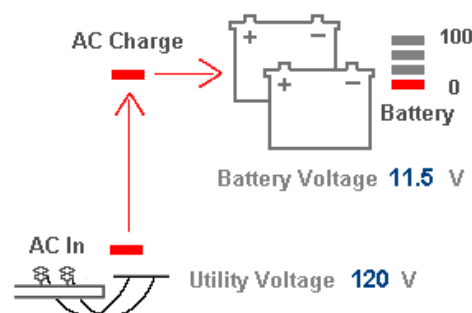
Solar charger is charging the battery

Solar Charge 

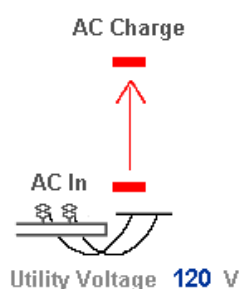


Solar charger is not charging the battery

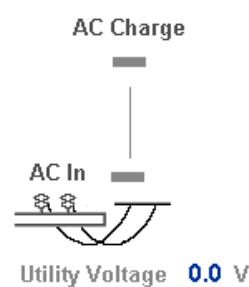
- 5. AC Charge :** User can check the monitoring menu to see if the AC charger is activated. It will be presented in the following manner.



Explanation of indicator :

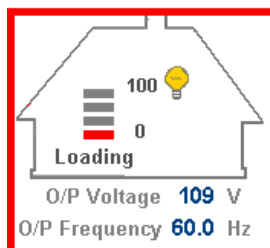


AC charger is charging the battery



AC charger is not charging the battery

5. **Loading** : To check loading status, the following diagram can be found on the monitoring menu which shows load percentage.



Explanation of indicator :

Indicator display	LED 1 ON	LED 1 ~ 2 ON	LED 1 ~ 3 ON	LED 1 ~ 4 ON
Load usage	0 ~ 30%	30 ~ 50%	50 ~ 75%	75 ~ 100%

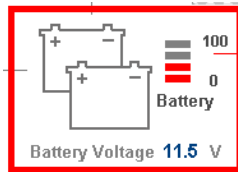
6. **Light indication** : Indicator of various inverter statuses and battery condition can be found in the monitoring menu. Details are as below.

- **Power on** ● **Battery low** ● **Stand-by saving mode**
 ● **Remote off** ● **Battery used up** ● **Abnormal Shutdown**

Explanation of indicator :

Indicator	Explanation
● Power on	Inverter activated.
○ Remote Off	Remote ON/OFF control.
○ Battery low	When battery capacity too low, inverter buzzer will activate.
○ Battery used up	When battery is used up, inverter will terminate the output.
○ Stand-by saving mode	No load ($\leq 5W$) saving mode.
○ Abnormal Shutdown	Shutdown protection for inverter mode.

7. **Battery** : To check battery status, the following diagram can be found on the monitoring menu which shows battery capacity in percentage.



Explanation of indicator :

Indicator display	LED 1 ON	LED 1 ~ 2 ON	LED 1 ~ 3 ON	LED 1 ~ 4 ON
Battery capacity	0 ~ 25%	26 ~ 50%	51 ~ 75%	76 ~ 100%