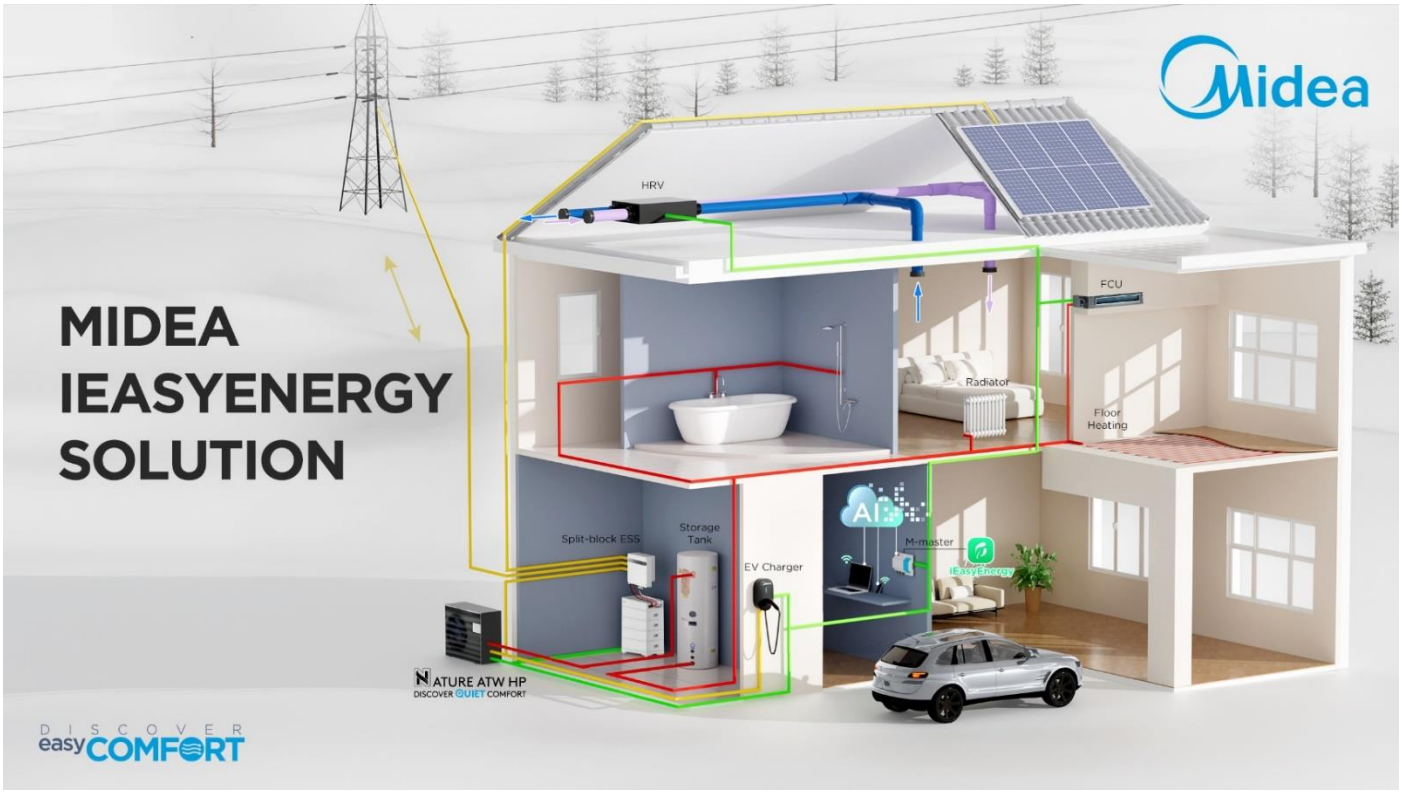
Midea Building Technologies

Midea iEasyEnergy Solution

Installation Manual



1 iEasyEnergy Super Advisor

1.1 Introduction

iEasyEnergy is mainly designed to help distributors and installers design Midea energy solutions and automatically generate analysis reports. It automatically outputs energy consumption data and curves based on application scenarios despite the lack of weather information such as light, shadow, and temperature, and outputs multiple solutions based on user needs and compares the economic benefits of these solutions by using the self-developed AI algorithm models, contributing to business expansion and growth.

1.1.1 **Procedures**

The whole process includes four steps:

1) Step 1: Select your desired energy solution from three options

- First Solution: Energy Independence

Select the first solution when PV, hybrid inverters, batteries, heat pumps, and hot water tanks are required to help you achieve energy independence.

- Second Solution: Energy Security

Select the second solution when PV, hybrid inverters, batteries, and heat pumps are required. This solution excludes hot water tanks.

- Third Solution: Basic Green Energy

Select the third solution when PV, hybrid inverters, heat pumps, and hot water tanks are required. This solution excludes batteries.

2) Step 2: Enter information such as the geographical location.

Enter the geographical location and roof area of the project as well as the single-phase/three-phase power supply information of the local power grid.

3) Step 3: Enter your household information and other basic information.

Enter your household information for us to automatically estimate your energy consumption and recommend heat pumps and water tanks to you if needed.

4) Step 4: Enter the electricity price and on-grid price for us to calculate the economic benefits.

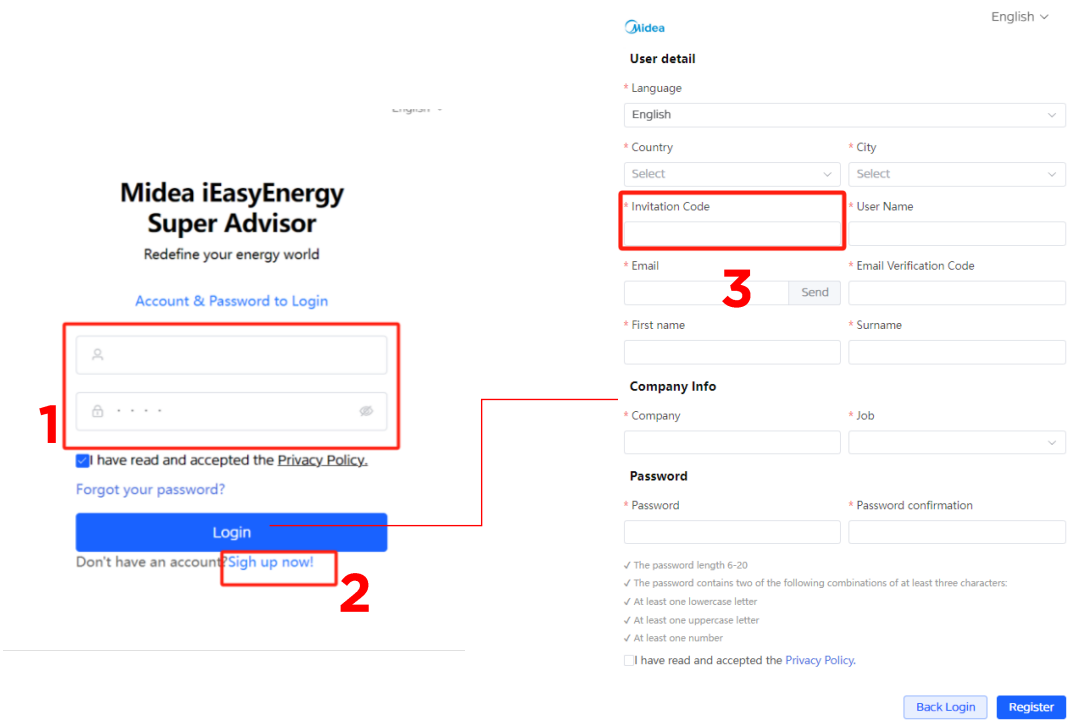
1.2 Operation Instructions

1.2.1 **Signup**

Open https://ieasyenergy.mideaibp.com/ in your browser.

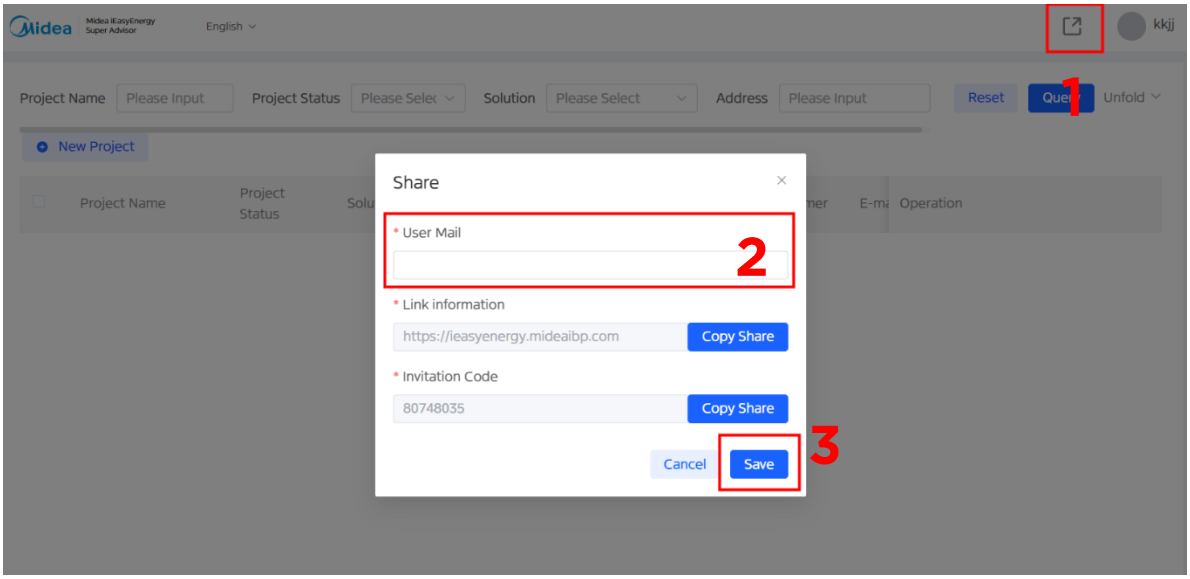
Click "Sign up now" on the home page to enter your information for review and approval by the background administrator. Upon approval, your signup is successful and you can use the software.

Note: After submitting your information, you can contact the technical supporter to accelerate the approval.



1) Input your username and password then login.
2) If you don't have a account, please register.
3) Input necessary register info. and click "register" to request the authorization. (Invitation code: 20220401)

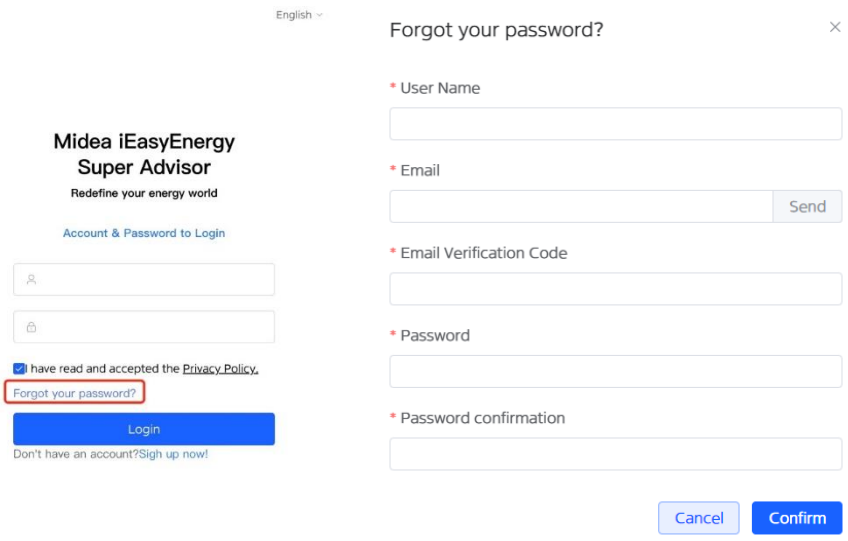
Note: After being authorized, you will get an email reply, and then you're able to use Super Advisor Selection Software.



1) It's also available to share the link with customers and invite them to use Super Advisor together.
2) Input the customers' mail address.
3) Click "send" button and customer will get the share link, then customer can access to the login and register page by clicking the link.

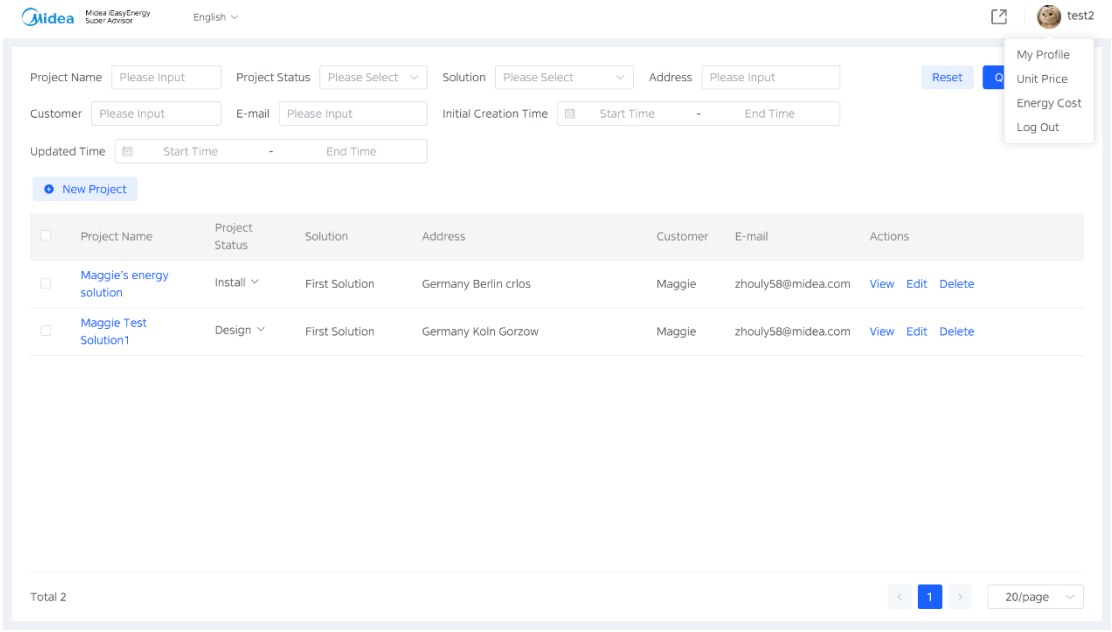
1.2.2 **Password Forgotten**

Click "Forgot your password". In the displayed page, enter your account name and email. A verification code will be sent to the email to verify your identity. Enter the new password and click "Confirm".



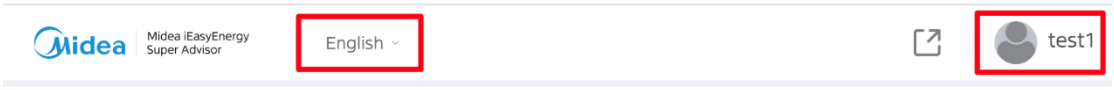
1.2.3 **Home Page**

Upon login, a list of all model selection projects created under your account will be displayed.



(1) Navigation bar

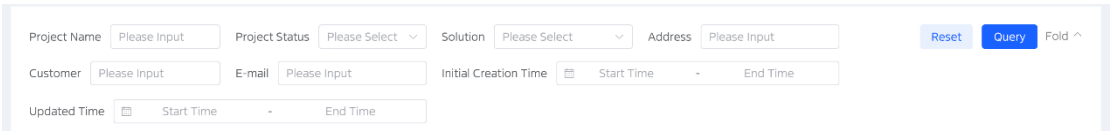
You can switch the language through the top navigation bar, and edit your personal data by clicking the profile. Also, the software



features unit price and energy price setting and logout.

(2)Project management

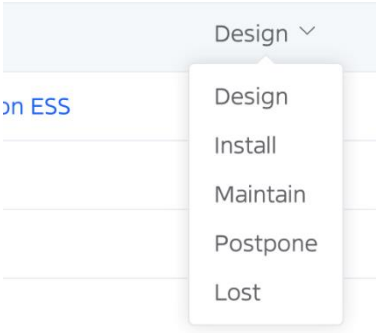
Items for filtering query results are located above the project list. You can filter the query results by the Project Name, Project Status,



Solution, Address, Customer, E-mail, Initial Creation Time, and Updated Time.

The project list covers information about the created projects, including

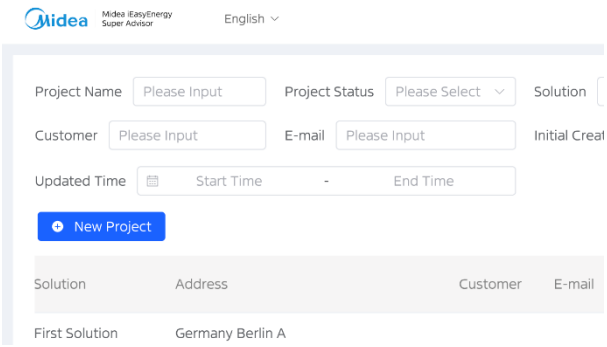
- Project Name: name of the model selection project



- Project Status: status of the project. You can click it to change the status
- Solution: type of the selected model selection solution
- Address: geographical location of the model selection project
- Customer: name of the project's customer
- E-mail: email of the project's customer
- Initial Creation Time: time when the project was initially created
- Updated Time: time when the most recent edition/change occurred
- Operation: The "View" option only enables you to check the project information, and does not allow you to edit it. Click "Edit" to edit the project information; Click "Delete" to delete the project.

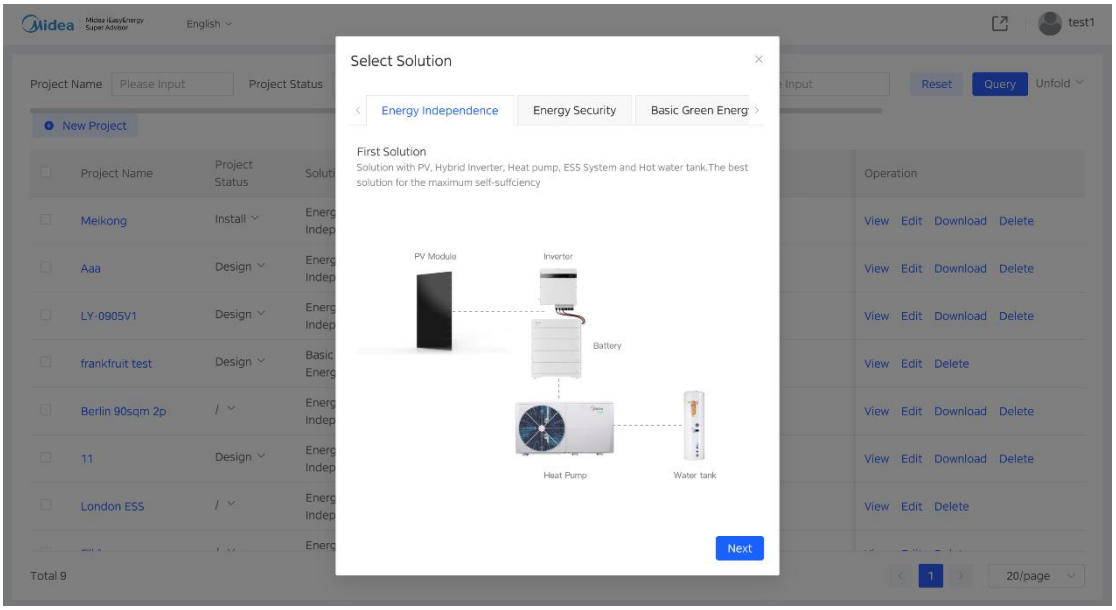
1.2.4 **New project**

Click "New Project" on the home page to create a new project.



1.2.4.1 Solution Selection

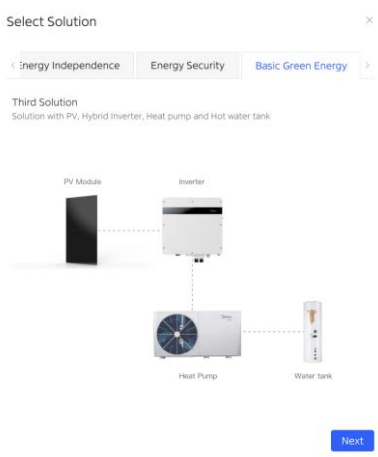
The software provides three solutions. You can choose a preferred solution based on your needs. Click your desired solution, and then click "Next" to start the next step of the model selection process.



- First Solution: We recommend this solution as it will achieve Energy independence. It includes PV, hybrid inverters, batteries, heat pumps and hot water tanks.
- Second Solution: This solution includes PV, hybrid inverters, batteries, and heat pumps. Unlike the first solution, the second one does not include any hot water tank. Therefore, no water tank will be recommended.
- Third Solution: This solution includes PV, hybrid inverters, heat pumps, and hot water tanks. Unlike the first solution, the third one does not include a hot battery. Therefore, no battery will be recommended.

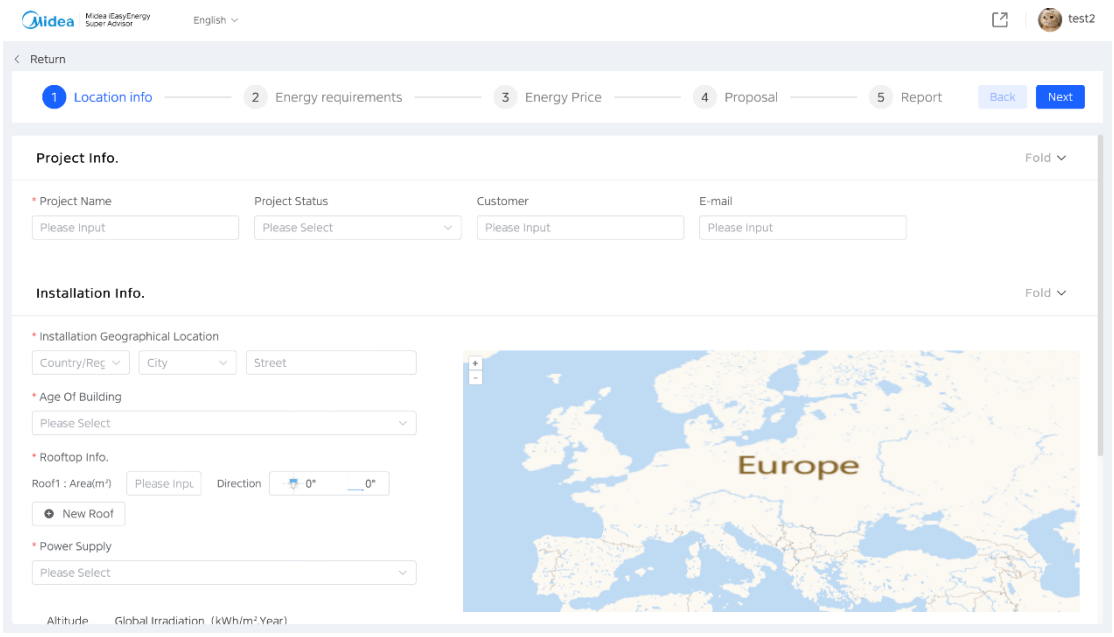
Energy Independence

Energy Security



Basic Green Energy

1.2.4.2 Location Information



Enter basic information such as the project name, project status, contact, and project location.

- Installation Geographical Location

Our light database contains the year-round sunshine data of all parts of the world. After you select the country and city, the average year-round percentage of possible sunshine, wind speed and ambient temperature data of the city will be displayed at the bottom of the screen.

- Rooftop Info

Enter the available roof area of the building to receive the energy system. This data affects the maximum number of PV modules to be installed. If the roof faces a different direction, add a new roof by clicking "New Roof" and set the orientation and area of the roof.

- Power Supply

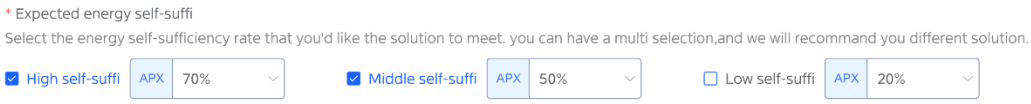
We will recommend a hybrid inverter that is compatible with the power supply.

1.2.4.3 Energy Requirement

Enter your household information and other basic information as well as the energy self-sufficiency rate you expect to achieve through the entire energy solution.

1) Expected energy self-suffi: the expected percentage of the power supplied by the entire energy solution to the total power consumption of your family, including three classes:

- High self-suffi: 70%, 80%, 90%, and 100%
- Middle self-suffi: 60% and 70%
- Low self-suffi: 20%, 30%, and 40%

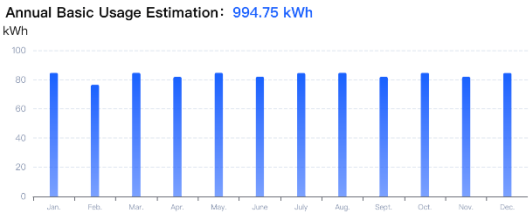


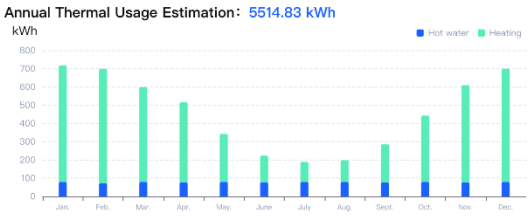
Your selection from the three classes will affect the recommended model in the "Proposal" step. If you select "High self-suffi" and "Middle self-suffi", we will provide you with two solutions that meet the two energy self-sufficiency rates in the "Proposal" step.

- **2) Household info:** information about your family members, based on which we will estimate the annual power consumption data of your family.
- **3) Estimated annual energy consumption:** data estimated based on the household information, which can be adjusted as required
- **4) Room area:** area of your living space, which affects the selection of heat pumps.
- **5) Estimated max. load:** maximum electrical load, which affects the selection of inverters and batteries
- **6) Type of heat pump installation:** whether the heat pumps are newly installed or renovated
- **7) Heat pump unit need:** the purpose of the heat pumps, to heat or cool or supply hot water

When you select the second solution, you do not need hot water tanks by default, and we will not recommend any water tanks to you.

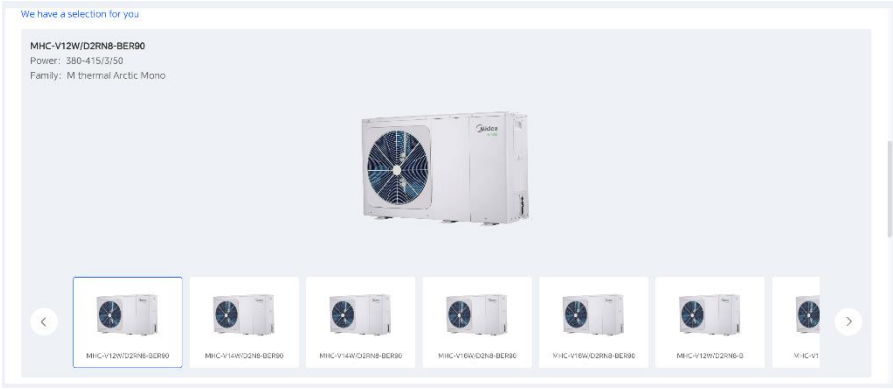
- **8) Heat pump unit type:** type of heat pump. We will recommend heat pumps based on the type you select.
- **9) Annual Basic Usage Estimation and Annual Thermal Usage Estimation:** These are the basic annual energy consumption





and heat energy data and distribution of your family estimated based on the above information.

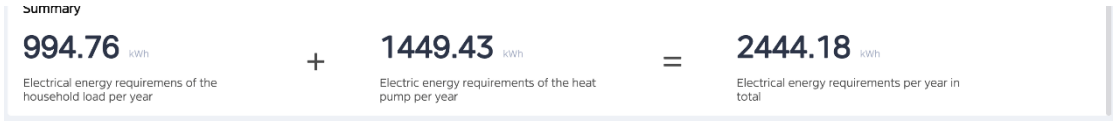
After you enter the above information, the Heat Pump Selection screen will display the models and parameters of all heat pumps recommended by us while the Hot water tank selection screen will show those of all hot water tanks recommended by us.

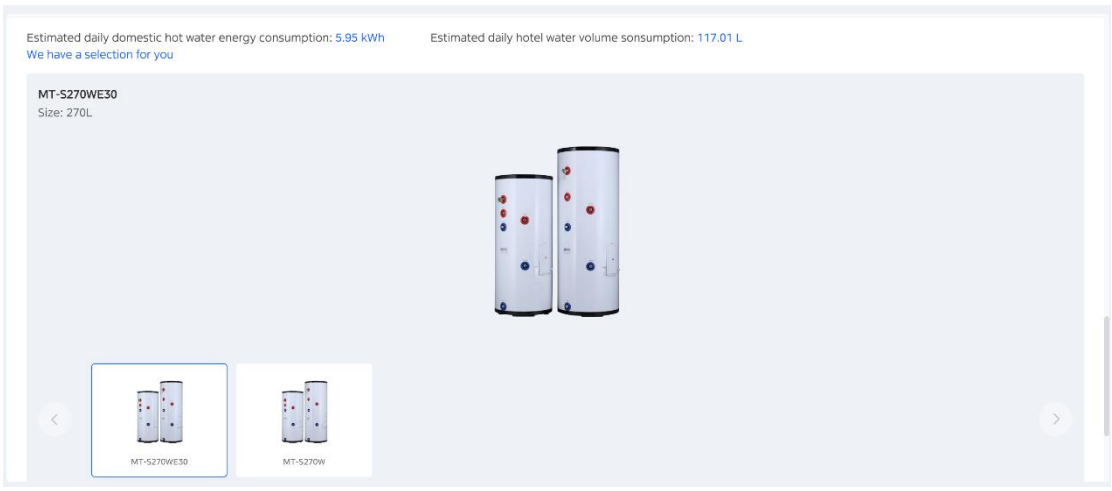


When you select the second solution, we will not recommend any water tanks to you.

Summary: estimated power consumption.

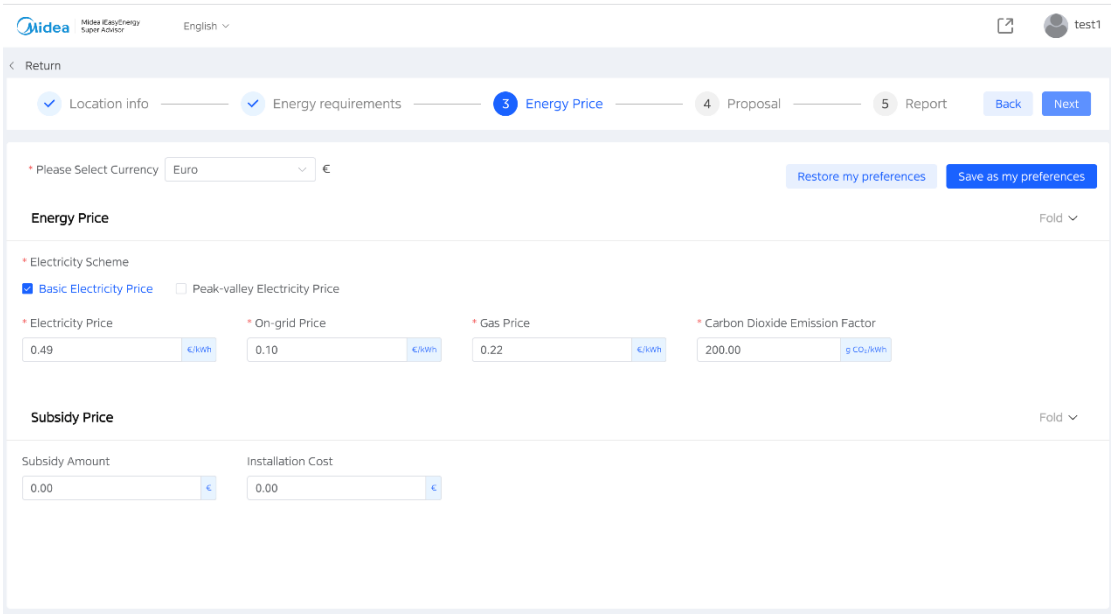
Annual Basic Usage Estimation is the basic power consumption data of your family and Annual Thermal Usage Estimation is the converted power consumption data. If heat energy is provided by heat pumps, the power consumption required is generally 1/3 of the heat energy. Therefore, the overall power consumption needs are calculated based on the sum of Annual Basic Usage Estimation and 1/3 of Annual Thermal Usage Estimation





1.2.4.4 Set Energy Price

Analyze the economic benefits of the entire solution based on information such as the electricity price.

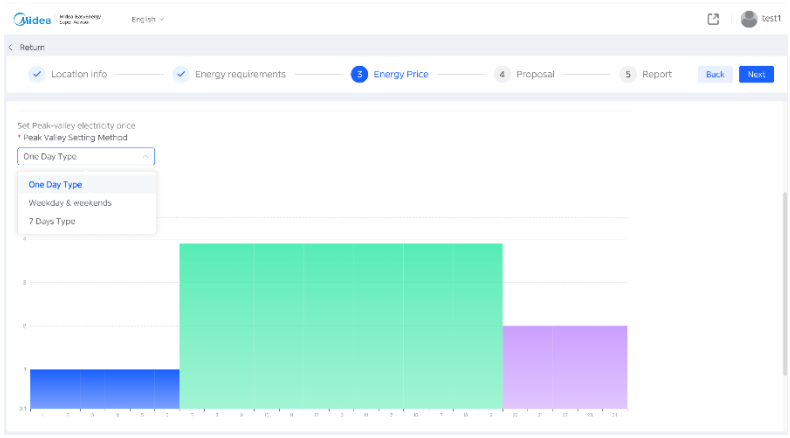


1) Basic Electricity Price

If there is only one local electricity price (non-price), change the mode.

2) Peak-valley Electricity Price

If the local electricity price is tiered based on time (including peak and valley prices), select this mod



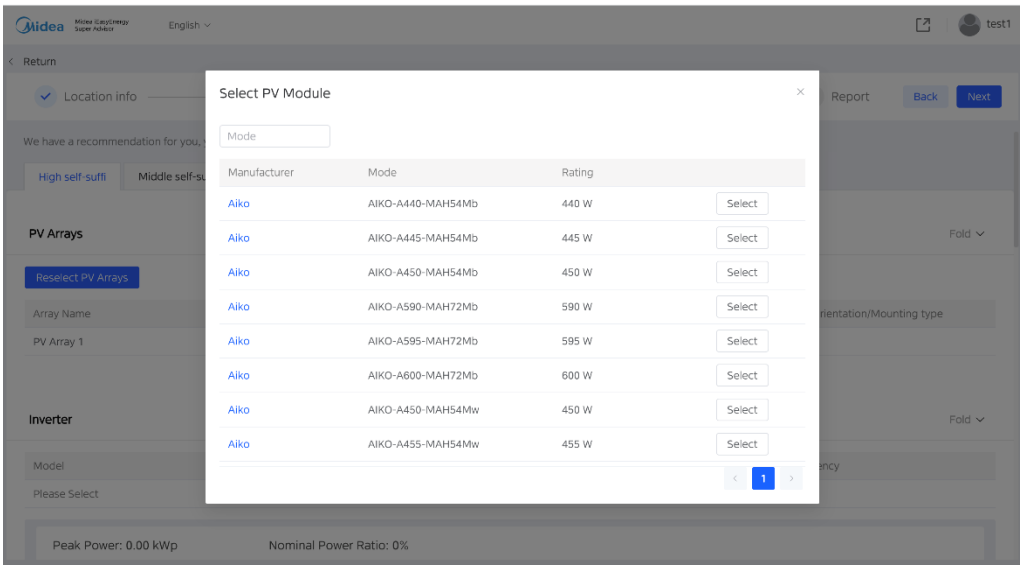
3) Save as my preferences: for saving the settings. With this option enabled, you can click "Restore as my preferences" to use the settings in the future.

4) Restore as my preferences: for using the settings saved previously.

5) Click "Energy Price" below the profile in the top navigation bar to enter the information, and click "Restore as my preferences" to use the settings.

1.2.4.5 Select PV Module

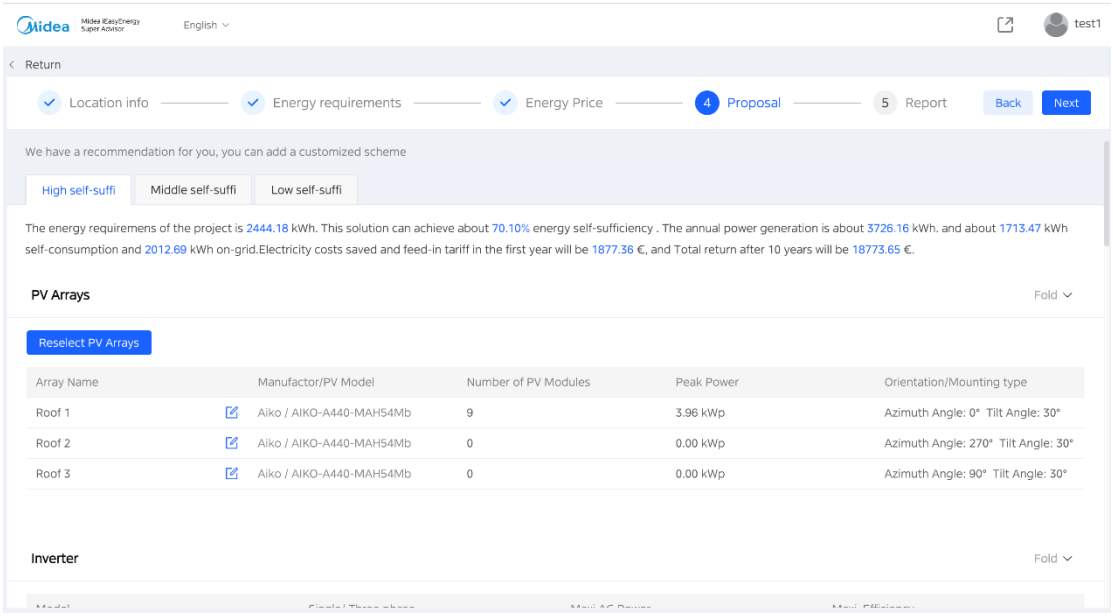
Select your desired model of PV modules. Then, we will estimate the number of the modules based on your selection and the roof area as well as energy consumption needs.



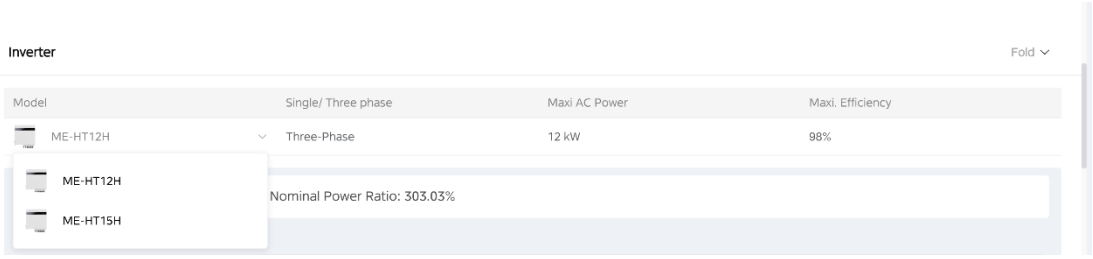
1.2.4.6 Proposal

Model recommendations, including the annual power output of your selected solution, the on-grid power price, and the achievable energy self-sufficiency rate.

1) PV arrays: the number of recommended PV modules to be installed on each roof and the peak power of each module. Orientation/Mounting type is the roof information entered in the first step of model selection.



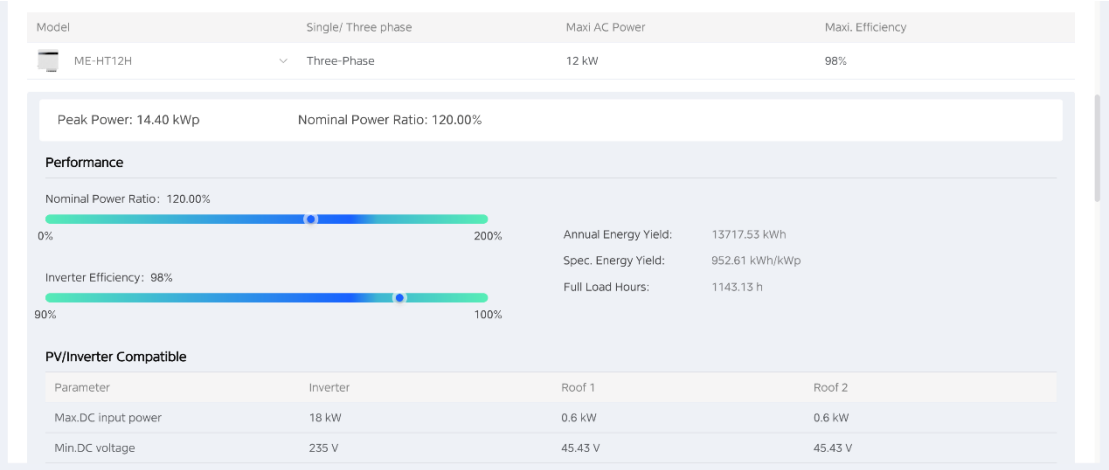
2) Inverter: recommended inverter. When more than one inverter is available, you can switch between or among them.



Comparison of parameters between the inverter and battery

- Nominal Power Ratio: ratio of the peak power of the PV modules to the maximum AC power of the inverter, ranging from 100% to 110%.
- Inverter efficiency: efficiency of the inverter
- Annual Energy Yield: estimated annual power output of the entire model selection solution
- Spec. Energy Yield: value of Annual Energy Yield/Inverter AC Power

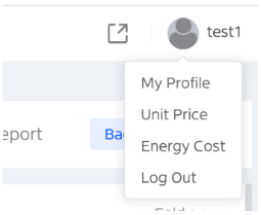
- Full Load Hours: power generation time of the inverter at full load



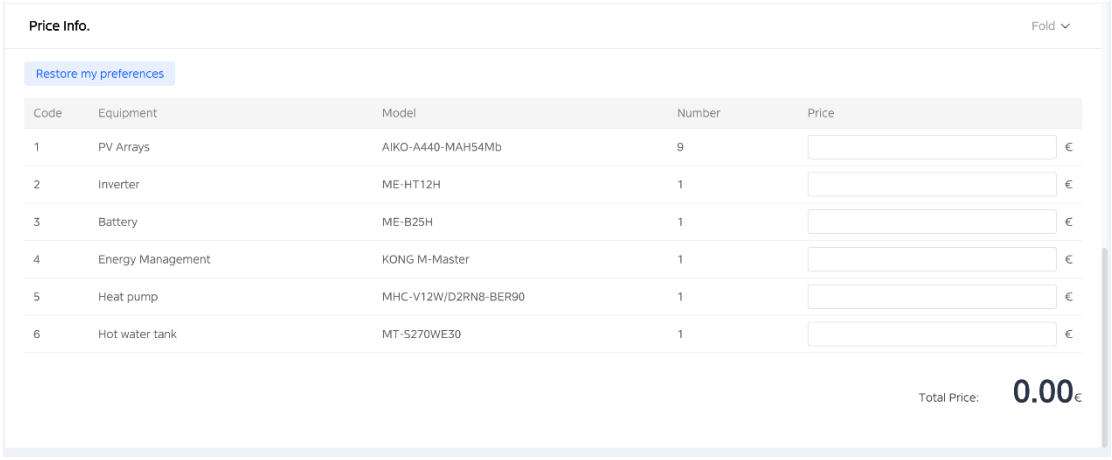
3) Battery: recommended battery model. When more than one inverter is available, you can switch between or among them.

4) Enter the price of each device on the Price info screen. The generated model selection report will include calculated payback time.

5) Click "Unit Price" under the profile on the navigation bar to maintain the price information of all devices.

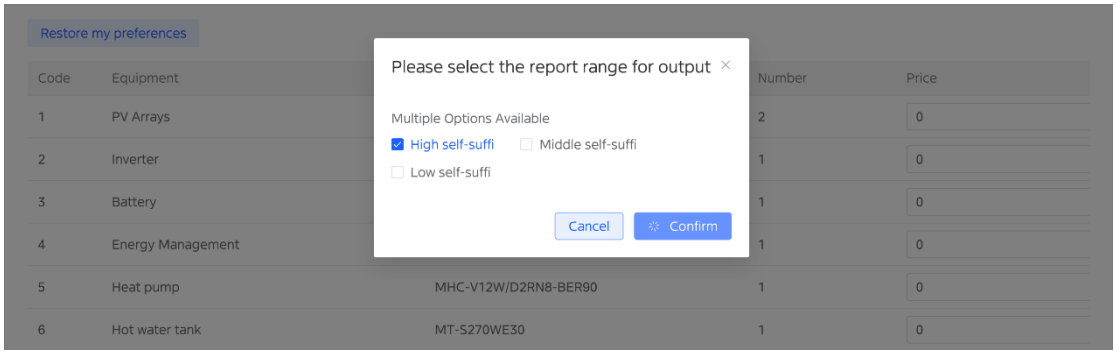


After completing maintenance, click "Restore as my preferences" to automatically use the price information of the corresponding device written in "Unit Price".



1.2.5 **Report**

When model selection solutions are provided for different energy self-efficiency rates, you can select one or more solutions that require a report.



Download PDF: A model selection report will be generated in PDF format.

Share: Enter the email of the person to share the report with. Then, the model selection report will be sent to the email address.

Upload Logo: You can upload the logo of your company, which will be shown in the PDF report.

The report includes the following information:

- Project information: project name and address
- Summary: annual power output of the model selection solution, self power consumption, on-grid power price, energy self-sufficiency rate, and energy self-consumption ratio
- Your solution: recommended device models, quantities, and parameters
- Economic analysis: estimated benefits to be brought by the entire solution, that is, comparisons between electricity cost before the use of the solution and after the use of the solution
- Renewable: percentage of Renewable energy in the entire solution and the decrease of carbon emission after the use of the solution

Project Case Frankfurt

Address Frankfurt, Germany

7496.65 kWh	7565.91 kWh	3782.73 kWh	3783.18 kWh	50.46%	50.00%
Estimated Annual Energy Consumption	Estimated Annual Energy Generation	Self-consumption	On-grid Power	self-suffi.quota	self-consump.quota

Your solution

PV array
Model: AIKO-A600-MAH72Mw
Number: 12
Power: 7.20kWp
Installation Angle: Azimuth Angle: 15°, Tilt Angle: 10°.

Inverter
Model: ME-HT10H
Single/ Three phase: Three-Phase
Number: 1
Maxi AC Power: 10kW

Battery
Model: ME-B25H
Capacity: 25.50 kWh
Number: 1
Maxi. Charging Power: 16 kW
Maxi. Discharging Power: 16 kW

Heat pump
Model: MHC-V10W/D2N8-BER90
Number: 1
Heating Capacity: 15.08kW
Type: Mono(ODU)

Hot water tank
Model: MT-S190WE30
Number: 1
Size: 190L

M-Master
Number: 1

iEasyEnergy App

Economy analysize

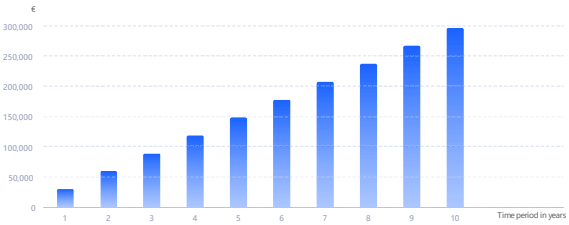
Total saving for 10 years approx.

296332.55 €

Energy purchase costs

Year	Before	After	Savings
1	31111.90 €	1856.96 €	94.03 %
10	311118.96 €	18569.59 €	94.03 %

Cumulative savings



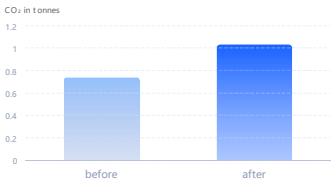
Details		Energy	Before	After	Savings
Investment costs	0.00 €	Total electrical energy consumption	1800.00 kWh	3713.92 kWh	-106.33 %
Grant amount	0.00 €				
		Total fuel energy consumption	20141.26 kWh	0.00 kWh	100.00 %
Annual return	29633.25 €	Self-consumption		3782.73 kWh	
Amortization time	0.00 years	Grid feed-in		3783.18 kWh	

Renewable

Renewable energies share

Self-sufficiency

CO_2 emissions



*Important: The yield values displayed are estimates. They are determined mathematically. Midea accepts no responsibility for the real yield value which can deviate from the yield values displayed here. Reasons for deviations are various external conditions, such as soiling of the PV modules or fluctuations in the efficiency of the PV modules.

2 Check List of System

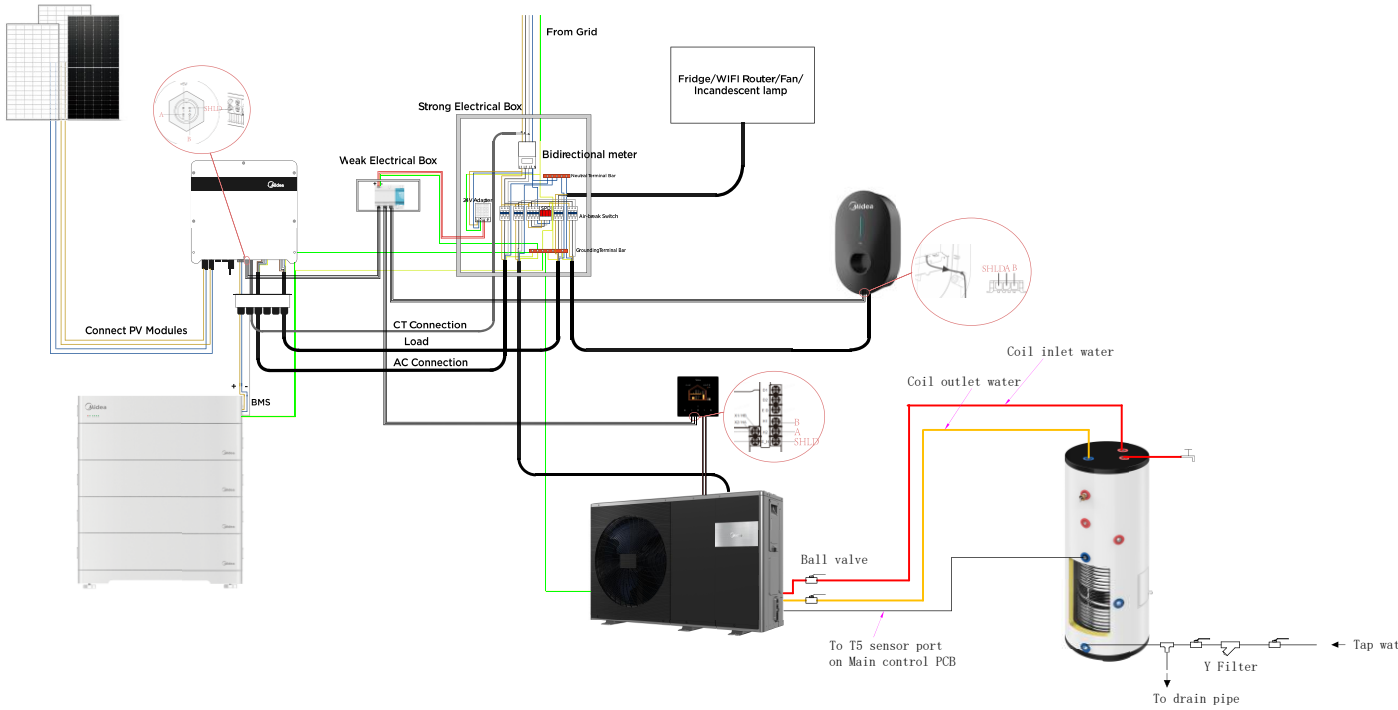
Main Components	Note	Compatible Units	
Heat Pump	Necessary	R290 M Thermal Arctic HT Series	MHC-V4(6/8/10/12/14/16)WD2N7 MHC-V12(14/16)WD2RN7
		M Thermal Arctic Series	MHC-V4(6/8/10/12/14/16)W/D2N8-B MHC-V12(14/16)W/D2RN8-B MHA-V4(6/8/10/12/14/16)W/D2N8-B MHA-V12(14/16)W/D2RN8-B
		M Thermal Power Series	MHC-V5(7/9/12/14/16)WD2N8-C MHC-V12(14/16)WD2RN8-C
Hybrid Inverter	Necessary	ME-HS5L-A; ME-HS5L~MEHS6L; ME-HT6H~ME-HT15H;	
Battery	Recommand	High Voltage	MEB10H~ME25H
		Low Voltage	MEB5L~MEB30L
M-Master	Necessary	MDG44-BTW23	
Thermal storage tank	Recommand	TSW Series	
EV Charger	Recommand	7/11/22 Wallbox	
* Refer to the report of Super Advisor selection software for specific model information.			

3 System Installation Introduction

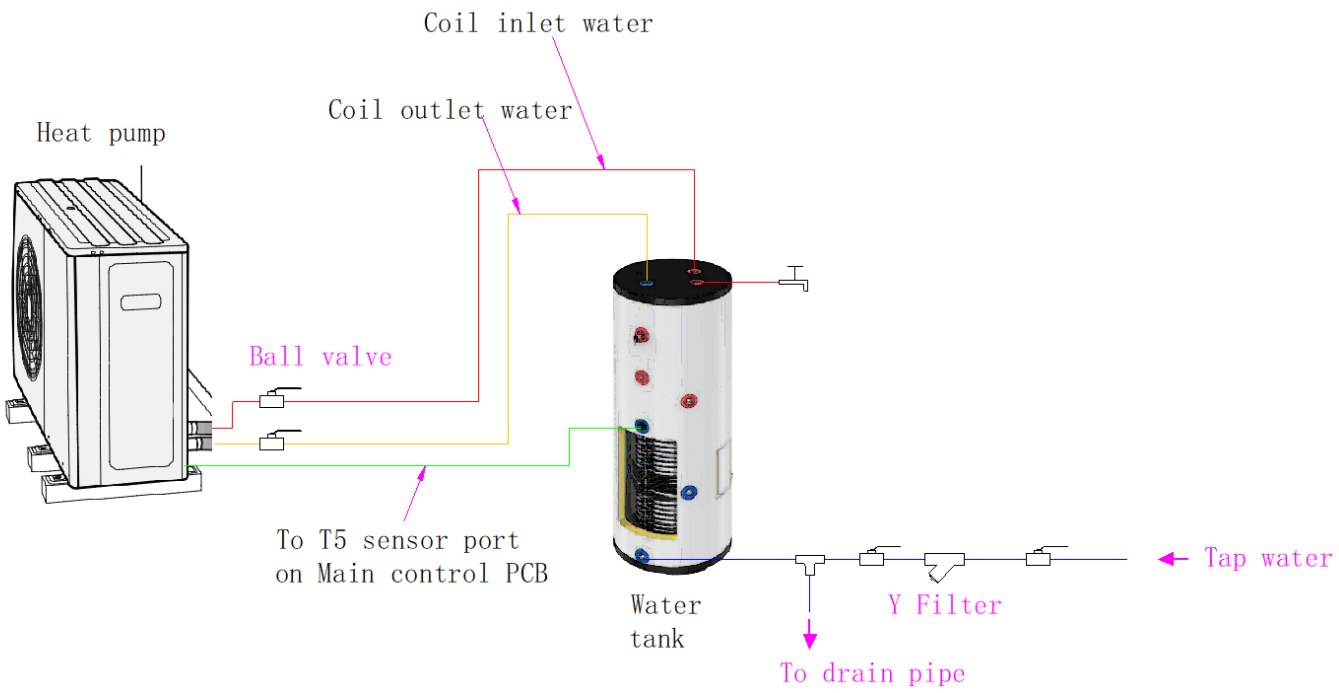
Refer to the respective user manuals and conduct trial runs to ensure that each individual equipment can operate normally. Once confirmed, turn off the power and proceed with the system installation.

System diagram is shown as below, and water circuit connection, communication cables connection and electrical wiring will be illustrated detailly later.

System Diagram
(For reference only, the actual installation scenario may vary)



4 System Water Circuit Connection

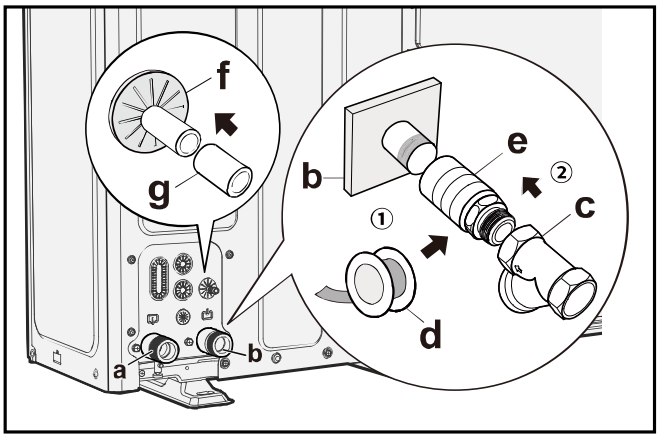


Note:

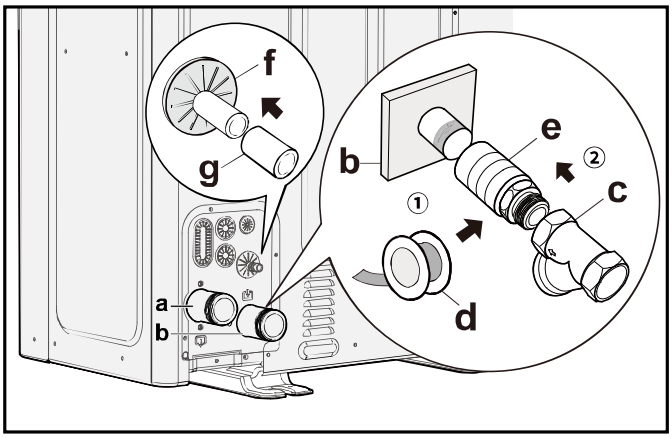
Except for Cable to T5 sensor port on Main control PCB, accessories else needs to be purchased on-site.

4.1 Heat Pump

4-6 kW

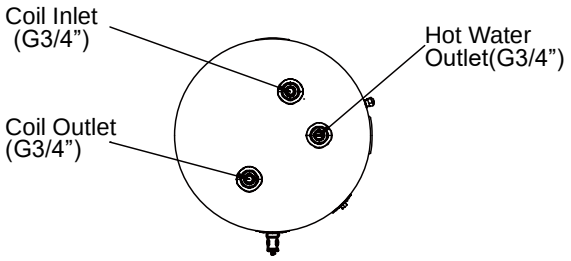


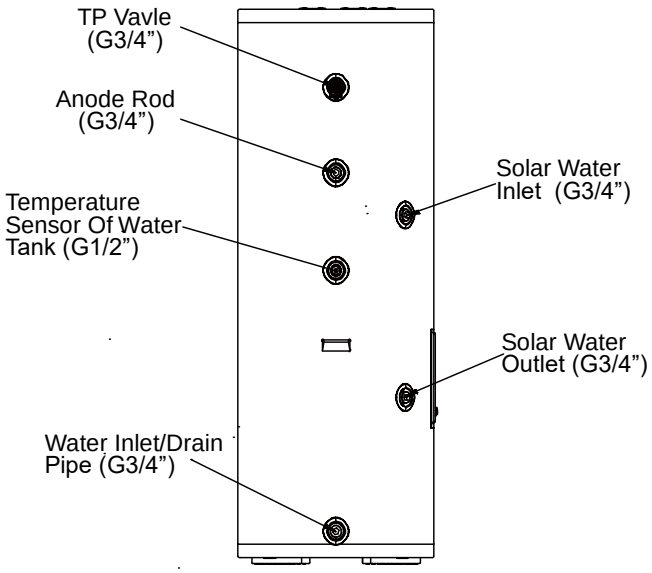
8-16 kW



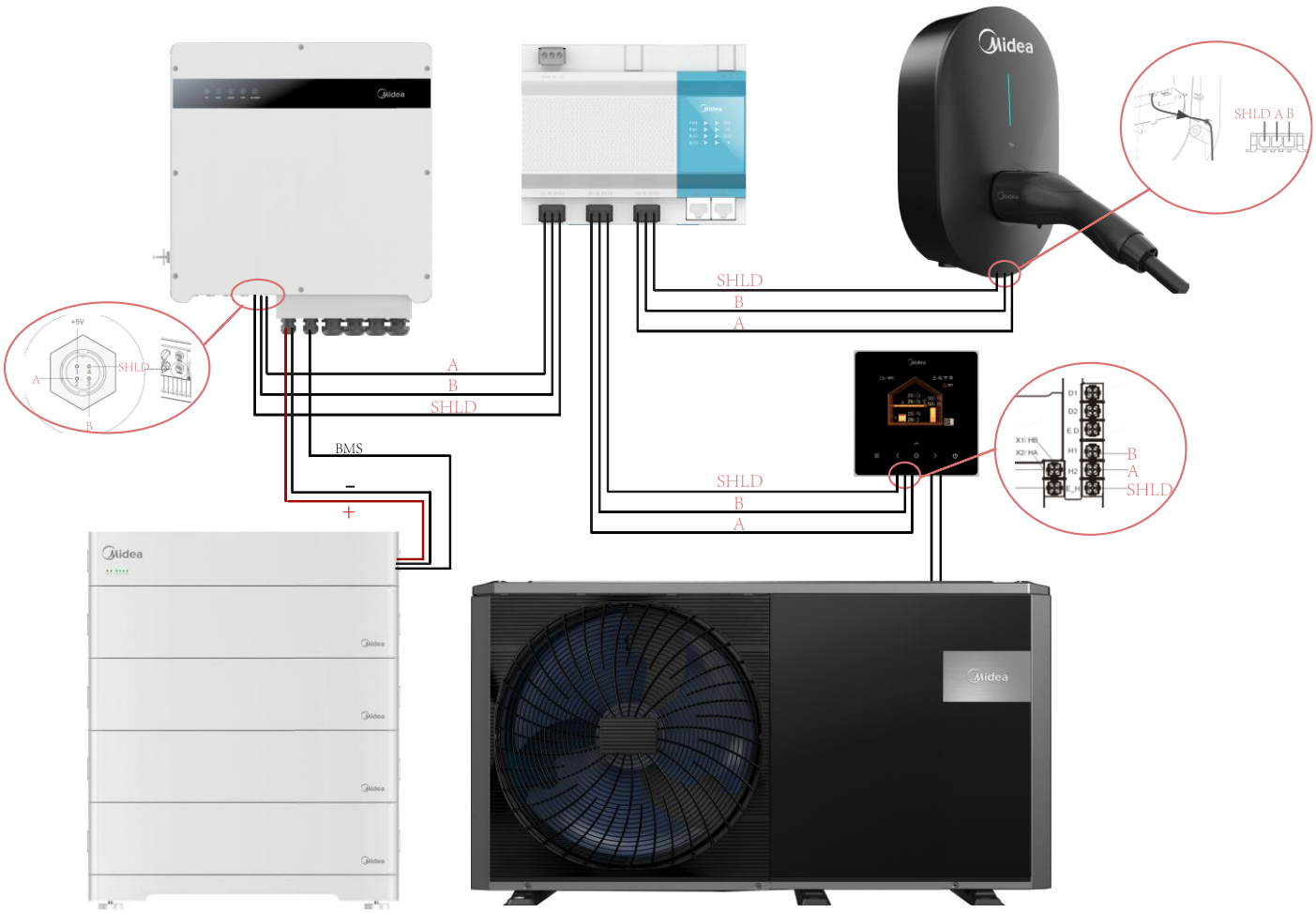
a	Water OUTLET (connection with screws, male, 1" for 4/6 kW units and 1 1/4" for 8-16 kW units)
b	Water INLET (connection with screws, male, 1" for 4/6 kW units and 1 1/4" for 8-16 kW units)
c	Y-shaped strainer (delivered with the unit) (2 screws for connection, female, 1" for 4/6 kW units and 1 1/4" for 8-16 kW units)
d	Thread seal tape
e	Extension pipe (recommended, with the length depending on the field conditions)
f	Safety valve outlet (hose, φ16mm)
g	Drain hose (supplied on the site)

4.2 Thermal Storage Tank





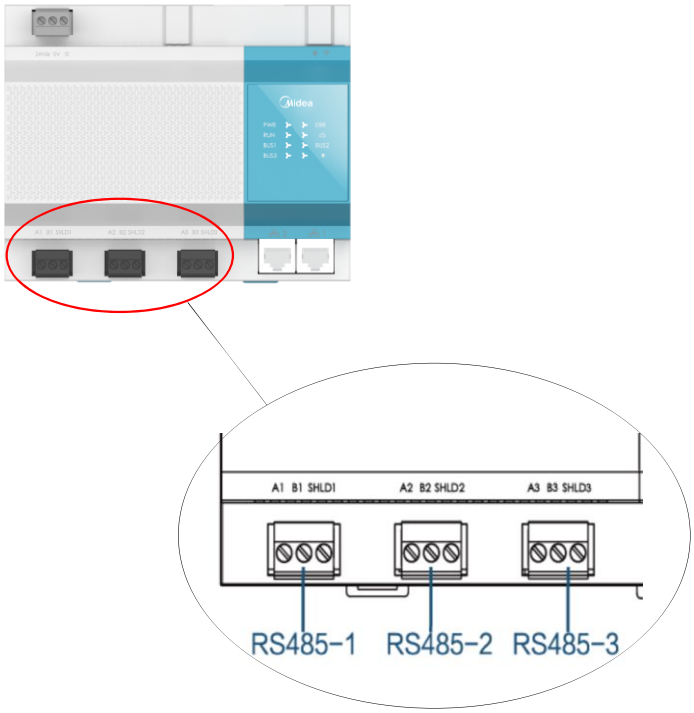
5 System Communication Cables Connection



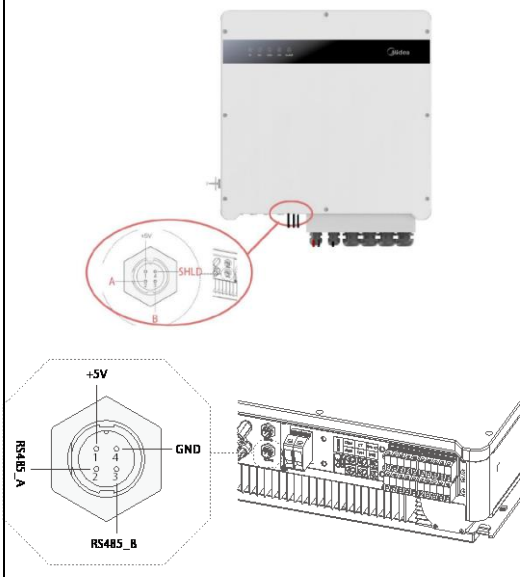
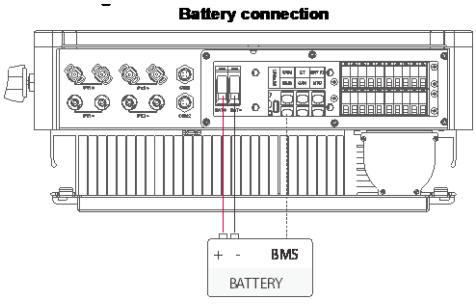
Note:

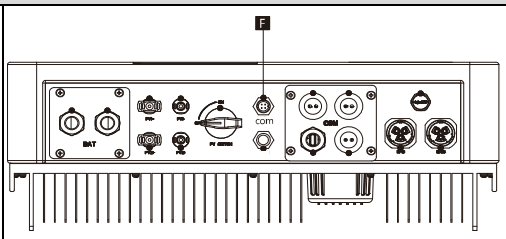
1. Please keep the length of the shielding wire within 500 meters to ensure communication quality.
2. The shielding wire access line sequence is for reference only. If it does not match the actual unit installation, please refer to the relevant instructions.
3. As wires shown above, except for the three wires connected to the battery, the rest need to be purchased on site.

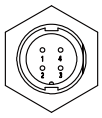
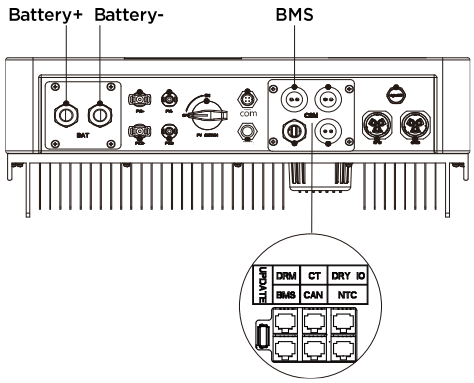
5.1 M-Master

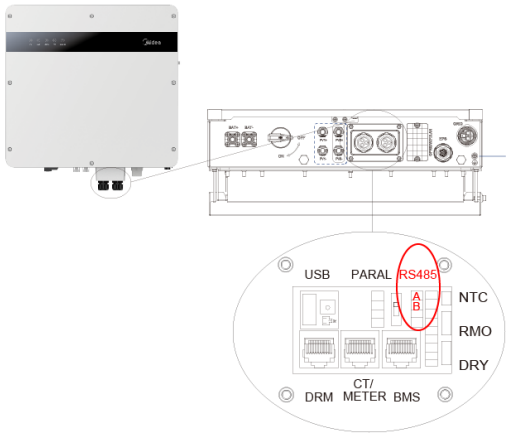
M-Master connetion


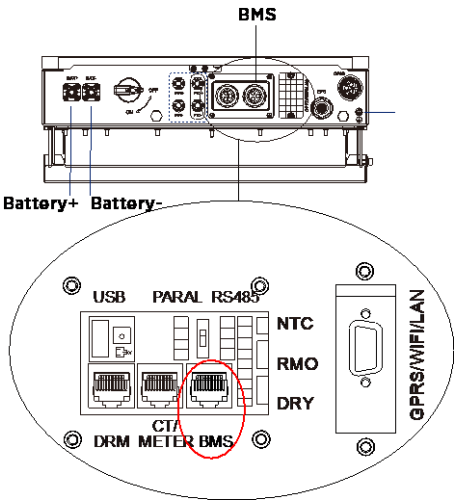
5.2 Hybrid Inverter

Type	Model	Hybrid inverter connects with M-Master	Hybrid inverter connects with Battery
Three phase	ME-HT6/8/10/12/15H		

<table>
<tr>
<td rowspan="2">单相</td>
<td>ME-HS3/4/5/6L</td>
<td>


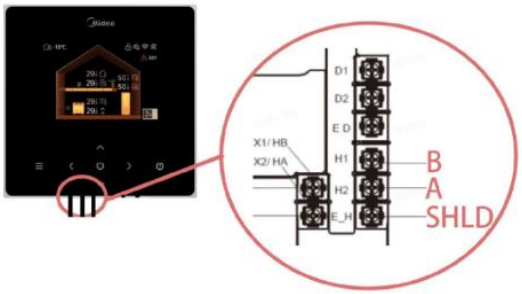
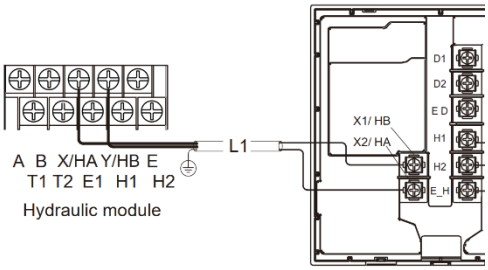
COM

<table>
<tr><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>+5V</td><td>RS485_A</td><td>RS485_B</td><td>GND</td></tr>
</table>
The connection cable for this port can be supplied as an accessory to the customer.
</td>
<td>


</td>
</tr>
<tr>
<td>ME-HS5L-A</td>
<td>


</td>
<td>


</td>
</tr>
</table>

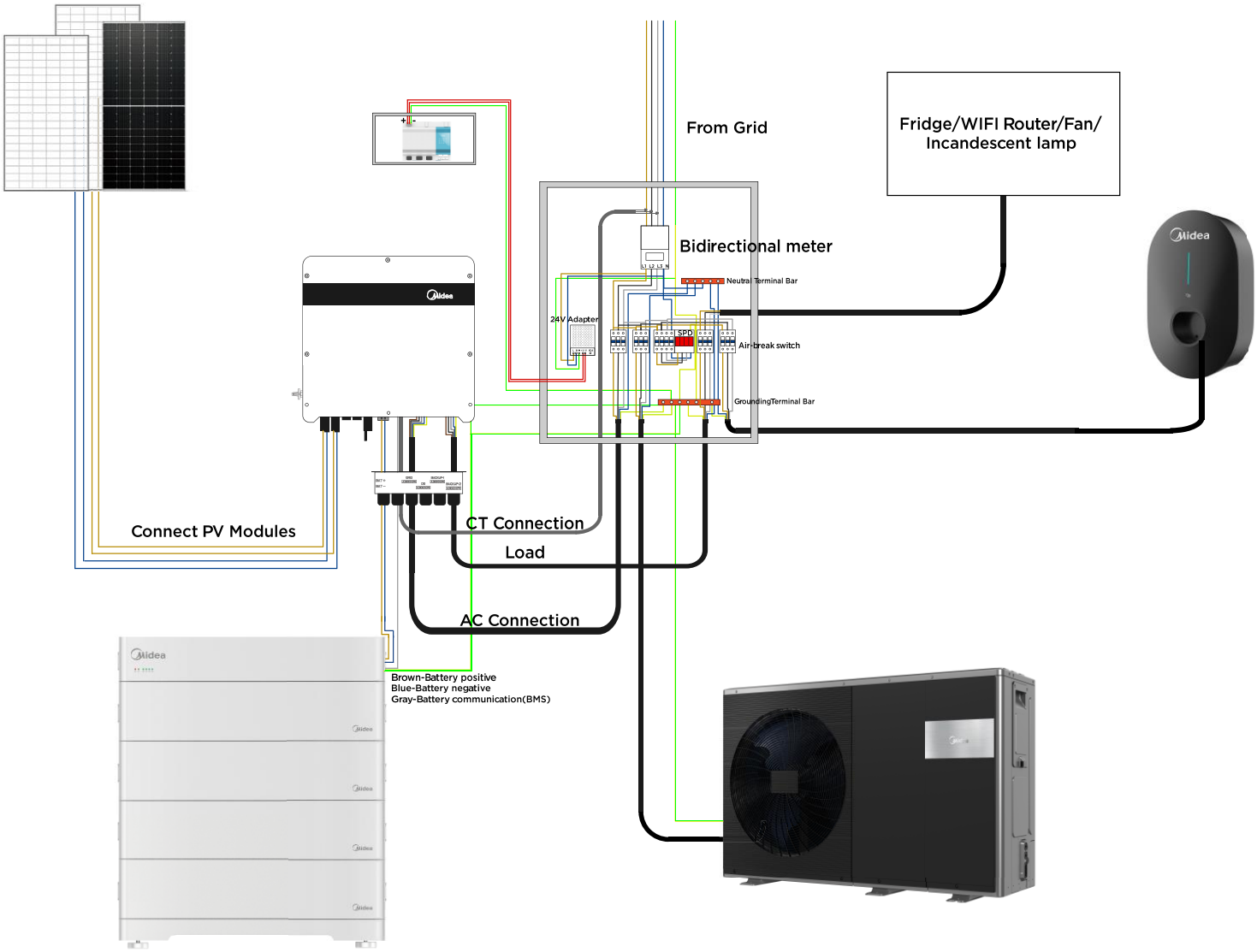
5.3 Heat Pump: User Interface

User Interface connects with M-Master	User Interface connects with Heat Pump
	
Applied to all User Interfaces of Heat Pump	

5.4 EV Charger

Model	EV Charger connects with M-Master
7/11/22kW	

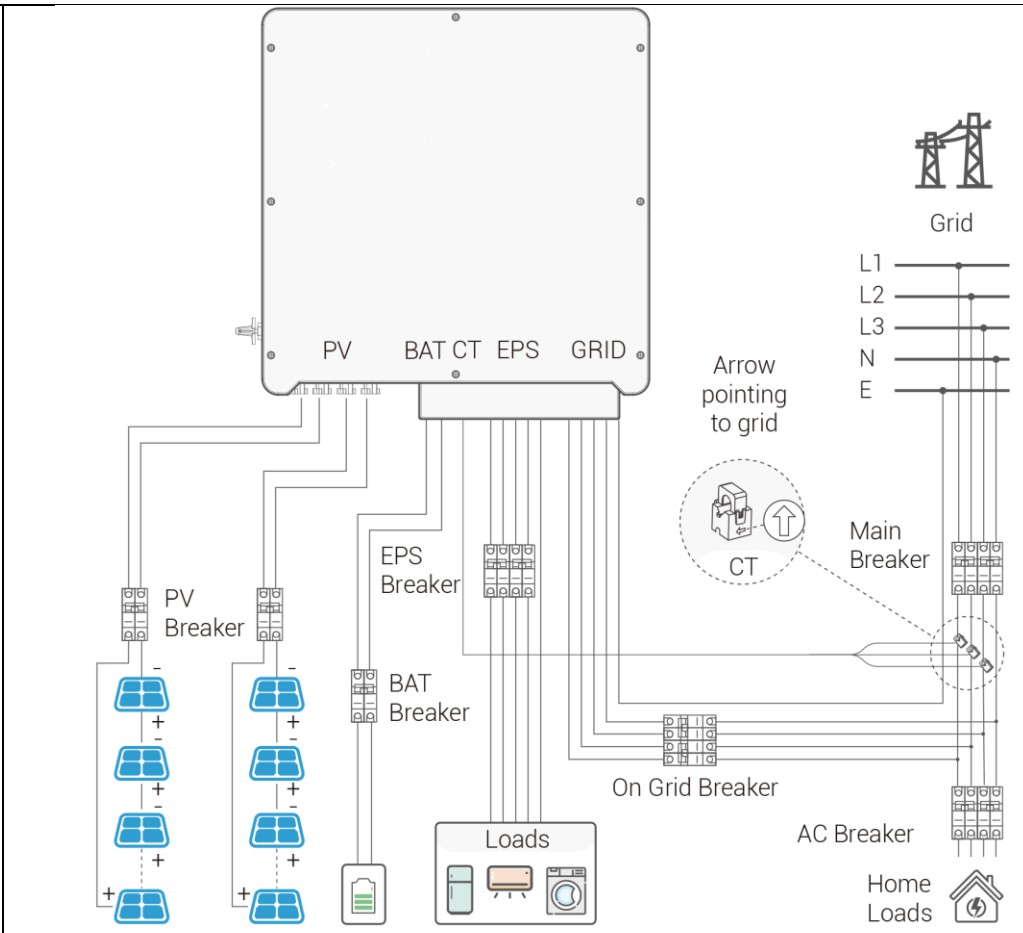
6 System Electrical Wiring



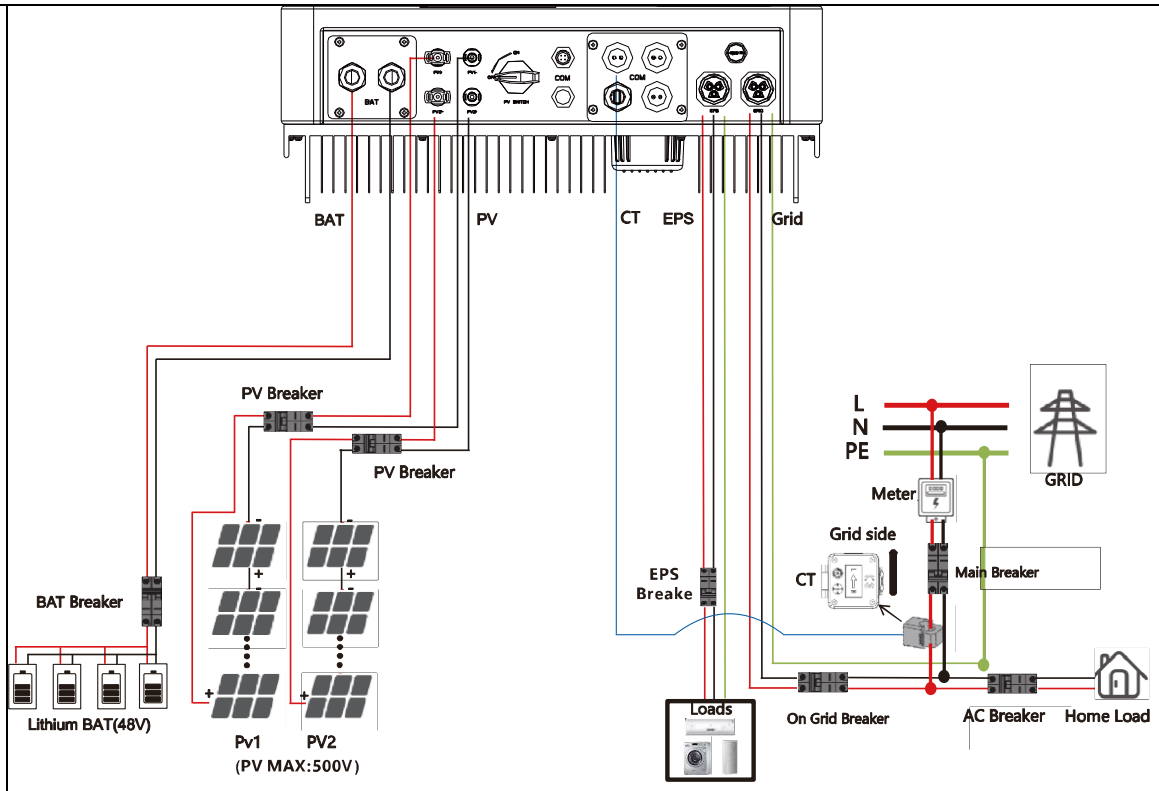
Note:

1. As wires shown above, except for CT and the three wires connected to the battery, the rest need to be purchased on site.
2. The wiring is for reference only. If there are too many wires connected to one terminal, please use an external wiring socket.

6.1 Hybrid Inverter

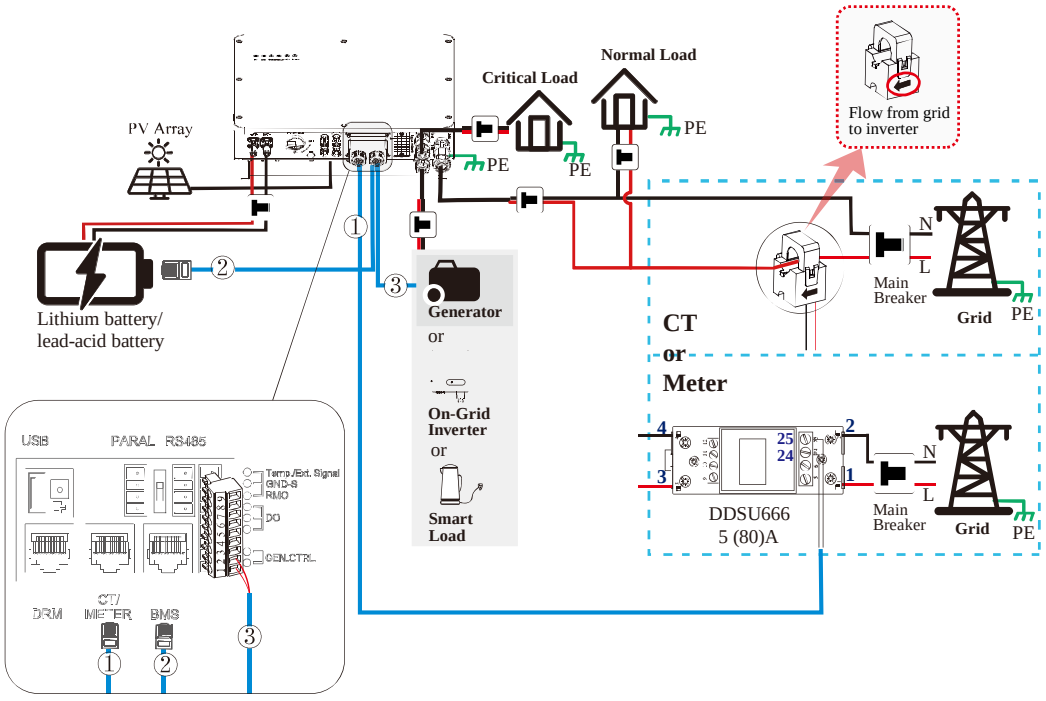
ME-HT6/8/10/12/15H	 Note: Important loads and normal loads can be distinguished, because the control logic for different loads is different. Please refer to the instruction manual for details.

Grid Connection/EPS Connection					
Model	ME-HT6H	ME-HT8H	ME-HT10H	ME-HT12H	ME-HT15H
Cable(mm^2)	4-6	4-6	4-6	6-10	6-10
Micro-Breaker(A)	20	20	32	32	32
Battery connection					
Model	ME-HT6H	ME-HT8H	ME-HT10H	ME-HT12H	ME-HT15H
Voltage	Nominal voltage of DC breaker should be larger thanmaximum voltage of battery				
Current(A)	63				
Cable(mm^2)	10				
Note: Before connecting to the battery, install a non-polarized DC circuit breaker to ensure that the inverter can be safely disconnected during maintenance.					

ME-HS3/4/5/6L	 Note: Load types are not distinguished. Please refer to the instruction manual for details.

Grid Connection/EPS Connection						
Model	ME-HS3L	ME-HS3R6L	ME-HS4L	ME-HS4R6L	ME-HS5L	ME-HS6L
Cable(mm^2)	4	4	4	6	6	6
Micro-Breaker(A)	20	20	20	32	32	32
Battery connection						
Model	ME-HS3L	ME-HS3R6L	ME-HS4L	ME-HS4R6L	ME-HS5L	ME-HS6L
Cable(mm^2)	≥25					
Micro-Breaker(A)	125					
Note: Before connecting to battery, please install a nonpolarized DC(125A) breaker to make sure inverter can be securely disconnected during maintenance						

ME-HS5L-A



① CT/Meter communication connection
② BMS communication connection
③ GEN DRY communication connection

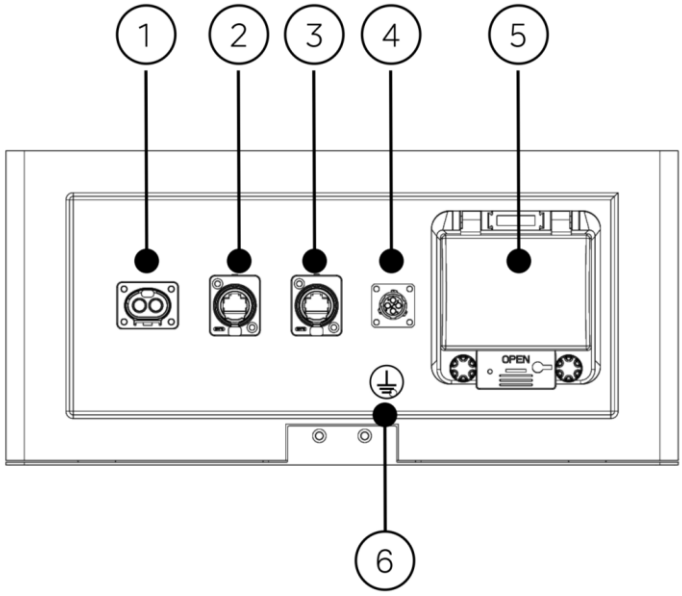
Note

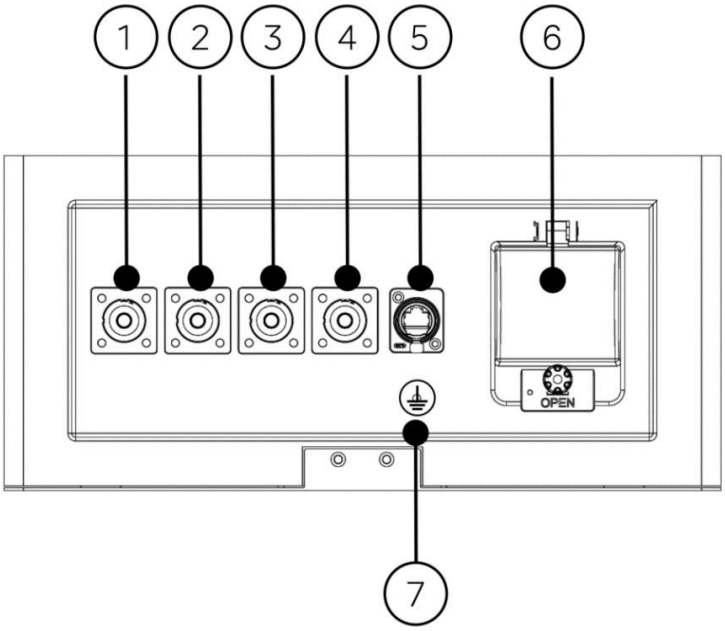
1. BMS connection is only for lithium battery.
2. Meter is optional.

Note: Important loads and normal loads can be distinguished, because the control logic for different loads is different. Please refer to the instruction manual for details.

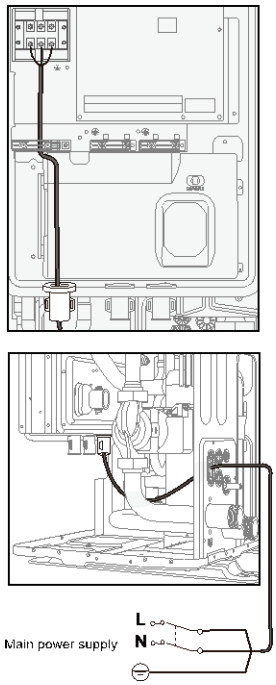
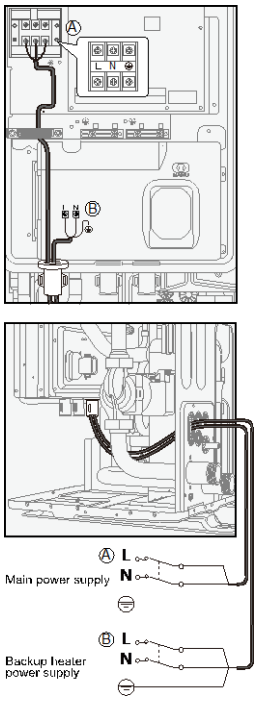
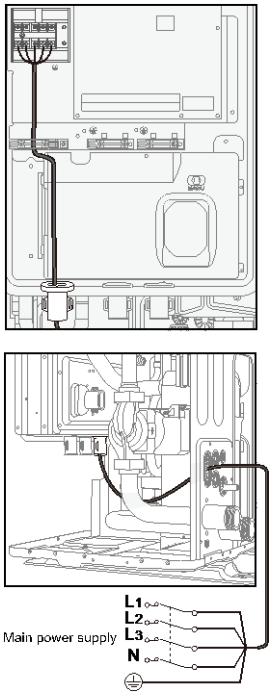
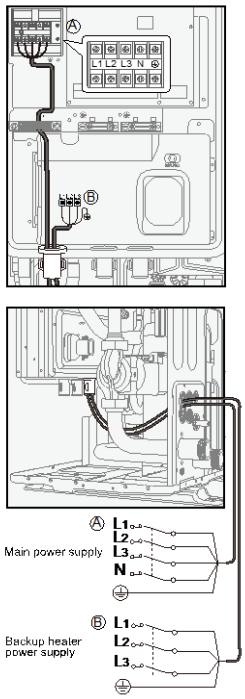
Grid Connection/EPS Connection		
Model	ME-HS5L-A	ME-HS6L-A
Cable(mm^2)	8-14(Grid); 4-6(EPS)	
Micro-Breaker(A)	50	
Battery connection		
Model	ME-HS5L-A	ME-HS6L-A
Cable(mm^2)	25	
Micro-Breaker(A)	150	
Note: Before connecting to battery, please install a separate DC breaker (150A; not equipped) betweeninverter and battery. This ensure the inverter can be security disconnected during maintenance.		

6.2 Battery

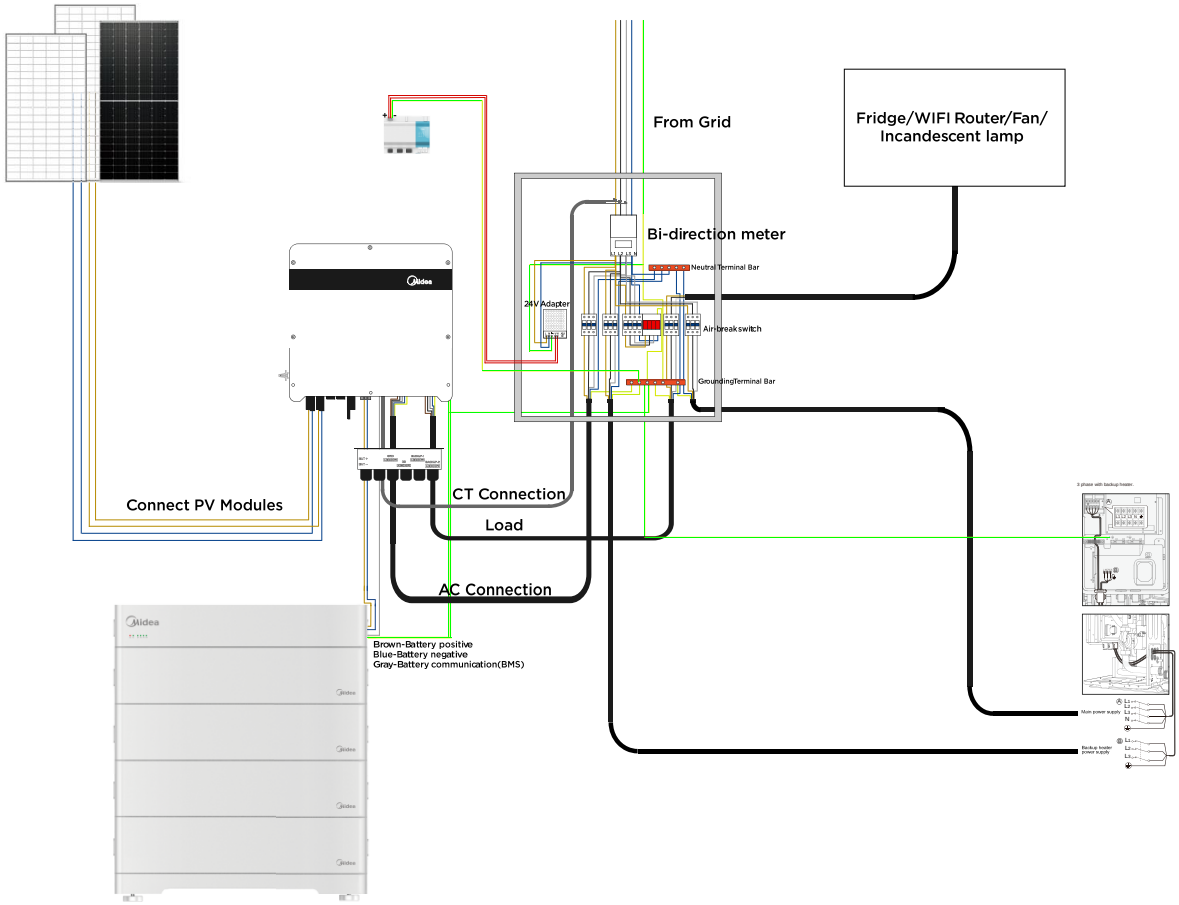
Model	Battery connects with Hybrid inverter	
ME-B5H~ ME-B25H		
1	HV DC Out Terminal	BAT+/BAT- termical to PCS for charging and discharging
2	4G COM	Reserved
3	Communication port	Commnuication port to PCS
4	24V DC Power Port	External DC Power source for PDU(Power distribution unit) when battery has insufficient electirity. (For after-sales services)
5	Power Breaker	Turn on/off PDU
6	⏚	Ground terminal

Model	Battery connects with Hybrid inverter	
ME-B10L~ ME-B30L		
1	Negative Terminal	BAT- termical to PCS
2	Negative Terminal	BAT- termical to PCS (Reserved)
3	Positive Terminal	BAT+ termical to PCS
4	Positive Terminal	BAT+ termical to PCS (Reserved)
5	Communication port	Commnuication port to PCS
6	Power Breaker	Turn on/off PDU
7	⏚	Ground terminal

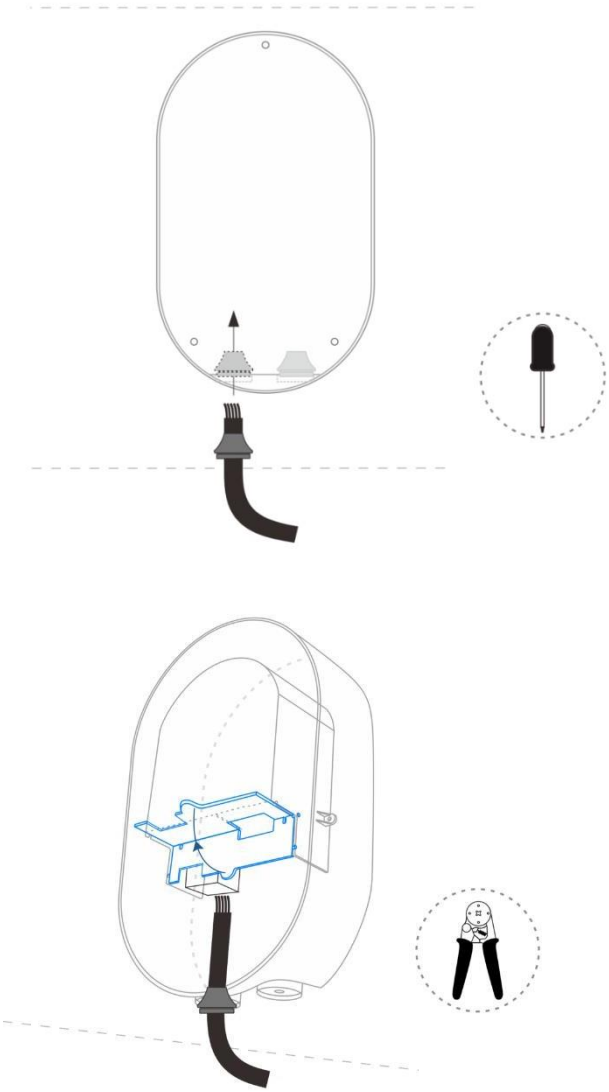
6.3 Heat Pump

Single Phase	1Phase with backup heater	Three Phase	3Phase with backup heater
			

Note: For Heat Pump with IBH, refer to connection diagram as below.



6.4 EV Charger

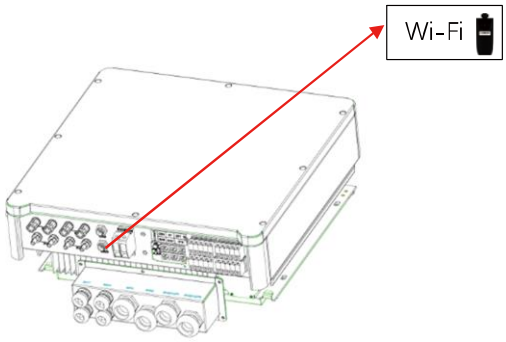
Model	EV Charger connects with M-Master
7/11/22kW	

7 Hybrid Inverter Commissioning

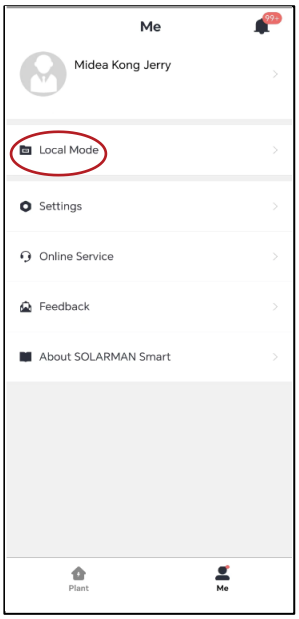
7.1 APP Quick Installation

1 Download and install the app "SLOARMAN Smart" on your mobile phone, which is available on APP Store and Google Play.

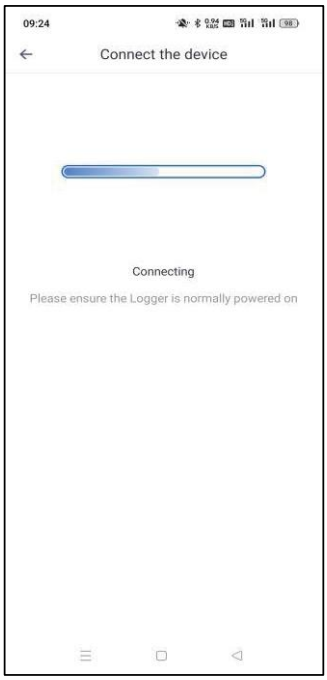
2 Connect the inverter to the WIFI adapter first, and ensure that the COM and READY leds on the right of the WIFI adapter are blinking

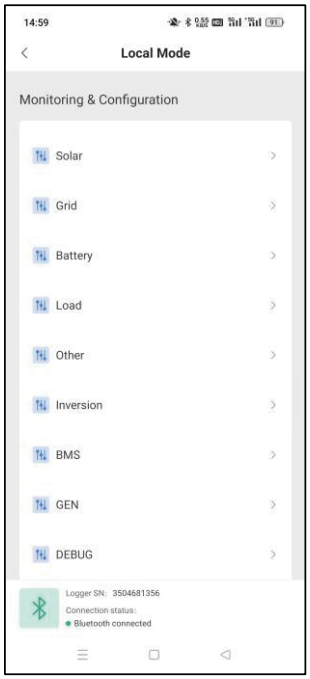


3 Open the APP and go to the main interface of the APP. Click "Local Mode", make sure your Bluetooth is enabled, scan the QR code on the WIFI adapter or manually enter the serial number to connect to the WIFI adapter.



4 After the connection is successful, the COM indicator is steady on and the READY indicator is blinking





When this page is displayed, it means that the connection is successful and the equipment is in normal working condition, and the inverter parameters can be monitored through the software.

7.2 APP Quick Settings

After steps above has finished, There are 5 steps need to set up quickly in field via APP, and then start to work.

Step 1: Grid

Choose Grid Std according to local power grid

Step 2: Battery type (Normally no need to change)

Choose LFP

Step 3: Work Mode

Choose SELFCONSUME

Step 4: PV input mode

Choose INDEPENDENT

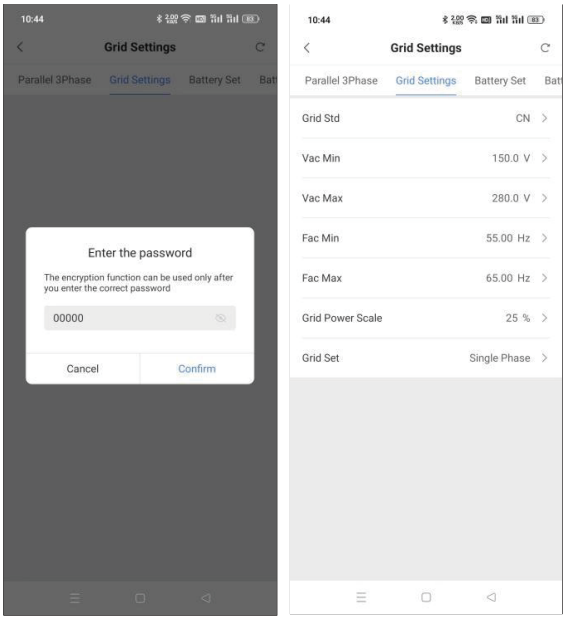
Step 5:Anti Reverse (change to Enable, if not sell power to Grid)

Choose Enable

7.2.1 **Grid Settings**

You need to enter a password to access the grid Settings screen.

The default password is 00000

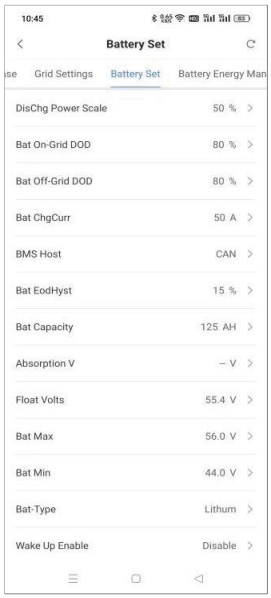


Grid Std : This interface is used to select Grid standard.
(Choose Grid Std according to local power grid)

Grid Std		
-> AU	1:AU-Australia	240V/415V 50Hz
AU-W	2:AU-W-Western Australia	240V/415V 50Hz
NZ	3:NZ-New Zealand	240V/415V 50Hz
UK	4:UK-United Kingdom	230V 50Hz
VDE	5:PK	230V 50Hz
KR	6:KR-Korea	220V/380V 60Hz
PHI	7:PHI-Philippines	110V/220V 60Hz
CN	8:CN-China	220V/380V 50Hz
US-CA	9:US-CA-America	120V/240V208V/240V 60Hz
THAIL	10:THAIL	220/380V 50Hz
SA	11:ZA	230V 50Hz
CUSTOM	12:CUSTOM-User defined	-
POL	13:POL	230V/380V 50Hz
EN50549	14:EN50549	217V/220V/240V 380V/400V 50HZ/60Hz
VDE4105	15:VDE4105-Germany	230V/380V 50Hz
JPN	16:Japan	110V/190V/60Hz
ITA	17:Italy	230V/380V/50Hz
SLO	18: Slovenia	230V/380V/50Hz
CZE	19: Czech Republic	230V/380V/50Hz
SWE	20: Sweden	230V/380V/50Hz
HU	21: Hungary	230V/380V/50HZ
SK	22: Slovakia	230V/380V/50HZ

Note: If none of the above options are available, please consult your dealer.

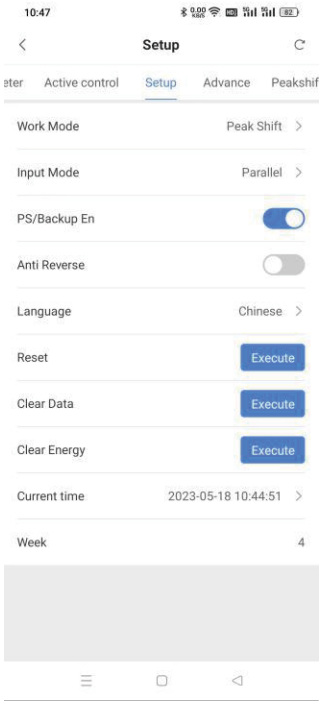
7.2.2 **Battery Set**



Bat-Type : Set the type of battery, according to the battery demand can be set DC source (for testing use only), lithium battery, lead-acid battery.

(Choose LFP)

7.2.3 **Setup**



1) **Work Mode** : This interface is used to select the working mode, includes SELFCONSUME, PEAK SHIFT, BAT PRIORITY. The default setting is SELFCONSUME.

(Choose SELFCONSUME)

2) **Input Mode** : Setup of PV Input mode, The default setting is Independent.

- INDEPENDENT : The default Settings,
- PARALLEL : This feature is for test use only, not customer use
- CV : This feature is for test use only, not customer use

(Choose INDEPENDENT**)**

3) **Anti- Reverse** : Whether Inverter isn't allowed to generate electricity to the Grid, The default option is disable, Enable means that it isn't allowed to generate electricity to the Grid.

(Choose Enable**)**

8 M-Master Commissioning

This Manual, with the M-Master controller, the heat pump MHC-V5WD2N8-C, and the inverter ME-HS5L as examples, provides the process of building an iEasyEnergy system, (Heat Pump, Photovoltaic, and Energy Storage), which can be monitored by iEasyEnergy APP

Basic information about the device

Item	Factory default
IP address	192.168.100.185
Configuration page address	https://192.168.100.185
Username	admin
Password	123AB@ab
iBuilding server	Overseas server
Timer	15 min
Impedance Matching	All closed
Configuration page language	Subject to the system language (English in case of no matching language)

8.1 Items Required

In order to achieve the above functions, the following items are required:

1. M-Master controller
2. Heat pump unit that can operate normally and its wired controller
3. Hybrid inverter and energy storage and PV modules that can operate normally
4. Power supply for normal operation of the M-Master controller (see above)
5. Three-conductor shielded cables for connecting the M-Master controller to the heat pump unit and the hybrid inverter
6. Ethernet cable
7. PC installed with Chrome or Edge browser (for gateway configuration)
8. Internet accessible network (Ethernet or Wifi)

8.2 Steps Overview

1. Connect the communication line
2. Power on
3. Access to LAN
4. Visit the M-Master Configuration page

5. Add devices and check connection status
6. Access to the Internet
7. Bind controllers

8.2.1 **Step 1 System Commnication Cables Connection**

Refer to system commnication cables connection part for details, make sure all cables are connected correctly.

8.2.2 **Step 2 Power On**

Connect the M-Master controller, the heat pump unit, and the inverter unit to the power supply for normal operation.

Notes:

The effective power supply range of the M-Master controller is:

AC 24V±20% 50/60Hz 12VA

DC 24V-10/+20% 8W

The electrical and cable connection of the heat pump unit and the inverter unit can be found in the relevant specification.

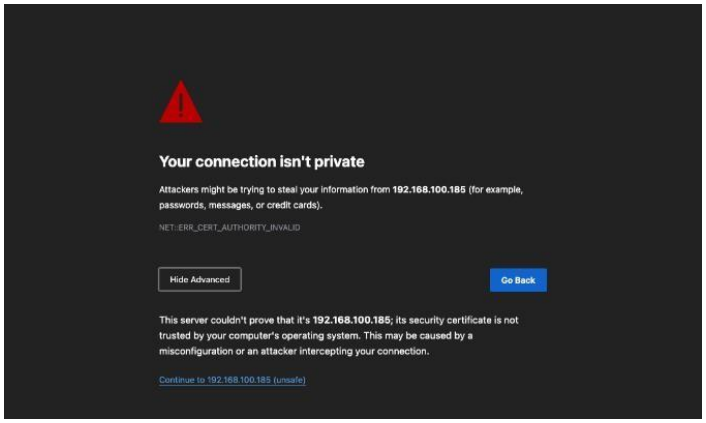
8.2.3 **Step 3 Access to LAN**

Configure the PC's Ethernet network card with a fixed IP address of 192.168.100.90, and connect the PC to the M-Master controller directly through an Ethernet cable (or through a switch), so as to set the M-Master controller and the PC both in a LAN allowing mutual access.

8.2.4 **Step 4 Visit M-Master Configuration Page**

When the LED "RUN" indicator of the M-Master controller is flashing, visit the Configuration page (https://192.168.100.185) through a browser installed on the PC. Log in with the default username and password on the Login page (see above)

In case of a pop-up SSL certificate error page, click Advanced-Continue to 192.168.100.185 (unsafe), or type “thisisunsafe” to visit the page



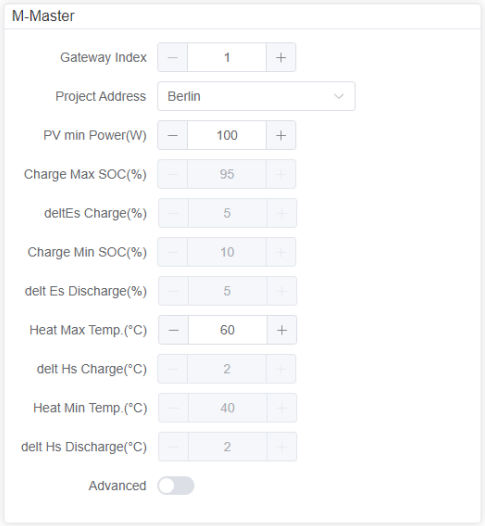
8.2.4.1 Step 5 Add devices

8.2.4.2 Add device– M-Master

After login, click "M-Master Configuration" to turn to the "M-Master Configuration" page.

Add devices on the "M-Master Devices" page

- Set Gateway Index to 1
- Fill in the remaining parameters according to the actual situation, and refer to the meanings of the parameters in the table below.

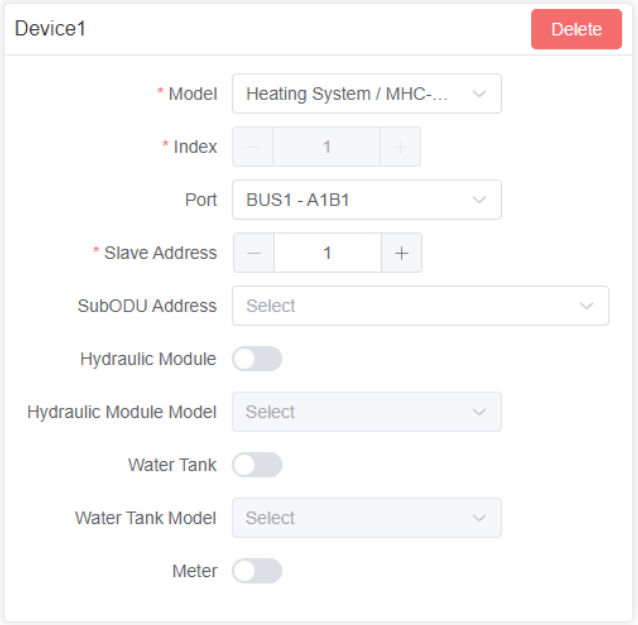


Parameter	Description
Gateway Index	Set Gateway Index to 1 Gateway serial number, please ensure that it is different for each gateway if there are multiple gateways in the same project. This parameter affects the SN of the reported device. Please do not modify it arbitrarily after setting it.
Project Address	Project Address
PV min Power(W)	The minimum power generation of PV modules
Charge Max SOC(%)	（Advanced Configuration） The maximum of SOC(State of Charge) while being charged
deltEs Charge(%)	（Advanced Configuration） Battery charging hysteresis
Charge Min SOC(%)	（Advanced Configuration） The minimum of SOC(State of Charge) while being discharged
delt Es Discharge(%)	（Advanced Configuration） Battery discharging hysteresis
Heat Max Temp. (℃)	The maximum temperature for heating the hot water
delt Hs Charge(℃)	（Advanced Configuration） Hysteresis of heating hot water
Heat Min Temp. (℃)	（Advanced Configuration） The minimum temperature for heating the hot water
delt Hs Discharge(℃)	（Advanced Configuration） Hysteresis of releasing hot water
Advanced	Enable advanced configuration

8.2.4.3 Add device – Heat Pump

Click Add to add the first device

- Select the Model MHC-V5 (7/9/12/14/16)WD2N8-C in Heating System
- Set Index to 1, Port to BUS1-A1B1, and Slave
- Address to 1, with no operation for SubODU Address
- Fill in the remaining parameters according to the actual situation, and refer to the meanings of the parameters in the table below.

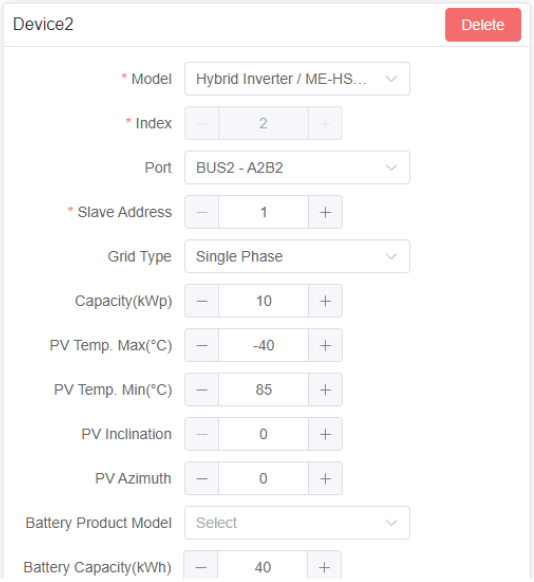


Parameter	Description
Model	PHeat pump model If none applies, please select MD-HP
Index	Device serial number, this parameter affects the SN reported by the device. To maintain device uniqueness, this parameter cannot be changed after it is saved
Port	Correspond with M-Master RS485 communication port
Slave Address	The device's slave address，same as HMI address for BMS of the user interface
SubODU Address	If there are parallel slaves, please select the address of the connected slave
Hydraulic Module	Whether the hydraulic module connected
Hydraulic Module Model	Model of the hydraulic module
Water Tank	Whether Thermal storage tank connected
Water Tank Model	Model of Thermal storage tank
Meter	Whether the electricity meter connected

8.2.4.4 Add device – Hybrid Inverter

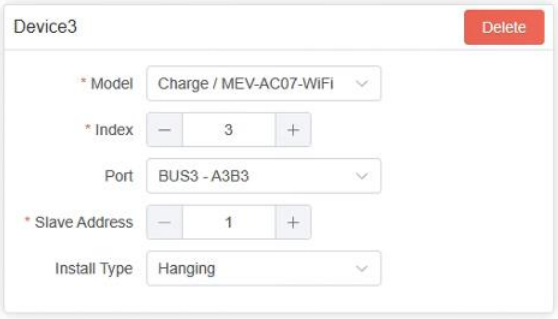
Click Add to add the second device

- Select the Model ME-HS5L in Hybrid Inverter
- Set Index to 2
- Port to BUS2-A2B2, and Slave Address to 1
- Fill in the remaining parameters according to the actual situation, and refer to the meanings of the parameters in the table below.



Parameter	Description
Model	Hybrid inverter model
Index	The equipment serial number, this parameter affects the SN of the reported device. To maintain the uniqueness of the device, this parameter cannot be changed after it is saved
Port	Correspond with M-Master RS485 communication port
Slave Address	The slave address of the device
Grid Type	If there are multiple slave devices connected in parallel, please select the address of the slave device that is connected
Capacity(kWp)	The installed capacity of the photovoltaic system
PV Temp. Max(°C)	The maximum operating temperature of a photovoltaic panel
PV Temp. Min(°C)	The minimum operating temperature of a photovoltaic panel
PV Inclination	The angle between the PV panel and the horizontal surface when PV installed southwards.
PV Azimuth	The angle between the PV panel and south when PV installed eastwards(-)/westwords(+).
Battery Product Model	Model of Battery
Battery Capacity(kWh)	Capacity of the battery

8.2.4.5 Add device – EV Charger

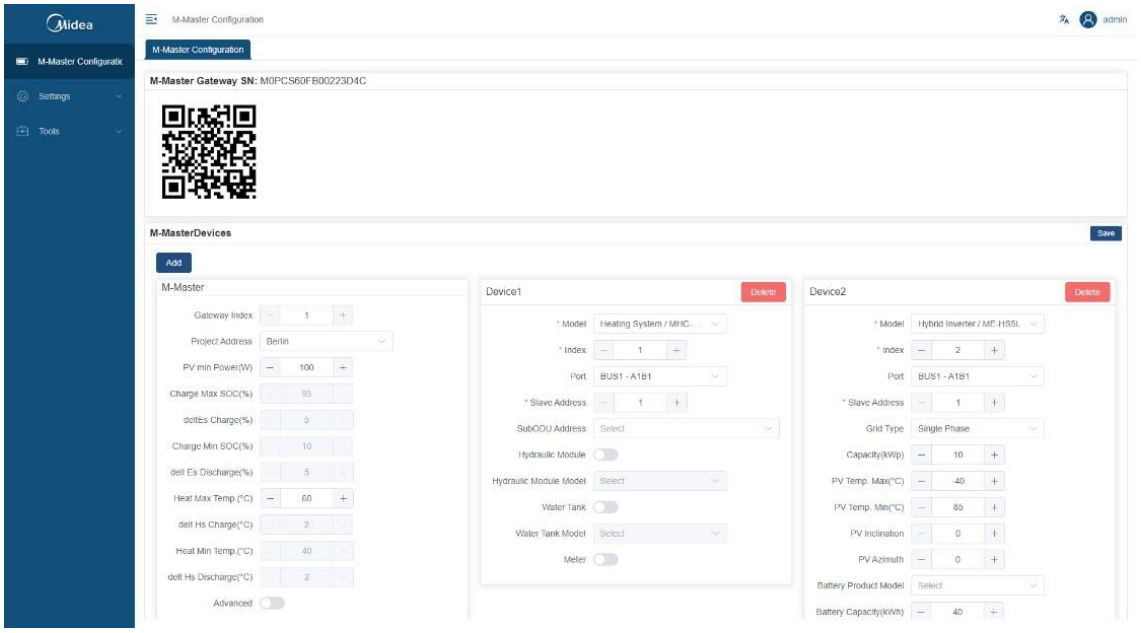


Click Add to add the third device,

- Select the Model MEV-AC07-WIFI in Hybrid Inverter
- Set Index to 3
- Port to BUS3-A2B3, and Slave Address to 1
- Fill in the remaining parameters according to the actual situation, and refer to the meanings of the parameters in the table below.

Parameter	Description
Model	EV Charger model
Index	The equipment serial number, this parameter affects the SN of the reported device. To maintain the uniqueness of the device, this parameter cannot be changed after it is saved
Port	Correspond with M-Master RS485 communication port
Slave Address	The slave address of the device
Install Type	Column or hanging installation

- Click Save to save the current configuration parameters



8.2.4.6 Add device – Check online status

Click "Debug" to enter the "Debug" page.

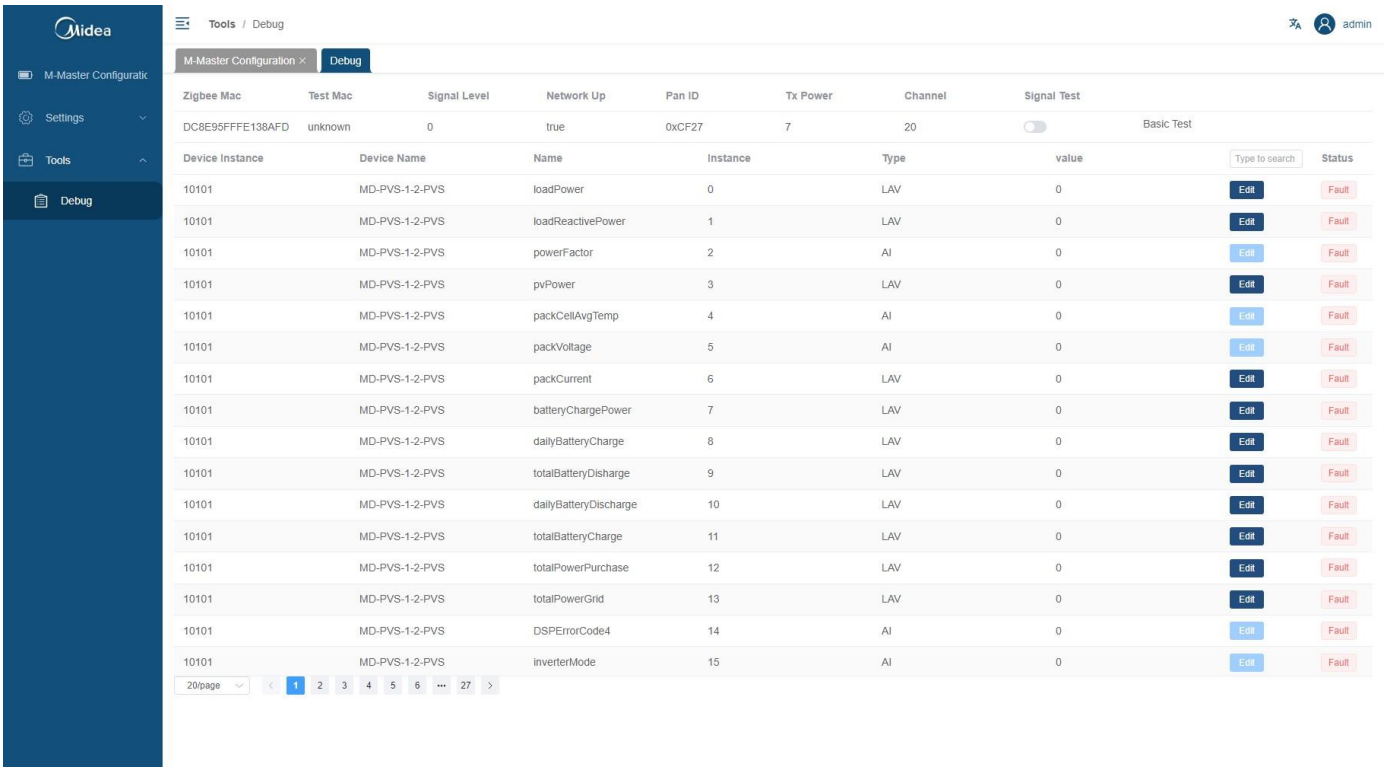
The communication status and current values of the added devices can be viewed on this page.

• When the Status in the rightmost column is Fault, it indicates that the device communication is abnormal.

• When the Status changes to Normal, it indicates that the device communication is normal.

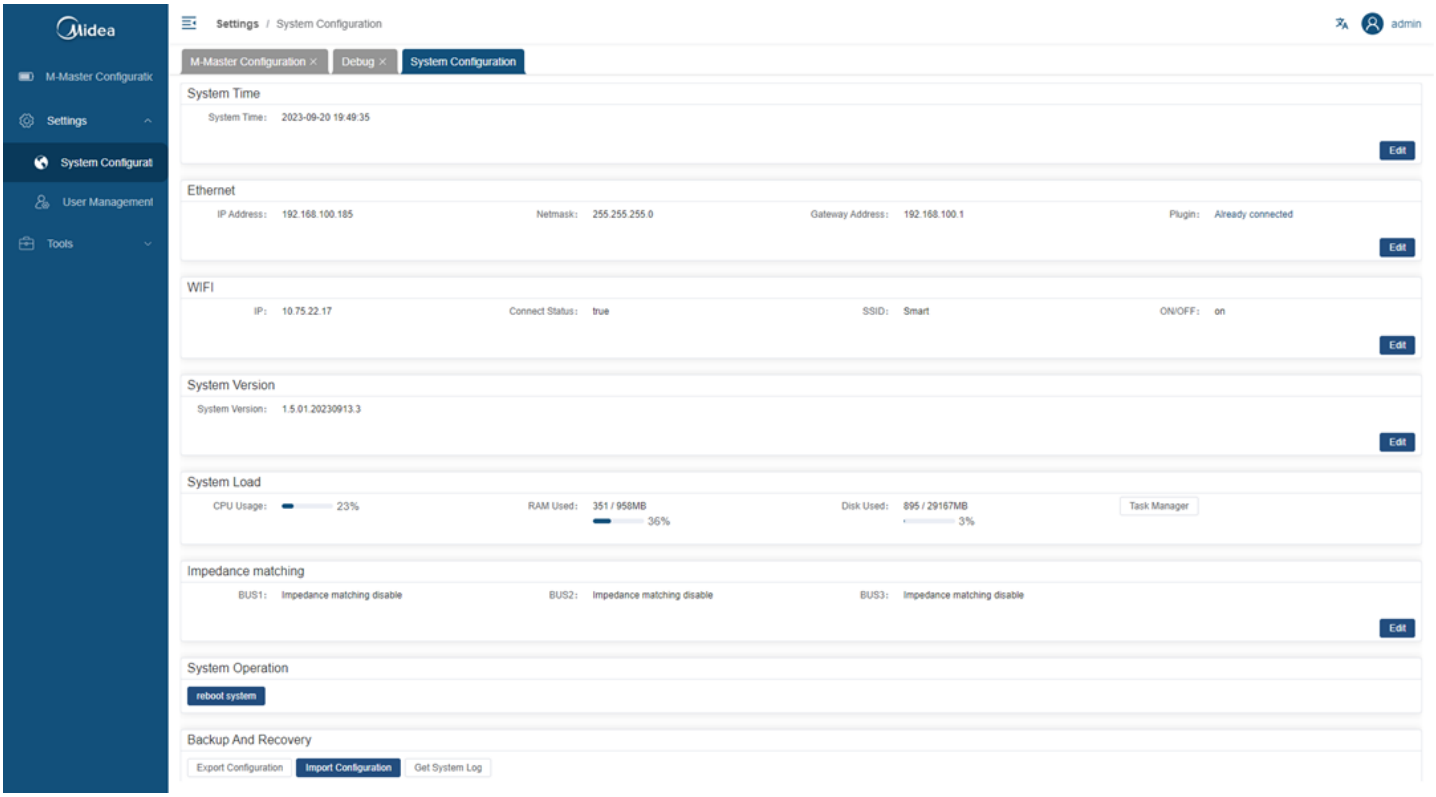
• The current status of the corresponding device can be viewed in the Precent Value column.

Note: After you configure the devices and click Save, the system initialization will start again. Check the device communication status after about 2 to 3 mins when the system communication becomes stable



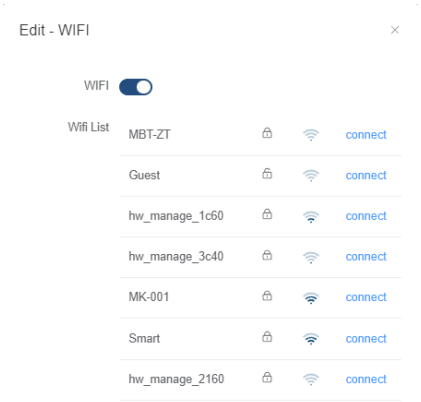
8.2.5 **Step 6 Access the Internet**

Click "System Configuration" to enter the "System Configuration" page to access the devices to the network.



Method 1: WiFI Access

In case of Wifi access, click Edit on the WIFI page to enter the searched Wifi list. Select the SSID to be connected and

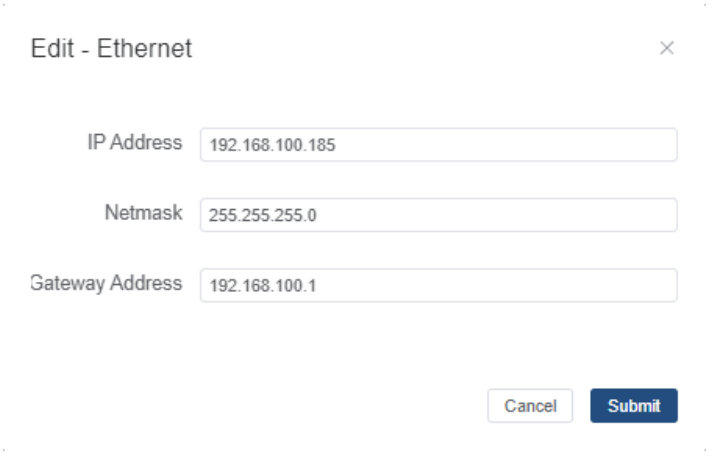


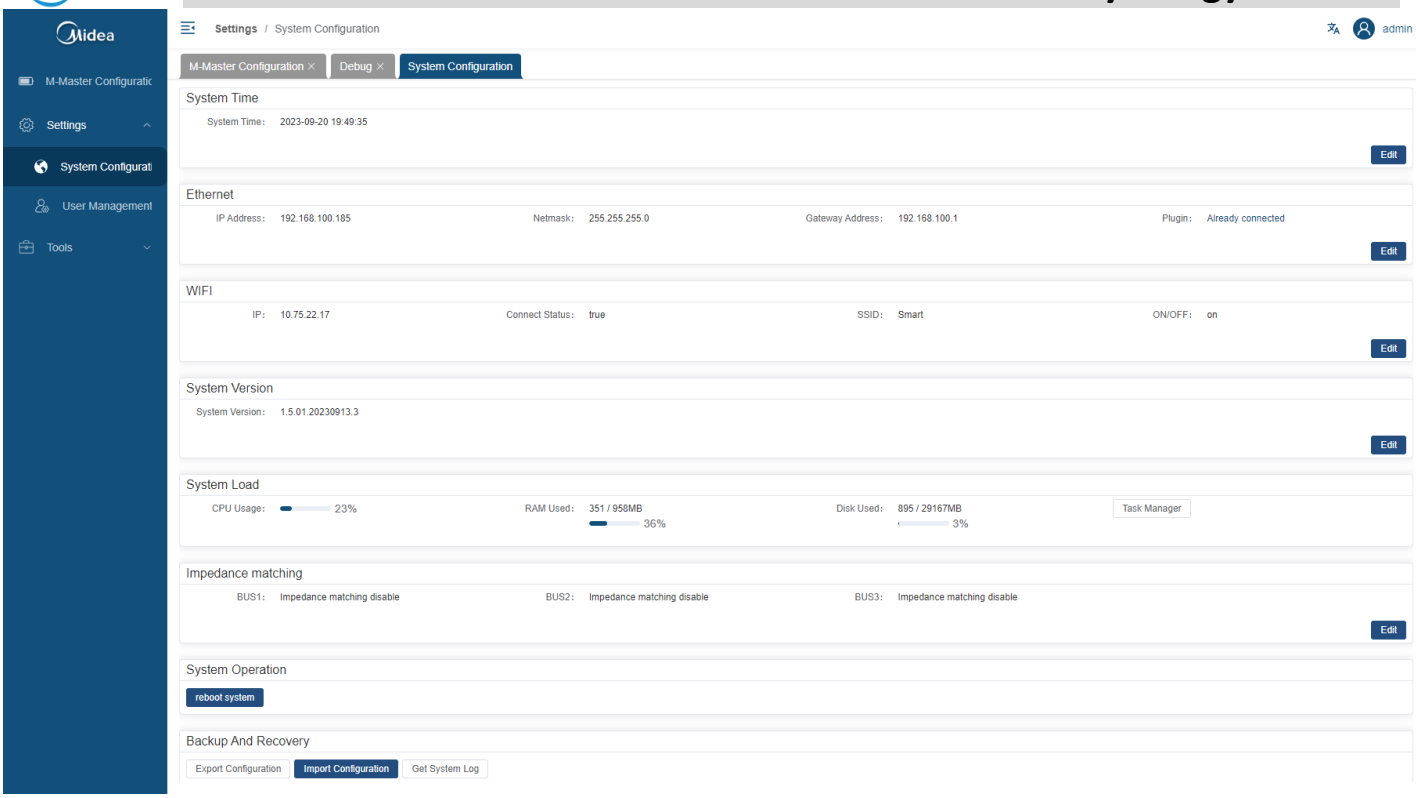
enter the password to connect.

Method 2: Ethernet Access

In case of Ethernet access, click Edit on the "Ethernet" page for configuration.

Note: The controller does not support DHCP mode. A fixed IP address is required for Ethernet access

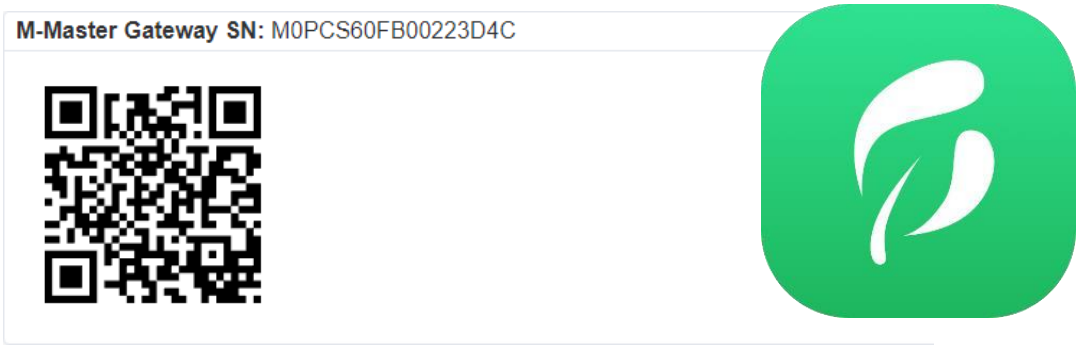




8.2.6 **Step 7 Bind Controllers**

Bind the gateway with the iEasyEnergy APP by scanning the QR code through the "M-Master Configuration" of the APP.

Please refer to iEasyEnergy instructions for how to use the APP.

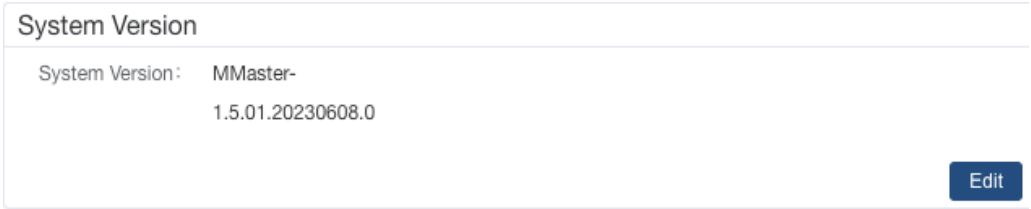


M-Master Gateway code

iEasyEnergy APP

8.3 System Version

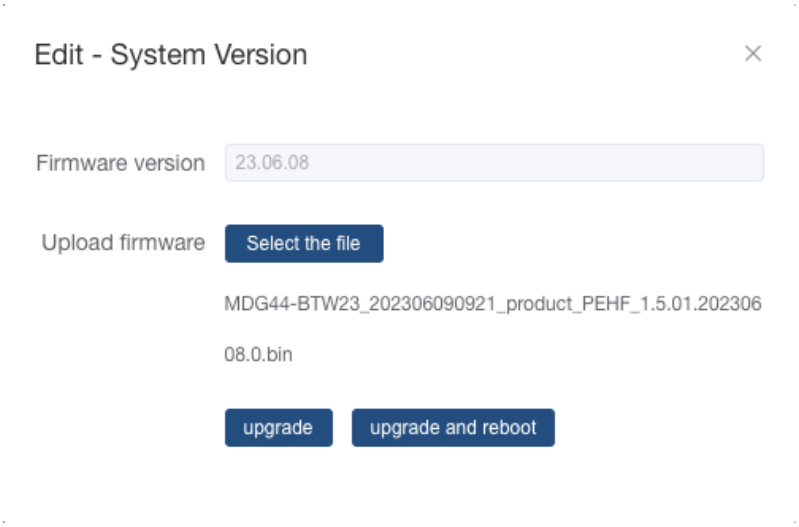
The version of the current system can be viewed on the "System Version" page. Click "Edit" to upgrade the system.



In the pop-up dialog box

- Click "Select the file" to select the upgrade file. A prompt pops up when the upgrade file is correct.
- Click "upgrade", the system will be automatically upgraded after the next reboot
- Click "upgrade and reboot" to upgrade and reboot the system immediately

Note: Do not power off the controller during the upgrade.



Note: The latest system version is 1.5.01.20230921.0, please kindly note that the system will be upgraded because of optimization, and keep you posted on further notice.

9 iEasyEnergy APP Commissioning

9.1 Preparation

Before you use the iEasyEnergy App, make sure that the complete suite of the Midea iEasyEnergy Solution with M-Master is installed in your home. Make sure that devices such as heat pumps, batteries, PV, and hybrid inverters have been connected to M-Master and that the devices have been configured and powered on. For more information about the settings of M-Master and its connection methods, see the user manual of M-Master.

9.2 Download

If you are using the iEasyEnergy App for the first time,search for iEasyEnergy in the App store on your phone and download the App. This App is available on both iOS and Android devices.

Minimum OS version to support:

For Android devices, later than Android 4.4

For iOS devices, later than iOS 9

9.3 Privacy Policy, Software License and User Service Agreement

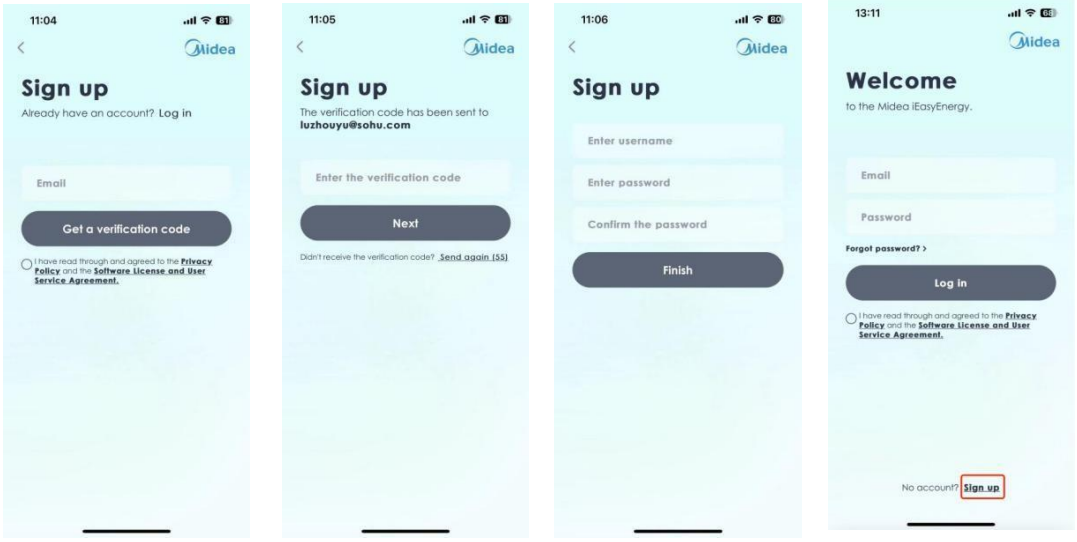
Before you use the iEasyEnergy App, you must read and select I have read through and agree to the Privacy Policy and the Software License and User Service Agreement.

For details about the Privacy Policy and the Software License and User Service Agreement, tap the name of the corresponding file on the login page.

9.4 Account and Login

If you are using iEasyEnergy for the first time, tap Sign up in the lower part of the login page to create an account. To create an account, do as follows:

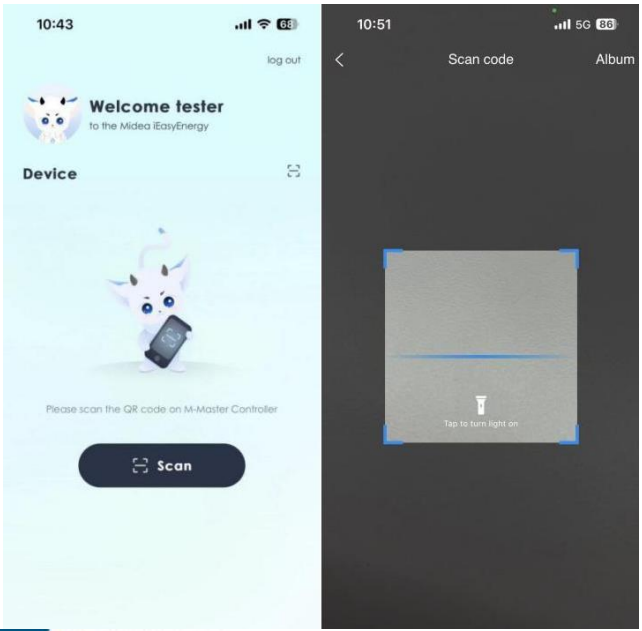
- Enter an email address as your account, read and select I have read through and agree to the Privacy Policy and the Software License and User Service Agreement, and then tap Get a verification code.
- Go to your email inbox to check the verification code, enter the verification code, and tap Next.
- Enter a username, password and confirm password, and tap Finish to complete the sign-up



9.5 Device Connection

After you log in to and access the App, you can connect devices with the help of customer service personnel or on your own.

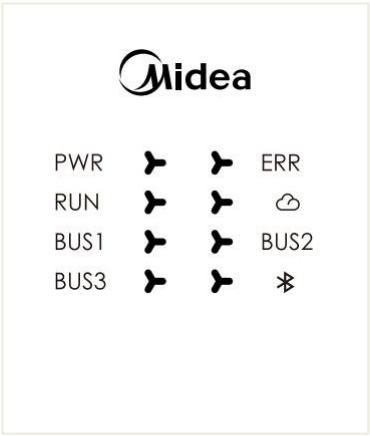
1) Scan the QR code of M-Master in the prompt that Appears to connect devices to M-Master. The QR code is displayed on the configuration page of M-Master. For details about the QR code, see the user manual of M-Master.
2) Verify the SN codes of the devices and tap Confirm pairing to connect the devices to M-Master. If the displayed SN codes are inconsistent with those displayed on M-Master, tap Cancel and contact the customer service to verify the SN codes.
3) If the QR code of M-Master has been stored in your phone, you can call the QR code picture from Albums to connect the device to M-Master.



4) After the devices are connected to M-Master, you are prompted to set the electricity price.
This setting helps you customize a running mechanism for your system, improves efficiency of energy use, and reduces costs. This setting can also be configured later on the personal center page.

5) After the devices are connected to M-Master, verify that data is successfully uploaded to the cloud.

1. If data fails to upload, check the state of the RUN indicator on M-Master.
   i. If the RUN indicator is flashing, check whether the indicator is flashing.
      a) If yes, the network connection is normal and data will be uploaded later.
      b) If no, check whether M-Master is connected to the Internet. For more information about how to connect to M-Master, see the user manual of M-Master.
   ii. If the RUN indicator is not flashing, contact technical support engineers for help



2. If data is successfully uploaded, verify data accuracy.

- Tap the second icon in the lower part of the page to go to the device page and find the heat pump.
- Check the running status of the heat pump, and verify that the running status of the heat pump on the wired controller is consistent with that on the page.
- Tap the entry of the heat pump to set heat pump parameters.

For example, you can select the heating mode and set the temperature to 55°C for Zone 1 and check whether the mode and temperature on the wired controller are consistent with those displayed on the App. If the data is consistent, the verification process is complete.

Note: If the data is inconsistent, verify the installation and connection of the devices.

6) After the verification is complete, you can use the iEasyEnergy App to manage your home devices.

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Midea Group

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