



AEH 20000

User guide



Document name	SIR-AEH20000-EN-NT-REV3
Publication date	2021-10-06

1. About this manual

This chapter describes the contents of this manual, target reader, and safety symbols, can help users to have a better understanding of the manual.

1. About this manual	2
1.1 Target readers	3
1.2 How to use this Manual	3
1.3 Symbols explanation	3
2. Safety instructions	5
2.1 Installation	5
2.2 Operator	5
2.3 Inspection and storage	5
2.4 Transportation	6
2.5 Repair and maintenance	6
2.6 Inverter EMC and noise level	6
2.7 Important notes	7
3. Product description	8
3.1 Energy storage system	8
3.2 Circuit diagram of the inverter	8
3.3 The layout of the main components	9
3.4 Operation mode	9
3.5 Battery setting	10
3.6 Protection	10
3.7 Storage	10
3.8 Dimensions	11
4. Product description	12
4.1 Installation condition requirements	12
4.2 Tools and spare parts required for installation is as follows:	13
4.3 Transportation of packaged whole machine	14
4.4 Electrical installation	14
4.4.1 Input and output requirements	14
4.4.2 DC batterie side wiring	15
4.4.3 AC side wiring	15
4.4.4 Earthing	16
4.4.5 DC PV modules side wiring	16
4.5 Communication	16
5. GUI (Graphic User Interface) instruction	17
5.1 LCD display screen introduction	17
5.2 History	18
5.3 Alarms	20
6. Routine maintenance	23
7. Specification	24
Contacts	25

1.1 Target readers

1. Only professional electricians or professionally qualified personnel can transport or install this product.
2. The operator should be fully familiar with the structure and working principle of the entire Energy Storage system;
3. The operator should be fully familiar with this manual;
4. The operator should be fully familiar with the local standards of the project.





1.2 How to use this Manual

Read this manual before installation of the AEH cabinet. Store this manual where accessible at all times.

The contents of this manual will be periodically updated or revised if necessary. However, discrepancies cannot be excluded.

1.3 Symbols explanation

In order to ensure the personal and property safety of the user during installation, or optimally efficient use of this product, symbols are used to highlight the information. The following symbols may be used in this manual, please read carefully, in order to make better use of this manual.

 <p>CAUTION</p>	<p>CAUTION Indicates there is potential risk, if not avoided, could result in equipment malfunction and property damage.</p>
 <p>DANGER</p>	<p>Caution, risk of danger Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.</p>
 <p>WARNING</p>	<p>Caution, risk of electric shock When battery bank or PV modules connecting point are exposed, there will be DC voltage in the equipment DC side; and when the output breaker is on, there is a potential risk of electric shock.</p>
 <p>WARNING</p>	<p>Caution, risk of fire hazard Suitable for mounting on concrete or other non-combustible surfaces only.</p>



PE TERMINAL

Caution, protective conductor terminal

The AEH has to be firmly grounded to ensure the safety of personnel.



WARNING

Caution, risk of electric shock, energy storage timed discharge.

Electrical shock danger exists in the capacitor; the cover shall be: moved at least 5 minutes later after all powers are disconnected.

2. Safety instructions

Inverter installation and service personnel must be trained and familiar with the general safety requirement when working on electrical equipment. Installation and service personnel should also be familiar with the local laws and regulations and safety requirements.

- Read this manual carefully before operation. The equipment will not be under warranty if failing to operate according to this manual.
- Operation on the AEH must be for qualified electrical technicians only.
- When AEH is operating, don't touch any electrical parts except for the touch screen.
- All electrical operations must comply with local electrical operation standards.
- Warranty service for the AEH does not contain module maintenance.
- Permission from the local utility company is required before installing the Energy Storage system and only professional personnel are qualified for the operation.

2.1 Installation

Proper installation requires following all the instructions in the user manual involving transportation, mounting, wiring and commissioning. SIREA does not cover warranty for the AEH damage due to failing to use it properly.

The protection level of the AEH is IP54, which is designed for indoor installation. Please refer to chapter 4 for installation instruction.

The installation location must be dry, including no expected condensation. The AEH is only for use in a closed electrical operating area.



WARNING

Caution, risk of fire hazard

Suitable for mounting on concrete or other non-combustible surfaces only.

2.2 Operator

Inverter installation and service personnel must be trained and familiar with the general safety requirement when working on electrical equipment. Installation and service personnel should also be familiar with the local laws and regulations and safety requirements.

2.3 Inspection and storage

The AEH should be carefully checked before signing the document from the transportation company. Check the received items against the delivery note, and if there is any defect or damage, immediately notify the transportation company. If necessary, you can seek help from SIREA Customer Service department.




CAUTION

CAUTION

AEH can only be stored when it is stopped and all the : doors are closed in a dry room to protect the internal circuits against dust and moisture.

2.4 Transportation

Transportation should follow the transportation methods described in the user manual. The AEH's weight and center of gravity should be taken into account during transportation. The center of gravity is marked on the box.

 DANGER	<p>Caution, risk of danger During transportation, lifting equipment and personnel must be qualified. The AEH should be placed vertically and the inclination cannot be more than 10 degrees. It is not allowed to place the AEH upside down or transport in a horizontal position. Incorrect lifting and transportation can lead to serious injury, property loss and damage to the AEH.</p>
--	---

2.5 Repair and maintenance

Repair and maintenance can only be carried out after disconnecting the DC and AC for at least 5 minutes.

Only professional technical personnel are qualified for the operation.

Disconnecting switches

Disconnect the DC switch and AC switch, and make sure the AEH will not be connected accidentally. Ensure the AEH is totally disconnected with no voltage by testing with a multimeter. Although the DC and AC switch has been disconnected, there is still voltage in some components, for example capacitors. Hence, the repair or maintenance operation can only proceed at least 5 minutes after the disconnection.

Maintenance and modification

Only personnel with SIREA authorization are qualified for the maintenance and modification. And to ensure personal safety, use original accessories provided by the manufacturer only. Otherwise, electrical safety and EMC might not comply with the required standard.

Function and safety parameters

Don't change the parameters of the AEH without authorization from the local utility and SIREA. Otherwise, it might lead to injury or equipment damage and the warranty of the AEH will be voided.

 WARNING	<p>Caution, risk of electric shock, energy storage timed discharge. Electrical shock danger exists in the capacitor; the cover shall be moved at least 5 minutes later after all powers are disconnected.</p>
---	--

2.6 Inverter EMC and noise level

Electromagnetic compatibility (EMC) is the requirement for electrical equipment that it can operate normally in the electromagnetic environment and does not cause unacceptable environmental impact itself.

- Anti-interference property from internal components.
- Anti-interference property from outside.
- Electromagnetic emission impact on the environment

Inverter may generate some noise and electromagnetic radiation during operation. According to EMC emission and noise level, AEH should be used in industrial environments. Hence, all personnel should not stay long near the AEH.

2.7 Important notes

Item 1: Static electricity can cause damage to the AEH

Electrostatic discharge may cause unrecoverable damage to AEH internal components
When operating the AEH, the operator must comply with anti-static protection norms!

Item 2: Restriction

The AEH cannot be directly used to connect the life support equipment and medical equipment.

Item 3: Precautions

Make sure installation tools or other unnecessary items are not left inside the AEH before starting up.

Item 4: Maintenance notice

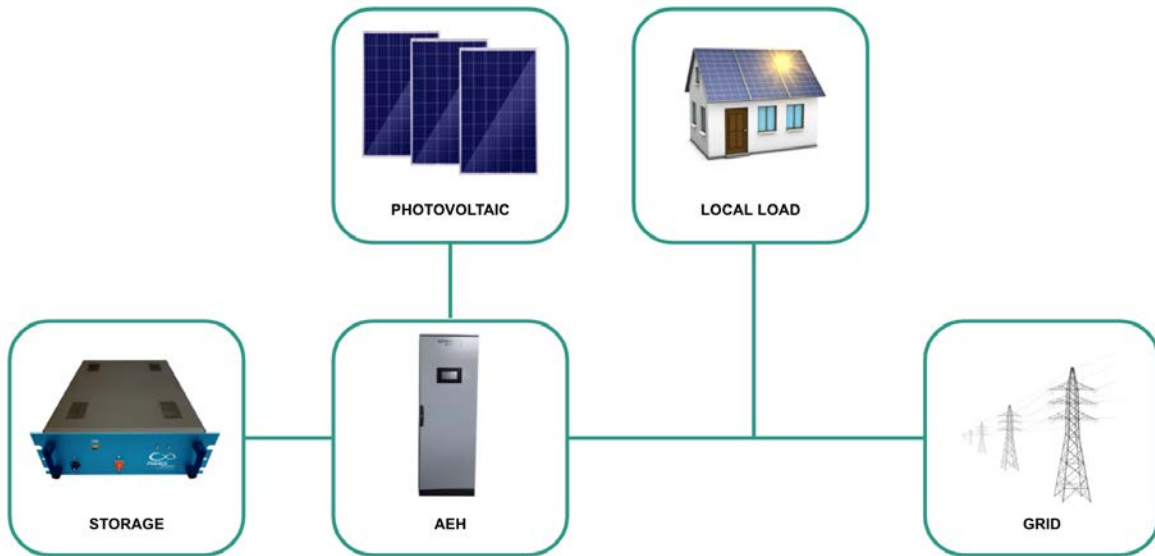
Maintenance can only be carried out after the AEH is totally discharged.

3. Product description

3.1 Energy storage system

AEH cabinet are designed for energy storage and photovoltaic system, it converts DC current generated by PV modules into DC for battery bank and AC current and feed it into the load/grid. DC for battery can also feed into the load/grid

Structure of a typical energy storage system is shown as below :



3.2 Circuit diagram of the inverter

AEH inverter converts DC current generated by PV modules into DC current on bus, then into DC current to charge battery or AC current, it can also convert DC current from battery to AC current. Then the AC current is filtered into sine wave electricity and fed into the grid through a medium-voltage isolating transformer. The circuit diagram is as below:

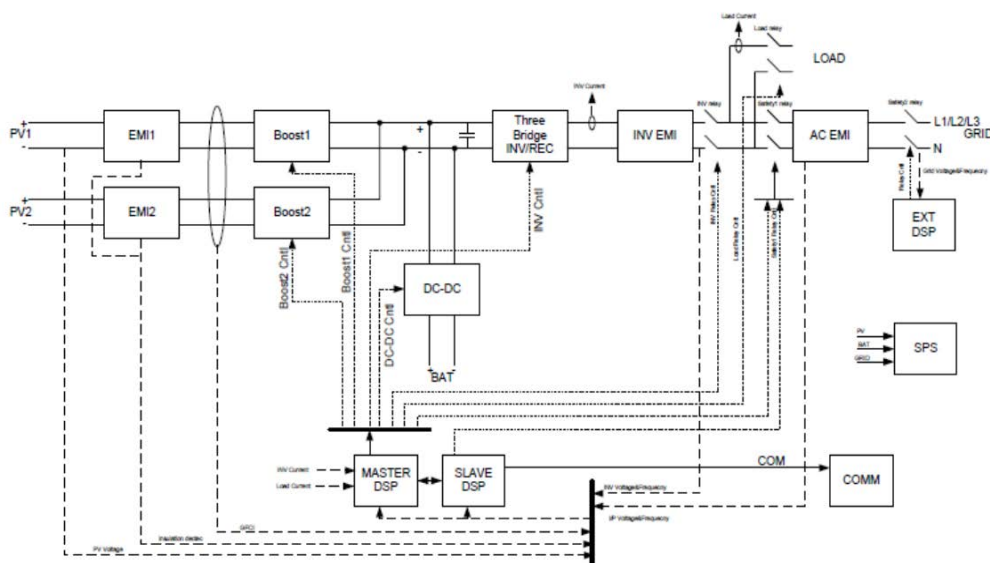
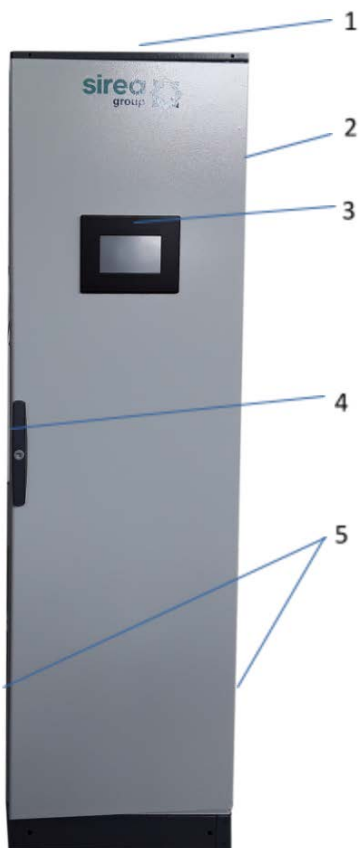


Figure 1 – Block diagram

3.3 The layout of the main components



No.	Name	Description
1	Fan	Fan for heat extraction
2	Cabinet	IP54 IK10 cabinet
3	Touch screen	Operation information display and control command
4	Lock	Lock to open door with double bar key
5	Ventilation grid	Grid for fan aspiration

3.4 Operation mode

There are several operation modes of the AEH.

On-grid mode

1. AEH connected to PV modules on DC side and grid on the AC side;
2. AEH connected to AC transducer placed on AC circuit where auto-consumption is needed;
3. Batteries started.
4. Every switches and breakers on :
 - a. Transducer measure energy flux and take energy from PV and battery if available.
 - b. If PV greater than consumption, PV supply consumption and charge batteries
 - c. If PV is lower than consumption, PV and batteries supply consumption, if power consumption is higher than PV and batteries capacities, grid supply also.
 - d. When the battery level is low, they go to standby mode, PV and grid supply consumption..

Off-grid mode

1. AEH connected to PV modules on DC side and grid on the AC side;
2. AEH connected to AC load and AC supply (grid or genset)
3. Batteries started.
4. Every switches and breakers on
 - a. If PV greater than consumption, PV supply consumption and charge batteries
 - b. If PV lower than consumption, PV and batteries supply consumption, power consumption can't be greater than nominal power of cabinet
 - c. When the battery level is low, the cabinet is connected to the grid by contactor or start genset to supply loads and charge batteries.



CAUTION

CAUTION

When the ambient temperature is too high, it is normal that the AEH reduces the output power. However, if this frequently happens, check the cooling surface of the AEH or place the AEH in a better ventilation condition place. If the AEH fan is dirty, please clean the fan, if there is a problem with the AEH internal electrical, please seek help from professional services.

3.5 Battery setting

Battery is an important part of the energy storage system, strict protection is needed in the whole operation process. Protection threshold needs to be set on AEH to ensure safe operation of battery, parameters including: battery quantity and unit quantity, capacity, charge current, discharge current, over voltage protection, under-voltage protection and so on. Battery parameter setting need to be done by professional personnel. Improper setting of the battery will affect the normal operation.

3.6 Protection

Anti-islanding

When the local power grid shut down due to malfunction or maintenance of equipment, the AEH will be physically cut off the connection to the grid, in order to protect operating personnel working in the electricity grid, and the cabinet is in compliance with the relevant standards.

Lightning protection

Cabinet lightning protection module has the DC / AC side lightning over voltage protection to avoid the AEH from being damaged. More protection features, please refer to section 6.3.

3.7 Storage

If there is a long time before installation or operation, the AEH cabinet should be stored appropriately.

- The packaging should be restored to its original state;
- Retain the desiccant in the packaging.
- The AEH can only be stored when it is stopped and all the doors are closed
- in a dry room to protect the internal circuits against dust and moisture.
- Operating temperature range: -10~55 °C
- Operating relative humidity range: 0%~90%
- Max. altitude: 2000 m



CAUTION

CAUTION

- Strictly prohibited storage without packing !
- Avoid storage in direct sunlight!
- Keep upright and no stacking on top of the crate.

3.8 Dimensions



4. Product description

4.1 Installation condition requirements

To ensure normal operation of the machine, the installation environment is required as follows:

- The ingress protection of AEH is IP54. Moreover, as this product is an electronic equipment, it shall not be placed in humid environment;
- Install indoors and avoid sunlight and rain;
- Ventilation of the room shall be good;
- The installation environment shall be clean;
- As some noise will be produced in operation, this equipment shall be installed far from residential quarters;
- The installation ground shall be even enough, and firm enough to support the weight of cabinet;
- The installation position shall be convenient for maintenance;
- Ambient temperature range: 0°C
- Appropriate space shall be reserved for the machine to ensure ventilation and cooling.

We suggest AEH is installed in the distribution room. The floor, wall clearance, Ventilation equipment and precaution should be designed by professional personnel and satisfy the following requirements.

Foundation requirement

AEH is required to install on even ground with fire-retardant material as the surface or channel steel support structure, and sag or tilt ground is prohibited. The foundation shall be solid, safe and reliable. The foundation shall be capable of bearing the load of the AEH. Its load bearing ability shall be concerned throughout the installation place selection.

Clearance space

During installation of the AEH, appropriate space shall be left to the wall or other equipment, in order to satisfy the requirements on narrowest maintenance channel, emergency access and ventilation.

In front of the installation place of AEH, a space of 1m or more shall be ensured, the back 0.1m or more, the side 0.1m or more, the top 0.6m or more to ensure easy installation, cooling and maintenance.

Cable trench

The cable connection of AEH adopts bottom inlet and bottom outlet. Cable trenches are recommended.

The cable trenches are often designed and constructed by the construction side based on relevant standards, with the equipment weight and dimensions required to be considered. Good electrical connection is needed between different cable trenches and GND terminals.

Wiring specification

Cables in the AEH can be classified into either power cables or data cables.

In cabling, the power cable shall be kept far away from, and the cable shall be kept in right angle at cross. The cable shall be as short as possible, and an appropriate distance shall be kept to the power cable.

The power cable and data access shall be placed in different cable trenches respectively to avoid lengthy routing between the power cable and other cables, so as to reduce the electromagnetic interruption caused by sudden change of the output voltage. The distance among the power cable and data access shall be more than 0.1m. When the cables are crossed, the cross angle shall be 90 degrees, while the distance can be reduced appropriately.

Ventilation requirement

In operation, AEH will produce a lot of heat. When ambient temperature is too high, the electrical property of the equipment may be affected, the equipment may even be damaged. Therefore, the heat release shall be fully considered in designing the contrai room to ensure operation of the equipment in high efficiency.

Ventilation environment

To satisfy the ventilation requirement of AEH, its installation environment shall meet the following conditions:

- Inverter shall be prevented from being installed in the place of poor ventilation condition and insufficient air flow;
- The air inlet shall have enough air supplementation.

Ventilation equipment

To ensure safe and reliable operation of the equipment, the ambient temperature must be within the permission range 0°C~55°, therefore, appropriate ventilation devices must be equipped with to release the heat generated by the equipment.

There must be ventilation equipment inside the distribution room to ensure release of the waste heat generated by the AEH from the equipment, and allow for maximum ambient environment temperature. This can be realized from installation of exhaust devices; Another fan can be added at the air duct outlet to exhaust the air out and ensure balanced pressure; The direction of the air outlet shall be selected according to the local actual wind direction; Pay attention to the dust-proof measures and waterproof design at the air inlet and outlet; If more air ducts are required, its dimensions shall be designed by the professionals according to the air output a mount.

Other protections

According to EMC requirement and noise level, the AEH shall be installed in industrial environment.

4.2 Tools and spare parts required for installation is as follows:

Hoisting crane, forklift or fork lift truck (with the capacity for bearing the weight of the AEH)

- Torque wrench
- Screwdriver
- Wire stripper
- Terminal crimping machine
- Megger and multimeter

4.3 Transportation of packaged whole machine


This cabinet is transported as an integrated unit, and the user can hoist it from the bottom with a forklift, or move it with a hoisting crane or crane.

Note 1: The cabinet is integrated and cannot be disassembled either in transportation or installation. Any fault attributed to modification unauthorized by SIREA is beyond the quality assurance.

Note 2: In movement, tilt, violent shake or sudden force upon the AEH shall be prevented, such as sudden down of lifting.

Note 3: Please read carefully the labeled parameters to select an appropriate transportation means and storage place.

We suggest the user make use of a forklift to move the cabinet if possible.




CAUTION

CAUTION

Before the AEH is moved to the designated place, we suggest to lay the DC input cable and AC main power supply cable. As these cables are relatively thick, they are hard to be cabled after the AEH is installed.

4.4 Electrical installation

4.4.1 Input and output requirements



DANGER

Caution, risk of danger

There is a danger of electrical shock of high voltage in AEH's operation; only electricians of professional skills can operate. All connections with this equipment shall be done under non-voltage state : The AEH may be damaged if the input or output terminal is incorrectly plugged. Failure of acting upon this information may cause serious personal injury or significant property loss even to death.

Cable (Cu)	Cable Diameter Requirements (mm ²)	Aperture
Model	AEH20	
Grid Phase A	1 input cables with each at least 6 mm ²	ct > 8,20N*m
Grid Phase B	1 input cables with each at least 6 mm ²	ct > 8,20N*m
Grid Phase C	1 input cables with each at least 6 mm ²	ct > 8,20N*m
NWire	1 input cables with each at least 6 mm ²	ct > 8,35N*m
Earth Wire	More than 16 mm ² . Green and yellow is recommended	ct > 8,20N*m
Transducer Wire	0.75mm ² , shielded Twisted pair is recommended	/
Ethernet	Category 5 FTP/UTP or more is recommended	/

Battery

The positive and negative highest voltage of the battery shall not exceed 60V, otherwise, the equipment will be in over-voltage protection state, and cannot work normally.

Three-phase grid

Inverter will continuously inspect whether the grid satisfies the grid connected conditions. The following is the grid limit for satisfaction of local Grid connected Conditions (requirements in different countries may vary, the value can be set up and please refer to local grid connected regulations for details), and the grid is a three phase grid. Meanwhile, it shall be permitted by the local power supply department before installing Grid-connected inverted power.

Model	AEH20
Grid Voltage Limit	184 – 265 Vac per phase
Grid Frequency Limit	45Hz-5 5Hz/5 5Hz-65Hz

4.4.2 DC batterie side wiring

**DANGER****Caution, risk of danger**

The positive and negative of the battery shall not be connected in reverse. A multimeter shall be used to determine the polarity first, and then connect into the corresponding input ends of the AEH.

Specific procedures are as follows:

1. Cut off the distribution circuit breaker at the DC side, and ensure that no voltage on the wire at DC side.
2. Determine the positive and negative with a multimeter
3. Connect the positive of the battery to the "DC +"of DC input
4. Connect the negative of the battery to the" DC-" of DC input
5. Please be sure that all wirings are fastened.

4.4.3 AC side wiring

**DANGER****Caution, risk of danger**

When connecting the AC grid, cut off the circuit breaker at the AC side to ensure that the AC wire connecting to terminals has no electricity.

Connect AC grid:

1. Cut off the circuit breaker at AC side, to ensure that the AC wire connecting to terminais has no electricity. Confirm it with a multimeter.
2. Connect phase on grey terminal XP 2/3/4
3. Connect neutral on blue terminal XP1
4. Please confirm that the wiring is fastened

4.4.4 Earthing

Cabinet must be earthing well for safety; Please make sure of the connection between PE in power distribution cabinet and PE copper in the AEH good; and make sure the earthing cable more than 16mm² and the earthing resistance must satisfy the demand of IEC standard.

4.4.5 DC PV modules side wiring

Specific procedures are as follows:

- Cut off the PV module string at the array with MC4 connectors, and ensure that no voltage on the wire at DC side.
- Determine the positive and negative with a multimeter
- Connect the positive of the PV to the PV terminals (XPV2/4/6/8)
- Connect the negative of the PV to the PV terminals (XPV1/3/5/7)
- Please be sure that all wirings are fastened.

4.5 Communication

AEH can be connected to external transducer, in this case connect a cable to XC1/2 terminal and 13/14 terminals of SIREA multiphase transducer.

AEH can be connected to Internet, Ethernet cable can be connected to special connector

Power on steps

First power-on :

1. Step 1: Start batteries
2. Step 2: Close DC batteries circuit breakers
3. Step 3: Close AC circuit breaker
4. Step 4: Close DC PV circuit breaker
5. Step 5: Inverter will connect to grid after checkings and start power regulation according measurement of transducer

Power off steps

After the AEH is completely powered off, the general DC switch at battery side and the Grid switch at grid side still maintain voltage. If operations are needed, please be sure to cut off the outer power completely, CAUTION and wait for not less than 5 minutes.

1. Cut off AC SWITCH;
2. Cut off PV DC SWITCH;
3. Cut off Batteries DC SWITCH,
4. Cut off the switch of AC distribution cabinet.
5. In case of long time shutdown stop batteries

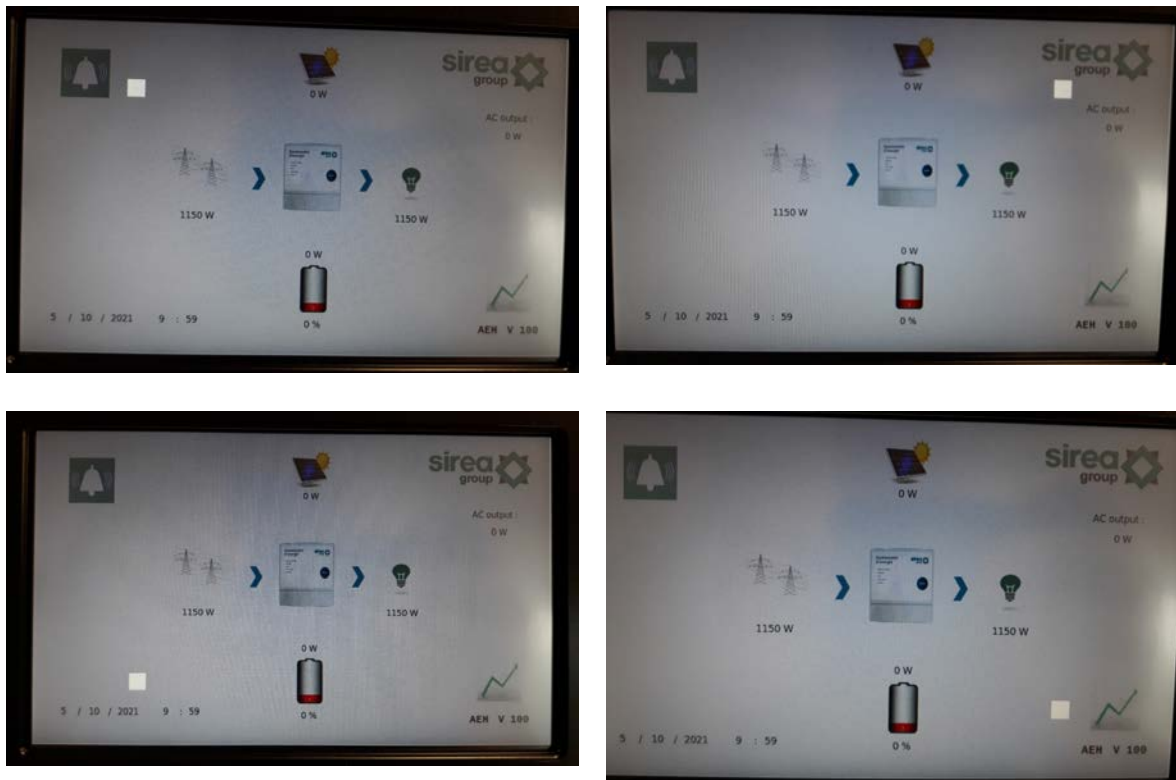
5. GUI (Graphic User Interface) instruction

5.1 LCD display screen introduction

User can view the information of the cabinet operation on the LCD touch screen.

After powering on the LCD will enter on the home page after about 15s. Then you can begin to read the information.

At the first power on of the screen, you will have to configure the touch screen by touching the 4 square buttons one by one as shown below :



Then you will be able to read the main information of the cabinet.

Below, a description of an example of information which can appear on the system.



On this situation, the photovoltaic power is mixed with grid power to charge battery and ensure load power.

The total amount of load power is 1898W and a backup load power include in the total load is 544W. If there is a grid blackout, the battery will continue to power only the backup load of 544W in off grid mode.

On the battery side, the state of charge (SOC) is 83% and the battery is charging at 954 W.

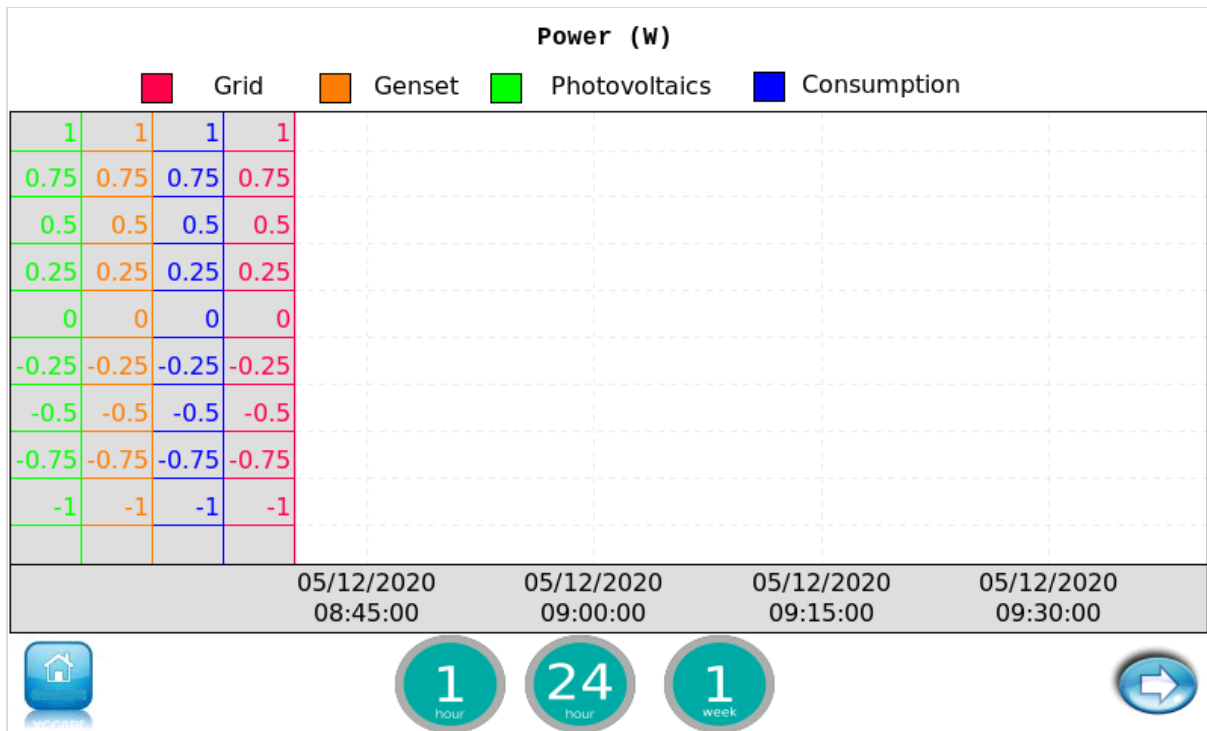
5.2 History



You can select the graphical page to see historical data by clicking on the following button on the main page

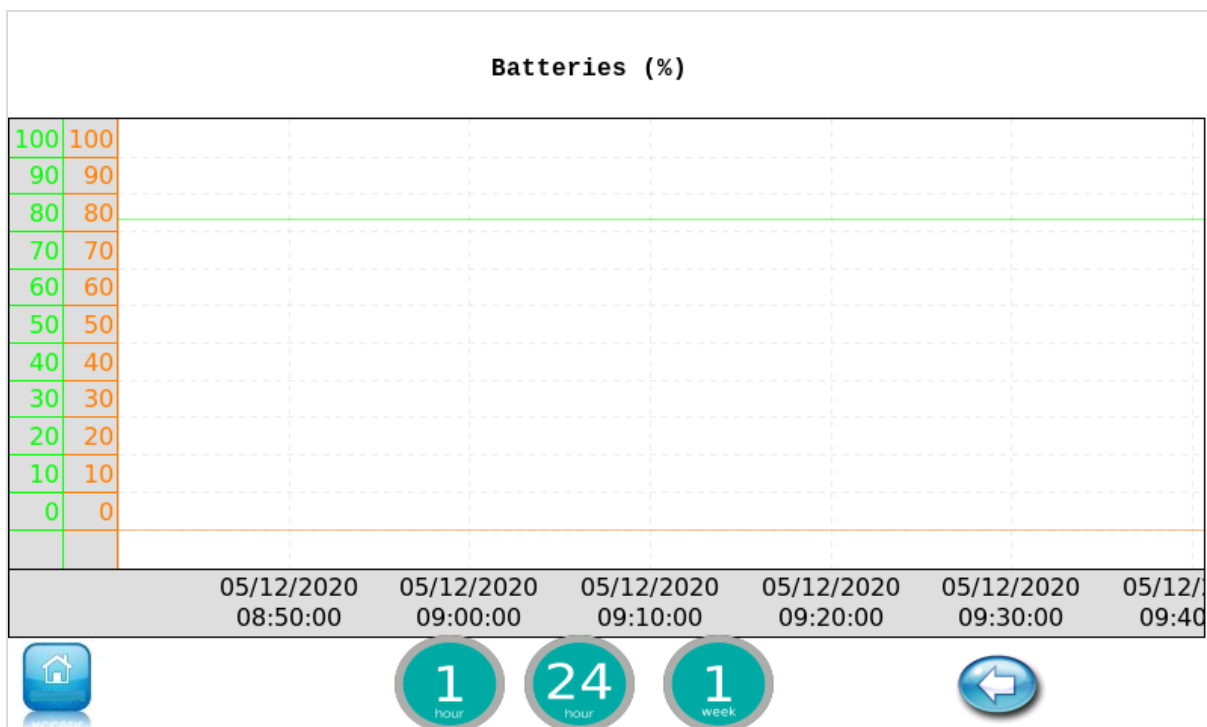
Note : You can always go back to the home page by clicking the home button on the bottom left corner.

On the graphical view, you will be able to see historical data of the cabinet (grid, genset if present, photovoltaic and load consumption).



You can select the time range view (1 hour, 24 hours or 1 week), the default range is 1 hour.

On the next page (button on the bottom right corner), you can see information related to the battery(ies). In green the state of charge SOC and orange the state of health SOH of the battery(ies).



5.3 Alarms



If an alarm is set, a buzzer is rising and a bell is shown on the top left corner of the home page. After clicking on it, you will be able to see the current alarms.

05/10/2021 - 09:26:10
Communication fault with inverter 2


05/10/2021 - 09:26:10
Communication fault with inverter 1


05/10/2021 - 09:26:04
Communication fault with grid transducteur


05/10/2021 - 09:26:04
Grid voltage missing


05/10/2021 - 09:24:35
SOH batteries low

05/10/2021 - 09:24:35
Surge arrester fault









Fault code inverter 1 : **13**

Fault code inverter 2 : **0**

Warning code inverter 1 : **0**

Warning code inverter 2 : **0**

1 / 1

Here is the list of the cabinet alarms which can appear on this alarm page :

Information

- Battery API low need replacement
- Clock update online fault
- Communication fault with grid transducteur
- Communication fault with AEH 1
- Communication fault with AEH 2
- Grid voltage missing
- Low battery voltage
- Onduleur 1 in fault (fault code)
- Onduleur 2 in fault (fault code)
- PV fault (24h without PV)
- SOH batteries low
- Surge arrester fault

Here is the list of the AEH's fault code which can appears on the bottom of the alarm page :

Fault code number	Fault code list
1	BUS exceed the upper limit
2	BUS drop to the lower limit
3	BUS soft start circuit timeout
4	AEH voltage soft start timeout
5	AEH current exceed the upper limit
6	Temperature over
7	AEH relay work abnormal
8	Current sample abnormal when AEH doesn't work
9	Solar input voltage exceed upper limit
10	SPS power voltage abnormal
11	Solar input current exceed upper limit
12	Leakage current exceed permit range
13	Solar insulation resistance too low
14	AEH DC current exceed permit range when feed power
15	The AC input voltage or frequency has been detected different between master CPU and slave CPU
16	Leakage current detect circuit abnormal when AEH doesn't work
17	Communication loss between master CPU and slave CPU
18	Communicate data discordant between master CPU and slave CPU
19	AC input ground wire loss
22	Battery voltage exceed upper limit
23	Overload
24	Battery disconnected
26	AC output short
27	Fan lock
32	Battery DC-DC current over

33	AC output voltage too low
34	AC output voltage too high
35	Control board wiring error
36	AC circuit voltage sample error
37	AC N wire current over
60	Negative power detected
61	Driver signal lost from relay board
62	Communication lost between main board and relay board
63	Versions are different between main board and relay board
71	Parallel version is incompatible
72	O/P current detection abnormal
80	CAN lost
81	HOST lost
82	SYN lost

6. Routine maintenance

Regular maintenance

In order to ensure the normal operation of the AEH, regular maintenance work is required. Recommended routine maintenance cycle and work, as shown in table below :

Maintenance item	Frequency
Clean or replace the dust screen .	Half a year
Check the dust, moisture or condensation inside the cabinet	Every month
Check the cable connections, and fix the screw if necessary.	Every month
Check the warning label, add or replace some if necessary.	Every month
Manual checks AC and DC circuit breakers.	Every month
Check if there is an abnormal sound when the AEH is operating.	Every week



DANGER

Caution, risk of danger

All maintenance operations must be carried out in the condition that the DC side and AC side of the AEH, PV module and AC distribution cabinet switch are all disconnected. Maintenance must be proceeded only after AC and DC are disconnected for at least 5 minutes, in order to avoid electric shock!

Waste disposal

The AEH will not cause environmental pollution, since all the components meet the requirements of environmental protection. According to environmental protection requirements, the user shall dispose of the AEH in accordance with the relevant laws and regulations.

7. Specification

Model	AEH20
Rating	20 kW
<i>DC input quantities</i>	
PV Input max voltage	800V
PV MPPT voltage	400-800V
PV Input current / MPPT	18,6A / 4
Battery nominal input	48V
Maximum charging / discharging current	400A
<i>AC output quantities</i>	
Voltage (nominal or range)	400 VAC
Current (maximum continuous)	29A
Frequency (nominal or range)	50Hz/60Hz
Power (maximum continuous)	20 kW
Ingress Protection	IP54
Environmental category	indoor
Suitability for wet locations	not
Overvoltage category	Type II for AC output Type II for DC input
Mains connection	Permanent connection
Transformer info	With isolating Transformer

Contacts

France

Sirea
1 rue Jean Perrin
81100 Castres
Phone: +33 5 63 72 93 92
Mail: contact@sirea.fr

Spain

iAR
Calle de Arcadio María Larraona, 1, 2º
31008 Pamplona, Navarra
Phone: +34 948 067 152
Mail: a.monreal@sireagroup.com

Cambodia

Kynex
Phnom Penh, KH
Phone: +855 69 81 49 61
Mail: go@kynex.biz

Burkina Faso

Sirea-Afrique
BP11 Kamboisin
Ouagadougou
Phone: +226 70 73 76 37
Mail: contact.sirea.afrique@gmail.com

© SIREA. All Rights Reserved.

No part of this document or any of its contents may be reproduced, copied, modified or adapted, without the prior written consent of the author, unless otherwise indicated for stand-alone materials.