The power behind competitiveness

Delta Power Monitor

User Manual

R4E (for energy storage system.)

www.deltaww.com

Smarter. Greener. Together.

Contents

■Note on expressions in this document■

Please note that product appearance, illustrations, screen depictions and data are images only. They may vary slightly from the actual product. Please keep that in mind.

Precautions for Your Safety

■ Notations for safe use of the product and their meanings

This User Manual provides precautions with the following notations and symbols for safe use of the Power Monitor Set (for energy storage system.) (Power Monitor: R4E; Power Meter: P1E / P3E; Wireless Communication Unit: N1E; Wireless Communication Unit for Inverter: N2E; Battery and USB Wireless Module).

The expression “Product” refers to the Power Monitor, Power Meter, Wireless Communication Unit, and Wireless Communication Unit for Inverter and USB Wireless Module. Precautions described herein contain important aspects of safety.

Please observe and follow these descriptions.

Notations and symbols are described below:

⚠ **Warning**	Failing to handle the Product properly may result in the described danger leading to slight or intermediate level injuries and in some cases may also result in serious injury or death.
⚠ **Caution**	Failing to handle the Product properly may result in the described danger leading to slight or intermediate level injuries or property damages in some instances.

■ Explanation of graphic symbols

	● Electric Shock Precaution Notifications pertaining to precautions for potential electric shock, under specific conditions
	● General Unspecified general notifications pertaining to prohibited actions.
	● Disassembly prohibited Notifications pertaining to prohibition of equipment disassembly, when doing so can potentially lead to injuries such as electric shock.
	● General Unspecified general notifications pertaining to instructions for users

⚠ Warning

Do not allow any fire producing objects to be near the Product, or apply any spray, including combustible gases, to the Product. The Product may ignite or explode in the unlikely event such an occurrence takes place.

Do not touch the Product with wet hands.
The Product may cause injury due to electric shock or equipment malfunction may occur in the unlikely event such an occurrence takes place.
Request the retailer where you purchased the Product or a specialist to perform installation work, repairs, extensions, relocations and reinstallations of the Product.

Do not disassemble or modify the Product.
The Product may cause injury or fire due to electric shock in the unlikely event such an occurrence takes place.
Request the retailer where you purchased the Product or a specialist to perform installation work, repairs, extensions, relocations and reinstallations of the Product.

Do not conceal the wiring of the AC adapter, through such means as embedding the cable inside a wall.
Furthermore, do not place any heavy objects such as a furniture on top of the cable and avoid damaging the cable by rolling wheels, such as castors, over the cable.
The Product may ignite or explode in the unlikely event such an occurrence takes place.

⚠ Caution

Do not install the Product in a place that is subject to significant effects of vibration and impact. There is danger of injury from the Product falling in some rare cases.

When installing the Power Monitor on a wall made of materials that are not wood, be sure to acquire plastic anchors available on the market to secure the Wall Surface/Desktop Mounting Plate on the wall surface. There is danger of injury from the Product falling in some rare cases.

Do not install the Product in the following types of locations:
There is danger of burnout in some rare cases.

- Locations that are exposed to rain water, such as outdoors or under eaves and the like.
- Locations that are exposed to steam or where the moisture level is 30 to 85% RH, such as lavatories, changing rooms, work sites, kitchens and the like.

- Do not use organic solvents (paint thinners, benzene and the like), strong alkaline substances or strong acidic substances to clean the case of the Product. There is danger of discoloring the case or the equipment malfunctioning in some rare cases.

Essential Points for Safety

Items described below must be followed as they are necessary to secure safety.

1. Do not connect anything other than the dedicated AC adapter on the power source terminal of the Power Monitor.

2. Request a specialist to dispose of the Product.

3. Pull the AC adapter off the power outlet when any abnormality is detected with the Product, such as emission of smoke, heat or the like.

4. Turn OFF the power breaker, to which the Meter is connected when any abnormality is detected with the Meter.

5. Do not install the Product in any place that is prevented from having air flow, such as inside closets or under stairs.

6. Install the Product with the “DELTA” logo facing up when installing the Power Monitor on a wall. When not installed on a wall, set the Product on the Wall Surface/Desktop Mounting Plate when using the Product.

7. Take care to ensure no water or other liquid gets on the Power Monitor or the Meter.

8. There is danger of injury. Do not throw the Product.

9. Securely insert the AC adapter in a power outlet. Furthermore, periodically remove any dust on the AC adapter.

10. The Product is not for outdoor use.

11. Do not install the Product at a high place or an unstable place when installing the product on a desk.

Precautions for Use

1 . The Product is not a specified measuring instrument that passed any certification criteria of any designated accreditation organization as prescribed by the Measurement Act. The Product may only be used to provide a rough indication on the amount of power.

2 . A touch panel type liquid crystal display has been adopted for the Product. Do not press or hit hard on the surface of the display.

3 . The Product may malfunction or may be damaged by static electricity. Be sure to remove any static electricity on the body, through such means as touching a metal object nearby, prior to coming into contact with the Product.

4 . Do not connect a telephone line or household LAN cable to the LAN terminal on the Power Monitor and the Wireless Communication Unit. There is danger of the Product malfunctioning.

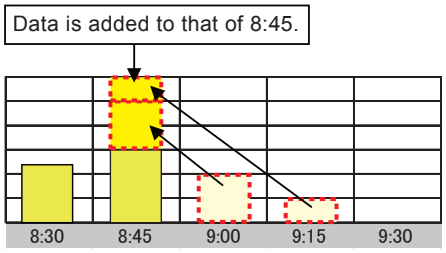
5 . Insert the AC adapter of the Power Monitor in the power outlet at all times when using the Product. Removing the AC adapter from the power outlet will prevent the system from obtaining detailed data during such period and result in the omission of graphs and the like.

6 . Keep the power supply (breaker for solar power generation) of the Meter turned ON at all times when the Product is in use.

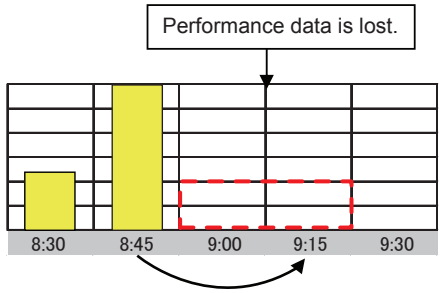
7 . Reverting the date and time by at least a 15 minute interval into the past will result in the loss of performance data. Set the date and time correctly.

Example : [A case where performance data is lost]
The time is inadvertently changed from 9:15 to 8:45 and then reverted to 9:15.
The performance data starting from 8:45 onwards are added to the performance data from 8:45 and the performance data for the period since 8:45 is lost. Lost data cannot be restored.

● Time is changed from 9:15 to 8:45.

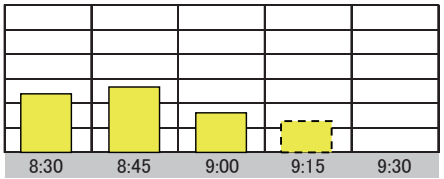


● Time is changed from 8:45 to 9:15.

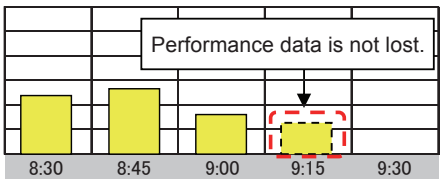


Example : [A case where performance data is not lost]
The time is inadvertently changed from 9:28 to 9:18 and then reverted to 9:28.
The performance data from 9:15 is fixed as of 9:30 and as such, the performance data is not lost, as long as the time change does not extend to at least a 15 minute interval.

● Time is changed from 9:28 to 9:18.



● Time is changed from 9:18 to 9:28.



8. Do not install the Product in following types of locations:
   a) A location with severe fluctuation of temperature.
   b) A location that is exposed to sea breeze (excluding the Wireless Communication Unit for Inverter).
   c) A location that is exposed to volatile, combustible, corroding or toxic gases.
   d) A location exposed to direct sun light.
   e) A location exceeding the operating temperature range (-20 to +50°C) (5 to 35°C for the USB Wireless Module).
   f) A location with altitude of 2,000 meters or higher.
   g) A location with a large amount of dust (powder dust, sand dust, cotton dust, metal dust, saw dust, straw dust and the like).
   h) A location covered by metals or metal fittings, metals installed on walls, on top of a metal desk, between metal products or near telephone unit, facsimile unit, personal computer, personal computer peripheral device, television set, microwave oven or induction heating (IH) product.
9. Store the Product in a location with the temperature ranging between -20 and +60°C, with the humidity ranging from 30 to 85% RH.
10. The Product communicates wirelessly.
    Install the Product as far away as possible from devices that emit strong radio waves, such as a civil band radio equipment.
11. The communication performance varies depending on the peripheral environment. Verify in advance that the Product is communicating normally when installing the Power Monitor on a wall.
12. Avoid installing the Power Monitor near iron plate or steel reinforcements and try to install the Product with as much clear space as possible.
13. The Product is not compatible with the Total Amount Purchasing System of the Feed-in Tariff Scheme for Reusable Energy.
14. Do not pull out the USB Wireless Module while the power is turned on. Communication with the personal computer and the Meter will no longer be possible.
15. Turn OFF the power breaker for the solar power generation on the power distribution board, remove the AC adapter of the Power Monitor from the power outlet, and contact the retailer where the Product was purchased when any instance of radio frequency interference occurs with the Product.
16. Do not use any USB Wireless Module other than the one that was bundled with the Product.

Equipment Specification Considerations

1. The value displayed as power consumption may be greater than (or smaller than) the actual value when the power being generated fluctuates due to fluctuation of sun light or the like. This arises from the difference in the timing of data acquisition for the power production from the power feed-in and purchase and is not due to a malfunction of the Product.
2. The amount of power purchased displayed on the Home screen or Log screen may differ from the power amount indicated on statements from the power company, due to such causes of errors as those described below:
   (1) Errors in measurement: The error arising from the fact that the instrument used by the power company for the purpose of calculating the amount of power purchased is not a specified measuring instrument but instead it is another equipment.
   (2) Errors in calculation: The error arising from rounding up or rounding off of figures in the calculation and display process of the Power Monitor.

Caring for the Product

Cleaning of the Product is recommended, in order to make it possible for you to use the Power Monitor in the best possible condition at all times.

● Cleaning method

A touch panel has been adopted for this Product, the display on which becomes difficult to view when soiled with fingerprints, sweat or oil.

・Wipe dry with a piece of dry, soft cloth.
Do not remove soiling by using excessive force. Doing so may result in the display being scratched and can also cause malfunction.

・Do not apply any tape, plastic or rubber matter on the Product for a long period of time.
The Product may be soiled. In such an event remove the soiling when cleaning.

1 .Information on The Product

The Product is intended for verifying the status of a solar power generation system. The Product collects and takes measurements of respective power information, to display results as well as store performance data for a prescribed period of time or provide assistance to save energy based on such information.

1.1.Principal Features

- A 7-inch color liquid crystal display is adopted to provide a clear display.
- The LED backlight feature is adopted to reduce power consumption.
- A real-time display of the power production and consumption are provided.
- The degree of freedom in the selection of location for installation has been improved with the support of the wireless communication (when the Wireless Set is in use).
- The Energy Saving Guide function has been incorporated.
- R4 is specifically used with energy storage solar system.
- User can view the status of the inverter and battery and set up charge and discharge mode to battery
- The background image of the Home screen can be changed.
- Performance data can be output and loaded onto a personal computer.
- Setting feature of the Grid Setting is available.
- The touch panel is adopted for easier operations

※ Notes on basic operation of the touch panel
Power Monitor is operated by using a touch panel, which is manipulated by touching with a fingertip. The basic operation of the touch panel is described below.

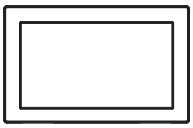
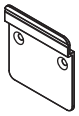
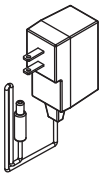
■ Touch

Touch lightly on the screen surface with a finger.

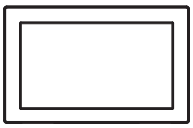
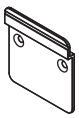
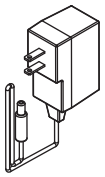
1.2.Power Monitor Set

Verify that following items are available for use prior to using this feature.

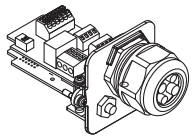
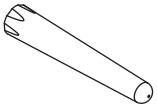
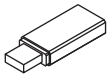
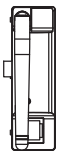
■ Wired Set (S4E_1P)

No	Product name	Shape	Qty	Remarks
1	Power Monitor		1 unit	
2	Wall Surface / Desktop Mounting Plate		1 pc	This is a plate used to install the Product on a wall or on a desk.
3	Wood screws (+) for Wall Surface / Desktop Mounting Plate (dia. 4 x 20 mm)		2 pcs	These are wood screws for the Wall Surface / Desktop Mounting Plate.
4	AC Adapter		1 unit	This is the power supply for the Power Monitor.
5	Power Meter		1 unit	
6	Quick installation guide		1 copy	

■ Wired Set (S4E_3P)

No	Product name	Shape	Qty	Remarks
1	Power Monitor		1 unit	
2	Wall Surface / Desktop Mounting Plate		1 pc	This is a plate used to install the Product on a wall or on a desk.
3	Wood screws (+) for Wall Surface / Desktop Mounting Plate (dia. 4 x 20 mm)		2 pcs	These are wood screws for the Wall Surface / Desktop Mounting Plate.
4	AC Adapter		1 unit	This is the power supply for the Power Monitor.
5	Power Meter		1 unit	
6	Quick installation guide		1 copy	

■ Wireless Set (S4E_WiFi)

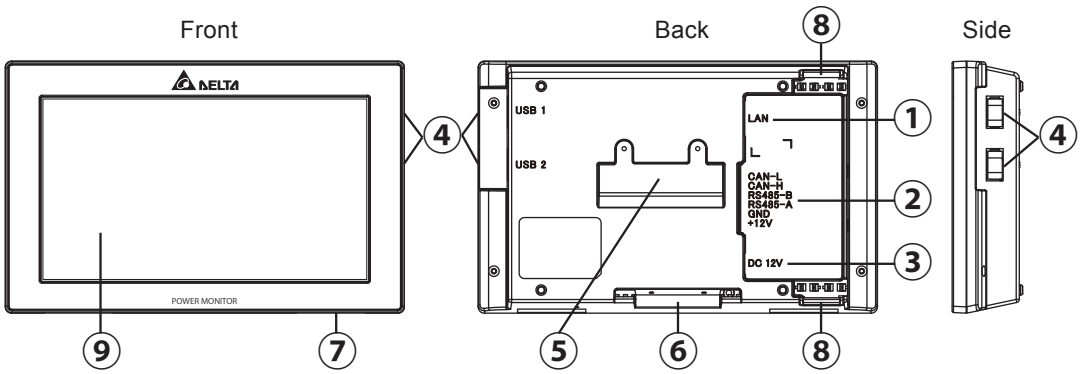
No	Product name	Shape	Qty	Remarks
7	Wireless Communication Unit for Inverter		1 unit	The unit converts the Inverter into a wireless communication system.
8	Wireless Communication Unit Antenna for Inverter		1 pc	This is an antenna that is mounted on the Wireless Communication Unit for Inverter.
9	USB Wireless Module		1 pc	The unit converts the Power Monitor into a wireless communication system.
10	Wireless Communication Unit		1 unit	
11	Quick installation guide		1 copy	

1.3.Descriptions and Functions of Parts and Components

Important

Do not connect a telephone line or household LAN cable to the LAN terminal.

■ Power Monitor



① LAN terminal (RJ-45 terminal) (fitted with a protective cover)
This is the terminal that is used to connect the system to an internet line. (A setup is required.)

② RS-485 (a 6-pin terminal)
This is the terminal that is used to connect a 6-pin connector provided, to link the supply of power and signals from the Inverter.

③ Power Supply terminal
This is the terminal that is used to connect the AC Adapter provided.

④ USB Terminal (for USB 1 and USB 2) (fitted with a protective cover)
Downloading of various data and upgrading of software versions can be performed.
Furthermore, the monitor and the Inverter, as well as the Meter can be converted into a wireless communication system by connecting the USB Wireless Module provided with the Wireless Set.
* Customers are requested to procure their own USB memory and USB cable.

⑤ Insertion slot for anchoring the Wall Surface Mounting Plate.
This is the insertion slot used to install the Wall Surface / Desktop Mounting Plate when installing the Product on the wall.

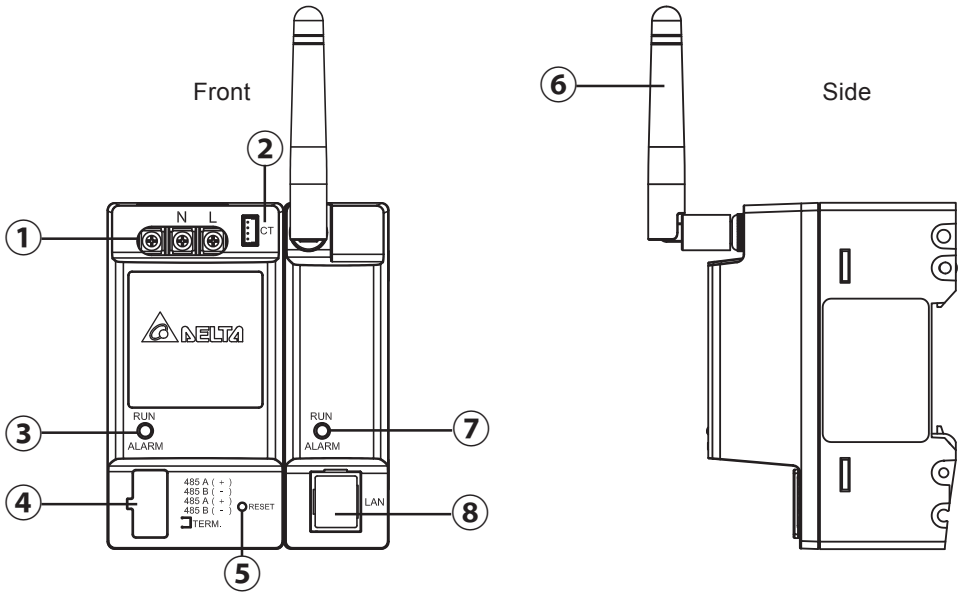
⑥ Insertion slot for anchoring the Desktop Mounting Plate
This is the insertion slot used to install the Wall Surface/ Desktop Mounting Plate when installing the Product on desktop.

⑦ Reset button
This is intended for use in maintenance work carried out by the manufacturer. Do not use this.

⑧ Wiring access
According to the prescribed wiring method, remove the tab on the wiring access, and guide the cable through.

⑨ Touch Panel section
Displays are switched and various settings are performed by performing touch panel operations.

■ Meter & Wireless Communication Unit (P1E & N1E)
(The figure depicts a situation where the Meter and the Wireless Communication Unit have been connected and the Antenna has been oriented upwards.)

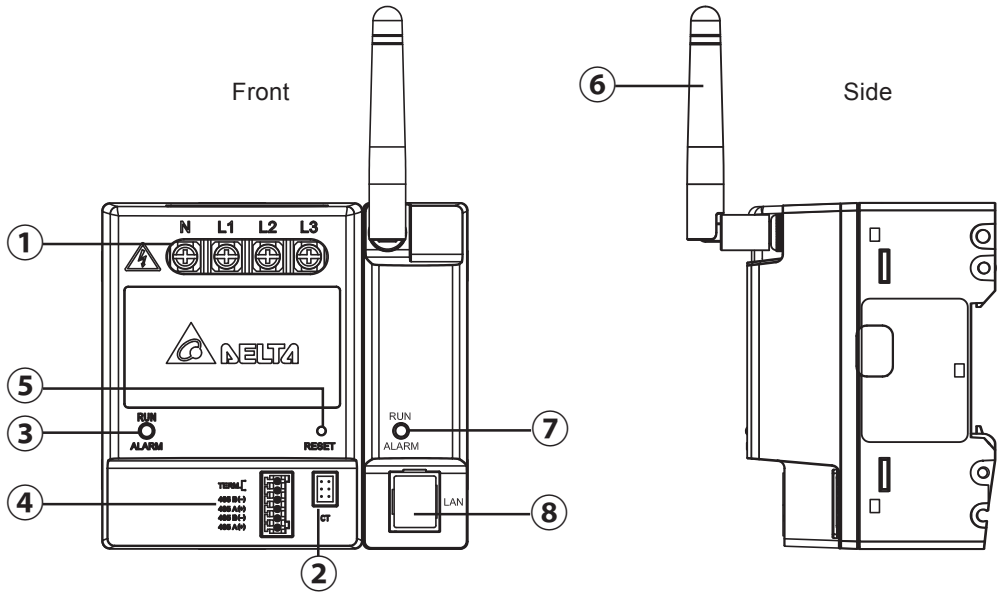


① Power Supply Input terminal (fitted with a protective cover)
This is the terminal for connecting the voltage detection cable.
② Current Sensor Connection terminal
This is the terminal for connecting the current sensor cable.
③ Operation LED lamp
Green light turned on: Normal operation
Green light blinking: Standby or connection standby
Red light turned on: Hardware malfunction
Red light blinking: Communication interrupted
④ Communication Signal Input terminal (fitted with a protective cover)
This is the terminal for connecting the RS-485 cable.
⑤ Reset button
This is the Reset button for the Wireless Communication Unit. Pressing this button restarts the Wireless Communication Unit. Holding this button down for five or more seconds reverts the Wireless Communication Unit to the default setting. Caution is required.
⑥ Wireless Communication Unit Antenna
This is the antenna used to perform wireless communication with the Power Monitor. The antenna can be detached from the main unit. (Do not remove the antenna.)
⑦ Operation LED lamp
Green light turned on: Normal operation
Green light blinking: Standby or connection not established
Red light turned on: Hardware malfunction
Red light blinking: Communication malfunction
⑧ LAN terminal (fitted with a protective cover)
This is intended for use in maintenance work carried out by the manufacturer. Do not use this. (Do not remove the protective cover.)

⚠ Warning

Do not open the protective cover or touch the internal parts and components with your hand. The Product may cause injury due to electric shock in the unlikely event such an action is taken.

■ Power Meter & Wireless Communication Unit (P3E & N1E)
(The figure depicts a situation where the Meter and the Wireless Communication Unit have been connected and the Antenna has been oriented upwards.)

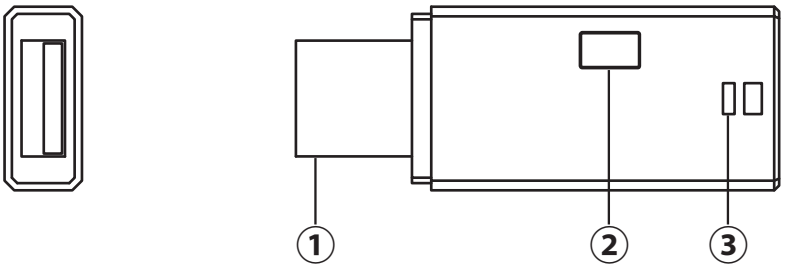


① Power Supply Input terminal (fitted with a protective cover)
This is the terminal for connecting the voltage detection cable.
② Current Sensor Connection terminal
This is the terminal for connecting the current sensor cable.
③ Operation LED lamp
Green light turned on: Normal operation
Green light blinking: Standby or connection standby
Red light turned on: Hardware malfunction
Red light blinking: Communication interrupted
④ Communication Signal Input terminal (fitted with a protective cover)
This is the terminal for connecting the RS-485 cable.
⑤ Reset button
This is the Reset button for the Wireless Communication Unit. Pressing this button restarts the Wireless Communication Unit. Holding this button down for five or more seconds reverts the Wireless Communication Unit to the default setting. Caution is required.
⑥ Wireless Communication Unit Antenna
This is the antenna used to perform wireless communication with the Power Monitor. The antenna can be detached from the main unit. (Do not remove the antenna.)
⑦ Operation LED lamp
Green light turned on: Normal operation
Green light blinking: Standby or connection not established
Red light turned on: Hardware malfunction
Red light blinking: Communication malfunction
⑧ LAN terminal (fitted with a protective cover)
This is intended for use in maintenance work carried out by the manufacturer. Do not use this. (Do not remove the protective cover.)

⚠ Warning

Do not open the protective cover or touch the internal parts and components with your hand. The Product may cause injury due to electric shock in the unlikely event such an action is taken.

■ USB Wireless Module (Wireless Set)

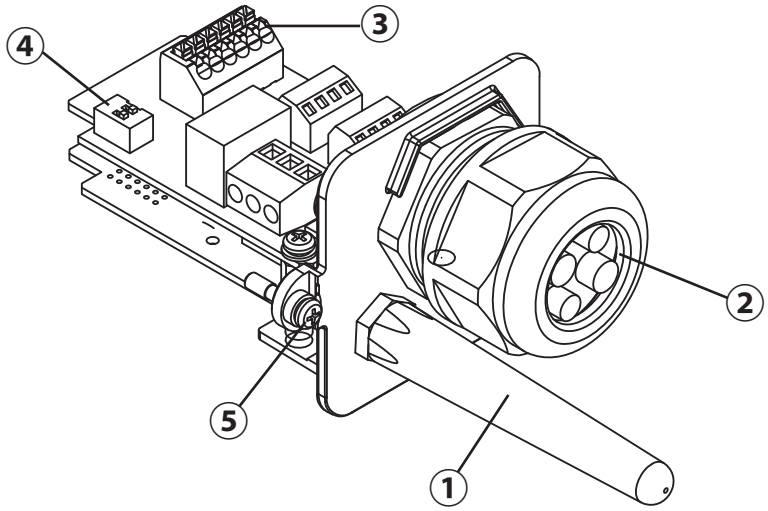


① USB insertion slot
This is installed on the USB terminal of the Power Monitor.

② Button Not used.

③ Operation LED lamp
Blue light blinking : Standby
Blue light on : Normal operation

■ Wireless Communication Unit for Inverter
(The figure depicts a situation where the antenna has been installed.) (Wireless Set)



① Wireless Communication Unit Antenna for Inverter
This is the antenna used to perform wireless communication with the Power Monitor.
The antenna can be detached from the main unit.
(Do not remove the antenna.)

② Communication cable insertion slot
Not used.

③ RS485 terminal
Not used.

④ Terminal switch
Not used. (Default setting : ON)

⑤ Inverter anchoring screw
This is the screw used to secure the Inverter onto the main unit.

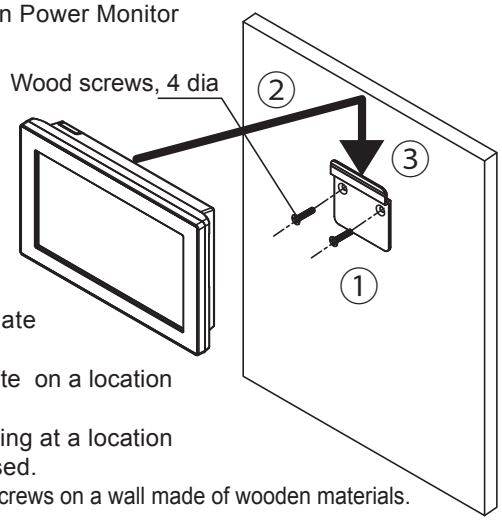
2 .Installation Method

The Power Monitor may be mounted on a desktop or on a wall surface for use.
“Wall Installation”, “Desktop Installation” and “Guiding the AC Adapter Cable” are respectively explained in this chapter.

* Communication status between the Inverter and the Meter must be verified prior to installation, in order to use wireless communication for the Power Monitor.
* Consult the retailer where you purchased the Power Monitor when relocating your Power Monitor.

2.1.Wall Installation

■ Installing Wall Surface / Desktop Mounting Plate on Power Monitor

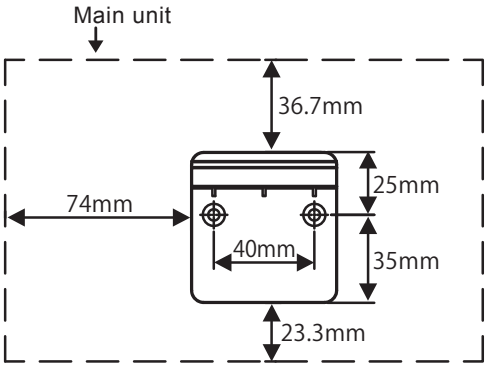


● Installation on wall

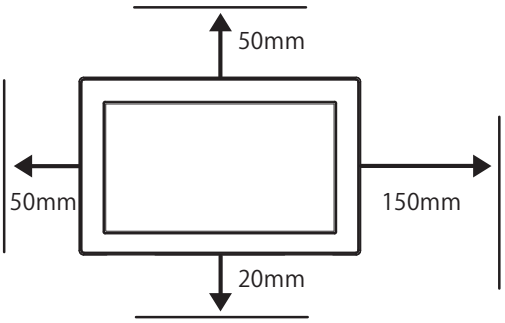
① Install the Wall Surface / Desktop Mounting Plate on the wall, using the wood screws provided.
- Install the Wall Surface / Desktop Mounting Plate on a location that can withstand the weight of the main unit.
- Use countersunk screws of 4 dia., when installing at a location where the provided wood screws cannot be used.
- Apply torque of 1.5 to 2.0 Nm when installing wood screws on a wall made of wooden materials.
- Install on a flat wall surface.

② Verify the hooking portion of the Wall Surface / Desktop Mounting Plate and the Wall Mounting Plate and the insertion slot for anchoring the Wall Surface Mounting Plate on the reverse surface of the main unit, then press on the main unit until the insertion slot for anchoring is positioned above the upper section of the Wall Surface / Desktop Mounting Plate.

③ Slide the main unit lower in that position and securely engage the hooking portion.
- Hook on the insertion slot for anchoring the Wall Surface Mounting Plate on the reverse surface of the main unit on the Wall Surface / Desktop Mounting Plate and shift down by approximately 1 centimeter.

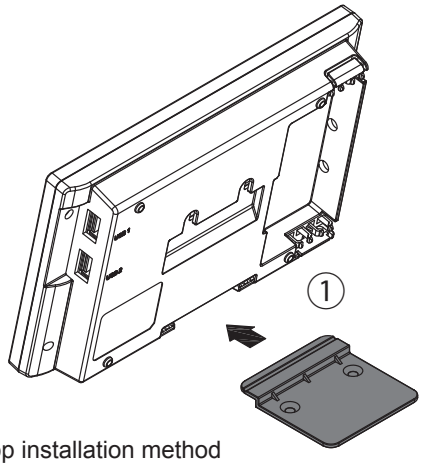


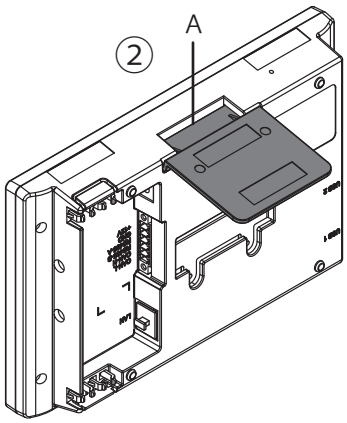
■ Dimensions of Wall Surface / Desktop Mounting Plate and the main unit



■ Separation distance from respective surfaces of main unit

2.2.Desktop Installation





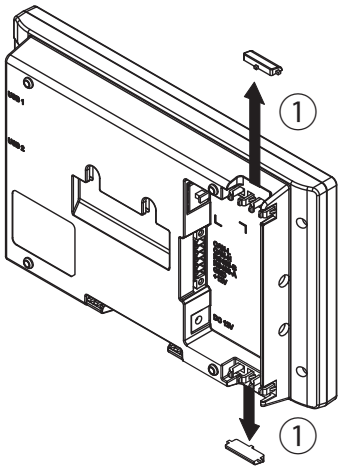
● Desktop installation method

① Insert the Wall Surface / Desktop Mounting Plate in the insertion slot for anchoring the Desktop Mounting Plate at the lower section of the main unit, being careful about the direction the plate is facing.

② Verify to ensure that there is no gap between the Wall Surface / Desktop Mounting Plate and Part A at the bottom of the main unit, as shown in the figure to the right.

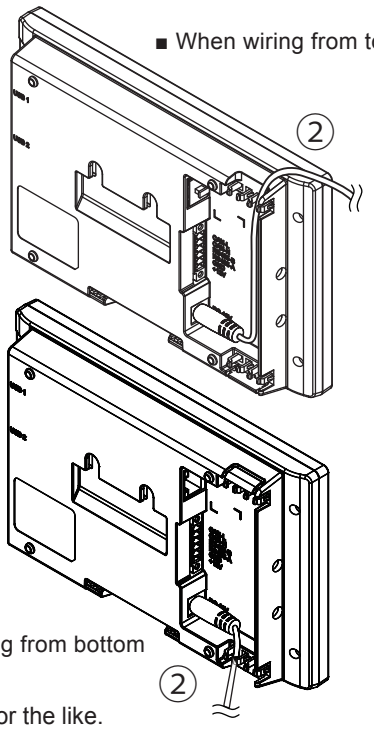
2.3. Guiding the AC Adapter Cable

There are two wiring accesses in the upper and lower sections on the reverse side of the Power Monitor.
According to the prescribed wiring method, remove the tab on the wiring access, and guide the cable through.



■ When wiring from top

■ When wiring from bottom



① Remove the tab on the wiring access, using a pair of pliers or the like.
(Remove burr with a pair of pliers to ensure that the cables are not scratched.)

② Guide through the cables.

3 .What Power Monitor can do

The Power Monitor displays the power production status of the solar power generation system and various information on a display screen.

3.1.Principal Functions

The following types of information can be verified using the Power Monitor:

● Current system status can be verified.
User can check the power production, electricity trading status, operating status of inverter, and charge and discharge status of inverter

● Past power status can be verified.
Power production, consumption, power feed-ins and power purchase status from the past can be verified, in units of one day, one month, one year and 20 years. Furthermore, such data can also be downloaded and used for proprietary compilation or management.

One Point

The amount of electric power purchased displayed on the Home screen or Log screen may differ from the electric power amount indicated on statements from the power company, due to such causes of errors as those described below:

(1) Errors in measurement: The error arising from the fact that the instrument used by the electric power company for the purpose of calculating the amount of electric power purchased is not a specified measuring instrument but instead it is another equipment.
(2) Errors in calculation: The error arising from rounding up or rounding off of figures in the calculation and display process of the Power Monitor.

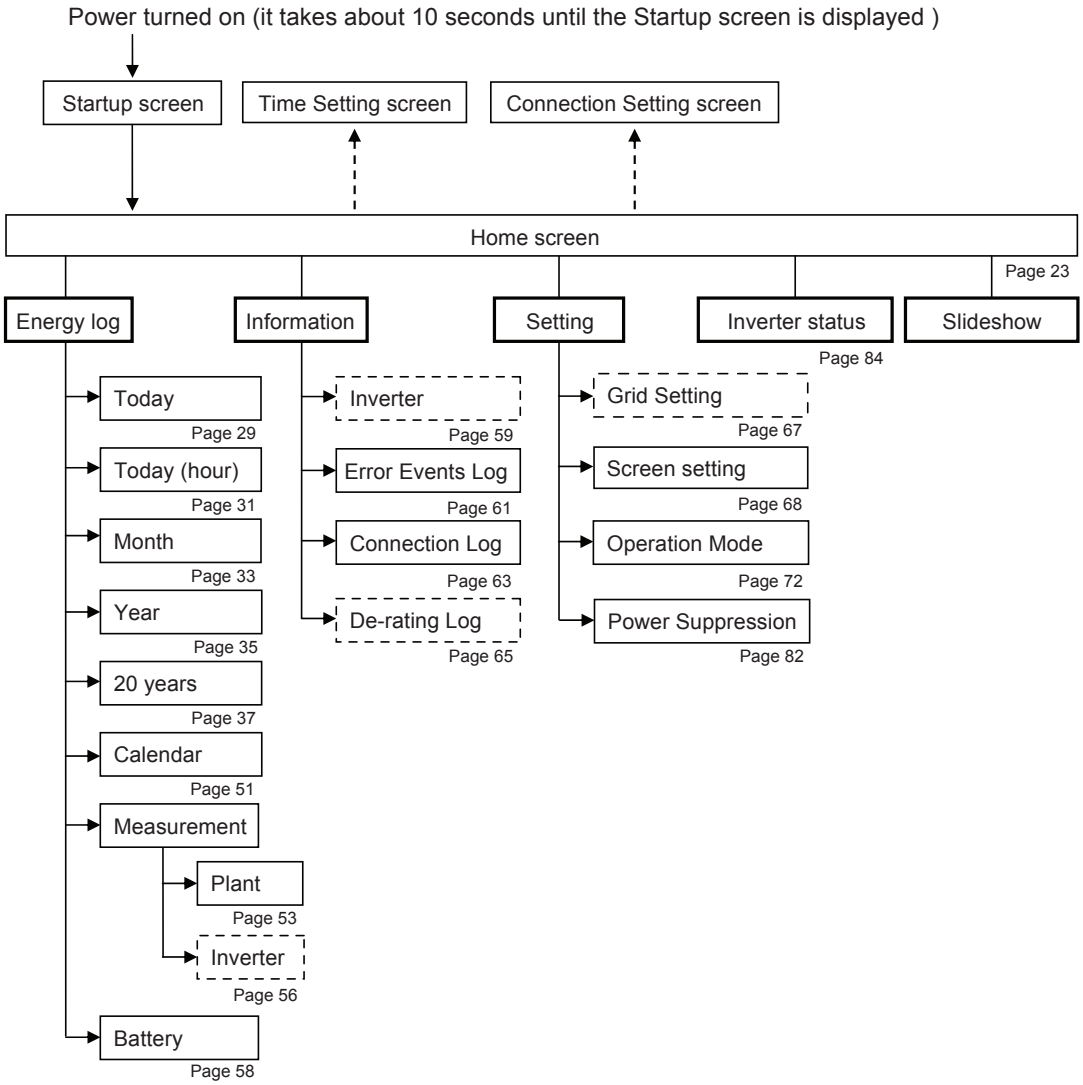
3.2.Operation Screens

The display screen of the Power Monitor changes in the following manner, according to touch panel operations and connection settings. Display details and operations of respective screen are described in the “Display Functions” section.

One Point

- The screens indicated by dotted arrow lines are displayed when a specific condition (such as date/time not entered, connection settings and the like) is satisfied.
- The screens surrounded by a frame of dotted line are not displayed when the Power Monitor and the Inverter are unable to communicate with each other.
- Screens indicated with solid lines are displayed for ordinary operations.

■ List of Operation Screens

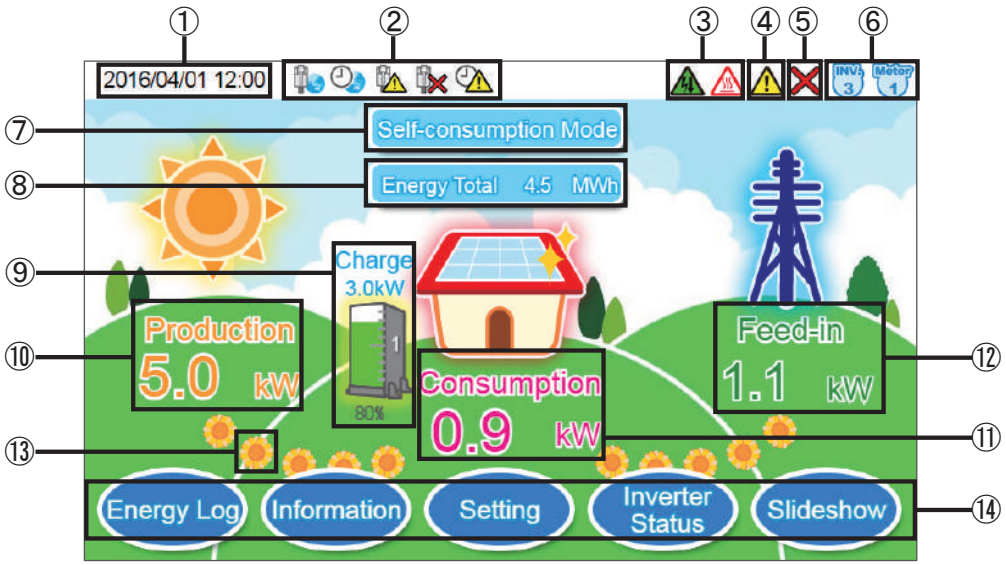


3.3.Interpreting and Operating Power Monitor

The Power Monitor displays a variety of information, such as the amount of power production, consumed, Feed-in or purchased, as well as the operating status of the Inverter.

3.3.1.Home screen

This is the Home screen of the monitor. Illustrations and icons displayed on this screen are explained.



① Date / Time
The current date and time are displayed.

② Not connect to the LAN or internet

It's able to connect to LAN, but not able to connect to external internet

Internet is working normally

Internet time synchronization is not successful

Internet time synchronization is successful

③ Suppression icon
A Suppression icon is displayed when there is suppression on the operation of the Inverter.

Icon	Operating mode	Description
	Temperature elevation suppression	The internal temperature of the Inverter has reached a high level. The output of the Inverter is being suppressed.
	Voltage elevation suppression	The voltage of the commercial power system has reached a high level while the Inverter was in operation. The output of the Inverter is being suppressed.

④ Error icon

An error icon is displayed to indicate that one or more errors are occurring.
The Error icon is ordinarily not displayed, and is displayed when one or more errors occur.
Refer to “4.When Something Seems Wrong (Troubleshooting)” (Page 85) for details.

⑤ Communication Malfunction icon

This icon is displayed when communication with the Inverter or the Meter is not available.

Icon	Operating mode	Description
	Communication malfunction	Communication with the Inverter or the Meter is malfunctioning.

⑥ Number of Connected Inverters and Meters icon

The number of Inverters and Meters that have been checked off in the Connection settings. This feature cannot be used to verify erroneous wiring, since the actual wiring is irrelevant to this indication.

⑦ Operation mode

Shows the charge and discharge mode of battery.

⑧ Energy Total

Indicates the total amount of power production from the day on which power production started to the present time.

⑨ Battery’s Icon and value

Shows charge and discharge wattage and power percentage.
In the main page, the electricity numbers are all for system except battery status. It only shows 1 battery status. Therefore, if connect to more than one Inverter and battery, some parts of batteries will be hidden, so user must click on the battery Icon to switch to another page to get battery information.

⑩ Power production icon and numerical value

The icon and the numerical value indicate the current status of power production.

⑪ Power Consumption icon and numerical value

The icon and the numerical value indicate the current status of power consumption.

⑫ Power feed-in and Power Purchase icon and numerical value

The icon and the numerical value indicate the current status of power feed-ins and purchases.
The color and text of the icon will change depending on the power feed-in and purchase status.
The color of the text is “green” when the power is feed-in and “red” when the power is being purchased.

⑬ Flow of electricity

Power production: The “ ” symbol flows from left to right between power production and consumption.

Power selling: The “ ” symbol flows from left to right between consumption and power feed-in.

Power purchasing: The “ “symbol flows from right to left between consumption and power purchase.

⑭ Menu buttons

The names of the Menu buttons are displayed.
Menu buttons have different names and roles for each screen that is being displayed.
Refer to the descriptions of respective functions for details of the Menu buttons.

Power log is displayed.

Status of the Inverters and the error log are displayed.

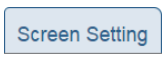
Setting for the Inverters and monitor.

Display the status of Inverters.

This is a slideshow feature.

● Display of tabs

The selected tab is displayed in white. The non-displaying tabs are displayed in light blue.

	Selected tab	Non-displaying tab
Tab		

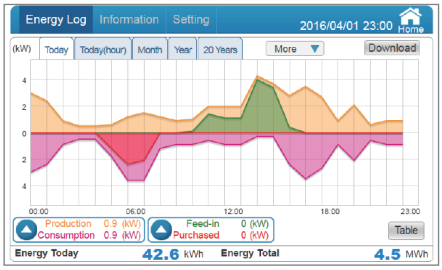
One Point

- Numerical values that are displayed on the screens are all displayed as values that have been rounded up or off.
  For instance in case where a value is “3.14 kWh”, this is displayed as “3.1 kWh”, whereas if the value is “3.15 kWh”, then it is displayed as “3.2 kWh”.
  Thus the numerical values that are displayed do not necessarily completely match with the true value in some cases, as described above.
- Refer to “4. When Something Seems Wrong (Troubleshooting)” (Page 85) for details when the Suppression and Communication Malfunction icons are displayed frequently.

3.3.2.Energy Log

The details on the performance of respective power amounts (power production / power consumption / power feed-in / power purchase) are displayed by respective units (date /month /year), graphs and lists. The following screens are available:

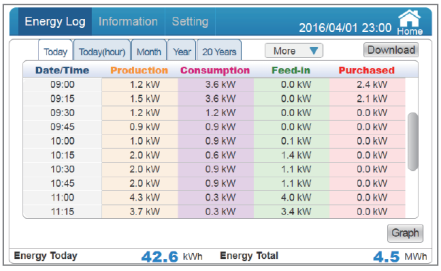
Power log for today (graph display)
The power status for the day can be verified.



Table

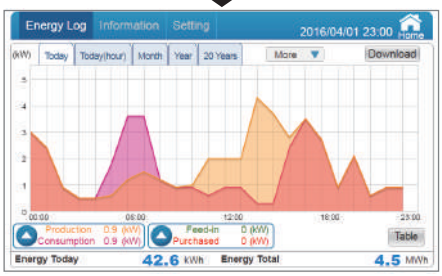
Graph

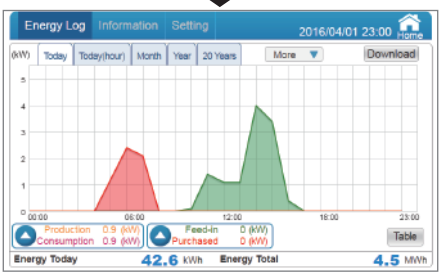
Power log for today (list display)



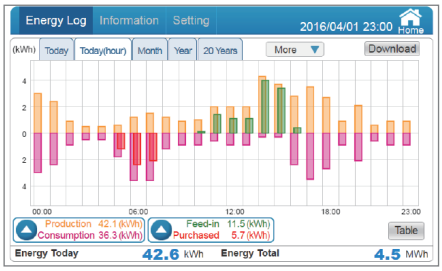
Production 0.9 (kW)
Consumption 0.9 (kW)

Feed-in 0 (kW)
Purchased 0 (kW)





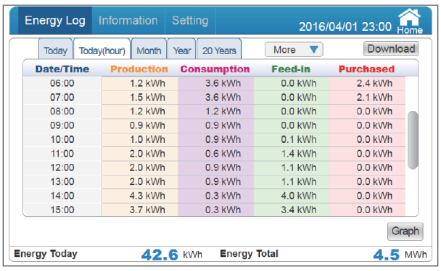
Power log for today by hours (graph display)
The power status for each hour can be verified.



Table

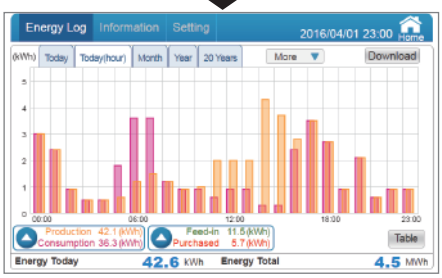
Graph

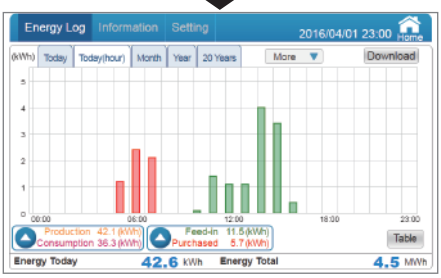
Power log for today by hours (list display)



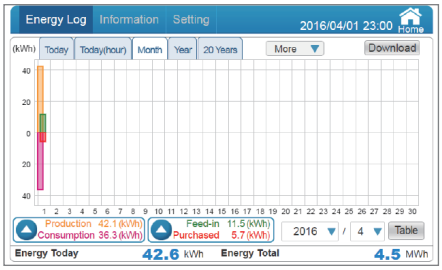
Production 42.1 (kWh)
Consumption 36.3 (kWh)

Feed-in 11.5 (kWh)
Purchased 5.7 (kWh)





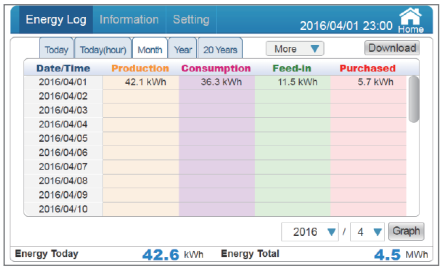
Power log for one month (graph display)
The power status for one month can be verified.

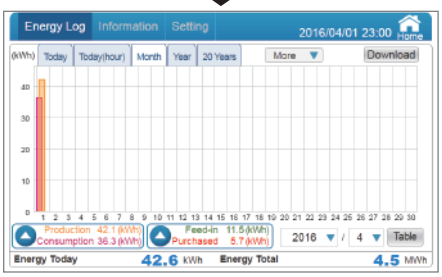


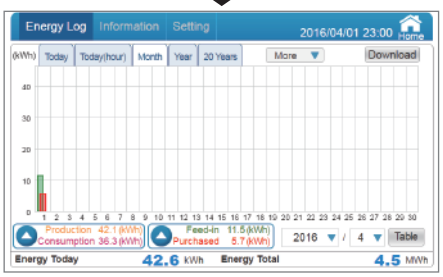
Table

Graph

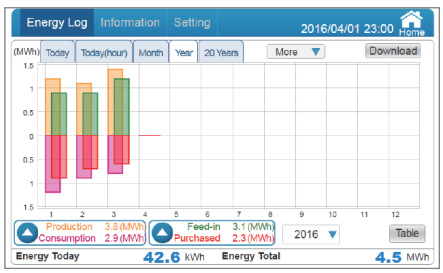
Power log for one month (list display)







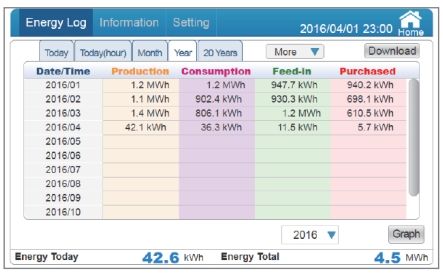
Power log for one year (graph display)
The power status for one year can be verified.

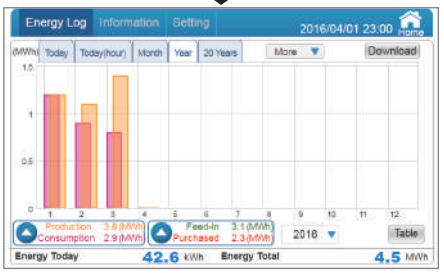


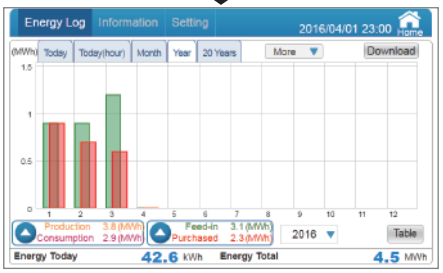
Table

Graph

Power log for one year (list display)







Electric power log for 20 years (graph display)
The electric power status for 20 years can be verified.

Electric power log for 20 years (list display)

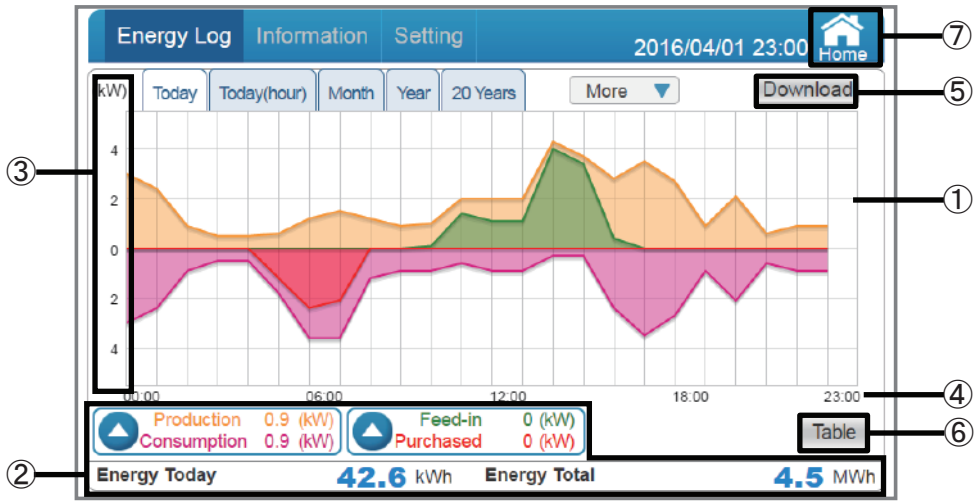
【 Power log graph (log for today) 】

The details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by graphs.

● Type of graph

Instantaneous power status for the 24 hour time span of the current day is shown in increments of 15 minute intervals.

● Graph screen



① Graph areas

The details on respective power attributes are shown with color coded line graph (power production: orange / power consumption: purple / power feed-in: green / power purchase: red).

② Power / Amount of Power display area

Power production: The amount of instantaneous electric power production for today is displayed.	Power feed-in: The amount of instantaneous electric power sold for today is displayed.
Power consumption: The amount of instantaneous electric power consumed for today is displayed.	Power purchase: The amount of instantaneous electric power purchased for today is displayed.
Amount of electric power production for today: The amount of electric power production today is displayed.	Accumulated amount of electric power production: The accumulated amount of electric power production as of today is displayed.

※ The power displayed under power production / power consumption / power feed-in / power purchase represents the instantaneous power with the log for “today” only.

The graph comprised only of power production and consumption can be viewed by touching  (Page 39).

The graph comprised only of power feed-in and purchase can be viewed by touching  (Page 39).

③ Power graph scale

The scale of the graph is displayed.

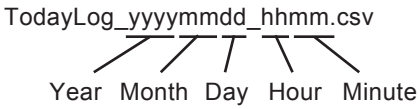
④ Time scale

The time scale suitable for respective log displays (daily / monthly / yearly) is displayed.

Log	Unit
Log for today	Time
Log for 1 month	Day
Log for 1 year	Month
Log for 20 years	Year

⑤ Download

Data can be downloaded onto USB memory.
Respective power details for a 3 month period, including the current day, are downloaded as data in 15-minute increments.
Format: CSV
File name: TodayLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Date (date)
Time (time)
Power Production Max (kW) (maximum amount of power production)
Power Consumption Max (kW) (maximum amount of power consumed)
Power Import Max (kW) (maximum amount of power purchased)
Power Export Max (kW) (maximum amount of power feed-in)

⑥ Table

The details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists. (Page 41)

⑦ Home

Change the display to the Home screen.

● Operating method

- In the Home screen, touch Energy Log → Today .
- A list is displayed with Table .
- Touch Production 0.9 (kW) Consumption 0.9 (kW) Feed-in 0 (kW) Purchased 0 (kW) to switch respective power graphs.
- Touch the desired log (Today | Today(hour) | Month | Year | 20 Years) to switch respective power graphs.

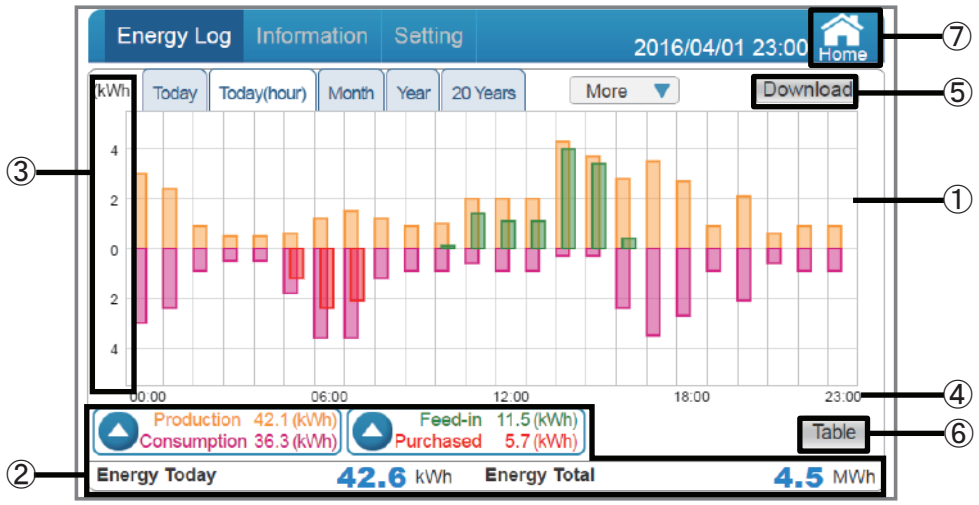
【 Power log graph (log for today (hour)) 】

The details on the power status of respective power amounts (power production / power consumption / power feed-in / power purchase) are displayed by graphs.

● Type of graph

Power status for the 24 hour time span of the current day is shown in increments of 1 hour intervals.

● Graph screen



① Graph areas

The details on respective power amounts are shown with color coded bar graph (power production: orange / power consumption: purple / power feed-in: green / power purchase: red).

② Amount of Power display area

Power production: The amount of electric power production for today is displayed.	Power feed-in: The amount of electric power sold for today is displayed.
Power consumption: The amount of electric power consumed for today is displayed.	Power purchase: The amount of electric power purchased for today is displayed.
Amount of electric power production for today: The amount of electric power production today is displayed.	Accumulated amount of electric power production: The accumulated amount of electric power production as of today is displayed.

The graph comprised only of power production and consumption can be viewed by touching Production 42.1 (kWh) Consumption 36.3 (kWh) (Page 39).

The graph comprised only of power feed-in and purchase can be viewed by touching Feed-in 11.5 (kWh) Purchased 5.7 (kWh) (Page 39).

③ Power graph scale

The scale of the graph is displayed.

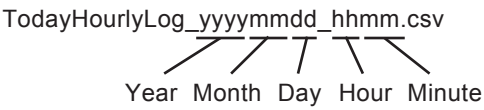
④ Time scale

The time scale suitable for respective log displays (daily / monthly / yearly) is displayed.

Log	Unit
Log for today	Time
Log for 1 month	Day
Log for 1 year	Month
Log for 20 years	Year

⑤ Download

Data can be downloaded onto USB memory.
Respective power details for a 3 month period, including the current day, are downloaded as data in 1-hour increments.
Format: CSV
File name: TodayHourlyLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Date (date)
Time (time)
Energy Generation (kWh) (amount of power production)
Energy Consumption (kWh) (amount of power consumed)
Energy Import (kWh) (amount of power purchased)
Energy Export (kWh) (amount of power feed-in)

⑥ Table

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists. (Page 43)

⑦ Home

Change the display to the Home screen.

● Operating method

- In the Home screen, touch Energy Log → Today(hour) .
- A list is displayed with Table .
- Touch Production 42.1 (kWh) / Consumption 36.3 (kWh) Feed-in 11.5 (kWh) / Purchased 5.7 (kWh) to switch respective power graphs.
- Touch the desired log (Today | Today(hour) | Month | Year | 20 Years) to switch respective power graphs.

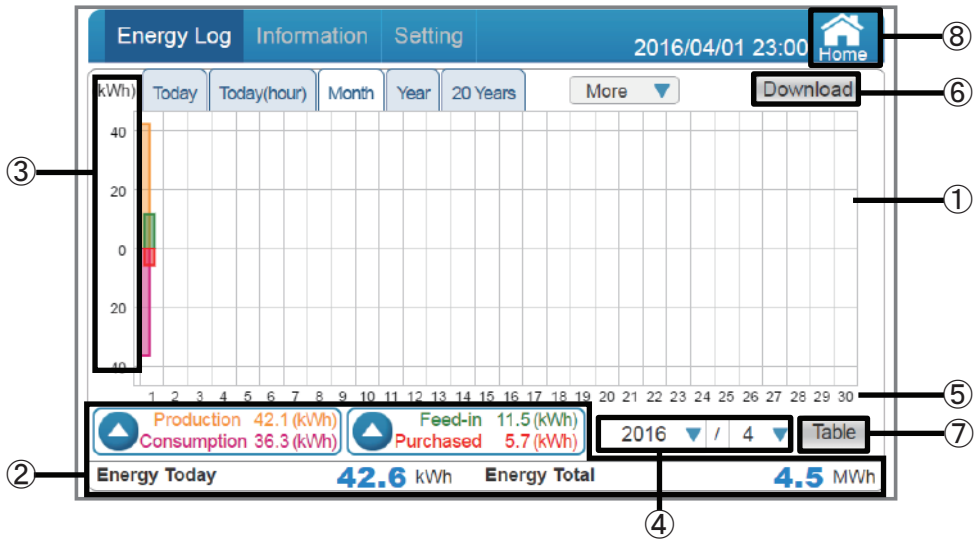
【 Power log graph (log for 1 month) 】

The details on the power status of respective power amounts (power production / power consumption / power feed-in / power purchase) are displayed by graphs.

● Type of graph

Power status for 1 month is shown in increments of 1 day intervals. (Including current day)

● Graph screen



① Graph areas

The details on respective power amounts are shown with color coded bar graph (power production: orange / power consumption: purple / power feed-in: green / power purchase: red).

② Amount of Power display area

Power production: The amount of electric power production for current month is displayed.	Power feed-in: The amount of electric power sold for current month is displayed.
Power consumption: The amount of electric power consumed for current month is displayed.	Power purchase: The amount of electric power purchased for current month is displayed.
Amount of electric power production for today: The amount of electric power production today is displayed.	Accumulated amount of electric power production: The accumulated amount of electric power production as of today is displayed.

The graph comprised only of power production and consumption can be viewed by touching Production 42.1 (kWh) Consumption 36.3 (kWh) (Page 39).

The graph comprised only of power feed-in and purchase can be viewed by touching Feed-in 11.5 (kWh) Purchased 5.7 (kWh) (Page 39).

③ Power graph scale

The scale of the graph is displayed.

④ Display period

The display period is indicated by respective units (month / year). Either the year or the month can be selected by touch. The display by year can only be selected if there is any power production performance for that year.

⑤ Time scale

The time scale suitable for respective log displays (daily / monthly / yearly) is displayed.

Log	Unit
Log for today	Time
Log for 1 month	Day
Log for 1 year	Month
Log for 20 years	Year

⑥ Download

Data can be downloaded onto USB memory.

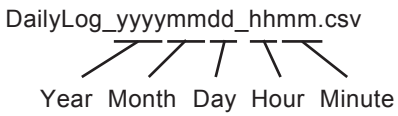
Respective power details for a 3 month period are downloaded as data in 1-day increments.

Format: CSV

File name: DailyLog_yyyymmdd_hhmm.csv

The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.

The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Date (date)

Energy Generation (kWh) (amount of power production)

Energy Consumption (kWh) (amount of power consumed)

Energy Import (kWh) (amount of power purchased)

Energy Export (kWh) (amount of power feed-in)

⑦ Table

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists. (Page 45)

⑧ Home

Change the display to the Home screen.

● Operating method

- In the Home screen, touch Energy Log → Month .
- A list is displayed with Table .
- Touch Production 42.1 (kWh) / Consumption 36.3 (kWh) Feed-in 11.5 (kWh) / Purchased 5.7 (kWh) to switch respective power graphs.
- Touch the desired log (Today | Today(hour) | Month | Year | 20 Years) to switch respective power graphs.

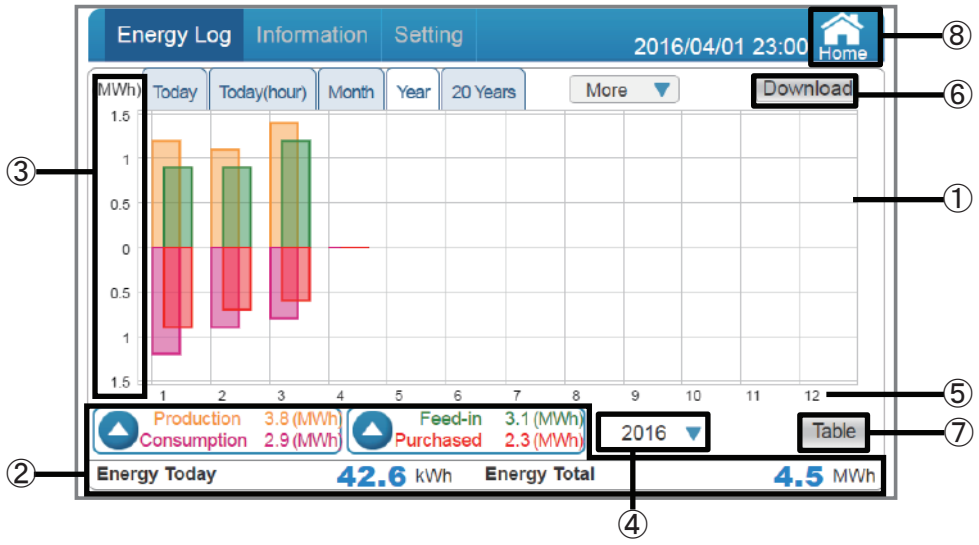
【 Power log graph (log for 1 year) 】

The details on the power status of respective power amounts (power production / power consumption / power feed-in / power purchase) are displayed by graphs.

● Type of graph

Power status for 1 year is shown in increments of 1-month intervals. (Including current month)

● Graph screen



① Graph areas

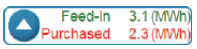
The details on respective power amounts are shown with color coded bar graph (power production: orange / power consumption: purple / power feed-in: green / power purchase: red).

② Amount of Power display area

Power production: The amount of electric power production for current year is displayed.	Power feed-in: The amount of electric power sold for current year is displayed.
Power consumption: The amount of electric power consumed for current year is displayed.	Power purchase: The amount of electric power purchased for current year is displayed.
Amount of electric power production for today: The amount of electric power production today is displayed.	Accumulated amount of electric power production: The accumulated amount of electric power production as of today is displayed.

The graph comprised only of power production and consumption can be viewed by touching 

(Page 39).

The graph comprised only of power feed-in and purchase can be viewed by touching 

(Page 39).

③ Power graph scale

The scale of the graph is displayed.

④ Display period

The display period is indicated for each year. The year can be selected by touch.
The display by year can only be selected if there is any power production performance for that year.

⑤ Time scale

The time scale suitable for respective log displays (daily / monthly / yearly) is displayed.

Log	Unit
Log for today	Time
Log for 1 month	Day
Log for 1 year	Month
Log for 20 years	Year

⑥ Download

Data can be downloaded onto USB memory.

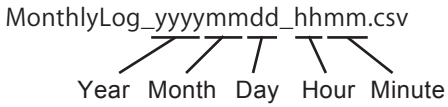
Respective power details for a 1 year period are downloaded as data in 1-month increments.

Format: CSV

File name: MonthlyLog_yyyymmdd_hhmm.csv

The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.

The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Month (month)

Energy Generation (kWh) (amount of power production)

Energy Consumption (kWh) (amount of power consumed)

Energy Import (kWh) (amount of power purchased)

Energy Export (kWh) (amount of power feed-in)

⑦ Table

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists. (Page 47)

⑧ Home

Change the display to the Home screen.

● Operating method

- In the Home screen, touch Energy Log → Year .
- A list is displayed with Table .
- Touch Production 3.8 (MWh) Consumption 2.9 (MWh) Feed-in 3.1 (MWh) Purchased 2.3 (MWh) to switch respective power graphs.
- Touch the desired log (Today | Today(hour) | Month | Year | 20 Years) to switch respective power graphs.

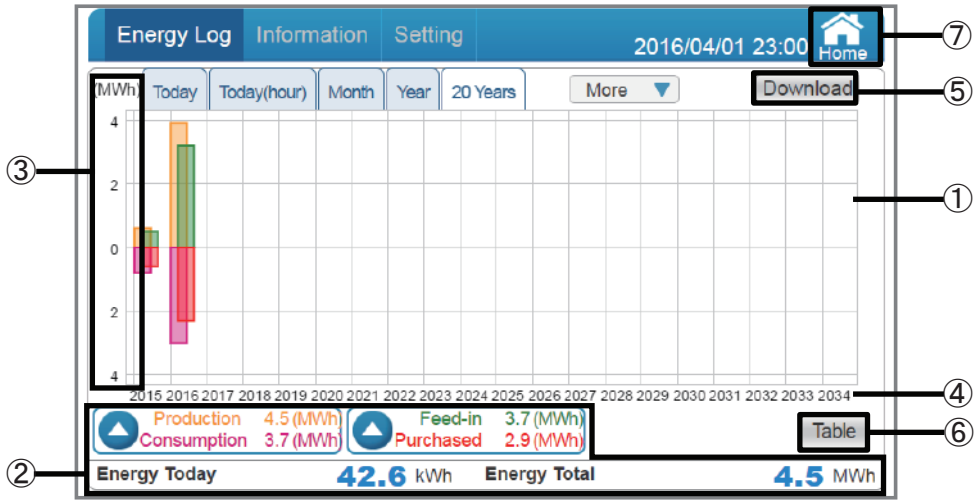
【 Power log graph (log for 20 years) 】

The details on the power status of respective power amounts (power production / power consumption / power feed-in / power purchase) are displayed by graphs.

● Type of graph

Power status for 20 years is shown in increments of 1-year intervals. (Including current year)

● Graph screen



① Graph areas

The details on respective power amounts are shown with color coded bar graph (power production: orange / power consumption: purple / power feed-in: green / power purchase: red).

② Amount of Power display area

Power production: The amount of electric power production for 20 years is displayed.	Power feed-in: The amount of electric power sold for 20 years is displayed.
Power consumption: The amount of electric power consumed for 20 years is displayed.	Power purchase: The amount of electric power purchased for 20 years is displayed.
Amount of electric power production for today: The amount of electric power production today is displayed.	Accumulated amount of electric power production: The accumulated amount of electric power production as of today is displayed.

The graph comprised only of power production and consumption can be viewed by touching 

(Page 39).

The graph comprised only of power feed-in and purchase can be viewed by touching 

(Page 39).

③ Power graph scale

The scale of the graph is displayed.

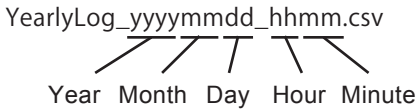
④ Time scale

The time scale suitable for respective log displays (daily / monthly / yearly) is displayed.

Log	Unit
Log for today	Time
Log for 1 month	Day
Log for 1 year	Month
Log for 20 years	Year

⑤ Download

Data can be downloaded onto USB memory.
Respective power details for a 20-year period, including the current year, are downloaded as data in 1-year increments.
Format: CSV
File name: YearlyLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Year (year)
Energy Generation (kWh) (amount of power production)
Energy Consumption (kWh) (amount of power consumed)
Energy Import (kWh) (amount of power purchased)
Energy Export (kWh) (amount of power feed-in)

⑥ Table

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists. (Page 49)

⑦ Home

Change the display to the Home screen.

● Operating method

- In the Home screen, touch Energy Log → 20 Years .
- A list is displayed with Table .
- Touch Production 4.5 (MWh) Consumption 3.7 (MWh) Feed-in 3.7 (MWh) Purchased 2.9 (MWh) to switch respective power graphs.
- Touch the desired log (Today | Today(hour) | Month | Year | 20 Years) to switch respective power graphs.

【Power log graph (Production 42.1 (kWh) Consumption 36.3 (kWh) ／ Feed-in 11.5 (kWh) Purchased 5.7 (kWh)) 】

The details on the power status, categorized into two pairs of power production with power consumption and power feed-in with power purchase are displayed by graphs.

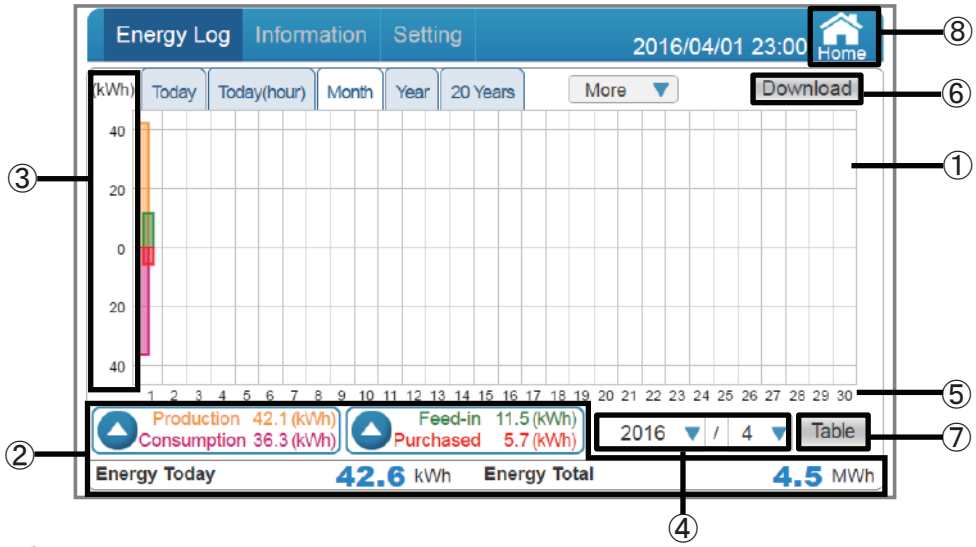
●Type of graph

Production 3.8 (MWh) Consumption 2.9 (MWh) : A graph showing only power production and power consumption is displayed.

Feed-in 11.5 (kWh) Purchased 5.7 (kWh) : A graph showing only power feed-in and power purchase is displayed.

●Graph screen

The screen is a display example for the 1 month log Production 42.1 (kWh) Consumption 36.3 (kWh) .



① Graph areas

A bar graph is displayed, with respective power amounts (Production 42.1 (kWh) Consumption 36.3 (kWh) Feed-in 11.5 (kWh) Purchased 5.7 (kWh)) color coded.

② Amount of Power display area

power production: The amount of electric power production for current month is displayed.	Power feed-in: The amount of electric power sold for current month is displayed.
Power consumption: The amount of electric power consumed for current month is displayed.	Power purchase: The amount of electric power purchased for current month is displayed.
Amount of electric power production for today: The amount of electric power production today is displayed.	Accumulated amount of electric power production: The accumulated amount of electric power production as of today is displayed.

※ The power amount displayed under power production / power consumption / power feed-in / power purchase represents the instantaneous power amount with the log for “today” only.

③ Power graph scale

The scale of the graph is displayed.

④ Display period

The display period is indicated by respective units (month / year). Either the year or the month can be selected by touch. The display by year can only be selected if there is any power production performance for that year.

⑤ Time scale

The time scale suitable for respective log displays (daily / monthly / yearly) is displayed.

Log	Unit
Log for today	Time
Log for 1 month	Day
Log for 1 year	Month
Log for 20 years	Year

⑥ Download

Data can be downloaded onto USB memory. (The format is CSV). Details are the same as those for respective power log graphs.

⑦ Table

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists. (Page 45)

⑧ Home

Change the display to the Home screen.

●Operating method

- In the Home screen, touch Energy Log and then touch Production 42.1 (kWh) Consumption 36.3 (kWh) Feed-in 11.5 (kWh) Purchased 5.7 (kWh) of desired log to view respective power status.
- Touch Table to display a list screen.

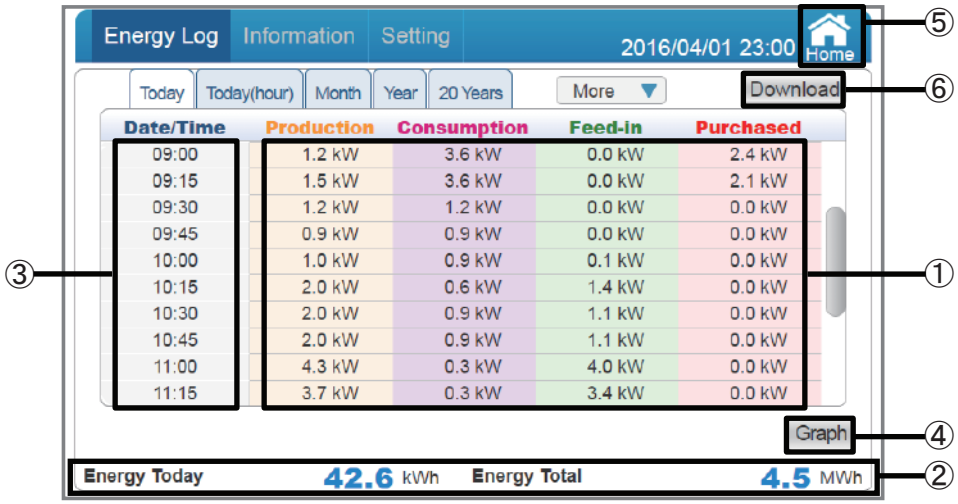
【 List display (log for today) 】

The details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists.

● Type of list

Log for today list: Power status for the 24 hour time span of the current day is shown in increments of 15 minute intervals.

● List display screen



① Power data

The details on the power status of respective power attributes for the applicable period (power production / power consumption / power feed-in / power purchase) are displayed by numerical values. The maximum amounts of power for 15 minute intervals are displayed. Values that have been rounded up or off are displayed.

② Amount of Power display area

Energy Today: The amount of power production today is displayed.
Energy Total: The accumulated amount of power production as of today is displayed.

③ Date / Time

The date / time suitable for respective performance displays (daily / monthly / yearly) are displayed.

④ Graph

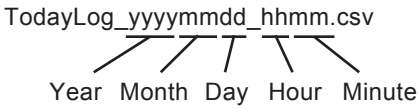
The graph screen for the performance data of respective power statuses (power production / power consumption / power feed-in / power purchase) is displayed. (Page 29)

⑤ Home

Change the display to the Home screen.

⑥ Download

Data can be downloaded onto USB memory.
Respective power details for a 3 month period, including the current day, are downloaded as data in 15-minute increments.
Format: CSV
File name: TodayLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Date (date)
Time (time)
Power Production Max (kW) (maximum amount of power production)
Power Consumption Max (kW) (maximum amount of power consumed)
Power Import Max (kW) (maximum amount of power purchased)
Power Export Max (kW) (maximum amount of power feed-in)

●Operating method

・In the Home screen, touch Energy Log → Today → Table to display lists of details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase).

・Touch Graph to return to the graph display of performance data.

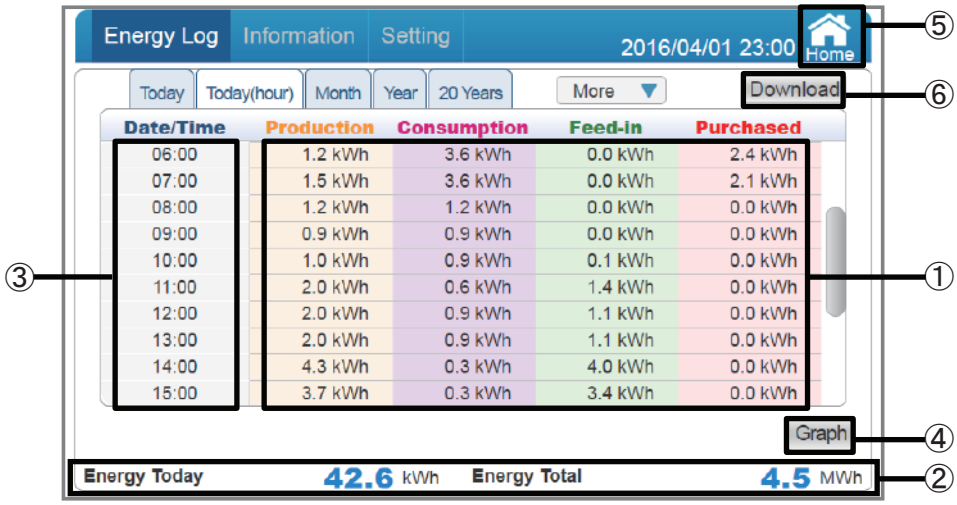
【 List display (log for today (hour)) 】

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists.

● Type of list

Log for today (hour) list: Power status for the 24 hour time span of the current day is shown in increments of 1 hour intervals.

● List display screen



① Power amount data

The details on the power amount of respective power attributes for the applicable period (power production / power consumption / power feed-in / power purchase) are displayed by numerical values.

Values that have been rounded up or off are displayed.

② Amount of Power display area

Energy Today: The amount of power production today is displayed.

Energy Total: The accumulated amount of power production as of today is displayed.

③ Date / Time

The date / time suitable for respective performance displays (daily / monthly / yearly) are displayed.

④ Graph

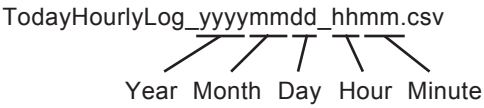
The graph screen for the performance data of respective power statuses (power production / power consumption / power feed-in / power purchase) is displayed. (Page 31)

⑤ Home

Change the display to the Home screen.

⑥ Download

Data can be downloaded onto USB memory.
Respective power details for a 3 month period, including the current day, are downloaded as data in 1-hour increments.
Format: CSV
File name: TodayHourlyLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Date (date)
Time (time)
Energy Generation (kWh) (amount of power production)
Energy Consumption (kWh) (amount of power consumed)
Energy Import (kWh) (amount of power purchased)
Energy Export (kWh) (amount of power feed-in)

●Operating method

・In the Home screen, touch Energy Log → Today(hour) → Table to display lists of details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase).

・Touch Graph to return to the graph display of performance data.

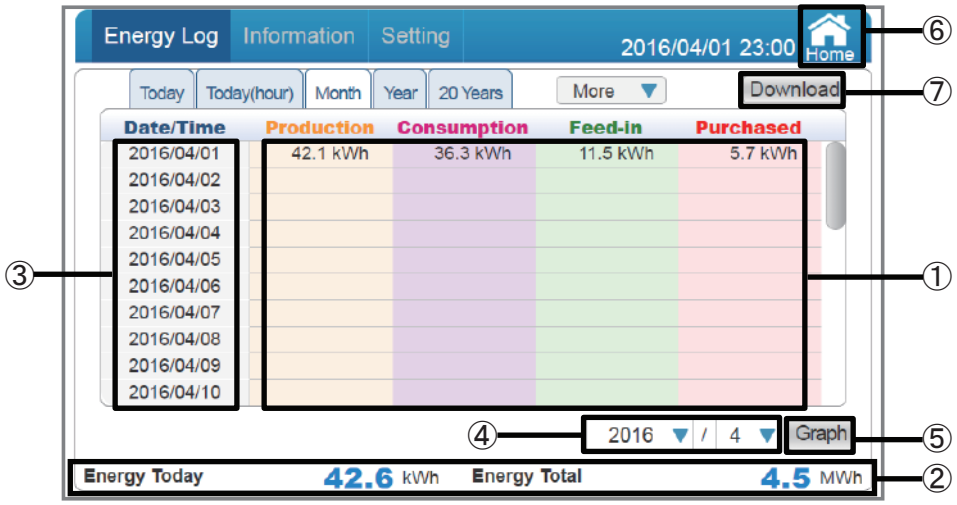
【 List display (log for 1 month) 】

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists.

● Type of list

Log for 1 month list: Power status for 1 month is shown in increments of 1-day intervals.

● List display screen



① Power amount data

The details on the power amount of respective power attributes for the applicable period (power production / power consumption / power feed-in / power purchase) are displayed by numerical values. Values that have been rounded up or off are displayed.

② Amount of Power display area

Energy Today: The amount of power production today is displayed.
Energy Total: The accumulated amount of power production as of today is displayed.

③ Date / Time

The date / time suitable for respective performance displays (daily / monthly / yearly) are displayed.

④ Display period

The display period is indicated by respective units (month / year).

⑤ Graph

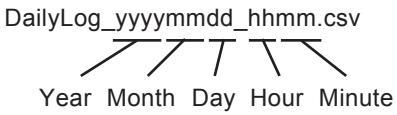
The graph screen for the performance data of respective power statuses (power production / power consumption / power feed-in / power purchase) is displayed. (Page 33, Page 39)

⑥ Home

Change the display to the Home screen.

⑦ Download

Data can be downloaded onto USB memory.
Respective power details for a 3 month period are downloaded as data in 1-day increments.
Format: CSV
File name: DailyLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Date (date)
Energy Generation (kWh) (amount of power production)
Energy Consumption (kWh) (amount of power consumed)
Energy Import (kWh) (amount of power purchased)
Energy Export (kWh) (amount of power feed-in)

●Operating method

・In the Home screen, touch Energy Log → Month → Table to display lists of details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase).

・Touch Graph to return to the graph display of performance data.

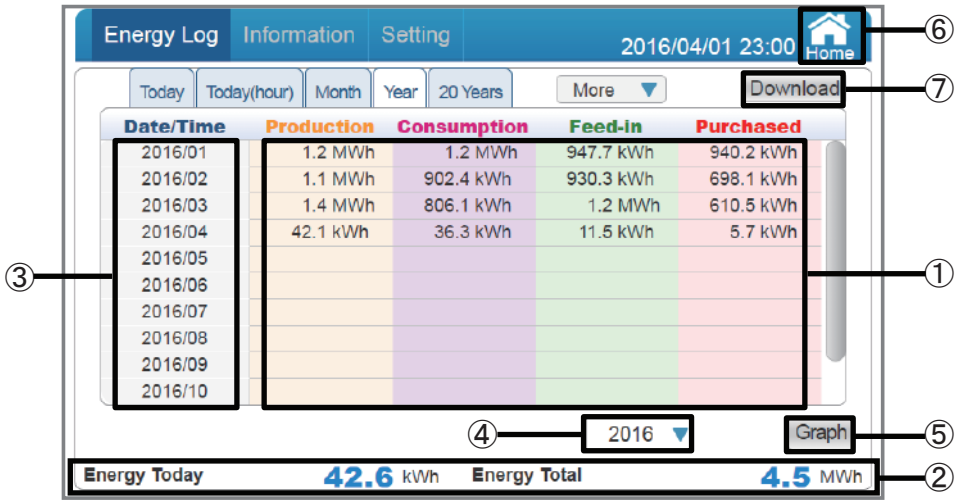
【 List display (log for 1 year) 】

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists.

● Type of list

Log for 1 year list: Power status for 1 year is shown in increments of 1-month intervals.

● List display screen



① Power amount data

The details on the power amount of respective power attributes for the applicable period (power production / power consumption / power feed-in / power purchase) are displayed by numerical values.
Values that have been rounded up or off are displayed.

② Amount of Power display area

Energy Today: The amount of power production today is displayed.
Energy Total: The accumulated amount of power production as of today is displayed.

③ Date / Time

The date / time suitable for respective performance displays (daily / monthly / yearly) are displayed.

④ Display period

The display period is indicated for each year.

⑤ Graph

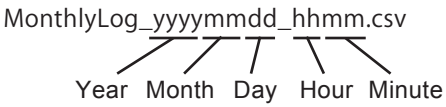
The graph screen for the performance data of respective power statuses (power production / power consumption / power feed-in / power purchase) is displayed. (Page 35)

⑥ Home

Change the display to the Home screen.

⑦ Download

Data can be downloaded onto USB memory.
Respective power details for a 1 year period are downloaded as data in 1-month increments.
Format: CSV
File name: MonthlyLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Month (month)
Energy Generation (kWh) (amount of power production)
Energy Consumption (kWh) (amount of power consumed)
Energy Import (kWh) (amount of power purchased)
Energy Export (kWh) (amount of power feed-in)

●Operating method

・In the Home screen, touch Energy Log → Year → Table to display lists of details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase).

・Touch Graph to return to the graph display of performance data.

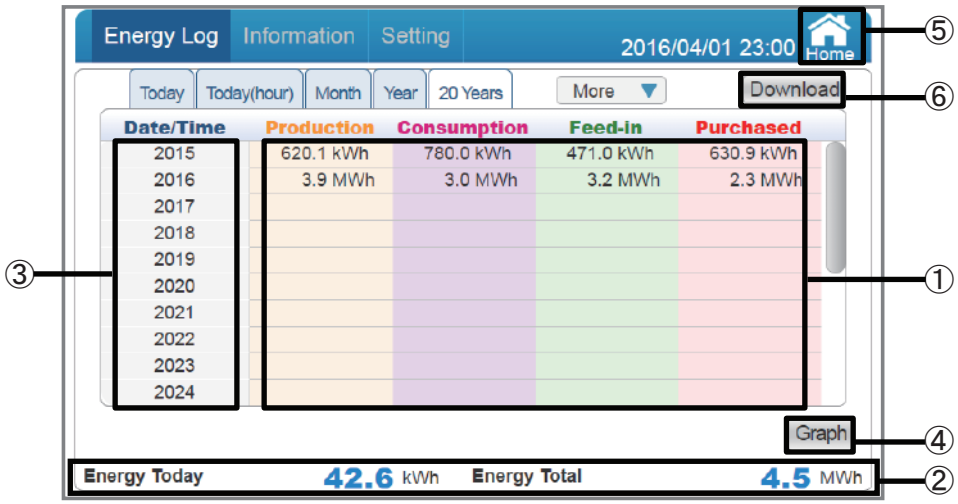
【 List display (log for 20 years) 】

The details on the power amount of respective power attributes (power production / power consumption / power feed-in / power purchase) are displayed by lists.

● Type of list

Log for 20 years list: Power status for 20 years is shown in increments of 1-year intervals.

● List display screen



① Power amount data

The details on the power amount of respective power attributes for the applicable period (power production / power consumption / power feed-in / power purchase) are displayed by numerical values. Values that have been rounded up or off are displayed.

② Amount of Power display area

Energy Today: The amount of power production today is displayed.

Energy Total: The accumulated amount of power production as of today is displayed.

③ Date / Time

The date / time suitable for respective performance displays (daily / monthly / yearly) are displayed.

④ Graph

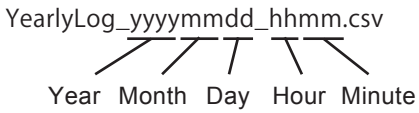
The graph screen for the performance data of respective power statuses (power production / power consumption / power feed-in / power purchase) is displayed. (Page 37)

⑤ Home

Change the display to the Home screen.

⑥ Download

Data can be downloaded onto USB memory.
Respective power details for a 20-year period, including the current year, are downloaded as data in 1-year increments.
Format: CSV
File name: YearlyLog_yyyymmdd_hhmm.csv
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Year (year)
Energy Generation (kWh) (amount of power production)
Energy Consumption (kWh) (amount of power consumed)
Energy Import (kWh) (amount of power purchased)
Energy Export (kWh) (amount of power feed-in)

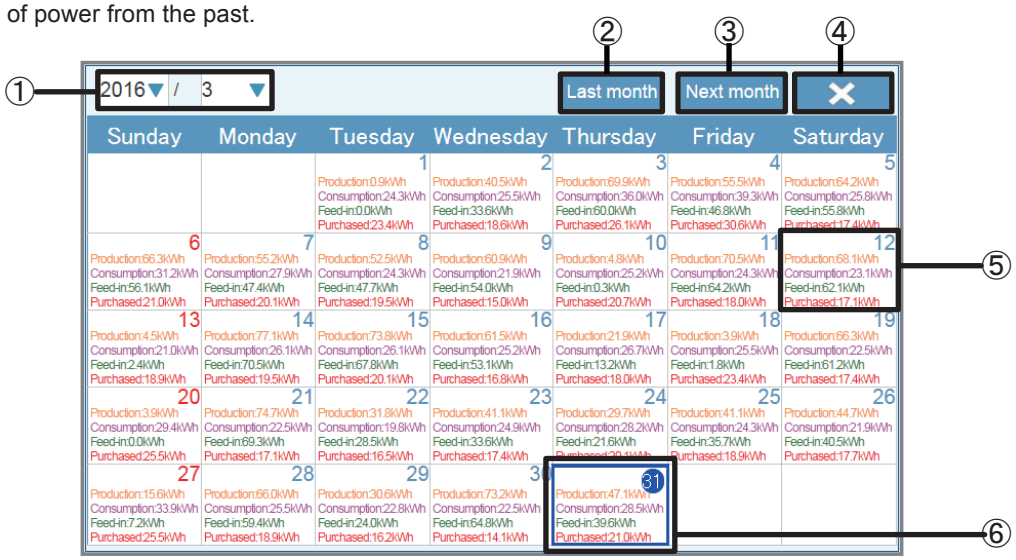
●Operating method

・In the Home screen, touch Energy Log → 20 Years → Table to display lists of details on the power status of respective power attributes (power production / power consumption / power feed-in / power purchase).

・Touch Graph to return to the graph display of performance data.

【 Calendar function 】

Power statuses from the past can be verified on the calendar, to review the details on the amount of power from the past.

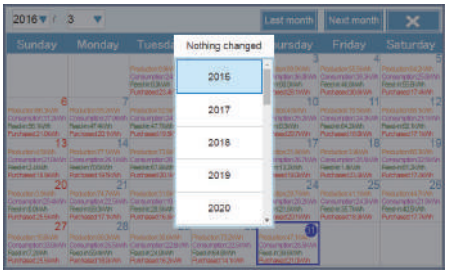


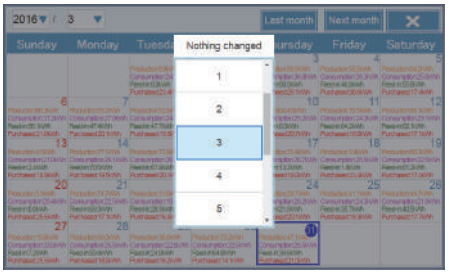
① Date

Year: Year is displayed according to the Gregorian calendar. The year can be changed with a touch.

Month: Month is displayed. The month can be changed with a touch.

Touching the “Nothing Changed” button reverts the display to the Calendar screen.





② Last month

Change the display to the previous month.

③ Next month

Change the display to the next month.

④

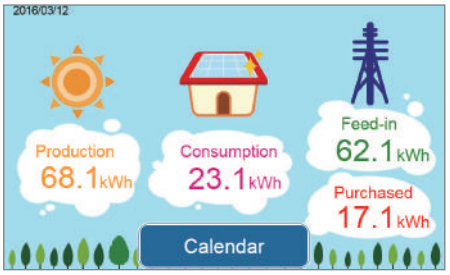
Change the display to the power history for today.

⑤ Power history

The power status for the day is displayed by numerical values. Respective amounts of power are color coded

(power production: orange; power consumption: purple; power feed-in: green; power purchase: red)

Touch on a desired date to switch the display to the Power history screen for that day.



Calendar Touch this button will return to the Calendar screen.

ⓒ Current day display

The current day is indicated by a blue frame.

When the date in the frame is a week day, it is displayed with outlined characters in a blue circle and if it is a Sunday it is displayed with outlined characters in a red circle.

● Operating method

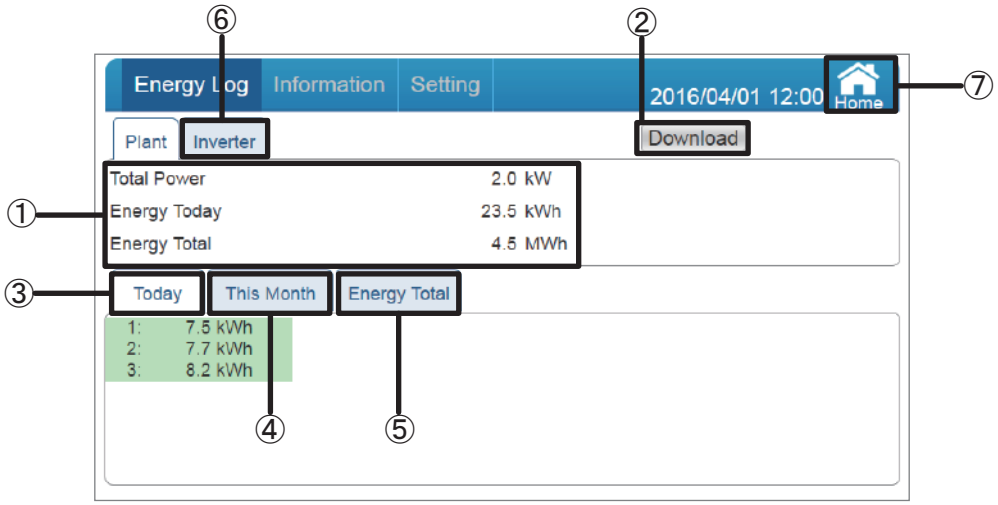
・In the Home screen, touch 

→ Calendar .

・Touch on a desired date to switch the display to the Power status screen for that day.

【Measurement → Plant】

The status of the plant can be verified based on the measurement values, when various measurement values are viewed.



① Plant screen

The energy today and the energy total are displayed.

Total power: The instantaneous amount of power generated at that moment is displayed.

Energy today: The amount of power generated today is displayed.

Energy total: The accumulated amount of power generated as of today is displayed.

② Download

Data can be downloaded to USB memory.

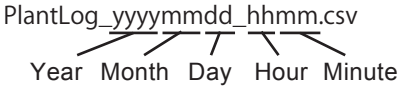
The total power, as well as energy today, energy total, and for respective Inverters as well as their totals is downloaded.

Format: CSV

File name: PlantLog_yyyymmdd_hhmm.csv

The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.

The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Plant Total Power (kW) (current power production)

Plant Today Energy (kWh) (amount of power production for today)

Plant Total Energy (kWh) (accumulated amount of power production)

The power production data of each Inverter is listed after the title of the data.

Inverter Index (Inverter No.)

Today Energy (kWh) (amount of power production for today)

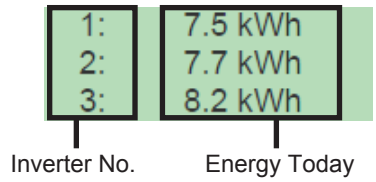
Month Energy (kWh) (amount of power production for the current month)

Total Energy (kWh) (accumulated amount of power production)

③ Today

Change the display to the Measurement values for today screen, where the status of the plant for today can be verified.

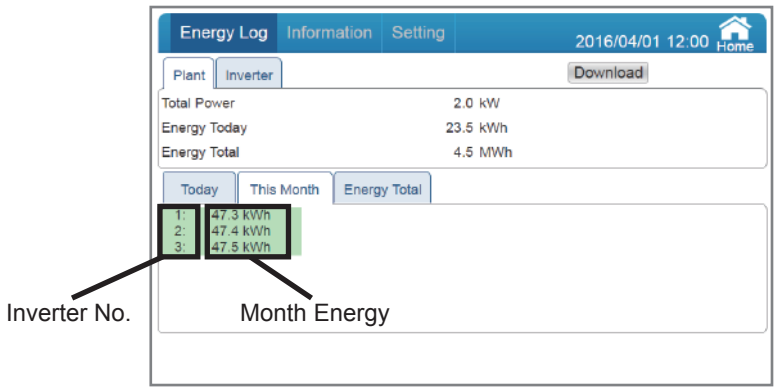
The energy today can be verified with each Inverter No.



④ This Month

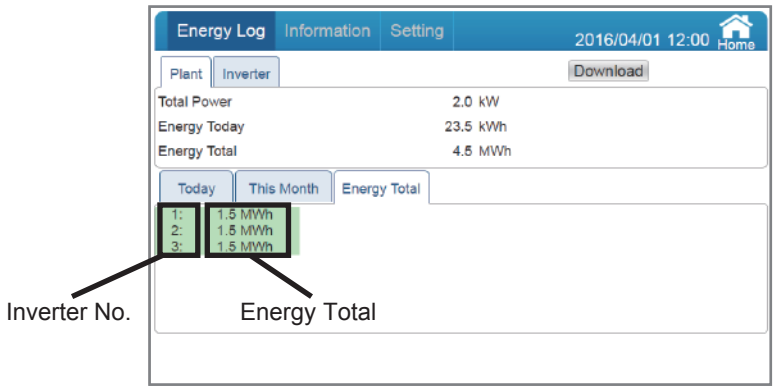
Change the display to the Measurement values for current month screen, where the status of the system for the current month can be verified.

The month energy can be verified with each Inverter No.



⑤ Energy Total

Change the display to the Measurement values screen for energy total, where the status on the energy total can be verified for each Inverter No.



The energy is accumulated for each Inverter and Power Monitor, respectively.
Therefore when a Inverter is replaced, the values for the energy may be different on the Inverter and a Power Monitor.

⑥ Inverter

Change the display to the Measurement values for Inverter screen, where the status of the Inverter can be verified.
Refer to “Measurement” → “Inverter” (Page 56) for details.

⑦ Home

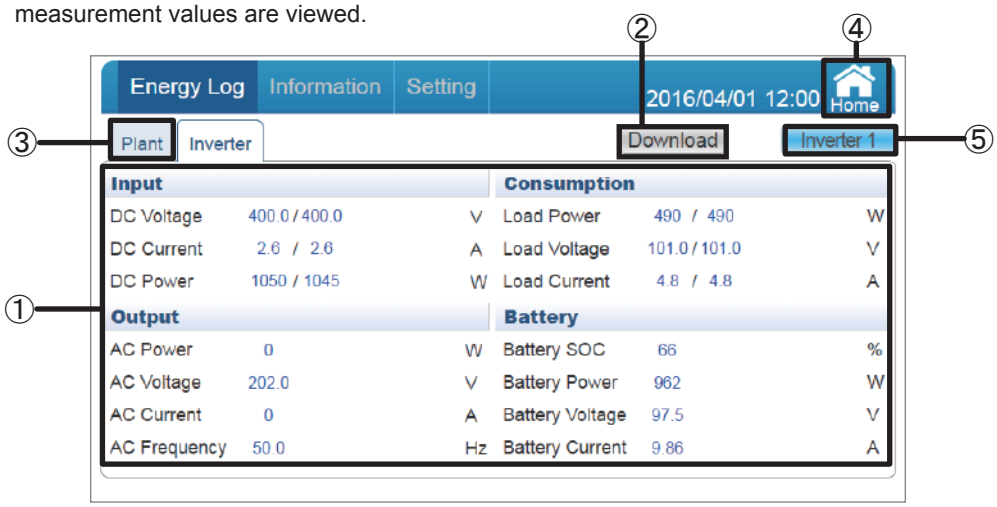
Change the display to the Home screen.

● Operating method

- Touch Energy Log → Measurement → Plant .
- Touch the desired measurement value (Today / This Month / Energy Total) to switch the display to respective measurement value screens.
- Inverter to display the measurement value screen of the Inverter.

【 Measurement→ Inverter 】

The status of the Inverter can be verified based on the measurement values, when various measurement values are viewed.



① Inverter screen

Input: Values are displayed for DC voltage, current and power of each circuit (The number of circuits vary, depending on the Inverter).

* Slight voltage may be displayed as the DC voltage of a circuit that is not in use, but this is not a malfunction.

Output: AC power, voltage, current and frequency are displayed.

Consumption: Shows Power, Voltage and Current of load.
(The value of circuits varies, depending on the Power Converter).

Battery: Show battery's SOC, Power, Voltage and Current.

② Download

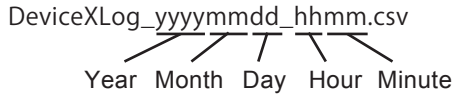
Data can be downloaded onto USB memory.

Format: CSV

File name: DeviceXLog_yyyymmdd_hhmm.csv

The "X" in the file name is the number of the Inverter, while "yyyymmdd" is the year for "yyyy", the month for "mm" and the day for "dd" on which the data is downloaded.

The file name "hhmm" represents the hour and minute at which the data was downloaded.



File description

Inverter Index (Inverter No.)

Date (date), Time (time)

DC1-Volt (V) (DC1 voltage), DC1-Current (A)(DC1 current), DC1-Power (W) (DC1 power)

DC2-Volt (V) (DC2 voltage), DC2-Current (A)(DC2 current), DC2-Power (W) (DC2 power)

DC3-Volt (V) (DC3 voltage), DC3-Current (A)(DC3 current), DC3-Power (W) (DC3 power)

DC4-Volt (V) (DC4 voltage), DC4-Current (A)(DC4 current), DC4-Power (W) (DC4 power)

AC Power (W) (AC power)

AC Volt (V) (AC electric voltage)

AC Current (A) (AC current)

AC Freq (Hz) (AC frequency)

* The number of circuits varies, depending on the Inverter.

③ Plant

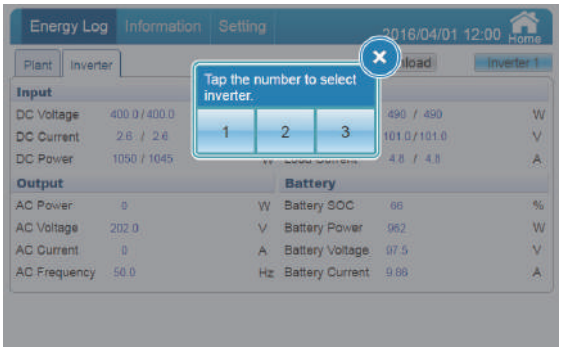
Change the display to the Measurement values screen, where the status of the plant can be verified.
Refer to “Measurement” → “Plant” (Page 53) for details.

④ Home

Change the display to the Home screen.

⑤ Inverter 1

A screen in which the desired Inverter can be selected is displayed.
Touch the button to display the Inverter Selection dialog box. Touch the number of the desired Inverter.



● Operating method

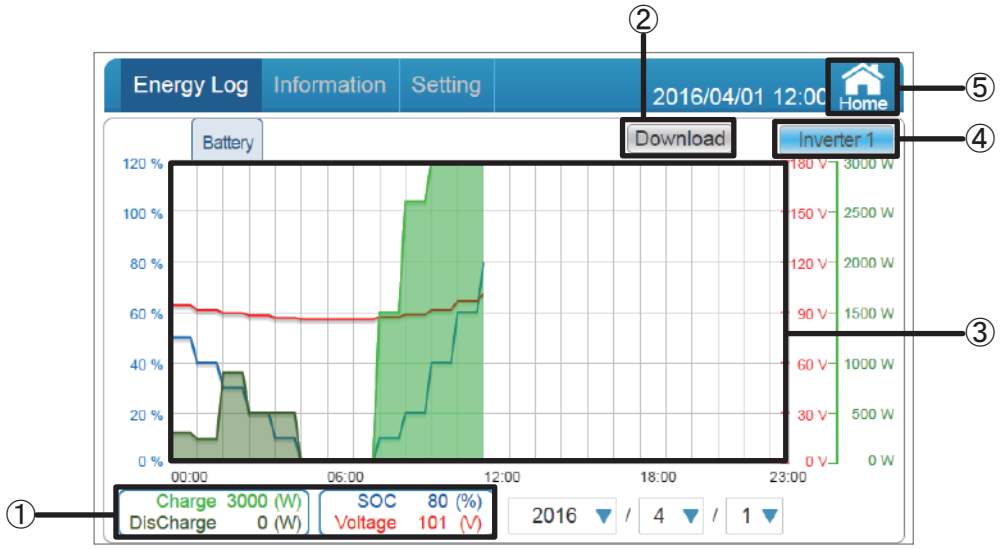
- Touch Energy Log → Measurement → Inverter .
- Inverter 1 the desired Inverter (1 / 2 / 3) to switch the measurement value screens of respective Inverters.
- Touch Plant to display the measurement value screen of the Plant.

【 Battery 】

The details on the electric power status of battery (Charge/Discharge/SOC/Voltage) are displayed by graphs.

● Type of graph

Log for day graph: Electric power status for the 24 hour time span of the selected day is shown in increments of 15 minute intervals.



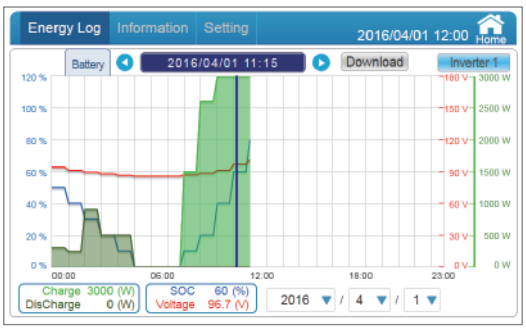
① The details on respective electric power attributes are shown with color coded line graph (Charge: Green/Discharge: Dark Green/SOC: Blue/Voltage: Red).

② Data can be downloaded onto USB memory.
Respective electric power details of battery for a 1 day period as data in 15-minute increments.

③ The specific date can be selected by touch.

Touch the blue graph time axis, the information of selected time is also displayed with white words and blue background. The below Charge/Discharge/SOC/Voltage will become the information of selected time.

Click ◀ ▶ icon to adjust the time axis, the battery information of selected time will also be displayed.



④ Inverter 1

Touch the button to display the inverter selection dialog box. Touch the number of the desired battery of inverter.

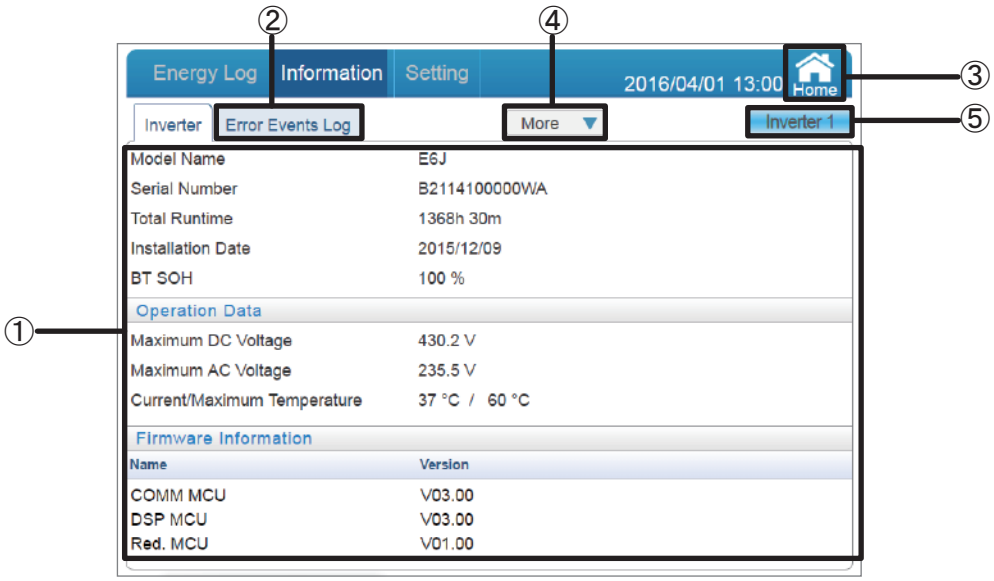
⑤ Home

Change the display to the Home screen.

3.3.3.Information

Status of the Inverter and the error log are displayed.

【 Inverter 】



① Inverter screen

Model name: The model name is displayed.

Serial Number: The serial number is displayed.

Total Runtime: The power generating time is displayed.

Installation Date: The power generation starting date is displayed.

[Operation Data]

Maximum DC voltage: The maximum DC voltage is displayed.

Maximum AC voltage: The maximum AC voltage is displayed.

Current/Maximum Temperature: The Current/Maximum value of temperature is displayed.

Firmware Information: The firmware versions of the Inverter are displayed.

② Error Events Log

The error log of the inverters can be verified.

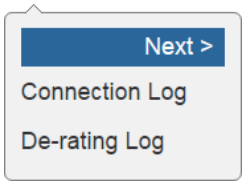
Refer to “Error Events Log” (Page 61) for details.

③ Home

Change the display to the Home screen.

④ More

Touching this button to display another page menu.
Touch the desired page to switch the display to the desired screen.



Connection Log

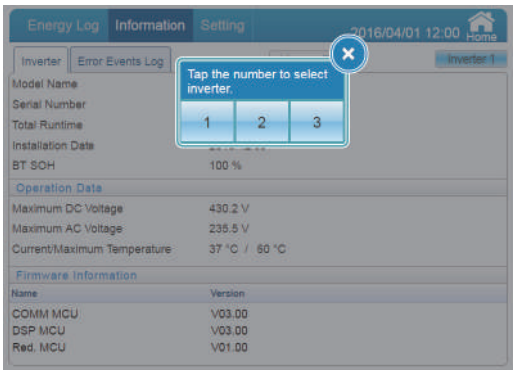
Log of the connections between monitor and inverters (meters) can be verified.
Refer to “Connection Log” (Page 63) for details.

De-rating Log

Voltage elevation and temperature elevation suppression can be verified.
Refer to “De-rating Log” (Page 65) for details.

⑤ Inverter 1

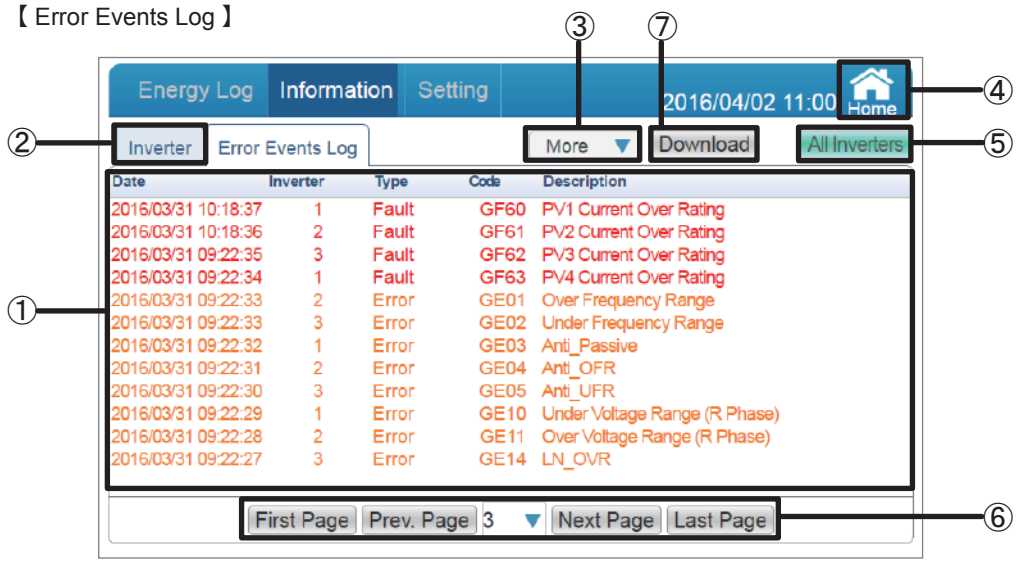
A screen in which the desired Inverter can be selected is displayed.
Touch the button to display the Inverter Selection dialog box. Touch the ID of the desired Inverter.



● Operating method

- In the Home screen, touch Information → Inverter .
- Touch Inverter 1 to select the desired Inverter and (1 / 2 / 3) to switch the measurement value screens of respective Inverters.
- Use Error Events Log , More to switch screens.

【 Error Events Log 】



① Error Events Log screen

Date: The occurrence dates are displayed in chronological order, with the most recent date on the top.

Maximum of 1,000 entries are stored, irrespective of the number of Inverters.

Once the number of entries exceeds 1,000 the data with the oldest date is overwritten.

Inverter: The inverter No. is displayed.

Type: The type of error (error: orange; fault: red; warning: yellow) is displayed.

Error code: The error code is displayed.

Description: The explanation on the description of the error is displayed.

Refer to the Installation and Maintenance Manual of the Inverter for details on the responsive actions to be taken when one or more errors occur.

② Inverter

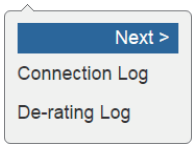
The status of the inverter can be verified.

Refer to “Information → Inverter” (Page 59) for details.

③ More

Touching this button to display another page menu.

Touch the desired page to switch the display to the desired screen.



Connection Log

Log of the connections between monitor and inverters (meters) can be verified.

Refer to “Connection Log” (Page 63) for details.

De-rating Log

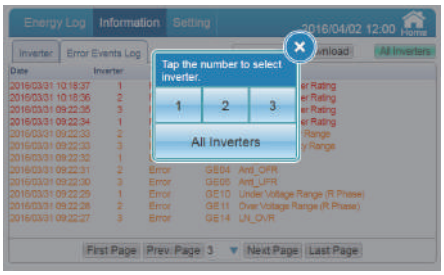
Voltage elevation and temperature elevation suppression can be verified.Refer to “De-rating Log” (Page 65) for details.

④ Home

Change the display to the Home screen.

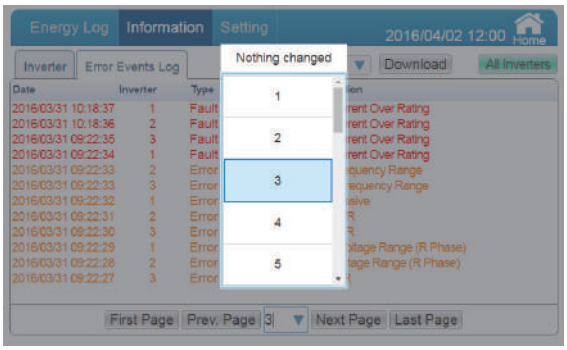
⑤ All Inverters

A screen in which the desired Inverter can be selected is displayed. Touch the button to display the Inverter Selection dialog box. Touch the No. of the desired Inverter.



⑥ Page selection

First Page	Change the display to the first page	Next Page	Change the display to the next page.
Prev. Page	Change the display to the previous page.	Last Page	Change the display to the last page.
3 ▼	Desired page can be selected. (Maximum number of pages is 84 pages.)	Nothing changed	Return to the Error Events Log screen.



⑦ Download

Data can be downloaded onto USB memory.
Format: CSV
File name: DeviceXEvent_yyyymmdd_hhmm.csv
The “X” in the file name is the No. of the Inverter. The “X” is not displayed when all Inverters are selected. The “yyyymmdd” is the year for “yyyy”, the month for “mm” and the day for “dd” on which the data is downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.

DeviceXEvent_yyyymmdd_hhmm.csv
Year Month Day Hour Minute

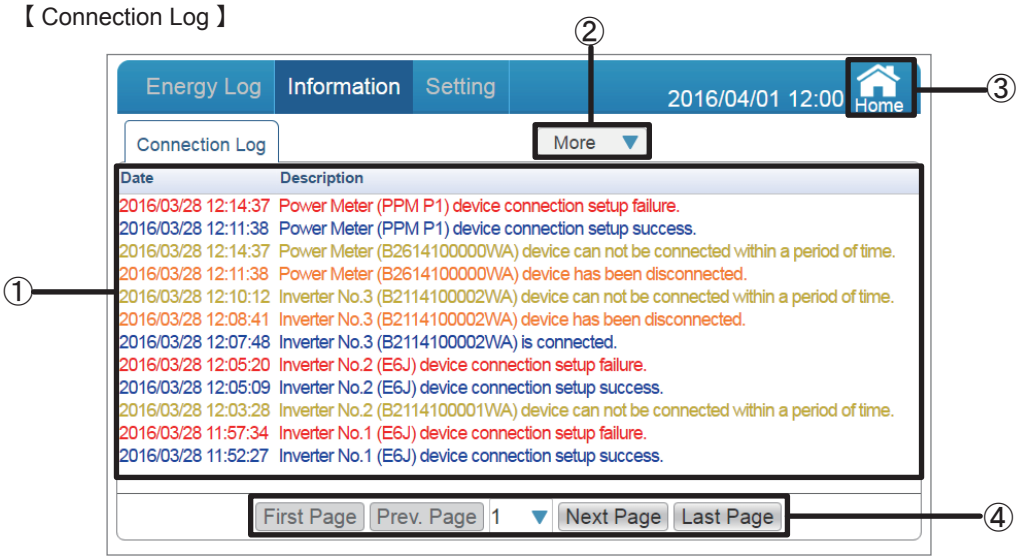
File description: Date (date)
Time (time)
Inverter # (Inverter No.)
Code (error code)
Message (error item)

* Details are displayed in the order of date and time (Most recent displayed on top)

● Operating method

- In the Home screen, touch Information → Error Events Log .
- Touch All Inverters to select the desired Inverter (1 / 2 / 3 / All Inverters) to switch the status screens of respective Inverters.
- Switch the display of respective screens by touching Inverter , More ▼ .

【 Connection Log 】



① Connection Log screen

Date: The occurrence dates are displayed in chronological order, with the most recent date on the top.

Maximum of 1,000 entries are stored, irrespective of the number of Inverters.

Once the number of entries exceeds 1,000 the data with the oldest date is overwritten.

Description: The explanation on the description of the connection log is displayed.

Display example

Inverter No. 1 (B1215A00000WA) unit is connected.

Equipment name — Model / serial No. — Status description

Equipment name: The name of the equipment is displayed.
The displayed equipment names are as the followings:

- Inverter No. 1
- Inverter No. 2
- Inverter No. 3

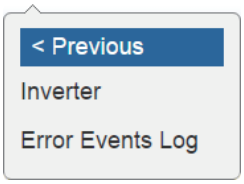
Model / Serial No: The model name and serial number of equipment are displayed.

Status description: The status of equipment is described.

- Connection setting completed successfully. / Connected. → Blue
  Display when the equipment has been connected successfully.
- Connection setting failed. → Red
  Display when the connection of the equipment failed.
- Disconnected. → Orange
  Display when the equipment has been disconnected.
- Connection cannot be established within a prescribed amount of time. → Yellow
  Display when the connection of the equipment could not be established after a period of time.

② More

Touching this button to display another page menu.
Touch the desired page to switch the display to the desired screen.



Inverter

The status of the Inverter can be verified.
Refer to “Information → Inverter” (Page 59) for details.

Error Events Log

The error log of the Inverter can be verified.
Refer to “Error Events Log” (Page 61) for details.

③ Home

Change the display to the Home screen.

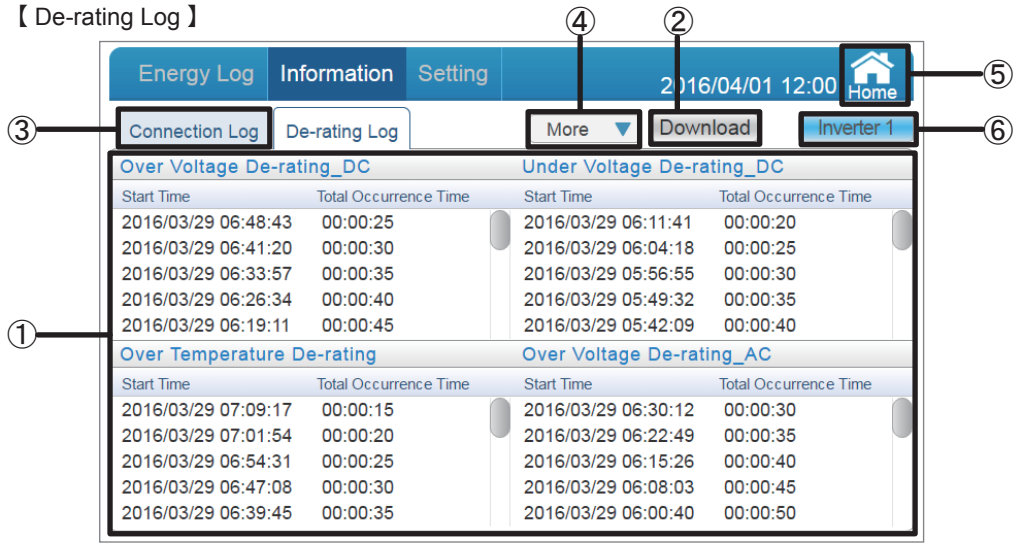
④ Page selection

First Page	Change the display to the first page	Next Page	Change the display to the next page.
Prev. Page	Change the display to the previous page.	Last Page	Change the display to the last page.
1	Desired page can be selected.	Nothing changed	Return to the Connection Log screen.

● Operating method

- In the Home screen, touch Information → Connection Log.
- Touch More to switch screens.

【 De-rating Log 】



① De-rating Log screen

The De-rating Log of the Inverter for four pair types, namely “Over Voltage De-rating_DC”, “Under Voltage De-rating_DC”, “Over Temperature De-rating” and “Over Voltage De-rating_AC” are displayed. A log entry is recorded in following cases:

- Over Voltage De-rating_DC: In an event the output voltage exceeds the set value.
- Under Voltage De-rating_DC: In an event the output voltage is low.
- Over Temperature De-rating: In an event the temperature of the Inverter elevates to a high level.
- Over Voltage De-rating_AC: In an event the input voltage is high.

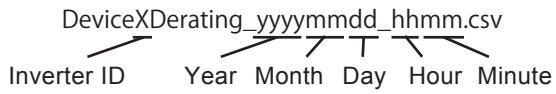
Start time: The date and time of occurrence are displayed.
The occurrence dates are displayed in chronological order, with the most recent date on the top.
Maximum of 16 entries can be stored for each item of each Inverter.
Once the number of entries exceeds 16 the data the oldest date is overwritten.

Total occurrence time: The total duration of time during which De-rating have occurred is displayed.

(When the interval between De-rating duration and other De-rating duration is within five minutes, then these are counted as a single occurrence of De-rating).

② Download

Data can be downloaded onto USB memory.
The data containing the type of suppression, as well as the Inverter number, start date and time, as well as total duration of occurrence is downloaded.
Format: CSV
File name: DeviceXDerating_yyyymmdd_hhmm.csv
The “X” in the file name is the ID of the Inverter.
The file name “yyyymmdd” represents the year, month and day on which the data was downloaded.
The file name “hhmm” represents the hour and minute at which the data was downloaded.



File description: Event (De-rating type)
Over Voltage De-rating_DC: OPV
Under Voltage De-rating_DC: OPV-Lo
Over Temperature De-rating: Thermal
Over Voltage De-rating_AC: Vin
Inverter # (Inverter ID)
Start (start date and time)
Time (total duration of occurrence)

※Start (start date and time) is displayed in the order of occurrence (Most recent displayed on top)

③ Connection Log

The Connection Log between monitor and inverters can be verified. Refer to “Connection Log” (Page 63) for details.

④ More ▼

Touching this button displays another page menu.
Touch the desired page to switch the display to the desired screen.

< Previous
Inverter
Error Events Log

Inverter — The status of the Inverter can be verified. Refer to “Information → Inverter” (Page 59) for details.

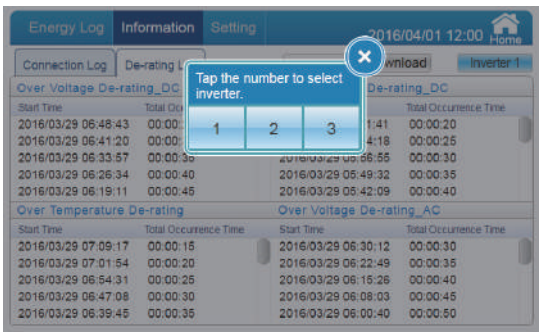
Error Events Log — The error log of the Inverter can be verified. Refer to “Error Events Log” (Page 61) for details.

⑤ Home

Change the display to the Home screen.

⑥ Inverter 1

A screen in which the desired Inverter can be selected is displayed.
Touch the button to display the Inverter Selection dialog box. Touch the ID of the desired Inverter.



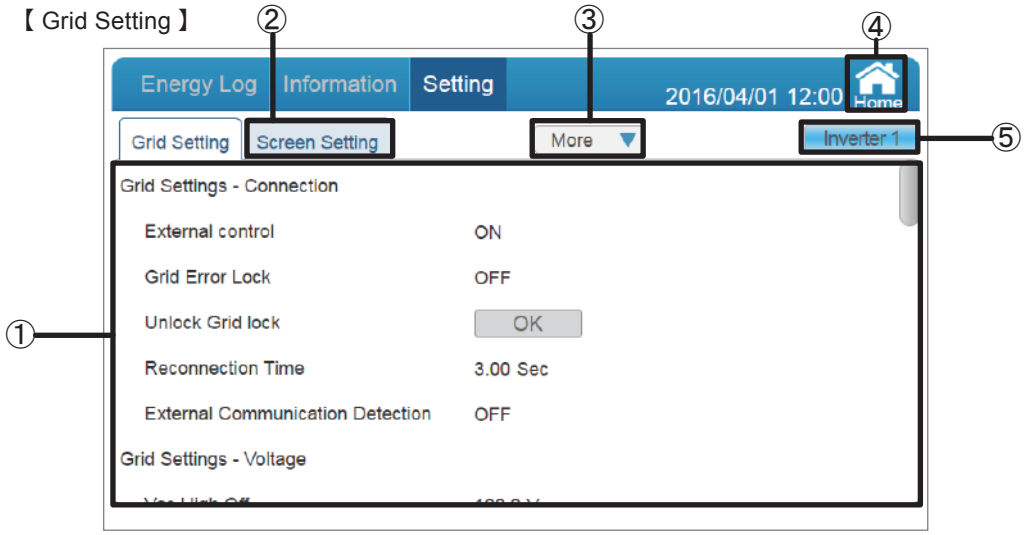
● Operating method

- In the Home screen, touch Information → De-rating Log .
- In Inverter 1 , touch to select the desired Inverter (1 / 2 / 3) to switch the information screens of respective Inverters.
- Touch Connection Log , More ▼ to switch screens.

3.3.4.Setting

Verification of Grid Setting and Setting Operation mode for the Inverter, as well as time and screen settings of the Power Monitor can be performed.

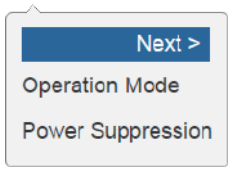
【 Grid Setting 】



① Grid Setting screen
Display the descriptions of the Grid Setting.

② Screen Setting
Sleep time and brightness and language for the screen can be set.
Refer to “Screen Setting” (Page 68) for details.

③ More
Touching this button to display another page menu.
Touch the desired page to switch the display to the desired screen.

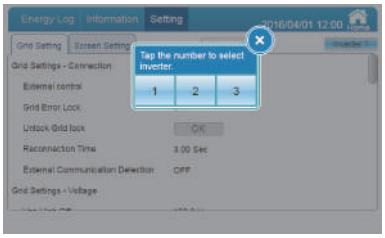


Operation Mode
Touch “Operation Mode” to switch the display to the Operation Mode screen. Refer to “Operation Mode” (Page 72) for details.

Power Suppression
The record of the output suppression on the Inverter can be verified. Refer to “Power Suppression” (Page 82) for details.

④ Home
Change the display to the Home screen.

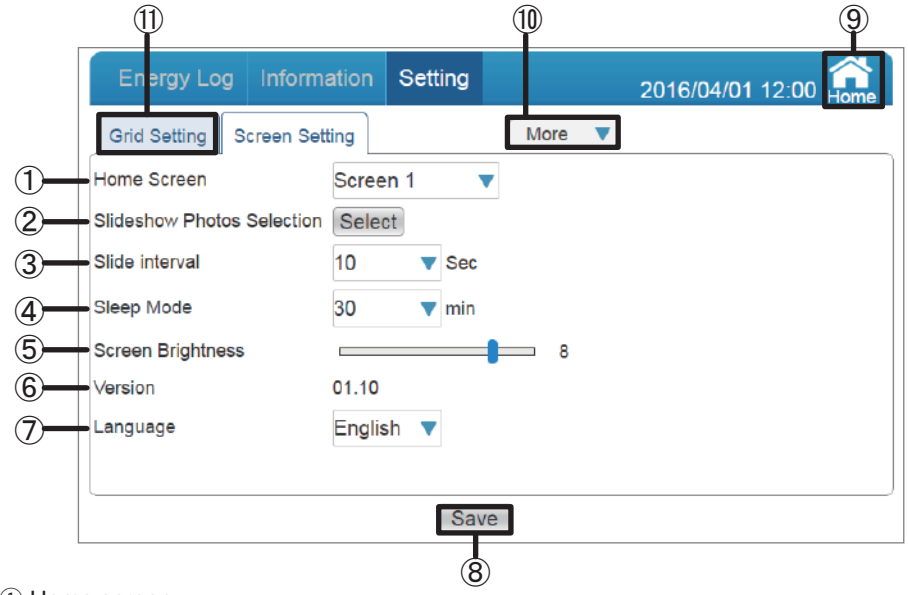
⑤ Inverter 1
A screen in which the desired Inverter can be selected is displayed.
Touch the button to display the Inverter Selection dialog box. Touch the No. of the desired Inverter.



● Operating method

- In the Home screen, touch Setting → Grid Setting .
- In Inverter 1 , touch to select the desired Inverter (1 / 2 / 3) to switch the information screens of respective Inverters.
- Touch Screen Setting , More to switch the screens.

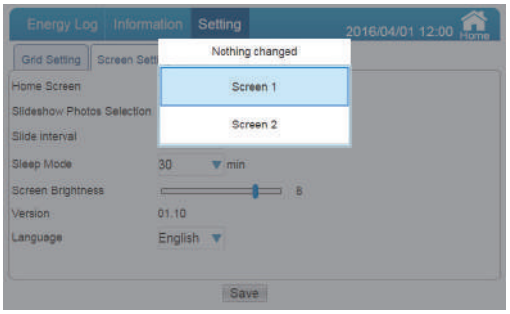
【Screen setting】



① Home screen

Touch the frame of the Home screen to select the Home screen.

Setting range: Screen 1 and Screen 2 (default setting is “Screen 1”).



Home screen selection

②Slideshow photo selection

Files can be saved from USB memory onto the monitor.

Touch the frame of the Slideshow Photo Selection to display the Slideshow Photo Selection screen.

[Target selection]: Select the monitor or USB memory.

Contents: A directory of the file is displayed.

Maximum of 30 characters can be displayed as character display for the contents. Once the number of characters exceeds 30, the portion leading up to the valid characters is replaced by “...”.

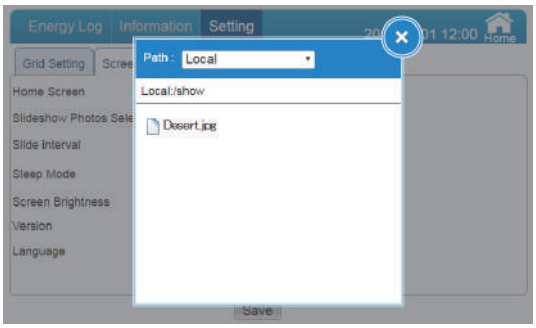
The directory of the file is displayed with maximum of 30 characters. Once the number of characters exceeds 30, the portions following the valid characters are replaced by “...”.

* It may take some time to display larger files. (The recommended image size is 800 x 480 pixels.)
* File names must be assigned in alphanumeric characters and the file formats must be JPG, JPEG, GIF or PNG.

Press the [Replace] button to select USB memory.

Select a folder and touch this button to store the file in the “show” folder in the monitor.

[x]: Touching this closes the dialog window.



Folder Selection screen

③ Slide interval

The screen switching time of the slideshow can be set (5, 10, 20 and 30 seconds).
The default setting is 10 seconds.
* It may take some time to display larger files.
(The recommended image size is 800 x 480 pixels.)
Touching the screen while a slideshow is being played will terminate the slideshow and change the display to the Home screen.
If an error occurs, the slideshown terminates and Change the display to the Home screen.

④ Sleep mode

The duration of time with no operation until the liquid crystal display on the monitor is turned off can be set.
Setting range: 1, 2, 3, 4, 5, 10, 15, 20, 25 and 30 minutes
The default setting is 5 minutes.
Touching the screen while in the sleep mode will trigger the display of the screen.
Furthermore, when an error code is displayed, the screen is turned on and the display reverts to the Home screen.

⑤ Screen Brightness

The brightness of the screen can be selected in ten levels.
Setting range: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
The default setting is 8.

⑥ Version

The firmware version of the Power Monitor is displayed.

⑦ Language

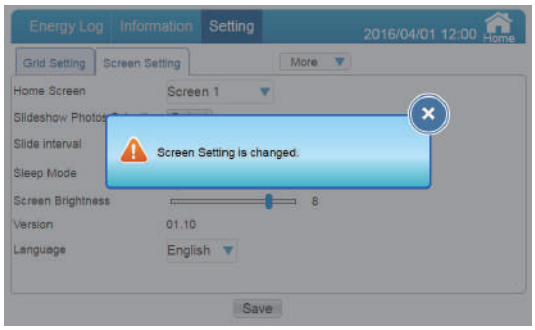
The language of the Power Monitor can be selected.
Setting range: English and Japanese.

⑧ Save

A change is confirmed.

* None of the settings will change until the “Save” button is touched at the end. Caution is required.

Touch ⊗ to turn off the dialog box.



Screen Change dialog box

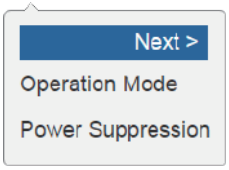
⑨ Home

Change the display to the Home screen.

⑩ More ▼

Touching this button to display another page menu.

Touch the desired page to switch the display to the desired screen.



Operation Mode

Touch “Operation Mode” to switch the display to the Operation Mode screen. Refer to “Operation Mode” (Page 72) for details.

Power Suppression

The record of the output suppression on the Inverter can be verified. Refer to “Power Suppression” (Page 82) for details.

⑪ Grid Setting

Grid Setting can be verified.

Refer to “Grid Setting” (Page 67) for details.

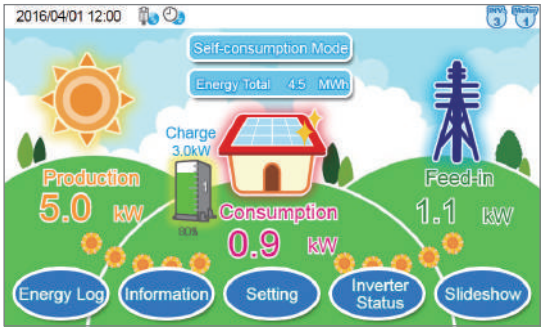
● Operating method

・In the Home screen, touch Setting → Screen Setting .

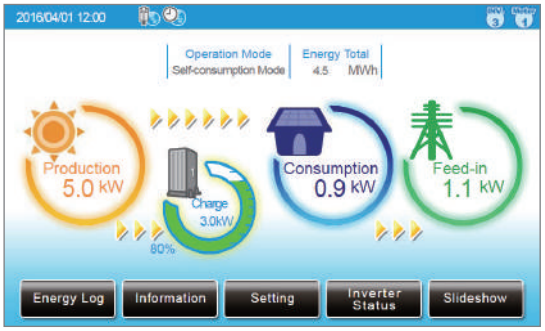
・Use Grid Setting , More ▼ to switch each screen.

● Descriptions of Respective Screens

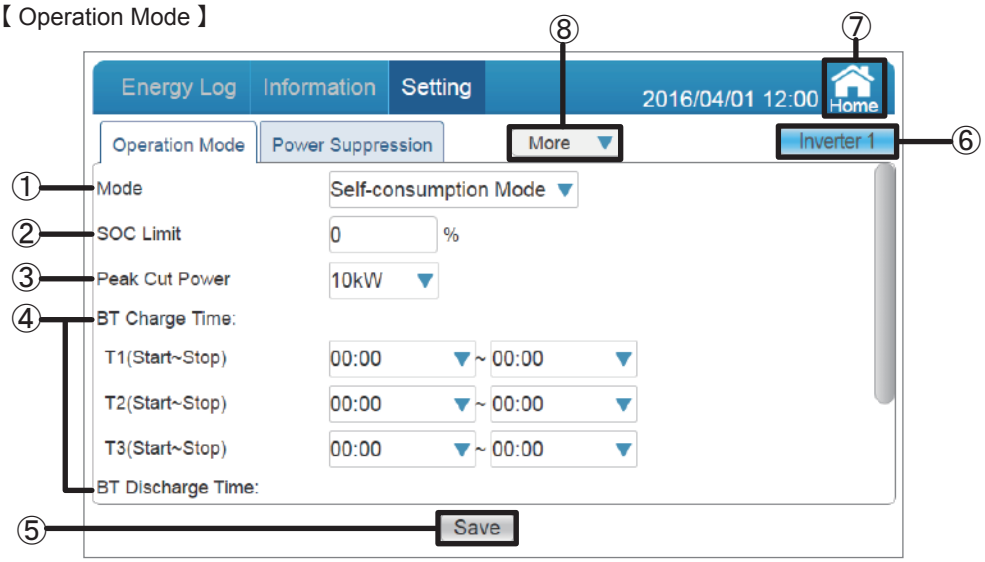
Screen 1:
A world of cute illustrations with large and clear numbers.



Screen 2:
A simple format with a simple screen.

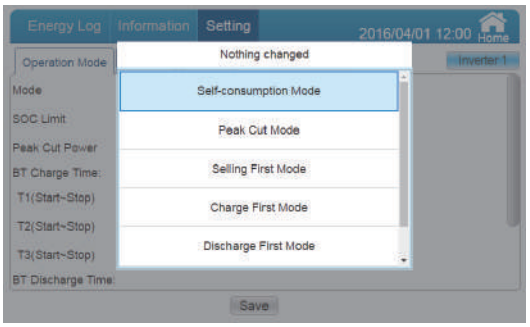


【 Operation Mode 】



① Mode

Hybrid inverter has 6 normal operation modes for users to choose.
Each mode has different behavior between PV, battery, grid, and home load.
The following are the description of these modes.
In some area, the detail behavior of each operation mode may be different due to the local electricity regulations.

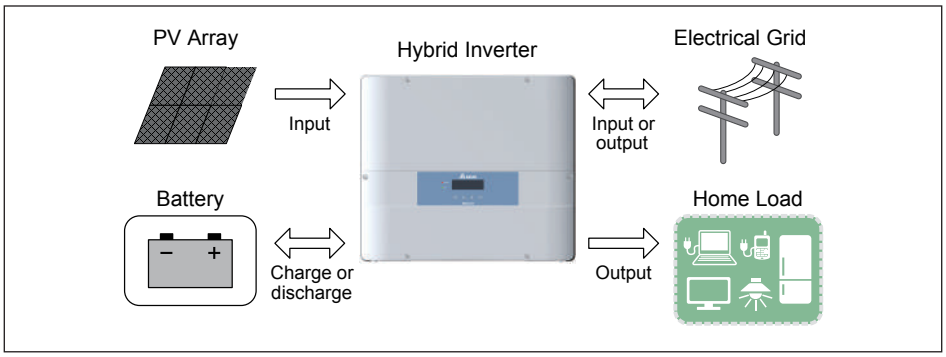


Mode selection

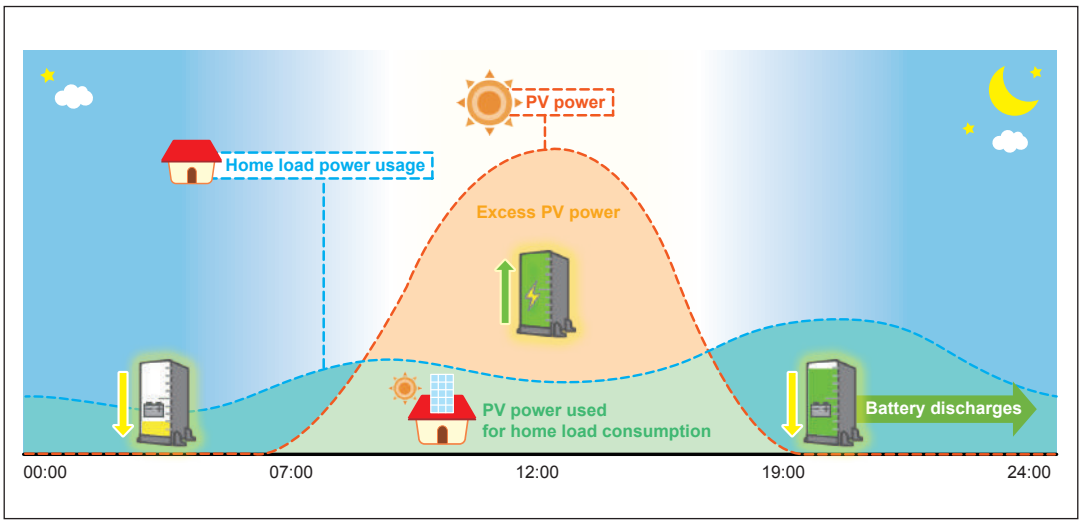
Self-consumption mode

Self-consumption mode is standard hybrid inverter mode.
In this mode, PV power is supplied in following priority :
1. Supply for home load.
2. Charge the battery until it is full.
3. Feed-in the remaining power to grid.

When there is no PV power, battery starts to discharge and supply home load until it's empty.
If you had set the time settings, the behavior of hybrid inverter will change.
We will explain it in Page 81.



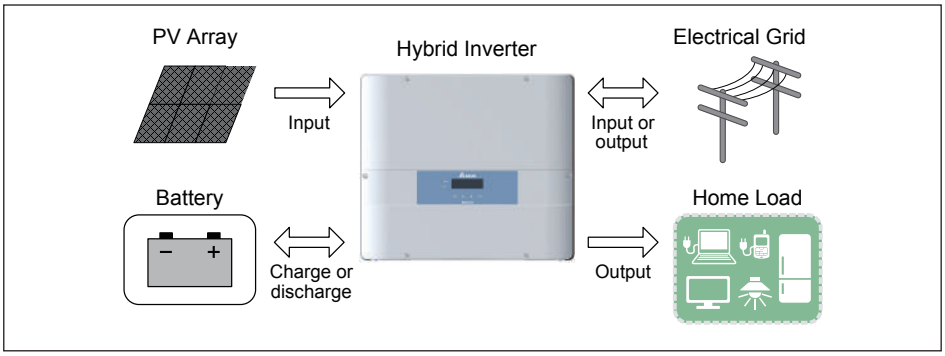
Self-consumption mode current flows



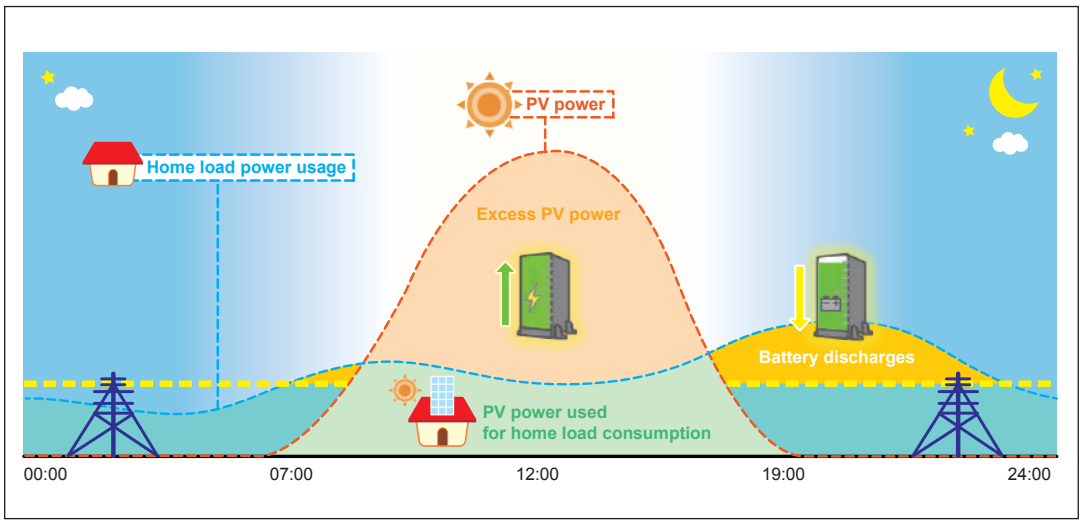
Self-consumption mode behavior

Peak cut mode

When home load consumption exceeds the Peak Cut Power you set in Function Setting page, battery will discharge to assist the power usage.



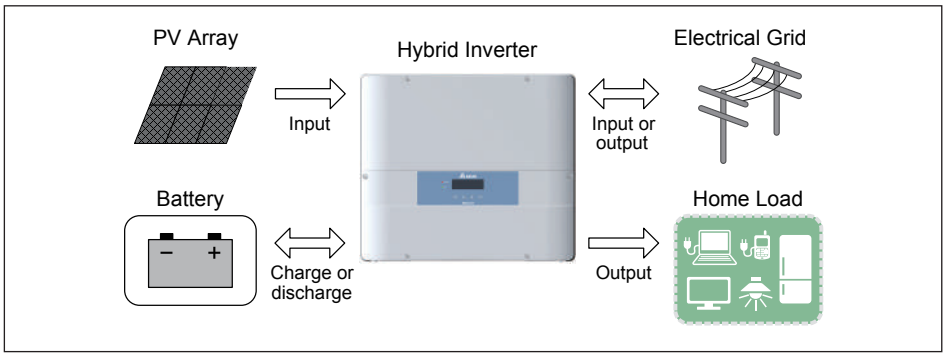
Peak cut mode current flows



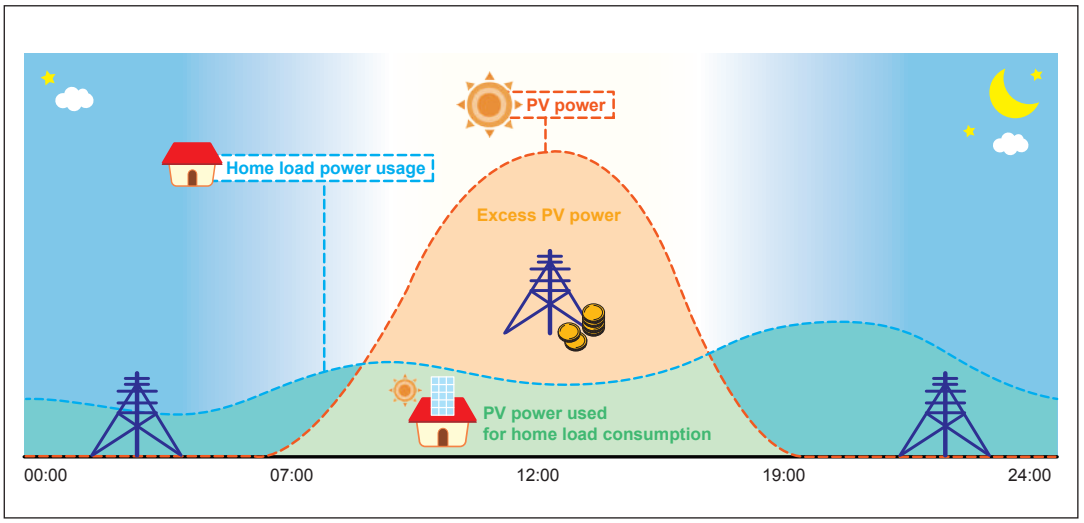
Peak cut mode behavior

Selling First mode

Selling first mode is a standard PV inverter mode combining with 6 time settings.
In normal operation, power generated by PV array will all feed-in to home load and grid.
If users have set the time settings, inverter will change behavior in these time intervals.
Please refer to page 81 chapter for more detail about time settings.



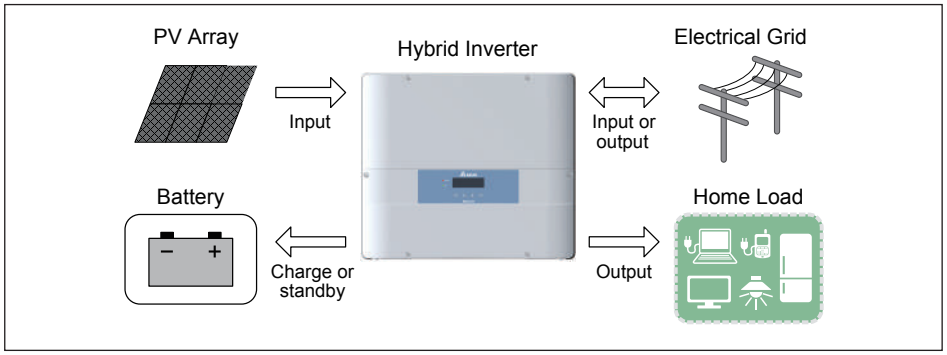
Selling first mode current flows



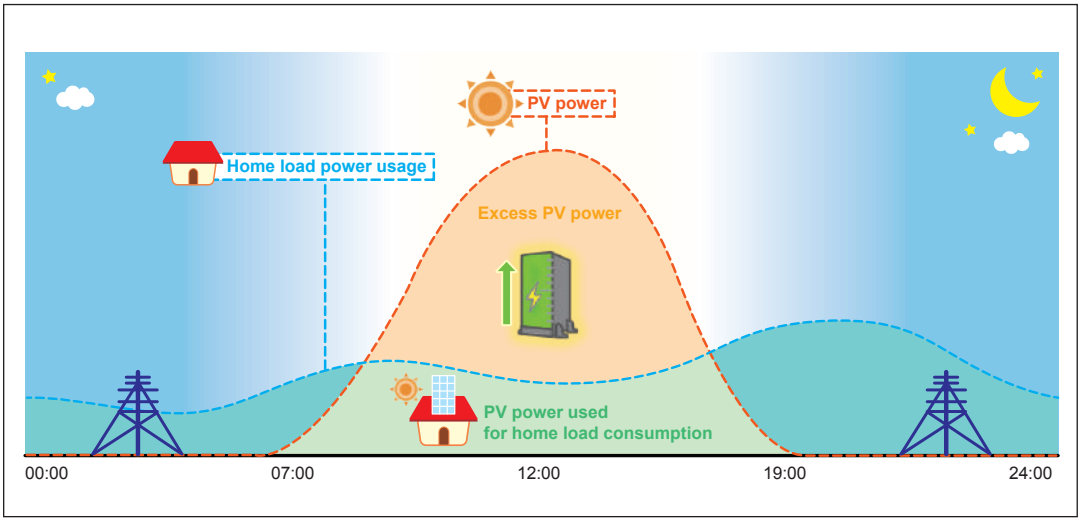
Selling first mode behavior

Charge first mode

In this mode, PV power is supplied for battery charging first. After battery is fully charged, the remaining PV power then feed-in to home load and grid.
Battery will not discharge in this mode even if there is no PV power.



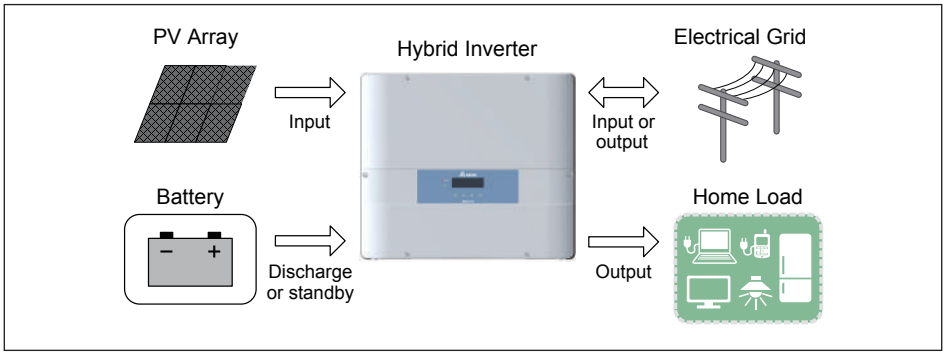
Charge first mode current flows



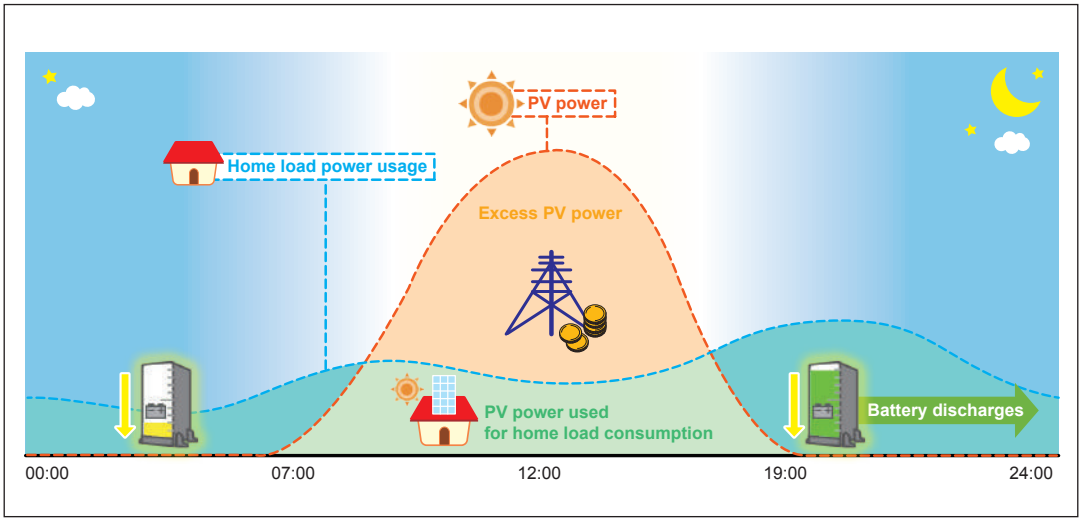
Charge first mode behavior

Discharge First mode

In this mode, battery will not be charged any more.
All the PV power is feed-in to home load and grid. Battery keeps discharging when there is no PV power until it is empty.



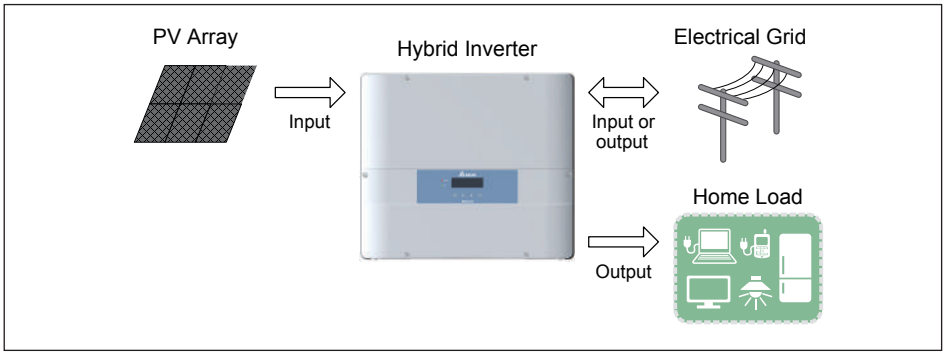
Discharge first mode current flows



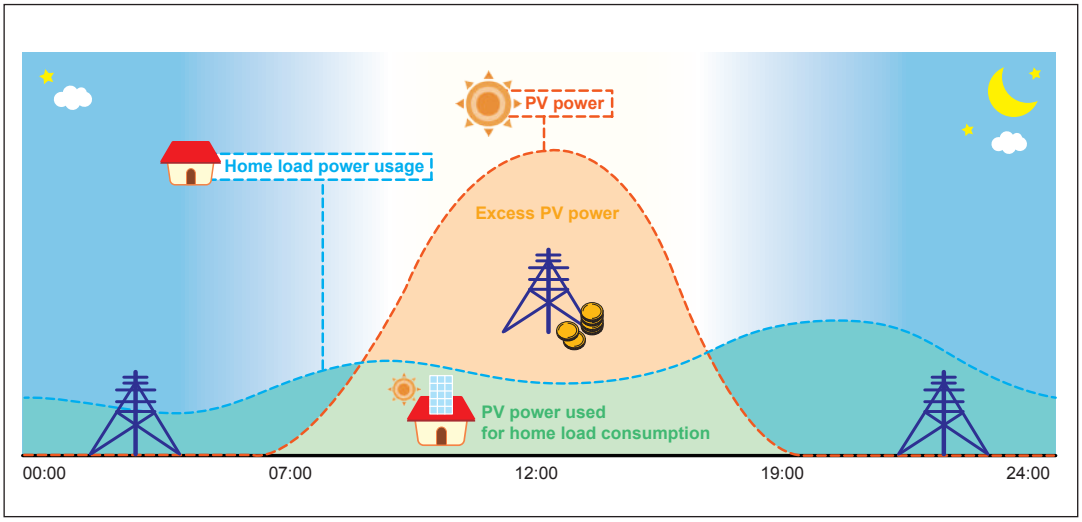
Discharge first mode behavior

Without BT mode

If your battery was damaged for some reason, you can disconnect the battery wiring and choose without BT mode. In this mode, hybrid inverter acts like a basic grid-tie PV inverter.



Without BT mode current flows



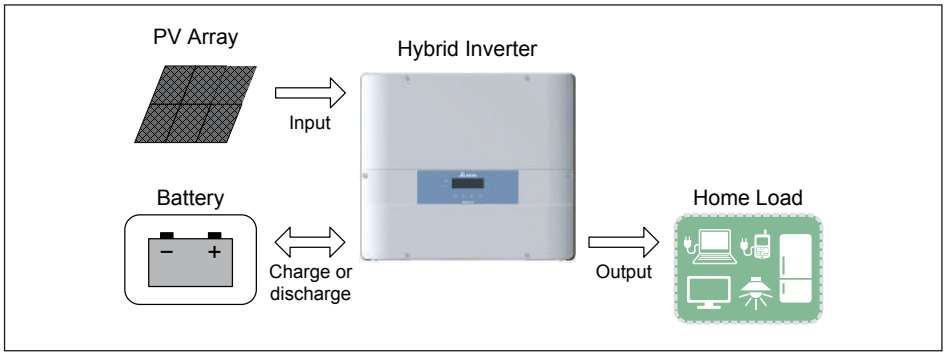
Without BT mode behavior

Special Modes

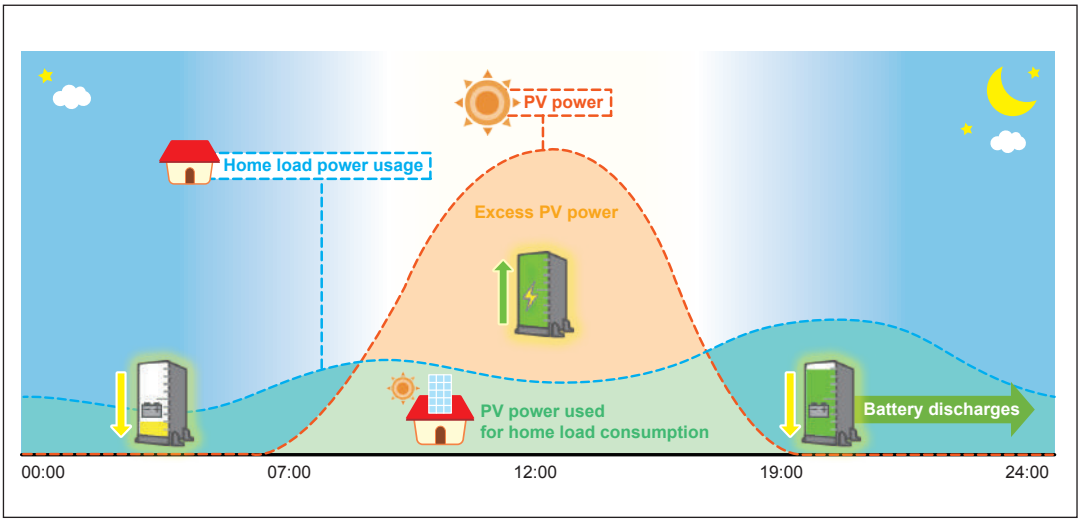
In addition to the 5 modes above, hybrid inverter still have 3 special modes. These modes cannot be enabled by user but will be enabled automatically by inverter in some special condition.

・Standalone mode

Hybrid inverter changes to standalone mode automatically during a power outage occur. At this time, grid side is disconnected by inverter and home load are supported by PV and battery power as much as possible.If the battery is not connected, only when there has sufficient PV power can inverter enter standalone mode.



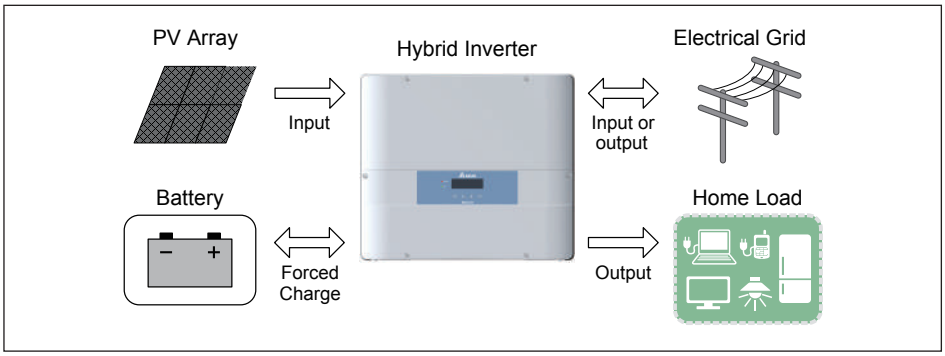
Standalone mode current flows



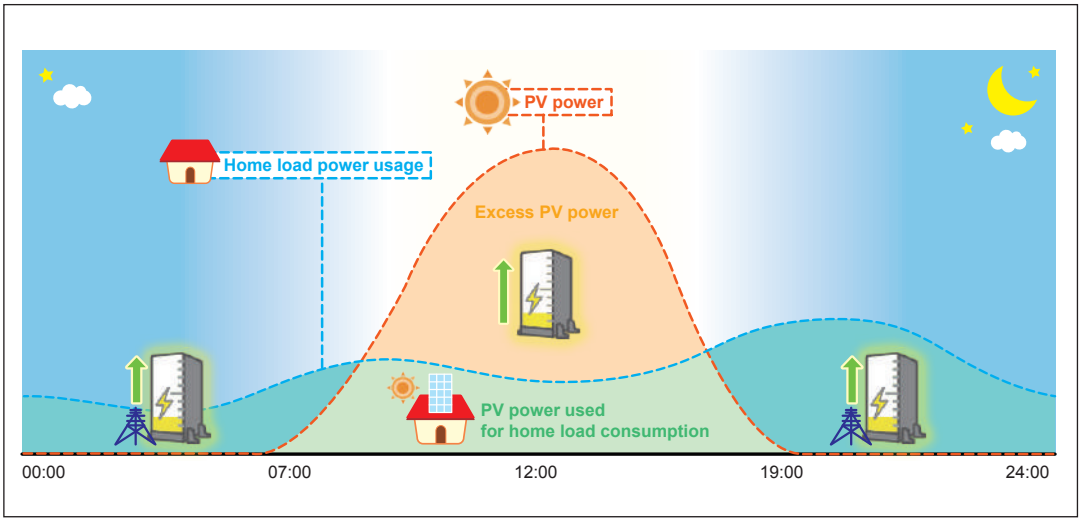
Standalone mode behavior

・Forced charge mode

Although battery stops any action when SOC (state of charge) reach 0%, the self-discharge phenomenon may still causing SOC lower than 0%. At this time, hybrid inverter will force battery charging from PV power and grid power until the battery SOC reaching 30%. Only in this special condition will battery be charged by grid power. In normal operation mode, inverter only charges the battery by PV power.



Forced charge mode current flows



Forced charge mode behavior

② SOC Limit

You can assign the lower limit of battery SOC. Battery will stop discharging when its SOC reach this limit.

③ Peak Cut Power

Peak cut power is used in peak cut mode. You can assign the peak power of home load usage from grid. When the home load consumption exceeds this value, battery will discharge to supply remaining power.

④ Time Settings

Time settings can be separated into BT charge time and BT discharge time.
Each setting can set 3 time intervals. These 6 time intervals cannot overlap with each other.
When the inverter operation mode set to self-consumption or selling first mode, time settings is enabled. Hybrid inverter will automatically change the mode to charge first / discharge first in the time intervals you set and return to self-consumption / selling first mode outside the intervals.

⑤ Save

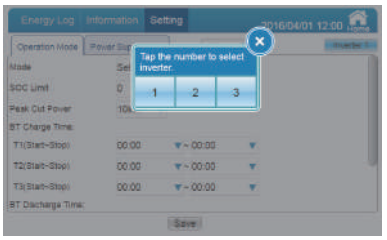
A change is confirmed.

* None of the settings will change until the “Save” button is touched at the end. Caution is required.

Touch ⊗ to turn off the dialog box.

⑥ Inverter 1

A screen in which the desired Inverter can be selected is displayed.
Touch the button to display the Inverter Selection dialog box. Touch the No. of the desired Inverter.



⑦ Home

Change the display to the Home screen.

⑧ More

Touching this button to display another page menu.
Touch the desired page to switch the display to the desired screen.

< Previous
Grid Setting
Screen Setting

Grid Setting

Grid Setting can be verified.
Refer to “Grid Setting” (Page 67) for details.

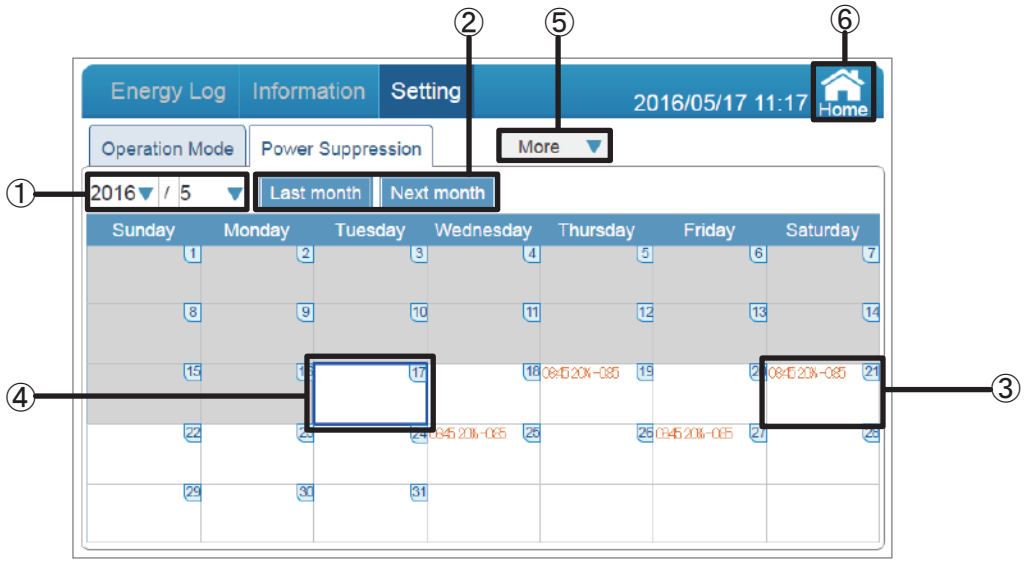
Screen Setting

Sleep time ,brightness, slideshow and language for the screen can be set. Refer to “Screen Setting” (Page 68) for details.

● Operating method

- In the Home screen, touch Setting → Operation Mode .
- Use More to switch each screen.

【 Power Suppression 】

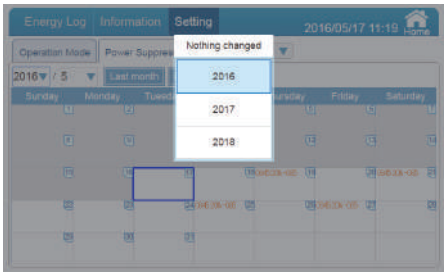


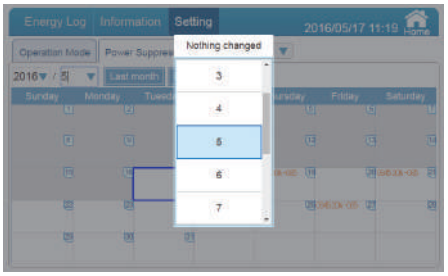
① Date

Year: Year is displayed according to the Gregorian calendar. The year can be changed with a touch.

Month: Month is displayed. The month can be changed with a touch.

Touching the “Nothing Changed” button will return to the Power Suppression screen.





② Last month

Change the display to the previous month.

Next month

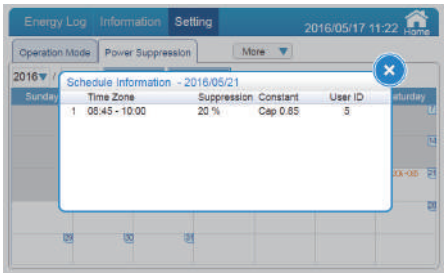
Change the display to the next month.

③ Suppression record

That displays the set of suppression details.

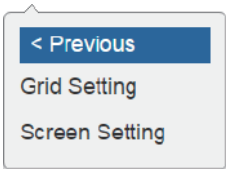
Touch on the desired date to display the Schedule Information for that day.

Touch ⊗ to revert to the Power Suppression screen.



④ Current day display
The current day is indicated by a blue frame.
Past days are displayed in gray.

⑤ More
Touching this button displays another page menu.
Touch the desired page to switch the display to the desired screen.



Grid Setting
Grid Setting can be verified.
Refer to “Grid Setting” (Page 67) for details.

Screen Setting
Sleep time ,brightness, slideshow and language for the screen can be set.
Refer to “Screen Setting” (Page 68) for details.

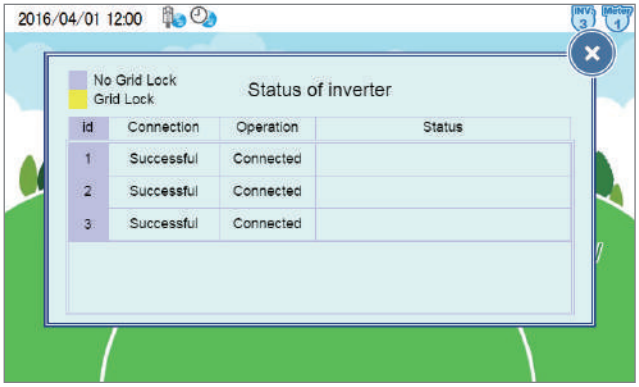
⑥ Home
Change the display to the Home screen.

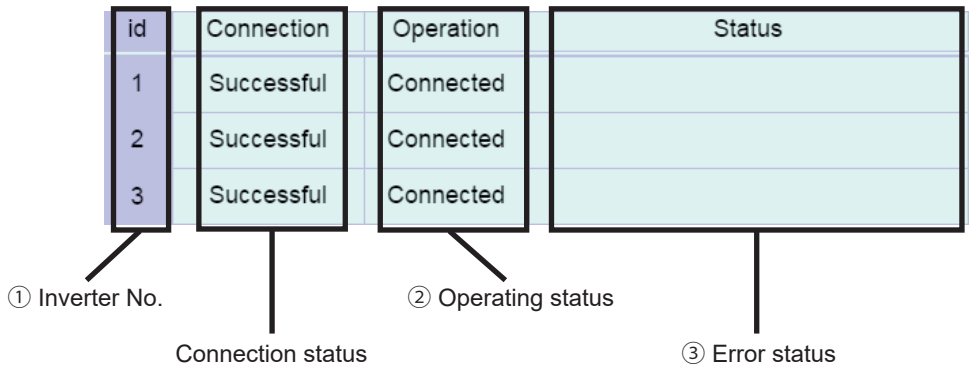
● Operating method

- In the Home screen, touch Setting → Power Suppression .
- Touch Grid Setting , Screen Setting to switch the screens.

3.3.5.Inverter Status

The status of the Inverter can be verified.





① Grid lock state will show by the color of Inverter No.
No grid lock if purple, and grid lock if yellow.

② Operating status
Connected: System is connected with grid
Independent: System is in standalone mode
Off: The Inverter is stop

③ Error status
When one or more errors are occurring, the error codes are displayed here.

2	Successful	Connected	GE5|GE10

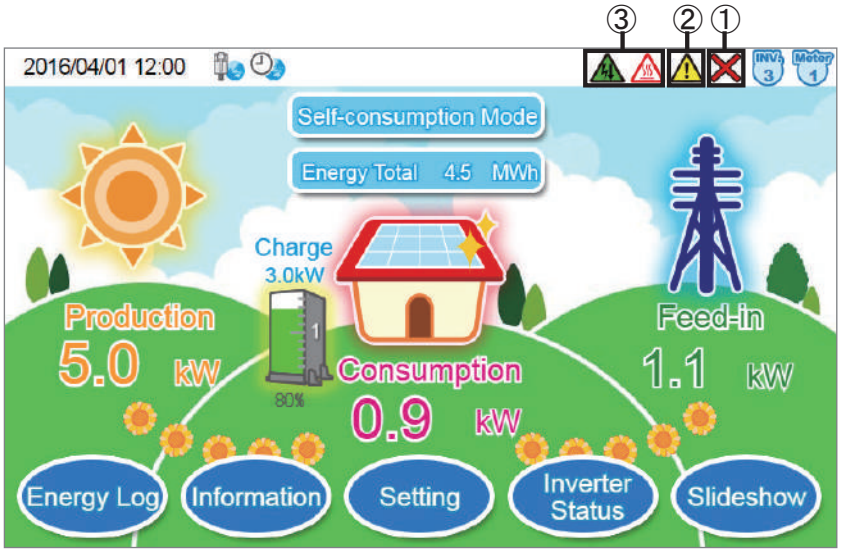
● Operating method

- In the Home screen, touch Inverter Status .
- to close.

4 .When Something Seems Wrong (Troubleshooting)

4.1.Error Displays

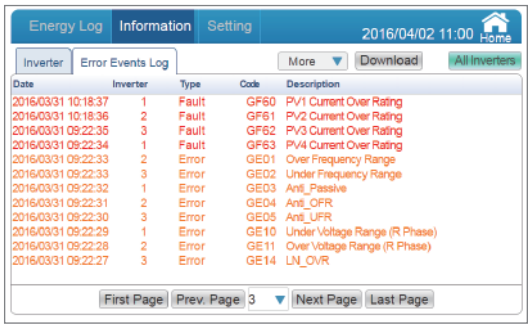
■ Icons are displayed on the Home screen when an error, malfunction or suppression occurs.

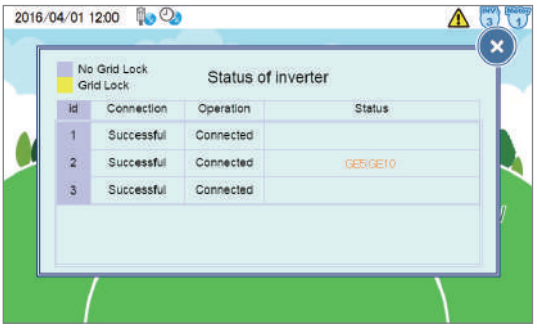


① Communication Malfunction icon
This icon is displayed when the communication with the Inverter or the Meter is not available.

Icon	Operating mode	Description
✕	Communication malfunction	Communication with the Inverter or the Meter is malfunctioning.

② Error icon
An error icon is displayed to indicate that one or more errors are occurring.
The Error icon is ordinarily not displayed, and displayed when one or more errors occur.
Details can be verified in the “Error Events Log” and “Inverter Status” pages.
Refer to the Installation and Maintenance Manual of the Inverter for details on the error codes.





● Operating method

・In the Home screen, touch Information → Error Events Log and Inverter Status .

・Touch Error Events Log All Inverters and select the desired Inverter (1 / 2 / 3 / All Inverters) to switch status screens of respective Inverters.

③ Suppression icon

Displayed when the Inverter is being suppressed.

Icon	Operating mode	Description
	Temperature elevation suppression	The internal temperature of the Inverter has reached a high level. The output of the Inverter is being suppressed.
	Voltage elevation suppression	The voltage of the commercial power system has reached a high level while the Inverter was in operation. The output of the Inverter is being suppressed.

The temperature elevation suppression and voltage elevation suppression are not due to malfunctions.

These are features available to ensure the safe operation of the system.

There is no malfunction with the system if the frequency is low or when they occur for brief intervals.

Consult your retailer if the frequency is high or when the system is not restored for a long period of time.

4.2.Troubleshooting

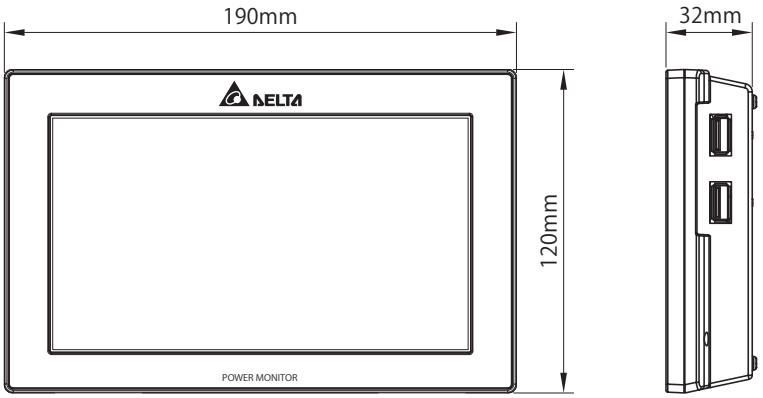
■ Responsive actions that should be taken in cases where the following symptoms occur are described.

Symptom	Verification details	Responsive action
“Battery Under Voltage” appears in Error Events Log.	Since reversed wiring may cause battery voltage lower	Please check if wiring to the battery is reversed. If the issue cannot be cleared, please contact with local representative.
“Battery Communication Fail” appears in Error Events Log.	It means there is no communication between inverter and battery.	Please check communication status between inverter and battery If there is no communication, check if communication wiring is reversed or unusual. If the issue cannot be cleared, please contact with local representative.
Nothing is displayed on the screen.	Is the backlight turned off?	Touching the screen will trigger the display of the screen. The duration of time the screen remains turned on can be changed in the Screen Setting. ⇒ “Screen Setting” (Page 68).
Nothing is displayed even when the screen is touched.	Has the AC Adapter come off the power outlet or the Power Monitor?	Connect the AC Adapter properly to the power outlet and to the Power Monitor. Contact your retailer if the symptom persists even after a proper connection has been established.
The screen is turned on when not in operation.	Is any error icon being displayed?	The screen is turned on and the error message is displayed automatically when a malfunction occurs. Verify the displayed error message. ⇒ Refer to the Installation and Maintenance Manual of the Inverter.
	Has any power failure occurred?	The Power Monitor restarts and the screen remains turned on for the duration of the set sleep time when the system is restored from a power failure condition after a power failure occurs.
AC Adapter is hot	How hot is it getting?	Heating does occur under normal circumstances while the system is in use. If the AC Adapter is so hot that you cannot touch it by hand, pull it off the power outlet and consult your retailer.
Total accumulated power of Inverter and the total accumulated amount of power on the Power Monitor vary.	Have you replaced the Inverter?	It is normal in the following case: The accumulated amount of power is accumulated for each Inverter and Power Monitor, respectively. Therefore, the values for the accumulated amount of power may be different on a Inverter and those displayed on a Power Monitor.
Voltage elevation suppression and temperature elevation suppression are displayed.	Verify the frequency and duration of occurrence.	The Voltage Elevation Suppression function and the Temperature Elevation Suppression function are functions that are triggered to ensure safe operation of the system. There is no malfunction with the system if the frequency is low or when they occur for brief intervals. Consult your retailer if the frequency is high or when the system is not restored for a long period of time.
Performance data is lost. Alternatively, the content of the performance data has changed.	Has the time been advanced or reverted by 15 minutes or more? Has there been any power failure?	The past performance data may be affected in instances where date/time settings are performed or when a power failure occurs.

Symptom	Verification details	Responsive action
The power display values appear to be incorrect. Alternatively, the values for the power production, power consumption and power feed-in and purchase are not in the following relationship: Power consumed = (power production - power feed-in) or Power consumed = (power production + Power purchased)	Verify that the displayed power values are in accordance with the equations described to the left.	There are instances that the values do not necessarily match up with the values that can be derived with these equations, due to effects from the fluctuations that occur with the power production or rounding up or off of the values and in such instances there is no malfunction with the Product. If the displayed power values are clearly wrong, there may be a system malfunction. Consult your retailer in such cases. There are some variances in measurement values.
The value of the power consumed displayed on the Home screen sometimes increases or decreases, even when the amount of electricity used remains constant.	Has the value of the power production changed?	The value displayed as power consumption may be greater (or smaller) than the actual value when there is fluctuation with sunshine or the like. This arises from the difference in the timing of data acquisition for the power production and the power purchase and is not due to a malfunction of the Product.
The amounts of power feed-in and purchased differ from those described in the statement of the power company.	Verify the amount of power being displayed.	There may be discrepancy between the amount described in the statement of the power company and the amount of power displayed due to following types of errors. If the discrepancy is significant, consult your retailer. (1) Error in measurement: The error arising from the fact that the instrument used by the power company for the purpose of calculating the amount of power purchased is not a specified measuring instrument but instead it is another equipment. (2) Errors in calculation: The error arising from rounding up or rounding off of figures in the calculation and display process of the Power Monitor.
Display (time and amount of power production) does not change.	Verify the radio wave status of the Power Monitor.	Install the Power Monitor in a location with good communication conditions when the Communication Malfunction icon is displayed.
Communication Malfunction icon is displayed. Wireless communication is not available.	Is there any obstruction in the surrounding area or is the installed location far away?	The communication between the Power Monitor and a Inverter or a Meter is in an abnormal condition when the Communication Malfunction icon is displayed. Consult your retailer.
The Operation LED lamp does not turn on when the USB Wireless Module is inserted in the Power Monitor.	Has the AC Adapter come off the power outlet or the Power Monitor?	Connect the AC Adapter properly to the power outlet and to the Power Monitor. Contact your retailer if the symptom persists even after a proper connection has been established.
The Wireless Setting lamp of the Meter is illuminated red.	Is there an icon, such as an Error icon displayed on the Power Monitor?	Install the Power Monitor in a location with good communication conditions when the Communication Malfunction icon is displayed.
The Wireless Setting lamp of the Meter is blinking green.	Is there an icon, such as an Error icon displayed on the Power Monitor?	Install the Power Monitor in a location with good communication conditions when the Communication Malfunction icon is displayed. Verify the connection if the Communication Malfunction icon is not displayed.

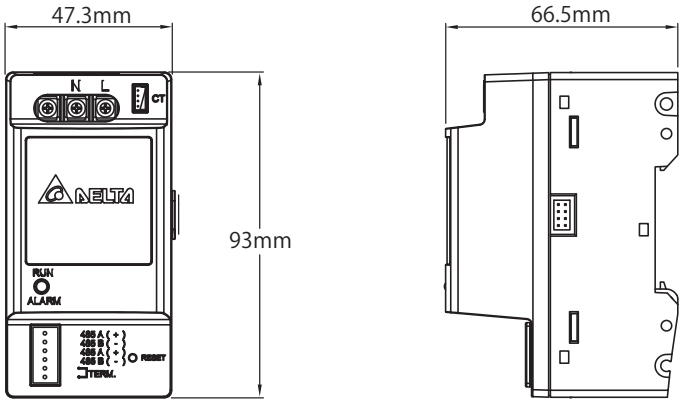
5 .Specifications

5.1. Power Monitor

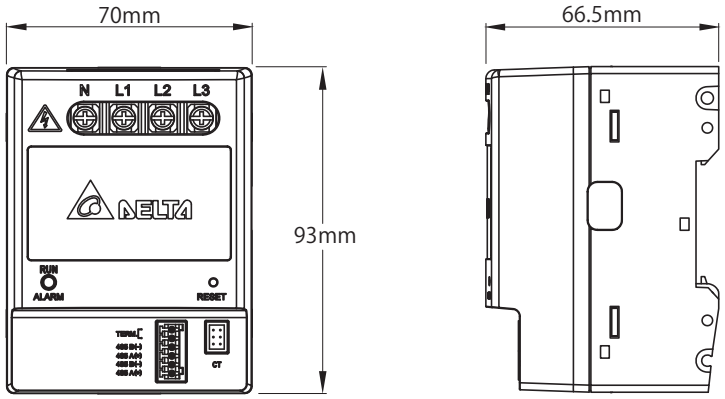


Model	R4E
Screen	7-inch TFT liquid crystal display, 800 x 480 pixels, resistive touch panel.
Display color	24-bit RGB (16,770,000 colors)
Displayed details	Power production, power consumption, amount of power feed-in and purchased, calendar history, Inverter information, error log, De-rating Log display and the like.
Data communication method	RS-485, Ethernet / Wireless communication
Installation method	Wall mounted / Desktop installation (indoors)
Downloads	Every 15 minutes, for period of 3 months
	Every hour, for period of 3 months
	Every day, for period of 3 months (available for duration spanning 20 years)
	Every month, for period of 1 year (available for duration spanning 20 years)
	Every year for period of 20 years
Operating voltage range	DC10V ~ 26V (Rated operating voltage: DC12V (AC Adapter))
Maximum power consumption	10 W or less (including USB Wireless Module and USB Storage)
Power consumption	6 W (when backlight is turned ON) (including USB Wireless Module)
Standby power	4 W (when backlight is turned OFF) (including USB Wireless Module)
Operating temperature range	-20°C to 50°C (no freezing permitted)
Operating humidity range	30% to 85% (no condensation permitted)
Dimensions	120 H x 190 W x 32 D (mm) 120 H x 215 W x 32 D (mm) (including USB Wireless Module)
Weight	440 g
Maximum number of Inverter connections	3 units

5.2.Power Meter

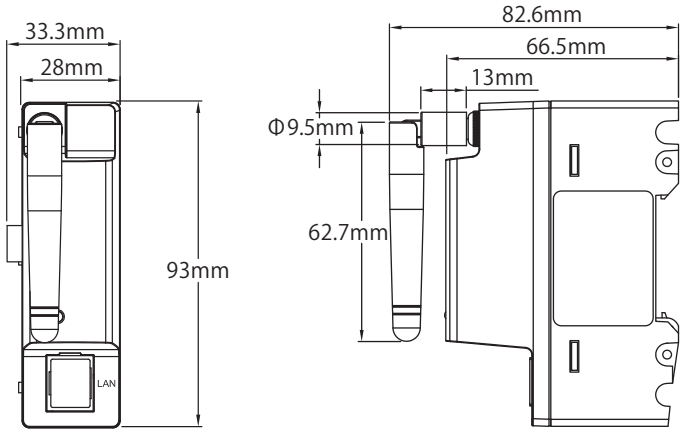


Model	P1E
Installation method	Wall mounting using DIN rails
Rated operating voltage	Single-phase 2-wire, 220V, 230V, 50/60 Hz
Power consumption	2 W or lower
Operating temperature range	-20°C to 50°C (no freezing permitted)
Operating humidity range	30% to 85% (no condensation permitted)
Dimensions	93.0 H x 47.3 W x 66.5 D (mm)
Weight	145 grams (current sensor 150 grams / cable 20 grams)



Model	P3E
Installation method	Wall mounting using DIN rails
Rated operating voltage	Tripple-phase 4-wire, 220V, 230V, 50/60 Hz
Power consumption	3 W or lower
Operating temperature range	-20°C to 50°C (no freezing permitted)
Operating humidity range	30% to 85% (no condensation permitted)
Dimensions	93.0 H x 70.0 W x 66.5 D (mm)
Weight	200 grams (current sensor 150 grams / cable 20 grams)

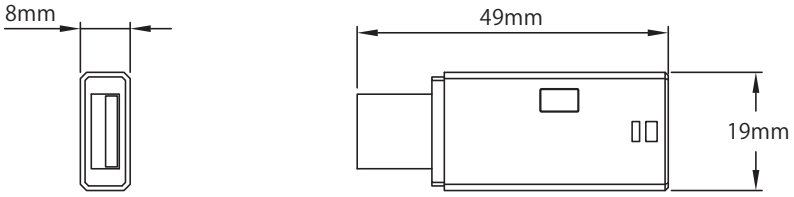
5.3.Wireless Communication Unit (Wireless Set)



Model	N1E
Data communication method	Wireless communication
Installation method	Wall mounting using DIN rails
Rated operating voltage	DC 3.3 V
Power consumption	2 W or lower
Operating temperature range	-20°C to 50°C (no freezing permitted)
Operating humidity range	30% to 85% (no condensation permitted)
Dimensions	93.0 H x 28.0 W x 82.6 D (mm) 62.7 (mm) (antenna)
Weight	90 grams (including antenna)

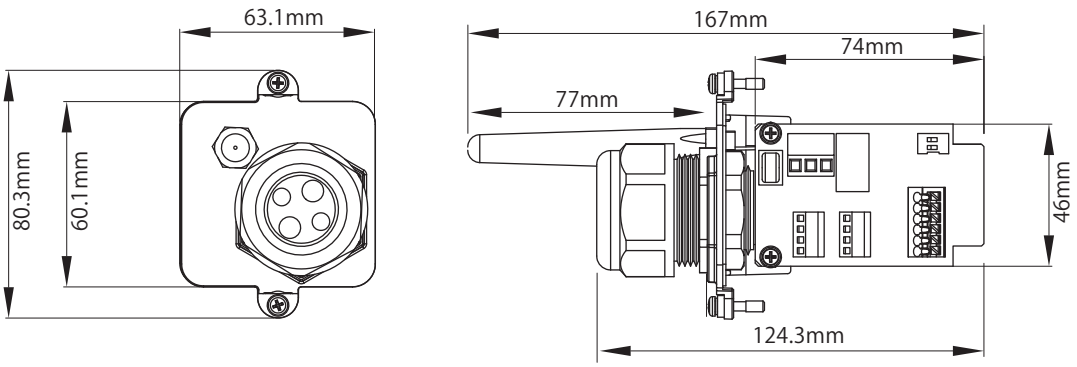
※The antenna can be detached from the main unit.

5.4.USB Wireless Module (Wireless Set)



Part No.	5040456000
Rated operating voltage	DC5V
Communication frequency	2.4 GHz band
Operating temperature range	5°C to 35°C (no freezing permitted)
Operating humidity range	10% to 85% (no condensation permitted)
Electric current consumption	260 mA (max.)
External dimensions	19（W）x49（D）x8（H）mm
Weight	Approx. 6 grams

5.5.Wireless Communication Unit for Inverter (Wireless Set)



Model	N2E
Data communication method	Wireless communication
Rated voltage	DC3.3V
Power consumption	2 W or lower
Operating temperature range	-20°C to 85°C (no freezing permitted)
Operating humidity range	0% to 90% (no condensation permitted)
Dimensions	167 mm x 80.3 mm (cover and antenna) 77 (mm) (antenna)
Weight	130 grams (including antenna)

※The antenna can be detached from the main unit.

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