

# Energy Storage Inverter

# User Manual

(ME 3000SP)



**2016-12-8**

**V8.0**

**730-000034-1**

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# 1. Equipment Introduction

ME-3000SP is mainly applied and developed for the renewable energy generation system compatible with lead-acid batteries and lithium batteries. It can help to achieve the optimal of battery power automatically. ME 3000SP can control the off-grid, on-grid and the bi-directional flow of electric power, work under the auto / manual mode and time-of-use (TOU) price mode, automatically switch to the off-grid and on-grid work mode and manage the battery charge / discharge, etc. Also, the inverter has the intelligent on-grid discharge function by setting and can adjust its discharge power according to the change of the load power, avoid the feed of redundant power into the power grid and help the user to make the maximum benefit. This storage inverter can choose DC bus occasion in connection with the PV system and also be used as a pure off-grid inverter if there is no PV system. The equipment is equipped with an LCD display panel and keyboard, high-quality Human Machine Interface and is stable, safe and reliable. The monitoring software has the fault history recording function for later-stage maintenance.

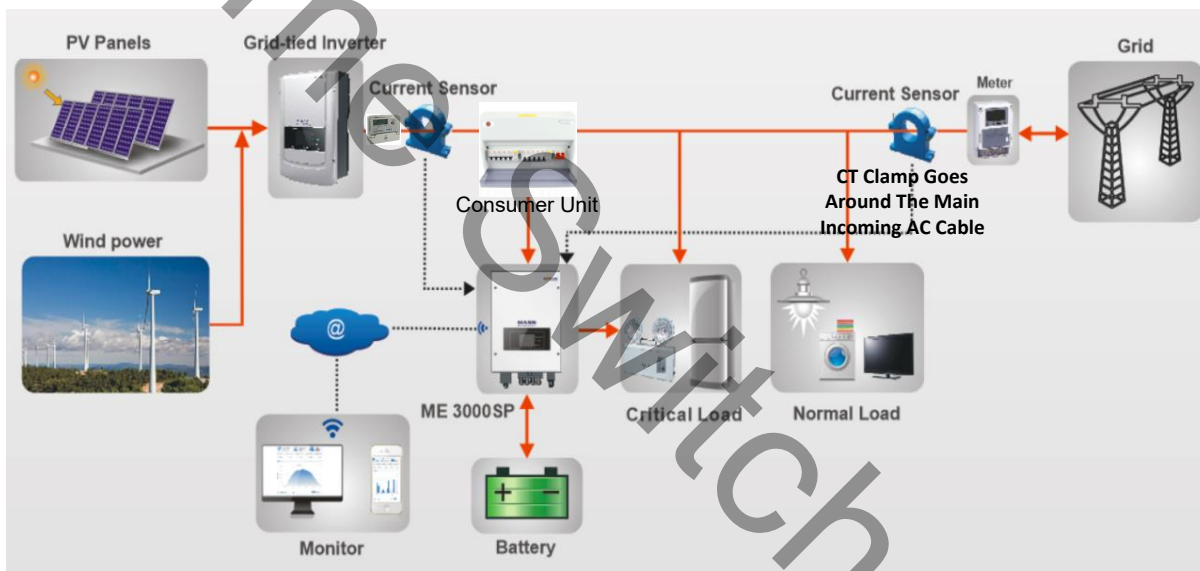







Fig. 1 ME 3000SP Storage System Solution

## 2. Equipment Safety Notes

Before the inverter is used, please read all instructions, warning signs and this manual. The inverter strictly meets safety rules of design and testing. During the installation, operation and maintenance, operators should abide by safety regulations. Improper operation may cause an electric shock or damage the equipment and properties.

### 2.1 Safety Signs

 <b>Danger</b>	<b>Danger indicates a hazardous situation which, if not avoided, will result in death or serious injury.</b>
 <b>Warning</b>	<b>Warning indicates a hazardous situation which, if not avoided, could result in death or serious injury.</b>
 <b>Caution</b>	<b>Caution indicates a hazardous situation, if not avoided, could result in minor or moderate injury.</b>
 <b>Attention</b>	<b>Attention indicates there are potential risks. If fail to prevent, may lead to equipment cannot run normally or property damage.</b>
 <b>Note</b>	<b>Note provides tips that are valuable for the optimal operation of the product.</b>

## 2.2 Safety Notes

- ✧ Electrical installation and maintenance must be carried out by competent electricians according to national connection rules.
- ✧ This inverter must only be installed by qualified technical personnel, and only those who have appropriate accreditation, as required by the local authority having jurisdiction.
- ✧ The battery chamber should keep a certain distance with the ME 3000SP and protected well to prevent from the collision.
- ✧ It is forbidden to place explosives and combustibles, e.g. gasoline, kerosene, oil, slab, cotton and rag, around the ME 3000SP.
- ✧ An electric shock must be avoided and the battery input and AC output of the inverter shall be stopped for at least 5min. before its installation or maintenance.
- ✧ The temperature of some parts of the inverter may exceed 60°C. The inverter must be powered off, and allowed to cool before working on in order to avoid scalding during the maintenance.
- ✧ Children should not go near the inverter.
- ✧ Please do not open the outer cover of the inverter without permission, except for the wire connections. If someone touches or changes its components without permission, he might be injured and even damage the inverter.
- ✧ Static power may damage electronic elements. An appropriate method should be adopted for preventing from such damage; otherwise, the inverter might be damage and the warranty will be invalid.
- ✧ If the Equipment is damaged because it is not operated according to the operation method of the specified manufacturer, the warranty will be invalid.
- ✧ To completely isolate the inverter: firstly shut down the DC switch and then disconnect the battery and the AC

terminal.

- ✧ The ME 3000SP shall be isolated completely before being maintained. The inverter must not be maintained in other modes!
- ✧ It is forbidden to disconnect the battery terminal and AC terminal when the ME 3000SP is running normally.

## 2.3 Battery Installation and Maintenance Notes

- ✧ The battery has been charged before being delivered and shall be prevented from short circuit in the transportation and installation process.
- ✧ The battery shall be placed in a well-ventilated space. Do not install the battery in airtight or badly ventilated spaces or equipment. Otherwise, the equipment might crack.
- ✧ Do not place the battery in high-temperature situations, direct sunshine or in front of a furnace or fire. Otherwise, the battery might leak and fire or crack.
- ✧ The connection cable shall not be extended from the provided cables to avoid too much voltage drop.
- ✧ Before switching on the batteries, check the connection are correct according to the manual, check the total voltage and anode and cathode of the battery system to ensure the correct installation.
- ✧ If you want to store the batteries without using them, they should be disconnected from the Charger, and kept in a cool, dry and ventilated environment.

Please be noted that it is not necessary to provide the reservation information with the following exact measures:

- Battery maintenance operators shall have the know-how and technical skill for the maintenance of the battery;
- When the battery is changed, the battery bank of the same model, firmware and quantity shall be changed;
- Warning: Do not dispose of scrap batteries with fire. Otherwise, the batteries might explode.
- Warning: Do not dismantle or damage the battery. Its electrolyte might be toxic and damage your skin and eyes.
- Warning: The battery may cause an electric shock or short circuit. Please take the following measures for the battery work:
  - a) Take off your watch, ring or other metal objects.
  - b) Only use tools with insulated handles.
  - c) Wear rubber gloves and shoes.
  - d) Do not put tools and metals above the battery.
  - e) Switch off the charge power supply before the battery terminal is disconnected.
  - f) Check if the battery is connected to the ground. If so unconsciously, disconnect the battery from the ground. Any part that touches the ground battery may suffer an electric shock. Disconnect the battery from the ground during installation and maintenance, so as to reduce the possibility of such a shock (applicable to the equipment and remote power supply without power circuits connected to the ground).

### 3. Installation

#### 3.1 Product Overview

The inverter is fully checked before being packed and delivered. It is forbidden to put it upside down position during delivery.

Please check the product package and internal components carefully before installation, e.g. housing, display and DC connection terminals.

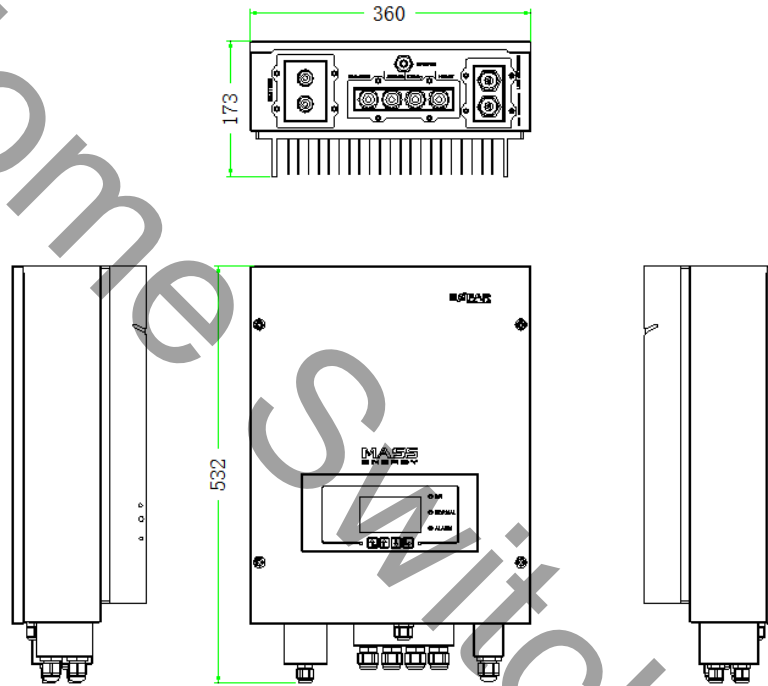
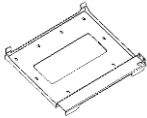

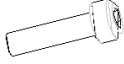



Fig. 2 ME 3000SP Overview

#### 3.2 Packing List

Before installation, please inspect the unit. Be sure that nothing inside the package is damaged. You should have received the following items inside of package:

 Mounting Bracket×1	 AC terminal×6	 M5 screw×2	 Battery terminal×2
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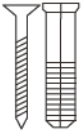

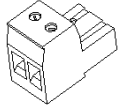
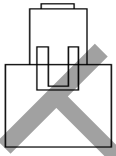



 <p>M6 flat washer×8</p>	 <p>Expansion Bolts×8</p>	 <p>Terminal cap×4</p>	 <p>CT terminal×2</p>
 <p>Current Transformer× 2</p>	 <p>User Manual×1</p>	 <p>Warranty card×1</p>	 <p>Quality Certificate×1</p>

Fig. 3 Accessories of ME 3000SP

### 3.3 Installation Environment


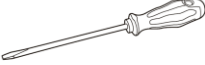
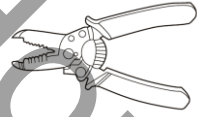
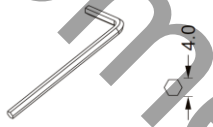
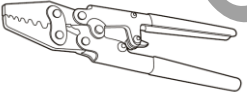
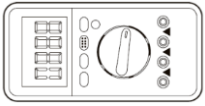

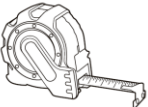
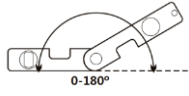
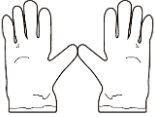
- Clean and tidy indoors, convenient for installation and in a dry position
- Ambient temperature scope:-25°C~60°C
- Relative humidity:0~100%(non-condensed)
- The ME 3000SP shall be installed in the place with an independent air inlet and outlet channels.
- There is neither flammable nor explosive materials in the area.
- The ME 3000SP shall be connected to the power grid with an over-voltage of CATIII and CAT II.
- The maximum work altitude is 2000m.
- Please consult our engineers about detailed requirements for installation.

### 3.4 Installation Tools



**PLEASE NOTE THAT IN ADDITION TO THE LIST BELOW YOU WILL REQUIRE RJ45 CONNECTOR AND CRIMPERS AS WELL AS ADDITIONAL LENGTH OF DATA CABLE (SUFFICIENT FOR CT CLAMP EXTENSION DISTANCES).**

**PLEASE CHECK THAT YOU HAVE AN AC ISOLATOR ON SITE ALSO.**

The following tools shall be prepared before installation:

No.	Tool	Model	Function
1		Hammer drill Recommend drill dia.6mm	Used to drill holes on the wall
2		Screwdriver	wiring
3		Wire stripper	Strip wire
4		4mm Allen Key	Turn the screw to connect rear panel with inverter
5		Crimping tools	Used to crimp power cables
6		Multi-meter	Used to check grounding
7		Marker pen	Used to mark signs
8		Measuring tape	Used to measure distances
9		Level	Used to ensure that the rear panel is properly installed
10		ESD gloves	Operators wear



11		Safety goggles	Operators wear
12		Anti-dust respirator	Operators wear

### 3.5 Installation Position

ME 3000SP should be vertically mounted (to ensure fast heat dissipation), please choose a position without direct sunlight / snow accumulation to install ME 3000SP.

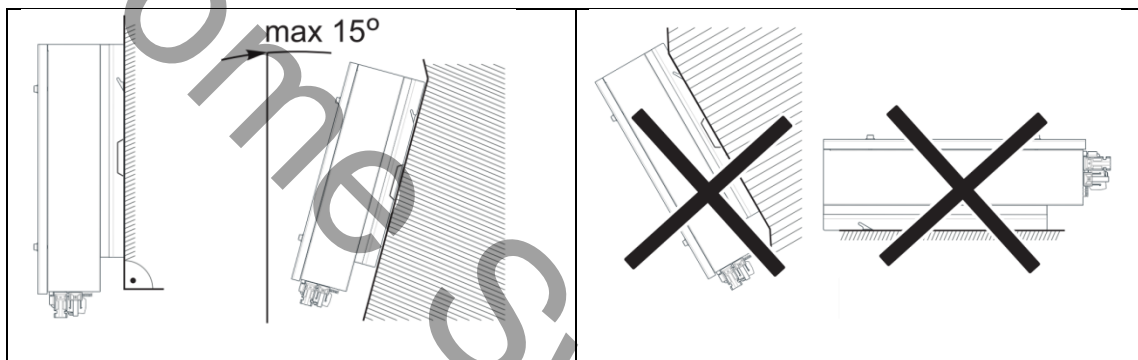


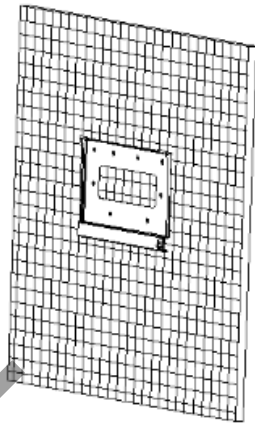
Fig. 4 Installation Position of ME 3000SP

### 3.6 Mount ME 3000SP

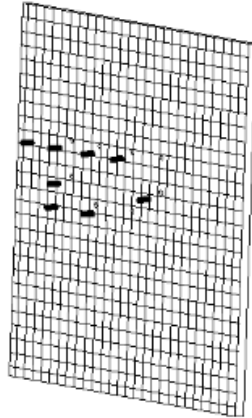
Step 1: Put the mounting bracket properly on the wall, mark these 8 drill holes using a marker pen. Drill 8 holes (drill bit 6mm) on the wall.

Step 2: Insert the expansion screw vertically into the whole, note the insertion depth. (Not too shallow or too deep)

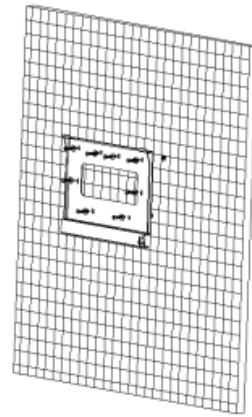
Step 3: Fix the mounting bracket on the wall using bolts & flat washers.



Step1



Step2

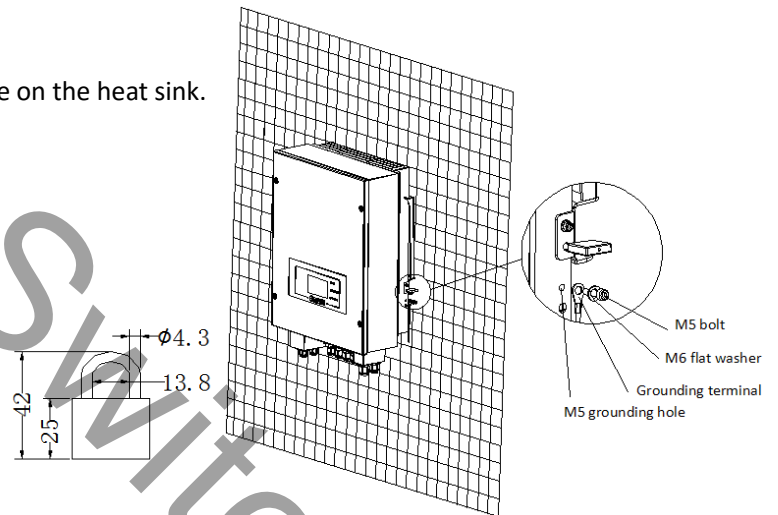


Step3

Step 4: Put ME 3000SP on the mounting bracket.

Step 5: Earth ME 3000SP using the grounding hole on the heat sink.

Step 6: OPTIONAL: you can lock ME 3000SP



$\phi 4.3$   
13.8  
25

M5 bolt  
M6 flat washer  
Grounding terminal  
M5 grounding hole

## 4. Electrical Connection



### Warning

- Be aware of electric shock and chemical hazards!
- Before connecting the battery, ensure the cable connectors have the correct polarity. Reversed polarity will damage the inverter!
- Before connecting to battery, please install a separate DC breaker (100A) between inverter and battery. This will ensure the inverter can be securely disconnected during maintenance.
- Before connecting to Grid, please install a separate AC breaker (25A) between inverter and grid.
- It is very important for system safety and efficient operation to use appropriate cable for electrical connection.
  - Battery connection: cable of AWG8 or AWG6.
  - Grid & Load connection: cable of AWG12.
- Make sure N wire is connected to PE wire when ME3000SP is working in EPS (Emergency Power Supply) mode.

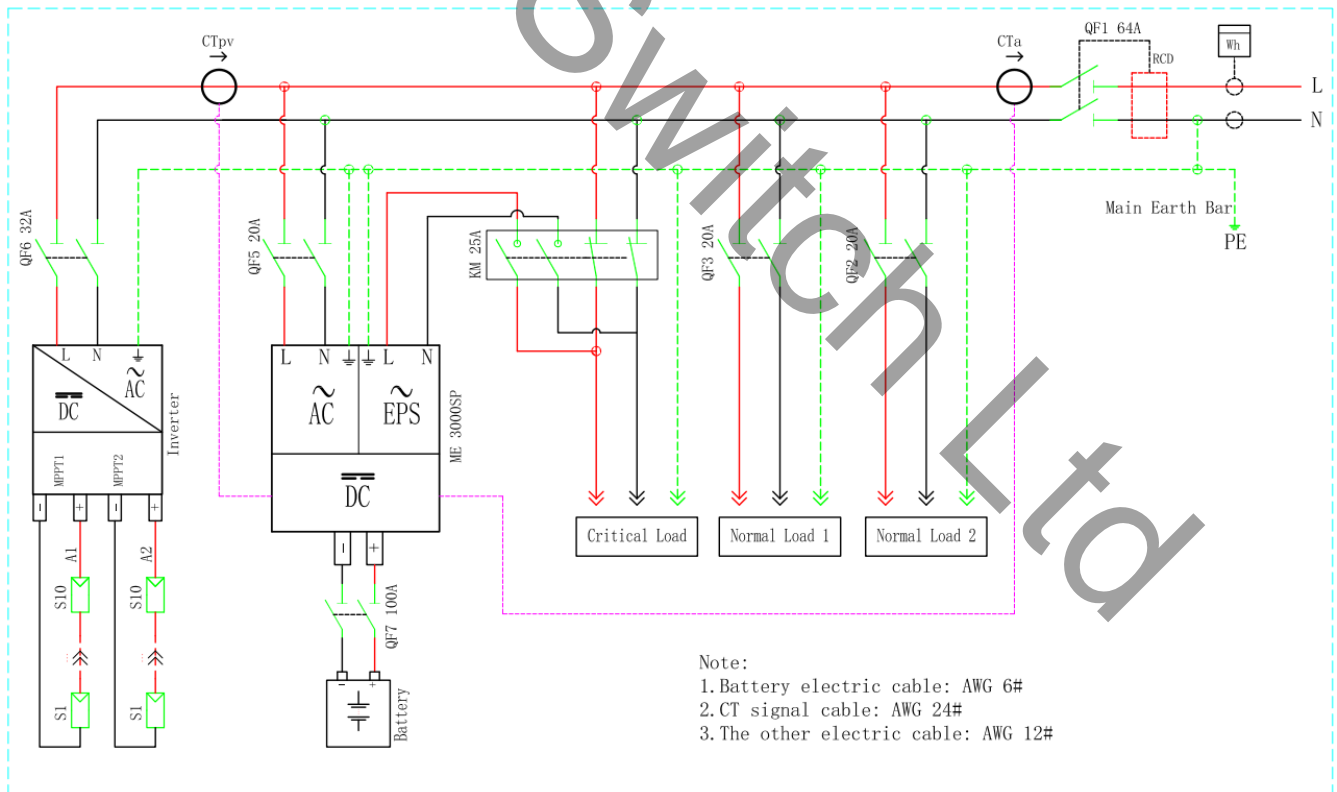


Fig. 5 Wiring Schematic of Single Phase System

## 4.0 Battery Set Up

Please make certain you have read the manual for the Pylon Batteries. Full information is available from <http://www.stealthenergy.co.uk/stealth-tile-system/stealthenergytm-growatt-inverter/so-far-solar/index.shtml>

The ME3000SP can be used with 1, 2, 3 or 4 Pylon US2000B batteries.

**THE ME3000SP SYSTEM IS ONLY COMPATIBLE WITH PYLON  
Us2000B BATERIES WHICH HAVE B63 FIRMWARE  
OTHER FIRMWARES ARE NOT COMPATIBLE – CONTACT YOUR SUPPLIER  
IF UNSURE.**

Batteries are supplied with or without mounting brackets. If you are not using the specific mounting brackets please ensure there is airflow between the batteries if you stack them.



### Short Power Lead Connections

The US2000b Pylon batteries are supplied with short black and white power connections for connecting more than one battery together. If you only have a single battery you will not need them. Please see figure 6 & 7. To make certain you connect the batteries as shown in the diagram.

### Short Data Cable Connections

The US2000b Pylon batteries are supplied with a short black and data cable connection for connecting more than one battery together. If you only have a single battery you will not need them. Please see figure 6 & 7. to make certain you connect the batteries as shown in the diagram.



Fig.6 Short Power Lead Connections and Data Cable



Fig.7 Linking Of Batteries

### Long Power Cable connection

If you have a single or multiple batteries, once connected your bank of battery power needs to be connected to the SoFar Me3000SP unit. This cable is 2m long – which is the maximum distance possible between the battery bank and the SoFar Me3000SP unit. Connect the long power leads to the GRID positive and negative on the SoFar Me3000SP unit, and to the relevant positive and negative connections

On the battery as shown in figure 8.



Fig 8. Long Power Cable Connection to ME3000SP



## Dip Switches

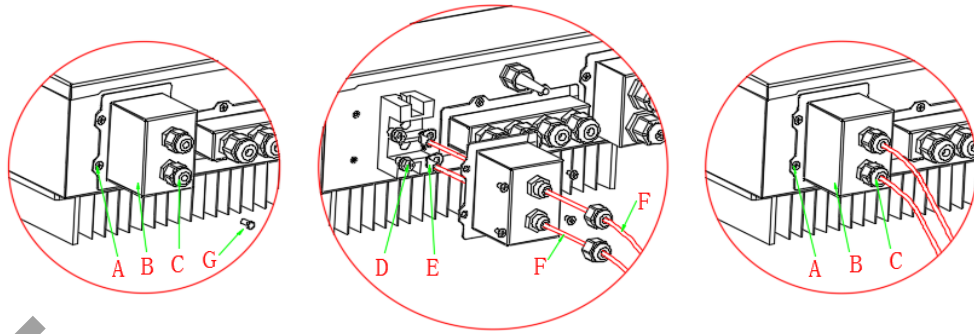
The Dip switches do not have an impact on the performance of the system. Under operation with the SoFar Me3000SP unit they have no functionality. For simplicity you can set them as in the image below



Fig 10. Dip Switches

## 4.1 Battery Connection

**Ensure you have made connection of the power leads correctly when using single or multiple batteries. See Fig 11.**



**Fig. 11 Battery connection (Test battery wires polarity before connection)**

Step 1: Loosen 4 screws (A) using a screwdriver (fig. 6);

Step 2: Remove the waterproof cover (B), loosen the cable gland (C), and then remove the stopper (G);

Step 3: Route the battery wires (F) through the cable gland, then connect battery wires using OT terminal (E);

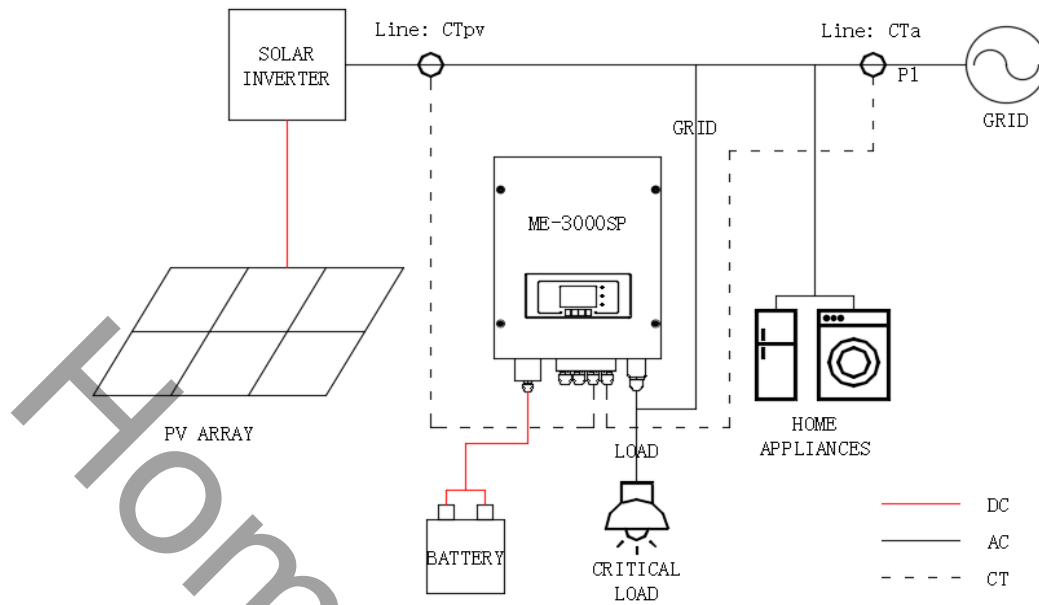
Step 4: Fasten the waterproof cover using 4 screws.

**Ensure you have followed the image below for setting up the communication between Batteries. See Fig 12.**



**Fig 12. Communication Set Up**

#### **4.2 CT / RS485 / NTC connection**



Schematic Diagram (ME 3000SP: energy storage add-on to existing renewable system)

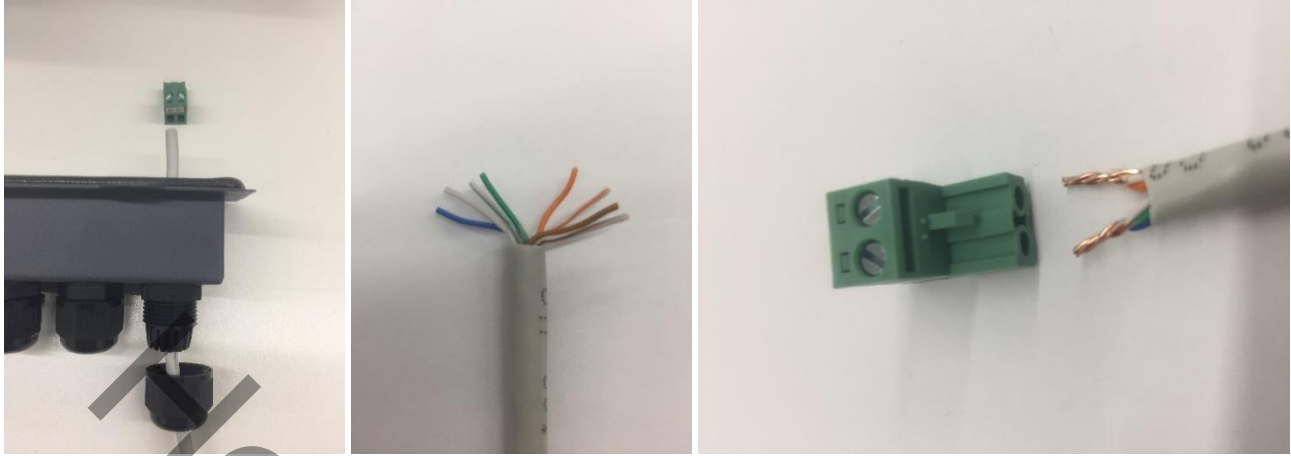
## CT Connections

There are 2 CT clamps which need to be connected. One is around the AC supply coming into the property, and the other is around the AC feed from your renewable source to the fuse-board.

If you are installing close to the fuse-board then you may only need a short extension. If you need a longer run, as you are locating the unit further away, you will need a longer extension.

Use Data cable to make this extension as this will ensure no interference from other devices when running longer distances. Follow the chart below to see how to group the cables, and the image in figure 8 in order to make the extension and to fit the sensor on the cable facing the correct direction.





PV CT Clamp Insert



AC CT Clamp Insert

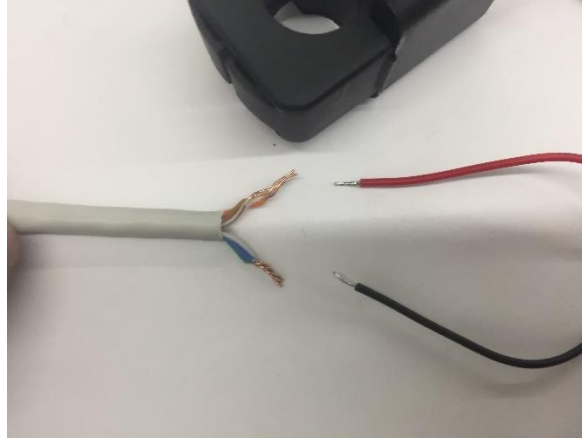


Fig 13. CAT 5 CT Extension Connection

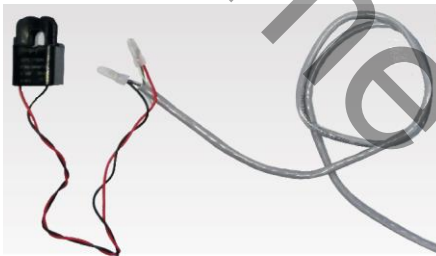


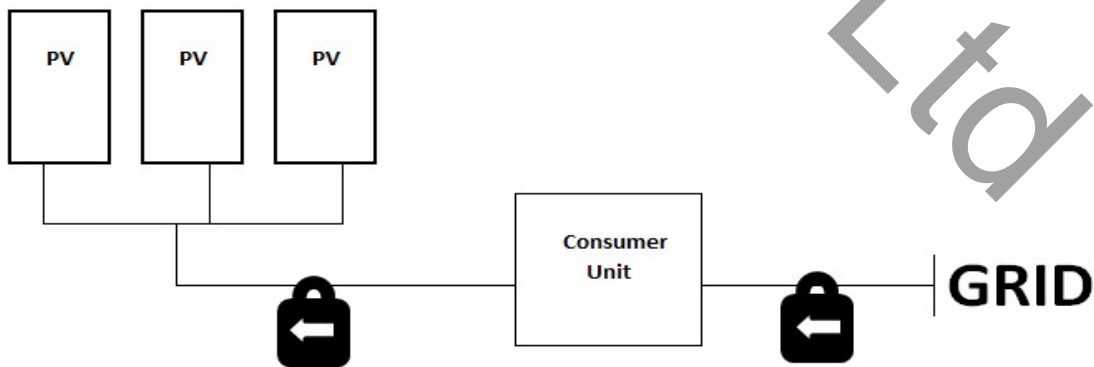
Fig 14. Plastic Cover Connectors



Fig 15. CT Clamp

CT wire	Extension cable (network cable)	ME 3000SP
Red	Orange / white orange / brown / white brown	CT+
Black	Green / white green / blue / white blue	CT-

Grid in connection with Fig 13.



### Connecting the CT clamps to the ME 3000SP

CT clamps are connected using Data cable. Use the grid above (Fig 13.) to extend the length of data cable required.

Once you have the correct extension – attach the CT Fitting to the cable in order to connect the CT clamp to the ME 3000SP unit See Fig 14.

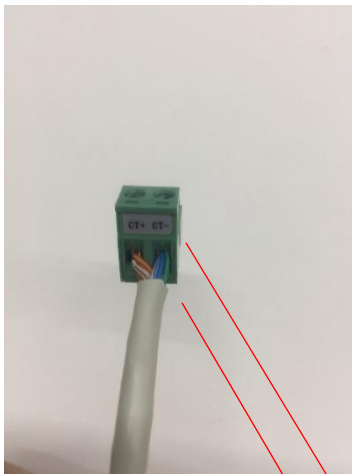


Fig 14. CAT 5 to ME3000SP CT Connector

Below Images Show Location for CT Connector See Fig 15.

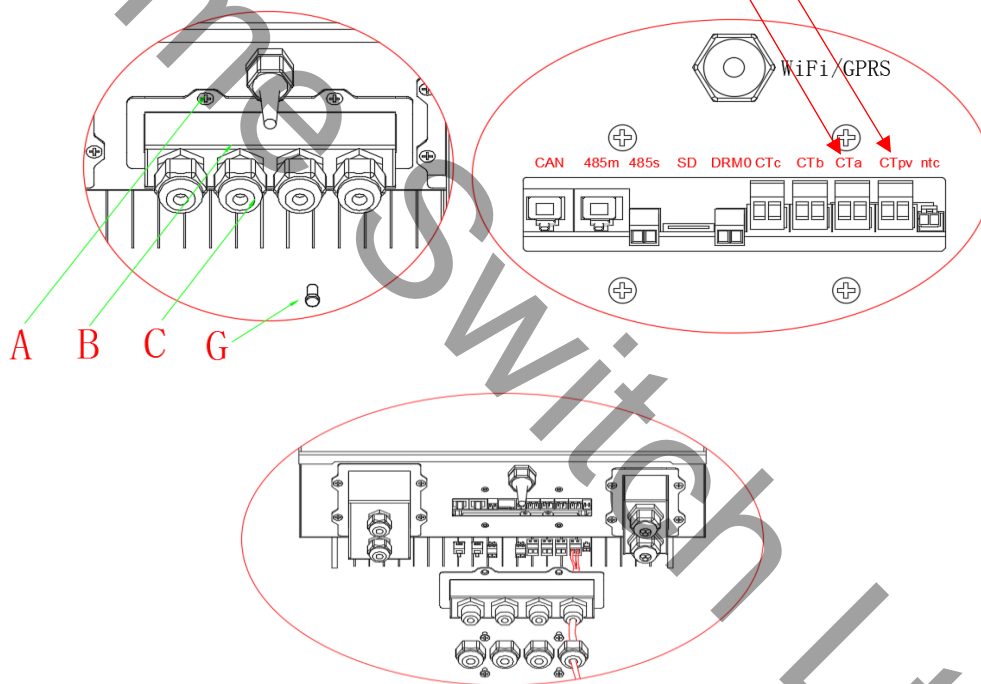


Fig 15. Location for CT Connector

Step 1: Use network cable & terminal cap to extend the CT clamps to the necessary distance.

Step 2: Remove the cover as shown in Figure 9. Pass the cables through the cover BEFORE connecting to the GREEN Terminals.

Step 3: Remove the waterproof cover (part B), loosen the cable gland (part C), then remove the stopper (part G)

Step 4: Route CT cable through the cable gland, connect CT cable to CT terminal, then insert CT terminal into corresponding ports. (Form 1)

Step 5: it is ONLY necessary to connect NTC for lead acid batteries:

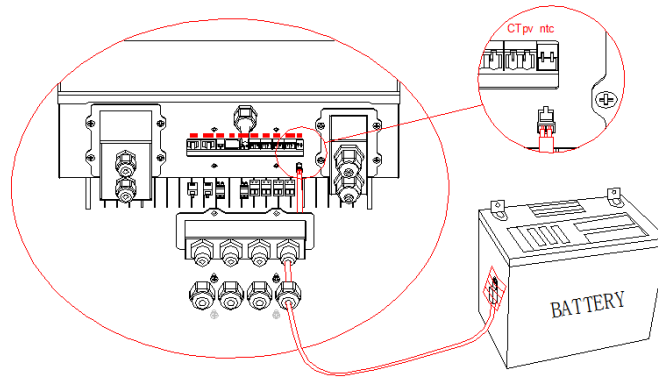


Fig. 17 NTC connection

Step 6: fasten the waterproof cover using 4 screws.

## 4.2 Grid Connection

For most of the customers, please ONLY connect the GRID port.

Please leave LOAD port unconnected unless you are installing the critical load

As shown below Fig 18.

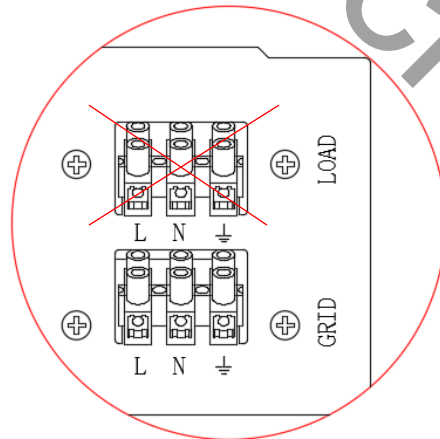


Fig 18. Grid & Load

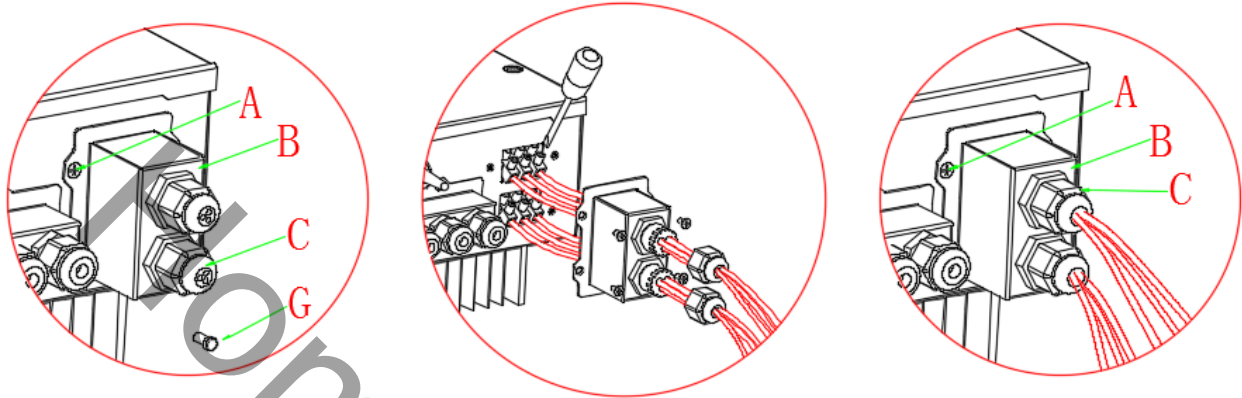
Step 1: Loosen 4 screws (part A) using a screwdriver (fig. 19)

Step 2: Remove the waterproof cover (part B), loosen the cable gland (part C), then remove the stopper (part G)

Step 3: Route 3-core cable through GRID cable gland, then connect 3 wires to corresponding terminal blocks. (BROWN – L, BLUE – N, YELLOW/GREEN – PE)

Step 4: Fasten the waterproof cover using 4 screws.

**PUT CROSSES ON THE IMAGE BELOW**



**Fig. 19 Grid & Load connection**

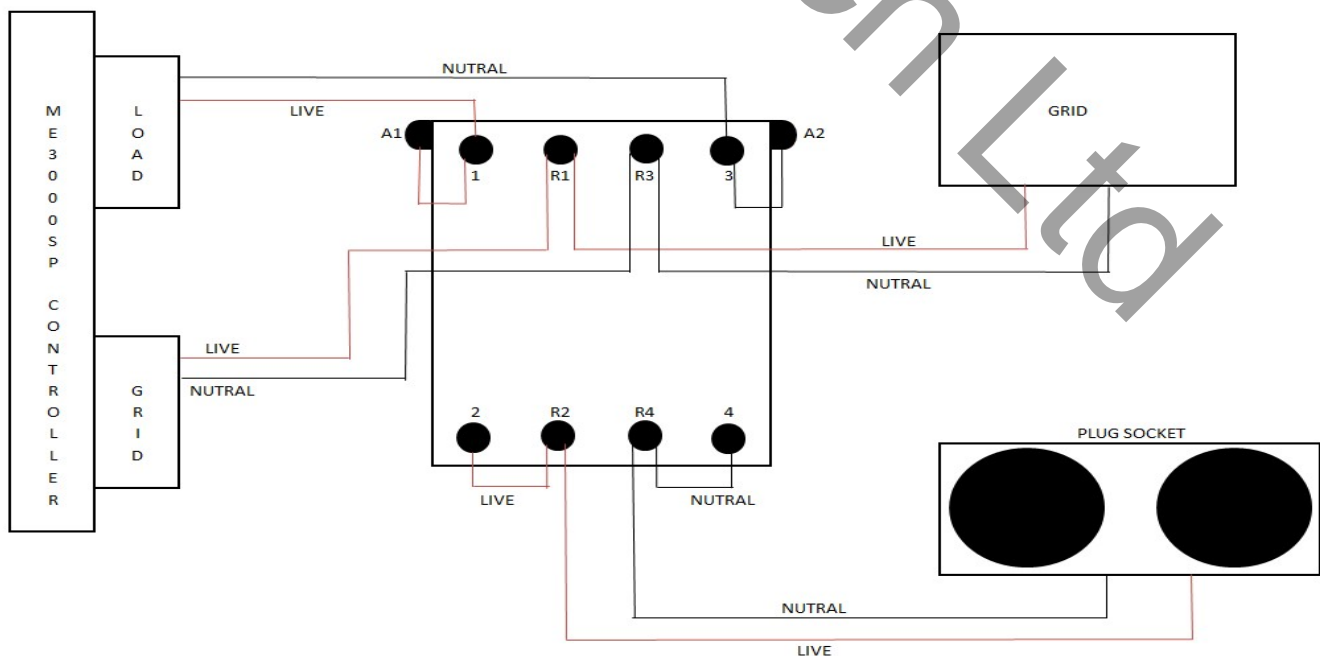
### 4.3 Critical Load Connection( Requires Additional Components)

Critical load: in case of grid outage, ME-3000SP will work in EPS (Emergency Power Supply) mode, discharge the battery & supply power to critical load via LOAD port.

LOAD port is only for critical load connection. Please make sure you've purchased the AC contactor accessory from Shenzhen SOFARSOLAR Co., Ltd.

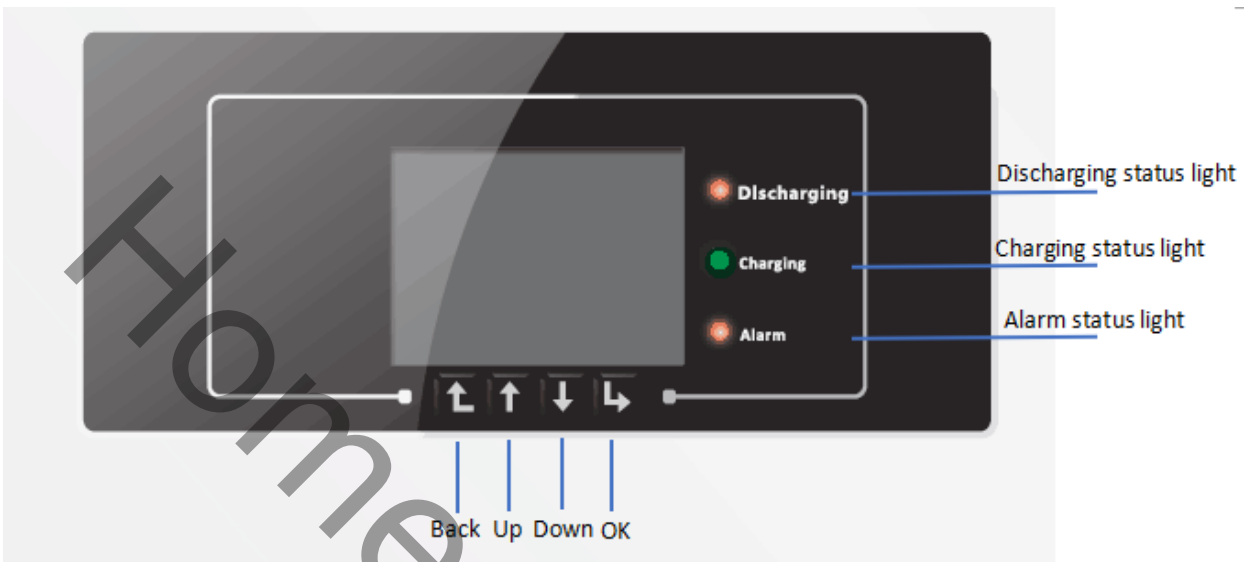
The connection to LOAD port is the same as grid connection (Fig. 11).

Before connecting the critical load, please make sure that you understand the following diagram (Fig. 12).



**Fig. 20 Connection of critical load (AC contactor: 2 NC, 2 NO)**

## 5. Indicators and Keys



### Buttons:

- press “back” to the previous screen or enter into the main interface;
- press “Up” to the last interface or value plus 1;
- press “Down” entry into the next column or value minus 1 ;
- Press “OK”to switch to the next digit.

### LED lights:

- Charging status Light ( Green )
  - When the system is in the state of charge detection, the LED light flashing;
  - When the system is in charging, the LED light is permanently on.
  - When the system is in Fault (fault, or permanent), the LED light goes out.
- Discharging status Light ( Green )
  - When the system is in the state of discharge detection, the LED light flashing;
  - When the system is in discharging, the LED light is permanently on.
  - When the system is in Fault (fault, or permanent), the LED light goes out.
- Alarm light ( Red )

When the system is in Fault (fault, or permanent), the LED light is permanently on.

# 6. Operation

## 6.1 Double Check

Please double check the following before operation.

1. ME 3000SP is firmly fastened to the mounting bracket on the wall;
2. The polarity of battery wires is correct, battery wires are firmly connected;
3. DC isolator is correctly connected between battery & ME 3000SP, DC isolator: OFF;
4. GRID / LOAD cables are firmly / correctly connected;
5. AC circuit breaker is correctly connected between ME3000SP GRID port & GRID, AC circuit breaker: OFF;
6. AC contactor is correctly connected (fig. 20);
7. For lithium battery, please ensure that the RS485 communication wire have been connected;
8. For the lead-acid battery, please ensure that the NTC wire has been connected.

## 6.2 First Time Switch on and Setup

**When you have completed the wiring and are ready to switch the unit on follow the process below: Ensure the Batteries & Sofar Unit are turned off and the PV Isolator is turned off.**

1. Turn on the battery(s) and press the SW button (Small Red Button on the Batteries)
2. Once the "RUN" is flashing turn on the power to the Sofar Controller
3. Set the Parameters as shown in the Grid below.
4. Once you have set the parameters and the countdown from 60 Secs as finished wait 3 Minutes then switch the PV isolator back on

	1 x 2.4kwh Battery	2 x 2.4kwh Battery	3 x 2.4kwh Battery	4 x 2.4kwh Battery
1)Set system time	-	-	-	-
2)Set country	for 0.26, set it to 0: Germany4105 first. change the country code to 16: UK G83 on site			
3)Select battery type	PYLON	PYLON	PYLON	PYLON
4)Set battery capacity	50Ah	100Ah	150Ah	200Ah
5)Set bat manage mode	N/A	N/A	N/A	N/A
6)Set max charge voltage	53.2V	53.2V	53.2V	53.2V
7)Set max Charge current	25A	50A	60A	60A
8)Set max protect voltage	54V	54V	54V	54V
9)Set min discharge voltage	47V	47V	47V	47V
10)Set max discharge current	25A	50A	60A	60A
11)Set min protect voltage	46V	46V	46V	46V
12)Set discharge depth	80%	80%	80%	80%
13)Set discharge time	N/A	N/A	N/A	N/A
14)Set empty discharge voltage	46.7V	46.7V	46.7V	46.7V
15)Set full charge voltage	52.08V	52.08V	52.08V	52.08V

### 1)Setup system time

System time's format is "Year-Month-Day-Hour-Minutes-Second", press "Up & Down" to change the number, press "Enter" to complete the time setting. When the system setting is complete, then it will turn to "country" setting automatically.

### 2)Setup country

Press "Up & Down" to select a country, press "Enter" to complete the country setting, then it will turn to "battery type" setting automatically.

CODE	Country	CODE	Country
00	Germany4105	14	Germany_0126
01	CEI021_INT	15	Italy_CEI0_16
02	Australia	16	UK_G83
03	SpainRD1699	17	Greece island
04	Turkey	18	EU_EN50438
05	Denmark	19	EU_EN61727
06	Greece Continent	20	Korea
07	Netherland	21	Sweden
08	Belgium	22	Europe general
09	UK_G59	23	CEI021_EXT
10	China	24	Cyprus
11	France	25	India
12	Poland	26	Philippines
13	Germany_BDEW	27	New Zealand

### 3)Setup battery type

According to you battery, press "Up & Down" to select the battery type, press "Enter" to complete the battery type setting, then it will turn to "battery capacity" setting automatically.

### 4)Setup battery capacity

According to the capacity of your battery, press "Up & Down" to select the battery capacity, press "Enter" to complete, then it will turn to "bat manage mode" setting automatically.

### 5)Setup bat manage mode

Press "Up & Down" to select the suitable manage mode for the battery, press "Enter" to complete, then it will turn to "max charge voltage" setting automatically.

### 6)Setup max charge voltage

According to the datasheet of your battery, press "Up & Down" to input the max charge voltage, press "Enter" to complete the "max charge voltage" setting, then it will turn to "max Charge current" setting automatically.

### 7)Setup max Charge current



According to the datasheet of your battery, press "Up & Down" to input the max charge current, press "Enter" to complete the "max charge current" setting, then it will turn to "max protect voltage" setting automatically.

#### 8) Setup max protect voltage

According to the datasheet of your battery, press "Up & Down" to input the max protect voltage, press "Enter" to complete the "max protect voltage" setting, then it will turn to "min discharge voltage" setting automatically.

#### 9) Setup min discharge voltage

According to the datasheet of your battery, press "Up & Down" to input the min discharge voltage, press "Enter" to complete the "min discharge voltage" setting, then it will turn to "max discharge current" setting automatically.

#### 10) Setup max discharge current

According to the datasheet of your battery, press "Up & Down" to input the max discharge current, press "Enter" to complete the "max discharge current" setting, then it will turn to "min protect voltage" setting automatically.

#### 11) Setup min protect voltage

According to the datasheet of your battery, press "Up & Down" to input the min protect voltage, press "Enter" to complete the "min protect voltage" setting, then it will turn to "discharge depth" setting automatically.

#### 12) Setup discharge depth

According to the request of the discharge depth, press "Up & Down" to input the discharge depth, press "Enter" to complete the "discharge depth" setting, then it will turn to "discharge time" setting automatically.

#### 13) Setup discharge time

According to the request of discharge time, press "Up & Down" to input the discharge time, press "Enter" to complete the "discharge time" setting, then it will turn to "empty discharge voltage" setting automatically.

#### 14) Setup empty discharge voltage

According to the datasheet of your battery, press "Up & Down" to input the empty discharge voltage, press "Enter" to complete the "empty discharge voltage" setting, then it will turn to "full charge voltage" setting automatically.

#### 15) Setup full charge voltage

According to the datasheet of your battery, press "Up & Down" to input the full charge voltage, press "OK" to complete the "full charge voltage" setting. It will display "Success", the setting of ME 3000SP's first operating is completed and press "Back" to return the main interface. If "Fail" is displayed, the ME 3000SP should be reset again.

### 6.3 Commissioning

After the completion of the above settings, turn off the ME3000SP, then power on the ME3000SP according to the following steps to complete sensor calibration on the grid and PV:

IMPORTANT: PLEASE FOLLOW THE FOLLOWING PROCEDURE:

- 1) Turn OFF the solar inverter. Make sure there's no power generation in ME 3000SP's phase.

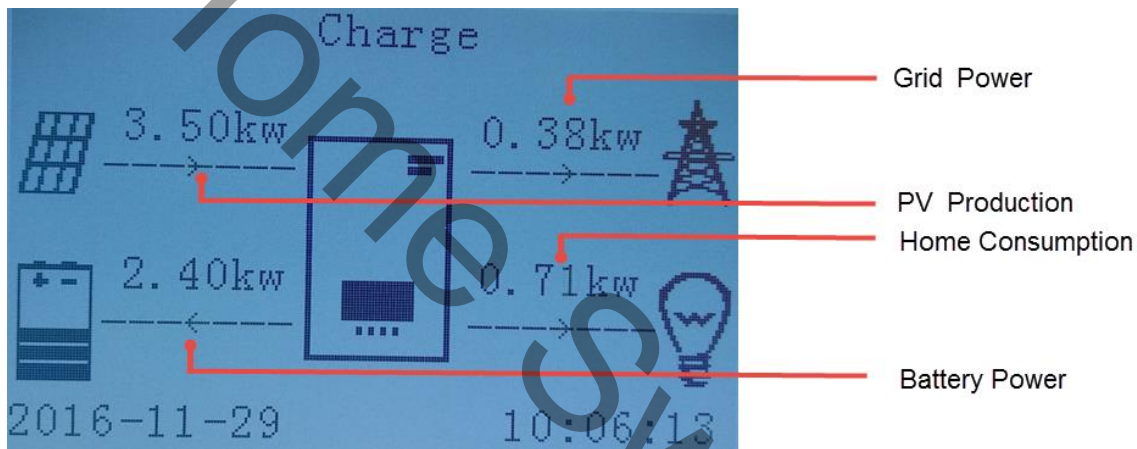
- 2) Turn ON DC isolator between battery & ME 3000SP.
- 3) Turn ON AC circuit breaker between ME 3000SP GRID port & GRID. ME 3000SP should start to operate now.
- 4) Turn ON some home appliances. Make sure power consumption in ME 3000SP's phase is greater than 200W. You should be able to read the data on the screen.
- 5) Turn ON the solar inverter. (power generation > 100W)

If power generation > power consumption, the battery is not full. ME 3000SP will charge the battery.

If power generation < power consumption, the battery is not flat. ME 3000SP will discharge the battery.

Every time you change the CT connection, you need to repeat the procedure above.

**The main interface:**



**6.4 Main interface**

At the standard interface, press the “back” button to enter the main interface. The main interface includes five functions: the inverter’s parameter settings, event list, system information, software upgrade, and energy statistics.

Main interface
1.Enter Setting
2.Event List
3.System Info
4.Software Update
5.Energy Statics

**6.4.1 Parameter setting interface :**

1.Enter Setting	
1.Set Battery Paras	7.Set Language
2.Clear Energy	8.Set Time

3.Clear Events	9.Eps Mode Control
4.Set Country	10. EPS Time Set.
5.Set Address	11. Auto Test
6.Enable Set Country	12. Chg And Disc Set

## 1. Set Battery Paras

1.Set Battery Paras	
1.Battery Type	7.Max.Discharge Current
2.Battery Capacity	8.Under voltage protect
3.Discharge depth	9.Max.Charge Voltage
4.Max.Charge Current	10.Discharge Time
5.Over voltage protect	11.empty-Discharged Voltage
6.Min.Discharge Voltage	12.full-charged Voltage

Press “back” button to enter main menu, select “1. Enter Setting”, Press “OK” button to enter. Select “1. Set Battery Paras” and press “OK”, “input password” is shown, press “OK” button again. Input the password (normal “0001”, advanced “0715”), press “Up” or “Down” to change the 1<sup>st</sup> digit, press “OK” to the next digit, when “0001 / 0715” is shown on the screen, press “OK” to enter “Set Battery Paras” interface. If “Error! Try again”, press “Back” and input the password again.

### 1) Battery Type

Select “1.Enter Setting” in the main interface, and press “OK” button to enter into the setting interface, then select “1.Set Battery Paras”,input the password to enter into the battery setting interface. Select “1.Battery Type” and press “OK” to enter into the battery type setting interface. Press “up” and “down” to select the battery type. Press “OK” to finish the setting and it will display “Success”.

### 2) Battery Capacity

Select “2.Battery Capacity” and press “OK” to enter into the battery capacity setting interface. Press “up” and “down” to input the value of battery capacity. Press “OK” to finish the setting and it will display “Success”.

### 3) Discharge depth

Select “3.Discharge depth” and press “OK” to enter into the discharge depth setting interface. Press “up” and “down” to input the value of discharge depth. Press “OK” to finish the setting and it will display “Success”.

Note: The value of discharge depth decide how much energy the battery export.

### 4) Max. Charge Current

Select “4.Max.Charge Current” and press “OK” to enter into the Max. Charge Current setting interface. Press “up” and “down” to input the value of Max. Charge Current. Press “OK” to finish the setting and it will display “Success”.

### 5) Over voltage protect

Select “5.Over voltage protect” and press “OK” to enter into the Over voltage protect setting interface. Press

“up” and “down” to input the value of over voltage protect according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

6) Min.Discharge Voltage

Select “7.Min.Discharge Voltage” and press “OK” to enter into the Min.Discharge Voltage setting interface. Press “up” and “down” to input the value of Min.Discharge Voltage according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

7) Min.Discharge Current

Select “8.Max.Discharge Current” and press “OK” to enter into the Min.Discharge Current setting interface. Press “up” and “down” to input the value of Min.Discharge Current according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

8) Under voltage protect

Select “9.Under voltage protect” and press “OK” to enter into the under voltage protect setting interface. Press “up” and “down” to input the value of under voltage protects according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

9) Max. Charge Voltage

Select “10.Max.Charge Voltage” and press “OK” to enter into the Max. Charge Voltage setting interface. Press “up” and “down” to input the value of Max. Charge Voltage according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

10) Discharge Time

Select “11.Discharge Time” and press “OK” to enter into the Discharge Time setting interface. Press “up” and “down” to input the value of Discharge Time according to the discharging time you need. Press “OK” to finish the setting and it will display “Success”.

11) empty-Discharged Voltage

Select “12.empty-Discharged Voltage” and press “OK” to enter into the empty-Discharged Voltage setting interface. Press “up” and “down” to input the value of empty-Discharged Voltage according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

Note: This item is effective only for lead-acid batteries, not for lithium batteries.

12) full-charged Voltage

Select “13.full-charged Voltage” and press “OK” to enter into the full-charged Voltage setting interface. Press “up” and “down” to input the value of full-charged Voltage according to the specification of the battery. Press “OK” to finish the setting and it will display “Success”.

Note: This item is effective only for lead-acid batteries, not for lithium batteries.

Recommended settings for customers using PYLONTECH US2000B batteries:

	1 x 2.4kwh Battery	2 x 2.4kwh Battery	3 x 2.4kwh Battery	4 x 2.4kwh Battery
1)Set system time	-	-	-	-
2)Set country	for 0.26, set it to 0: Germany4105 first. change the country code to 16: UK G83 on site			
3)Select battery type	PYLON	PYLON	PYLON	PYLON
4)Set battery capacity	50Ah	100Ah	150Ah	200Ah
5)Set bat manage mode	N/A	N/A	N/A	N/A
6)Set max charge voltage	53.2V	53.2V	53.2V	53.2V
7)Set max Charge current	25A	50A	60A	60A
8)Set max protect voltage	54V	54V	54V	54V
9)Set min discharge voltage	47V	47V	47V	47V
10)Set max discharge current	25A	50A	60A	60A
11)Set min protect voltage	46V	46V	46V	46V
12)Set discharge depth	80%	80%	80%	80%
13)Set discharge time	N/A	N/A	N/A	N/A
14)Set empty discharge voltage	46.7V	46.7V	46.7V	46.7V
15)Set full charge voltage	52.08V	52.08V	52.08V	52.08V

## 2. Clear Energy

Select "2.Clear Energy", press "OK" to enter into "input password" interface. Input the password ("0001"), press "Up" or "Down" to choose the value, and press "OK" to the next value setting, when "0001" showed on the screen, press "OK" to clear energy. If "Error! Try again", press "Back" and set the password again. If the password is right, energy clearing is completed and it will display "Success".

## 3. Clear Events

Select "3.Clear Events", press "OK" button twice to complete the events clearing and it will display "Success".

## 4. Set Country

Select "4.Set Country", press "OK" button to enter into "Input Country Code" interface, press "OK", if it warning "Set Disable", you need to turn to "6.Enable Set Country" interface to enable the setting, then you can return to "4.Set Country" to input the country code. Press "OK" button to complete and it will display "Success".

## 5. Set Address

Select "5.Set Address", press "OK" button twice to enter into Address setting interface. When it's completed, it will display "Success".

## 6. Enable Set Country

Select "6.Enable Set Country", press "OK" to enter into "input password" interface. Input the password ("0001"), press "Up" or "Down" to choose the value, and press "OK" to the next value setting, when "0001" showed on the screen, press "OK". If "Error! Try again", press "Back" and set the password again. If the password is right, Country enable setting is completed and it will display "Success".

## 7. Set Language

Select "7.Set Language", press "OK" to enter into "input language selecting interface. Press button "up" and "down" to select the language and press "OK" to complete it, then it will display "Success".

## 8. Set Time

Select "8.Set Time", press "OK" to enter into time setting interface, the format of the time is Year-Mon-Day-Hour-Min-Second. When the time setting is finished, it will display "Success", or it will display "fail".

## 9. EPS (Emergency Power Supply) Mode Control

Select "9.Eps Mode Control", press "OK" to enter into EPS Mode Control setting. Press button "up" and "down" to select "1.enable or disable", press "OK" to complete the EPS Mode Control setting. It will display "Success". Select "2.Eps Time Set", press "OK" button to enter into EPS Time setting interface. Press button "up" and "down" to set the time of EPS. When it's completed, it will display "Success".

## 10. DRMs0 Control (This part is valid for Australian Market ONLY)

Select "10.DRMs0 Control", press "OK" to enter into "input password" interface. Input the password ("0001"), press "Up" or "Down" to choose the value, and press "OK" to the next value setting, when "0001" showed on the screen, press "OK", if the password is correct, it will enter into DRMs0 testing interface. If "Error! Try again", press "Back" and set the password again. After entering into DRMs0 testing interface, press button "up" to select "1.Enable DRMs0", press "OK" to enable "DRMs0" this function. If you need to forbid "DRMs0" this function, press button "down" to select "2.Disable DRMs0", press "OK" to forbid "DRMs0".

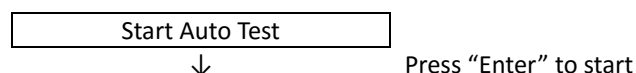
## 11. AUTO test (This part is valid for Italian Market ONLY)

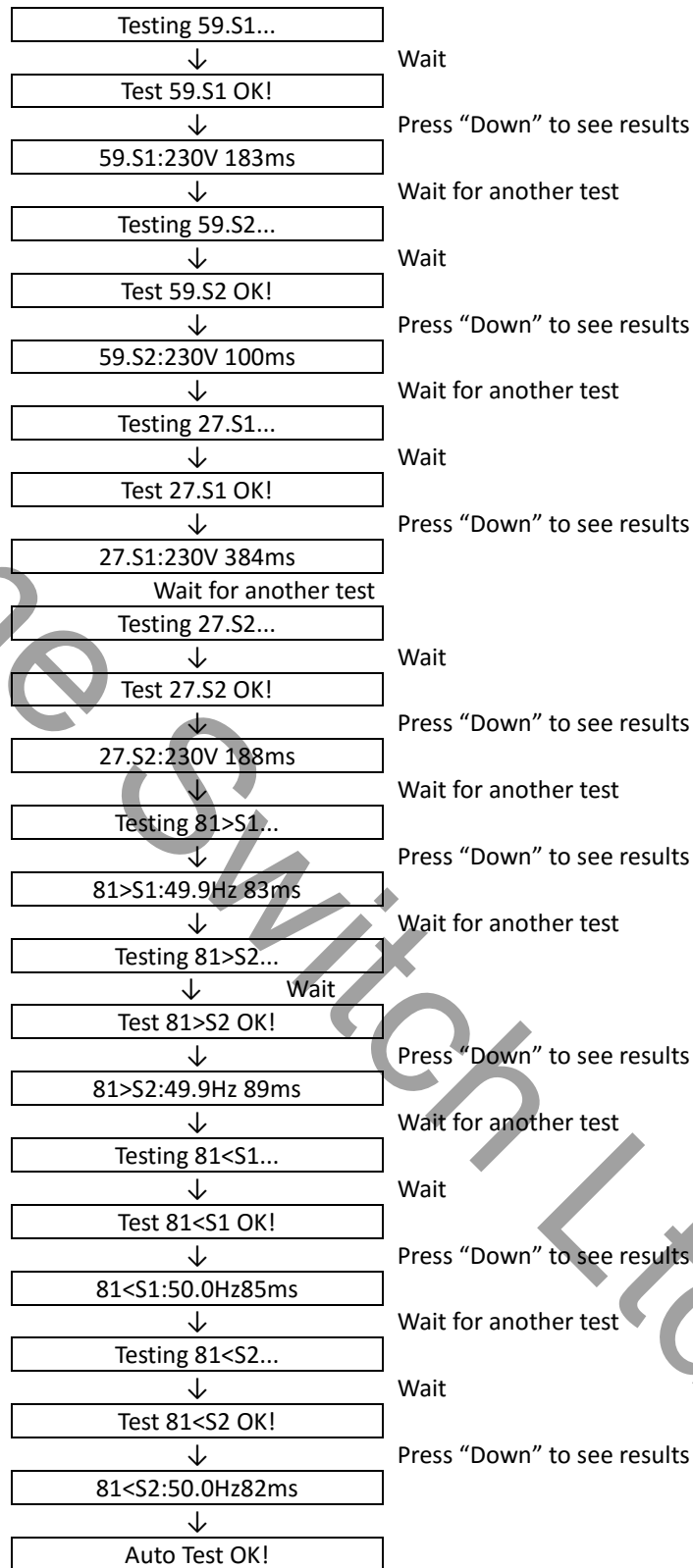
Select "11.Auto Test", press "OK" button to enter into autotest interface.

11.Auto Test		
	1.Autotest Fast	4.Setting QV time
	2.Autotest STD	5.Control 81.S1
	3.Setting Pf time	

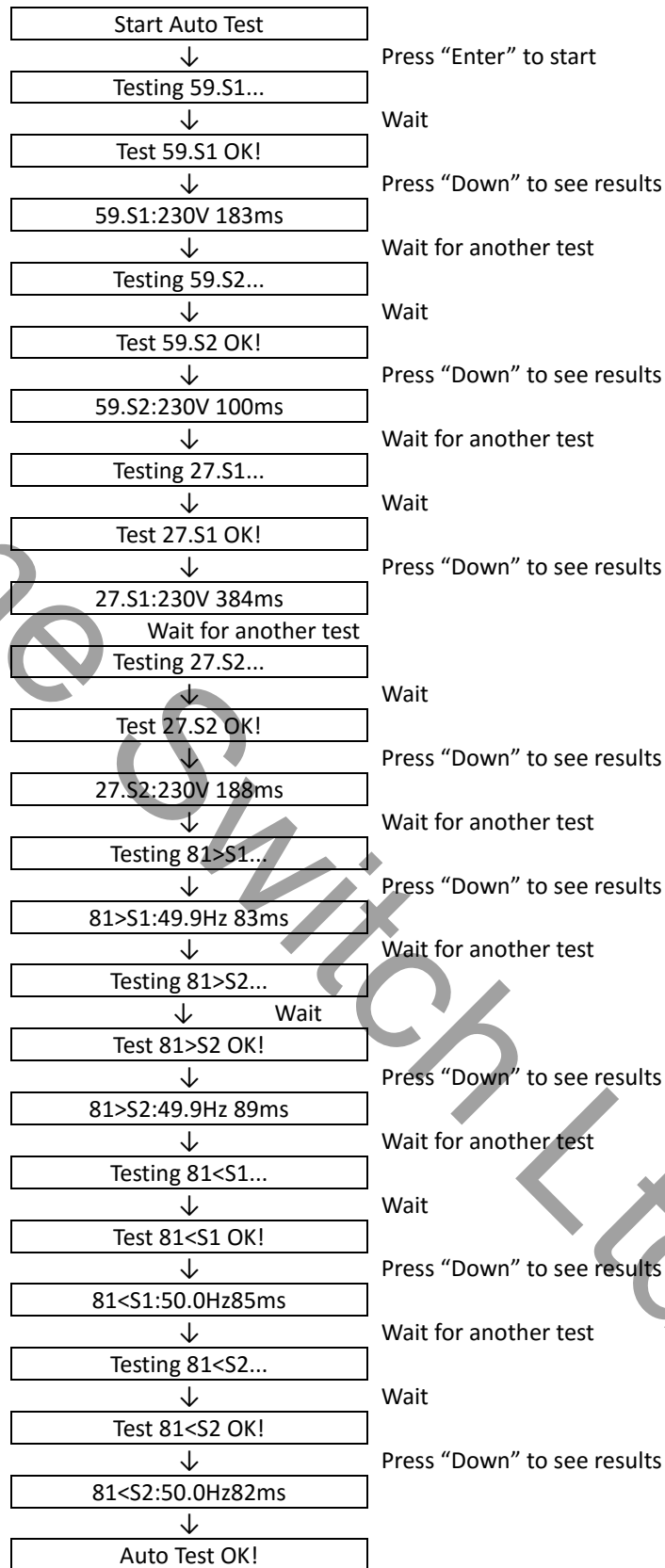
### 1) Autotest Fast

After entering into Auto Test interface, press button "up" and "down" to select "1.Autotest Fast", then press "OK" to start Auto test Fast process.





- Autotest STD After entering into Auto Test interface, press button "up" and "down" to select "2.Autotest STD", then press "OK" to start Auto test STD process.



3) Setting Pf time



After entering into Auto Test interface, press button “up” and “down” to select “4.Setting Pf time”, then press “OK” to enter into Setting Pf time interface.

After entering Setting Pf time interface, it will display as below:

Set : \*. \*\*\* s

\*. \*\*\*is the time value need to be set, the unit is in seconds. Press button “up” and “down” to input the value, press “OK” to input next value. After all the value is set, press “OKs” and it will display “Success”, Pf time setting is finished.

#### 4) Setting QV time

After entering into Auto Test interface, press button “up” and “down” to select “5.Setting QV time”, then press “OK” to enter into Setting QV time interface.

After entering into Setting QV time interface, it will display as below:

Set : \*\* s

\*\*is the time value needing to be set, the unit is in seconds. Press button “up” and “down” to input the value, press “OK” to input next value. After all the value is set, press “OKs” and it will display “Success”, QV time setting is finished.

#### 5) Control 81.S1

After entering Auto Test interface, press “down” to select “5. Control 81.S1”, then press “OK” to enter into Control 81.S1 interface. After entering Control 81.S1 interface, press button “up” to select “1.Enable 81.S1”,then press “OK”, if “Success” is displayed, function 81.S1 can be used. If need to forbid function 81.S1,press button “down” to select “ 2.Disable 81.S1”,then press “OK”, if “Success” is displayed, function 81.S1 is forbidden.

## 12. Work Mode Set

Enter “chg. And Disc Set”:

Select “12. Work Mode Set”, press “OK” to enter into charging and discharging setting interface.

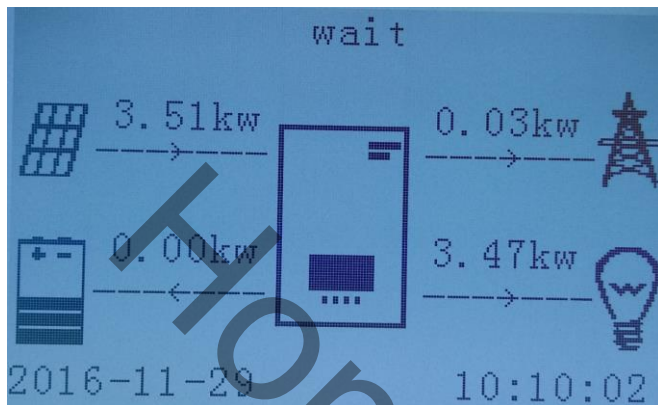
12.Work Mode Set
1.Set Auto Mode
2.Set Time-of-use Mode

#### 1) Set Auto Mode

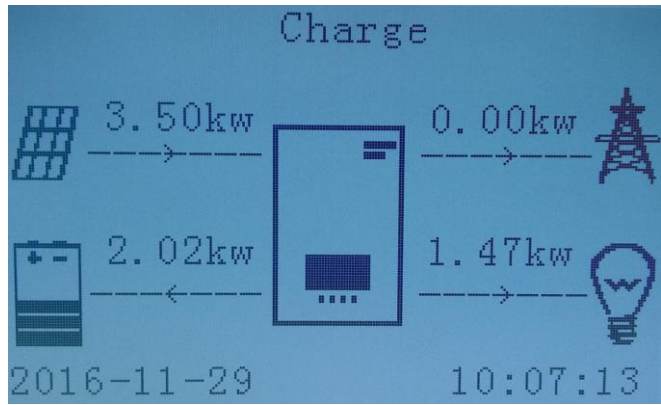
Select “1. Set Auto Mode”, then press “OK” to set Auto mode.

In automatic mode, the device will automatically determine the charging time & discharging time, & ensure that the battery SOC (State of Charge) won't be too low.

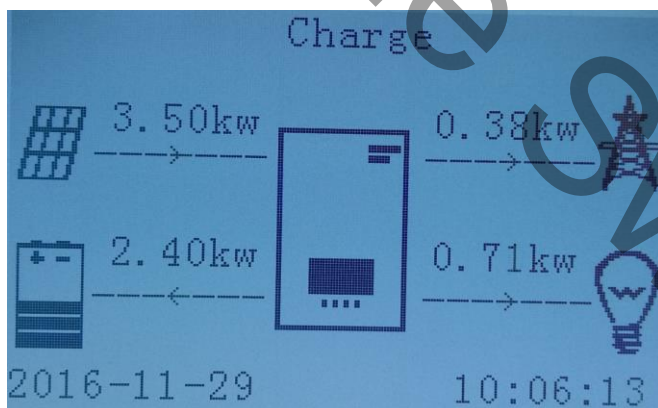
1) PV generation = LOAD consumption ( $\Delta P < 100W$ ), ME 3000SP will stay in Standby state.



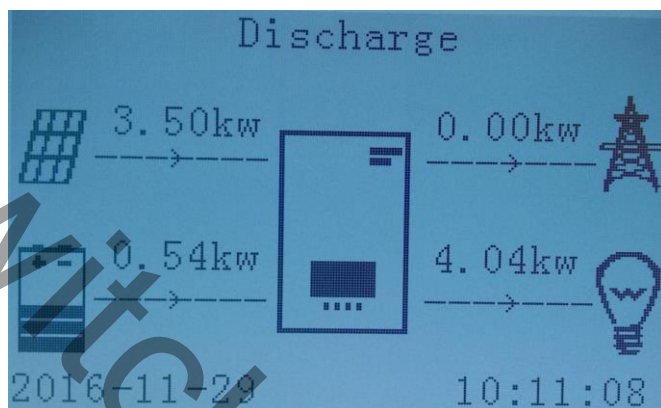
2) PV generation > LOAD consumption, the surplus power will be stored in the battery firstly.



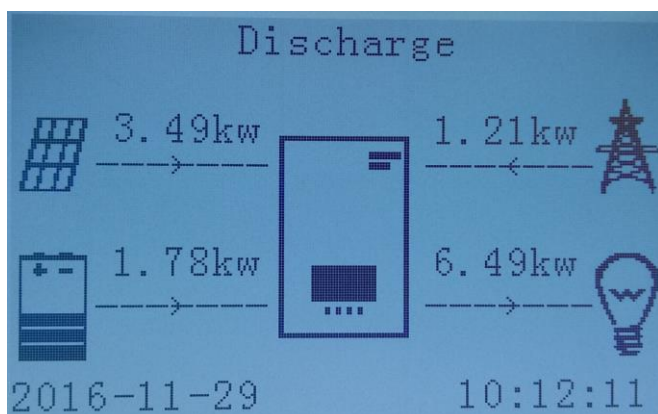
3) When the battery is full (or already at Max Charge Power), excess power will be exported to the grid.



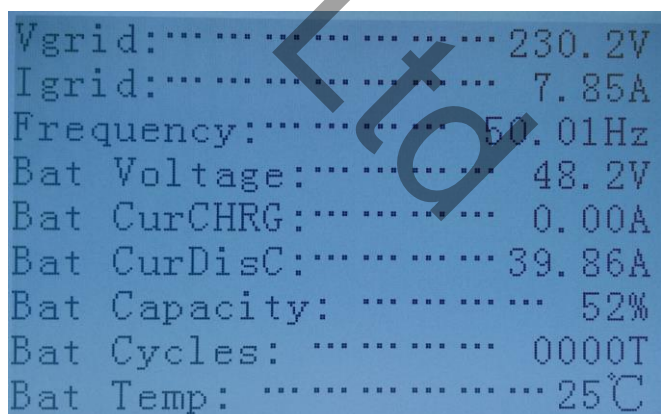
4) PV generation < LOAD consumption, discharge the battery to supply power to load firstly,



5) PV generation + Battery < LOAD consumption, ME-3000SP will import power from the grid.



6) Presses "DOWN" button to view current information of the ME 3000SP in the main interface, as below.

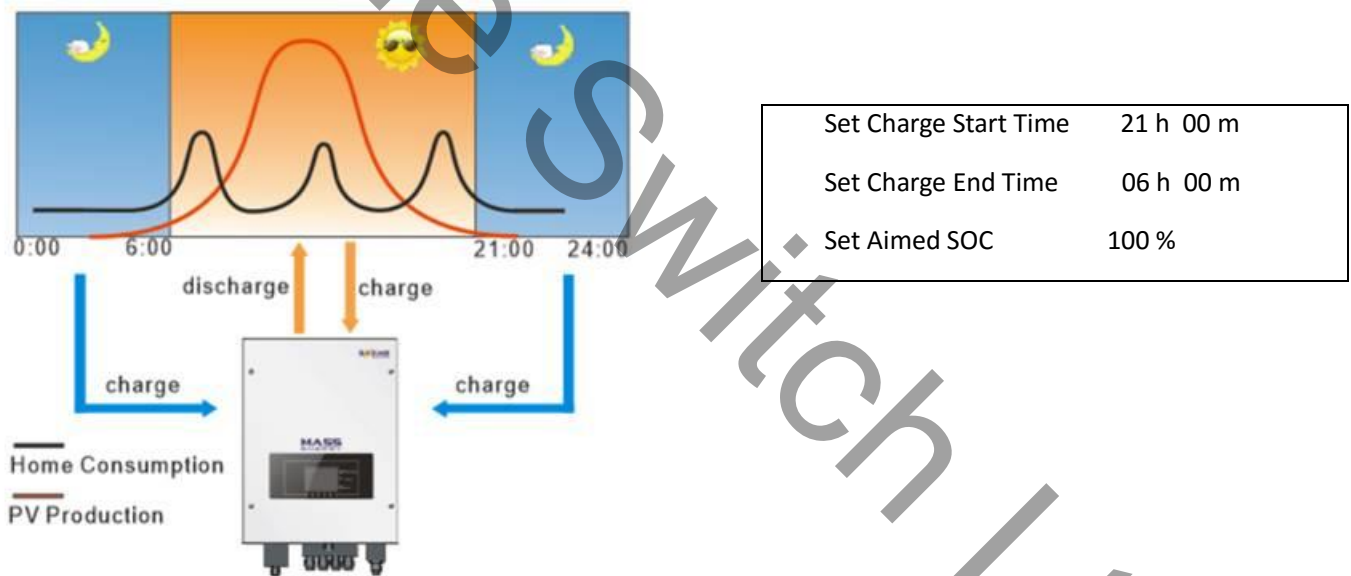


## 2) Set Time-of-use Mode

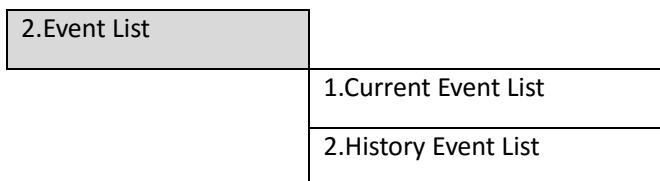
Select "2.Set Time-of-use Mode", and then press "OK" to enter into setting Time-of-use mode interface. The user can set a time range and target SOC (State Of Charge to terminate evening charging). The interface of Time-of-use Mode is shown as below. This mode is for customers who have TOU (Time-of-use) pricing electricity (cheaper rate in off peak time & more expensive rate in peak time) and owning a PV on-grid system.

For example:

- a) From 9:00PM to 6:00AM, the electricity is cheap, ME-3000SP will import power from grid & charge the battery to target SOC.
- b) From 6:00AM to 8:00AM, the electricity is expensive and the PV generation is quite low, ME3000SP will discharge the battery to supply the morning peak consumption;
- c) From 8:00AM to 7:00PM, PV generation > LOAD consumption, the surplus PV power will be stored in the battery;
- d) From 7:00PM to 9:00PM, the electricity is expensive & ME3000P will discharge battery to supply the night peak consumption;



## 6.4.2 Event List



Event List shows the event list of the equipment, the failure includes the current event list and history event list.

### 1 ) Current Event List

Select "1.Current Event List", press button "OK" to check the current events.

## 2 ) History Event List

Select “2.History Event List”, press button “OK” to check the history events. If the screen can’t show all the events in one page, press button “up” and “down” to check more history events.

### 6.4.3 System information interface

3.System Information		
	1.Product SN	6.Power Factor
	2.Software Version	7.EPS Mode
	3.Hardware Version	8.Battery Paras
	4.RS485 Address	9.Setting Pf time
	5.Country	10.Setting QV time

#### 1 ) Product SN

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “1.Serial Number” and it will show the SN number of the equipment.

#### 2 ) Software Version

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “2.Software Version” and it will show the software version of the equipment.

#### 3 ) Hardware Version

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “3.Hardware Version” and it will show the hardware version of the equipment.

#### 4 ) RS485 Address

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “4.RS485 Address” and it will show the RS485 address of the equipment.

#### 5 ) Country

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “5.Country” and it will show the country of the equipment.

#### 6 ) Power Factor

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “6.Power Factor” and it will show the country of the equipment.

#### 7 ) EPS Mode

Select “3.System Information” in the main interface, press button “OK” to enter into the system information interface, then select “7.EPS Mode” and it will show the EPS Mode of the equipment.

## 8 ) Battery Paras

Select "3.System Information" in the main interface, press button "OK" to enter into the system information interface, then select "8.Battery Paras" and it will show the EPS parameter of the battery.

## 9 ) Setting Pf time

Select "3.System Information" in the main interface, press button "OK" to enter into the system information interface, then select "9.Setting PF time" and it will show the parameter of Pf time.

## 10) Setting Time

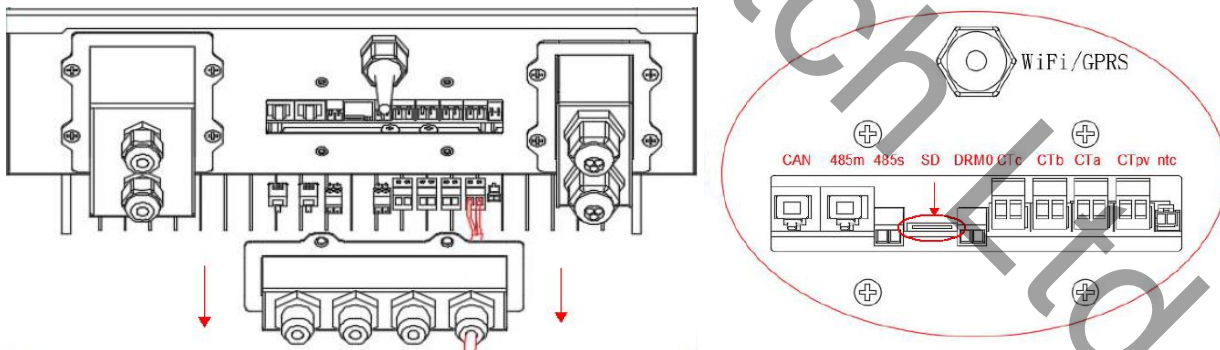
Select "3.System Information" in the main interface, press button "OK" to enter into the system information interface, then select "10.Setting QV time" and it will show the parameter of QV time.

### 6.4.4 Software upgrading

Select "4.SoftwareUpdate" in the main interface, press button "OK" to enter into the interface "input password", press "OK" button to input the password. Input the password (0715), press "Up" or "Down" to choose the numbers, and press "OK" to the next value setting, when "0715" showed on the screen, press "OK" ,if"Error! Try again", press "Back" and set the password again. If the password is right, it will start to upgrade the software automatically. ME 3000SP inverters offer software upgrade via SD card to maximize inverter performance and avoid inverter operation error caused by software bugs.

#### Upgrading Procedure:

**Step 1** first, turn off the DC and AC breakers, then remove the communication waterproof cover as the following picture. If the communication lines (RS485, NTC, CT) have been connected, be sure to release the waterproof nuts. Make sure the communication line is not tight. Then remove the waterproof cover in order to avoid loosening the communication plug which has been connected.



**Step 2** Remove the waterproof cover and remove the SD card. Simply Press the SD card inwards into the SD slot and it will release back out of the slot so that you can pull it out.

**Step 3** The information needs to be preloaded onto the SD card via a computer and an SD card reader.

**Step 4** Technical support will have sent you the software file necessary for the update. Having received the file, please decompress the file and transfer it across to the SD card.

**Step 5** Insert the SD card into the SD card slot, there will be a faint clicking as the SD card returns into position.

**Step 6** Then turn on DC switch and AC switch, enter into the online upgrade to the main menu"4.SoftwareUpdate" in the LCD display program. The method to enter the menu can refer to operation interface of LCD.

**Step 7** Input the password, if password is correct, and then begin the update process, the original password is 0715.

**Step 8** System updates main DSP, slave DSP and ARM in turns. If main DSP update success, the LCD will display "Update DSP1 Success", otherwise display "Update DSP1 Fail"; If slave DSP update success, the LCD will display "Update DSP2 Success", otherwise display "Update" DSP2 Fail".

**Step 9** If you have the message 'Fail', turn off the DC & AC breaker, wait for the LCD screen turn off, then Continue to update from step 6.

**Step 10** After the update is completed, turn off the DC & AC breaker, then wait for the LCD screen turn off. Re-instate the waterproof cover and then turn on the DC breaker and AC breaker again, the inverter will switch back on.

NOTE: Software should be placed in the root folder ES3000firmware.

### 6.3.5 Energy Statics :

5.Energy Statics		
	Today	
Production	100.00KWh	
Self-Use	80.00KWh	80%
Export	20.00KWh	20%
Consumption	190.00KWh	
Self-Use	80.00KWh	80%
Import	20.00KWh	20%

Select "5.Energy Statistics" in the main interface, press button "OK" to enter into the Energy Statistics interface, the interface shows the current energy production and consumption within a certain range of time, and information of Spontaneous for private use ratio. The user can press "Up" and "Down" to check the statistics of daily, weekly, monthly, yearly.

## 7. Technical Data

Technical Data		ME 3000SP
<b>BATTERY PARAMETERS</b>		
Battery Type	Lead-acid,Lithium-ion	
Nominal battery voltage	48V	
Battery voltage range	42-58V	
Recommended battery capacity	200Ah (100~500Ah optional)	
Recommended Storage capacity	9.6kWh	
Max.Charging Current	60A	
Charging Current Range	0-60A(Programmable)	
Charging curve	3-stage adaptive with maintenance	
Max.Discharging Current	60A	
Electronic protection	OCP OTP OVP	
Short circuit protection	Fuse (100A)	
Discharge times (Hour)	Po=1kVA 9.6h	
	Po=3kVA 3.2h	
Depth of discharge	Lithium : 0~80%DOD adjustable	
	Lead-acid:0~50%DOD adjustable	
<b>AC PARAMETERS</b>		
Max.Output Power	3kVA	
Rated Input/Output Voltage	230V	
Max.Input/Output Current	13A	
AC Input/Voltage Range	180V-270V	
Grid Frequency Range	44~55Hz / 54~66Hz	
THD	<3%	
Power Factor	1(Adjustable +/-0.8)	
Connection phase	single	
Current(inrush)	0.8A/1us	
Maximum output fault current	100A/1us	
Maximum output overcurrent protection	13A	
<b>SYSTEM PARAMETERS</b>		
Max.Charging Efficiency	94.1%	
Max.Discharging Efficiency	94.3%	
Stanby Losses	<5W	
Topology	High Frequency Isolated Transformer	
Degree Of Protection	IP65	
Safety Protection	Anti islanding, RCMU, Ground Fault Monitoring	
Certification	AS4777,VDE0126-1-1,G83/2,C10/11,RD1699,UTE15-712-1,EN50438,VDE-AR-N4105	
Communication	Wifi,RS485,CAN2.0	
<b>ENVIRONMENTAL</b>		
Ambient temperature range	-25°C...+60°C (Above 45°Derating)	
Allowable Relative Humidity Range	0... 100%, No Condensing	
Protective Class	Class I	
Max.Operating Altitude	2000m	
Current Sensor Connection	external	
<b>GENERAL DATA</b>		
Noise	<25dB	
Weight	16kg	
Cooling	Natural	
Dimension(W*H*D)	532*360*173mm	
Display	LCD display	
Warranty	5 Years (Optional: extension to 10 years)	
<b>Emergency Power Supply</b>		
EPS rated power	3000VA	
EPS rated voltage, Frequency	230V,50/60Hz	
EPS rated current	13A	
Total harmonic distortion	<3%	
Switich time	<3s	

## 8. Troubleshooting

Code	Name	description	solution
ID01	GridOVP	The power grid voltage is too high	<p>If the alarm occurs occasionally, the possible cause is that the electric grid is abnormal occasionally. ME3000SP automatically returns to normal operating status when the electric grid's back to normal.</p> <p>If the alarm occurs frequently, check whether the grid voltage/frequency is within the acceptable range. If no, contact technical support. If yes, check the AC circuit breaker and AC wiring of the ME3000SP.</p> <p>If the grid voltage/frequency is within the acceptable range and AC wiring is correct, while the alarm occurs repeatedly, contact technical support to change the grid over-voltage, under-voltage, over-frequency, under-frequency protection points after obtaining approval from the local electrical grid operator.</p>
ID02	GridUVP	The power grid voltage is too low	
ID03	GridOFP	The power grid frequency is too high	
ID04	GridUFP	The power grid frequency is too low	
ID05	BatOVP	The battery voltage is too high	<p>If the alarm occurs occasionally, the possible cause is during the process of charging.</p> <p>If the alarm occurs occasionally, check whether the overvoltage setting of the battery consistent with the parameter of battery manufacturer and contact technical support.</p>
ID09	HW_LLCBus_OVP	LLCBus voltage is too high and has triggered hardware protection	<p>ID09- ID26 are internal faults of ME3000SP, turn OFF the "DC &amp; AC switch", wait for 5 minutes, then turn ON the "DC switch" and turn ON the "AC switch". Check whether the fault is rectified. If no, please contact technical support.</p>
ID10	HW_Boost_OVP	Boost voltage is too high and has triggered hardware protection	
ID11	HwBuckBoostOCP	BuckBoost current is too high and has triggered hardware protection	
ID12	HwBatOCP	The battery current is too high and has triggered hardware protection	
ID15	HwAcOCP	The grid current is too high and has triggered hardware protection	
ID17	HwADFaultIGrid	The grid current sampling error	
ID18	HwADFaultDCI	The DCI sampling error	
ID19	HwADFaultVGrid	The grid voltage sampling error	
ID21	MChip_Fault	The master chip fault	
ID22	HwAuxPowerFault	The auxiliary voltage error	



ID25	LLCBusOVP	LLCBus voltage is too high		
ID26	SwBusOVP	Bus voltage is too high and has triggered software protection		
ID27	BatOCP	Battery current is too high	If the fault occurs frequently, please contact technical support.	
ID28	DciOCP	The DCI is too high	ID28-ID55 are internal faults of ME3000SP, turn OFF the "DC&AC switch", wait for 5 minutes, then turn ON the "DC switch" and turn ON the "AC switch". Check whether the fault is rectified. If no, please contact technical support.	
ID29	SwOCPIstant	The grid current is too high		
ID30	BuckOCP	Buck current is too high		
ID31	AcRmsOCP	The output current is too high		
ID49	ConsistentFault_VGrid	The grid voltage sampling value between the master DSP and slave DSP is not consistent		
ID50	ConsistentFault_FGrid	The grid frequency sampling value between the master DSP and slave DSP is not consistent		
ID51	ConsistentFault_DCI	The Dci sampling value between the master DSP and slave DSP is not consistent		
ID52	BatCommunicationFlag	Battery communication fault		
ID53	SpiCommLose	SPI communication is fault		
ID54	SciCommLose	SCI communication is fault		
ID55	RecoverRelayFail	The relays fault		
ID57	OverTempFault_BAT	The battery temp is too high		ID57-ID59 Check whether the air condition around the equipment is good. Or set the "max discharging & charging current" a little lower to check whether the fault is rectified. If the fault occurs frequently, please contact SOFAR technical support.
ID58	OverTempFault_HeatSink	The temperature of heat sink is too high		
ID59	OverTempFault_Env	The environment temp is too high		
ID65	unrecoverHwAcOCP	The grid current is too high and has cause unrecoverable hardware fault	ID65-ID77 are internal faults of ME3000SP, turn OFF the "DC switch", wait for 5 minutes, then turn ON the "DC switch" and turn ON the "AC switch". Check whether the fault is rectified. If no, please contact SOFAR technical support.	
ID66	unrecoverBusOVP	The bus voltage is too high and has cause unrecoverable fault		
ID67	BitEPSunrecoverBatOcP	Unrecoverable fault of battery overcurrent in EPS mode		
ID70	unrecoverOCPIstant	The grid current is too high, and has		

		cause unrecoverable fault	
ID75	unrecoverEEPROM_W	The EEPROM is unrecoverable	
ID76	unrecoverEEPROM_R	The EEPROM is unrecoverable	
ID77	unrecoverRelayFail	Relay has happen permanent fault	
ID81	Over temperature	Internal temperature is too high.	<p>1. Please make sure ME 3000SP in installed in a place without direct sunlight.</p> <p>2. Please make sure the inverter is vertically installed &amp; the ambient temperature is less than the temperature upper limit of ME 3000SP</p>
ID82	Over frequency	AC frequency is too high	
ID85	Battery voltage is low		ME 3000SP won't discharge the battery before charging the battery.
ID94	Software version is not consistent		Contact technical support to upgrade software.
ID95	CommEEPROMFault	The Communication board EEPROM is fault	ID95-ID96 are internal faults of ME3000SP, turn OFF the "DC&AC switch", wait for 5 minutes, then turn ON the "DC switch" and turn ON the "AC switch".
ID96	RTCFault	RTC clock chip is fault	Check whether the fault is rectified. If no, please contact technical support.
ID97	InValidCountry	Invalid Country	Check the country setting according to country ID
ID98	SDfault	The SD card is fault	Please replace the SD card.
ID100	BatOCD	Battery over current discharging protect	ID100-ID103 is battery fault. If this fault occurs occasionally, wait few minutes to see whether the fault is rectified. If this fault occurs frequently, please contact technical support.
ID101	BatSCD	Discharging short circuit protect	
ID102	BatOV	Battery high voltage protect	
ID103	BatUV	Battery low voltage protect	
ID104	BatOTD	Battery discharging high temperature protect	Battery fault. Check whether the air condition around the equipment is good. Or set the "max discharging & charging current" a little lower to check whether the fault is rectified. If the fault occurs frequently, please contact technical support.
ID105	BatOTC	Battery charging high temperature protect	
ID106	BatUTD	Battery discharging Low temperature protect	Id106-id107 is battery fault. Increase the temperature of the battery. If the fault occurs frequently, please contact technical support.
ID107	BatUTC	Battery charging Low temperature protect	