

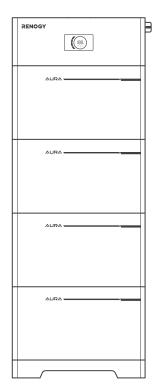
AURA

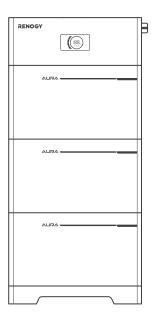
Find Your Energy Freedom™

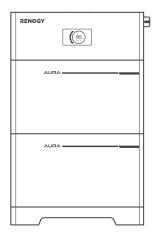
Lithium Iron Phosphate Battery System

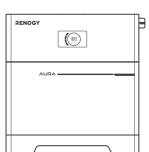
51.2V | 5 kWh/10 kWh/15 kWh/20 kWh

VERSION AO









USER MANUAL

Applicability

The user manual applies to the following products:

- AURA 51.2V 200A Lithium Iron Phosphate Battery Control Kit (RSA200BCK-4REB5A)
- AURA 51.2V 200A Lithium Iron Phosphate Battery Control Module (RSA200BCM-4REB5A)
- AURA Lithium Iron Phosphate Battery Base (RSA00BS-REB5A)
- AURA 51.2V 100Ah Lithium Iron Phosphate Battery Module (RES0505BT-51LFP)
- AURA 51.2V 5 kWh Lithium Iron Phosphate Battery System (RES0505BS-51LFP)
- AURA 51.2V 10 kWh Lithium Iron Phosphate Battery System (RES1009BS-51LFP)
- AURA 51.2V 15 kWh Lithium Iron Phosphate Battery System (RES1510BS-51LFP)
- AURA 51.2V 20 kWh Lithium Iron Phosphate Battery System (RES2010BS-51LFP)

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Date and Revision

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Symbols Used

General Safety Information

Arc Flash Protection

Qualified Personne

The user manual provides important installation, operation, and maintenance instructions for AURA Lithium Iron Phosphate Battery System (hereinafter referred to as AURA). Read the user manual carefully before installation and operation and save it for future reference. Failure to observe the instructions or precautions in the User Manual can result in electrical shock, serious injuries, or death, or can damage AURA, potentially rendering it inoperable. The installation and service of AURA require electrical knowledge and must be carried out by qualified personnel.

Symbols Used

The following symbols are used throughout the user manual to highlight important information:

▲ WARNING	Indicates a potentially dangerous condition which could result in injuries or death.
CAUTION	Indicates a critical procedure for safe and proper installation and operation.
i NOTE	Indicates an important step or tip for optimal performance.
∭ INFO	Indicates that more information is available in other documents relating to the subject.

The following symbols are used on AURA and its packaging to indicate important information:

Á	Risk of electric shock.	
Smin'	Before carrying AURA out for maintenance, wait at least five minutes after turning it off to avoid electric shock.	
S	Single-person lift might cause back injuries.	
	Team lift is required.	
	Do not touch the exposed electrolyte or powder if AURA is damaged.	
	Do not place AURA near fire or heat.	

Symbols Used

General Safety Information

Arc Flash Protection

Qualified Personne

	Read the user manual carefully before installation and operation.	
	Turn off the circuit breakers on both AURA and the inverter before wiring and maintenance.	
	Do not step on AURA.	
	Keep AURA out of the reach of young children and animals.	
	Susceptible to damage from an electrostatic discharge event.	
	Do not dispose of AURA as household waste.	
	Recyclable.	
	Grounding protection.	
<u>11</u>	This side up.	
T	Handle with care.	
T	Keep dry.	
7	Do not stack more than seven packages vertically.	

Symbols Used

General Safety Information

Arc Flash Protection

Qualified Personne

General Safety Information



WARNING

- Do not puncture, drop, crush, penetrate, shake, strike, or step on AURA.
- Do not open, dismantle, repair, tamper with, or modify the components of AURA.
- Do not touch the connector contacts while AURA is in operation.
- Turn off the circuit breakers on both AURA and the inverter before wiring and maintenance.
- Install AURA in accordance with the regulations at the installation site.
- Do not expose AURA to direct flame.
- Do not expose AURA to flammable or harsh chemicals or vapors.
- Keep AURA away from heating equipment.
- Do not touch the exposed electrolyte or powder if AURA is damaged.
- Keep AURA out of the reach of children.
- Wear proper protective equipment and use insulated tools during installation and operation.
 Do not wear metal jewelry, such as necklaces and watches.
- Do not dispose of AURA as household waste. Comply with local, state, and federal laws and regulations and use recycling channels as required.



CAUTION

- Ensure to be constantly grounded when working on or around AURA to prevent electrostatic discharge.
- Do not expose AURA to strong electrostatic fields, strong magnetic fields, or radiation.
- Use suitable handling equipment for safe transportation of AURA.
- Ensure that there is no water source including downspouts, sprinkles, or faucets above or near AURA.
- Ensure that there is no snow accumulate around AURA.
- Do not expose AURA to direct sunlight.
- Do not lean on, stack anything on top of, or hang anything from the battery or from cables leading to AURA.
- Do not place AURA upside down on the floor.
- Only use AURA with compatible inverters. Refer to the list of compatible inverters at <u>renogyx</u>.
 com.
- Do not connect AC conductors or photovoltaic conductors directly to AURA.

Symbols Used General Safety Information Arc Flash Protection

Arc Flash Protection

To protect personnel from the possibility of getting injured by an arc flash hazard, arc flash calculation of AURA is estimated with the Direct-Current Incident Energy Calculations by referring to Annex D of NFPA 70E.

System Voltage	51.2V
Bolted Fault Current	3000A
Arcing Current	1500A
Arcing Time	0.001s
Working Distance	450 cm
DC Arc Flash Incident Energy at the Maximum Power Point	0.000379 cal / cm²
DC Arc Flash Boundary	1.25 cm

Personnel must wear personal protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed in accordance with NFPA 70E Article 130.



WARNING

- Maintain protective equipment in a safe and reliable condition.
- Store protective equipment properly to avoid damage caused by moisture, dust, or other deteriorating agents.
- Inspect the protective equipment before use, and make sure that there is no contamination of grease, oil, flammable liquids or combustible materials. Do not use arc-rated clothing that is contaminated or damaged. It is recommended to perform an air test on insulating gloves and sleeves every time and perform an electrical test on the electrical protection equipment regularly.
- Wear proper arc-rated clothing to prevent injuries from exposure to the electric arc flash.
- Wear nonconductive protective equipment for the head, eyes, face, neck, and chin to prevent injuries from electric shock, electric arcs, flashes, or burns, or from flying objects caused by the electrical explosion. When using hairnets and / or beard nets, make sure that they are arc rated.
- Wear hearing protection within the arc flash boundary.
- Wear rubber insulating sleeves and gloves with leather protectors to prevent arm and hand injuries from electric shock or burns due to contact with energized electrical conductors or circuit parts. The rated voltage of rubber insulating gloves should be applied to the voltage exposed by the gloves.
- Wear insulating shoes to prevent stepping on or touching with potential. Do not use insulated soles as primary electrical protection.

Symbols Used

General Safety Information

Arc Flash Protection

Qualified Personnel

Qualified Personnel

The installation and service of AURA must be carried out by qualified personnel. Qualified personnel refer to trained and licensed electricians or installers with all the following skills and expertise:

- Knowledge of the functional principles and operation of on-grid and off-grid energy storage system.
- Knowledge of the risks and dangers associated with the installation and service of electrical devices and acceptable mitigation methods.
- Knowledge of the installation and service of electrical devices.
- Knowledge of and adherence to the user manual and all safety precautions and best practices.
- Knowledge of local installation regulations.
- Electrical license for the installation and service of energy storage system required by the county or state.

Introduction

General Information

Key Features

General Information

AURA Lithium Iron Phosphate Battery System is your off-grid smart living center that revolutionizes comfort when you live in your off-grid home or RV. The modular design and stacked installation of AURA make the installation much easier.

An Aura system consists of a Control Module with one or more Battery Module. The Battery Module is a lithium battery energy storage system composed of lithium iron phosphate (LFP) with a rated power of 5 kWh. Use the appropriate quantity of battery modules according to your off-grid needs. The Control Module is integrated with an LCD screen, a circuit breaker, Wi-Fi antenna and a Bluetooth module to provide a better operation and use experience.

Key Features

Modular Design

The adjustable system capacity can meet different power needs.

Easy Installation

Wireless Battery Modules are connected in parallel by just stacking them together.

Outdoor Installation

AURA has a built-in heater. The IP55 design ensures protection from foreign objects, dust that could affect the normal operation of AURA, and low-pressure water jets lasting at least three minutes without being immersed, making it an ideal choice for outdoor installations.

Intelligent Monitoring

With the built-in Wi-Fi and Bluetooth module, AURA can be connected to the DC Home app for remote device monitoring. You can monitor the operation status and modify parameters through the DC Home app.

Long Service Life

The Battery Modules consist of lithium iron phosphate batteries, which can guarantee at least 6000 cycles. In addition, the built-in overcharge and discharge protection mechanisms help ensure safe operations on AURA and effectively extend the service life of the Battery Modules.

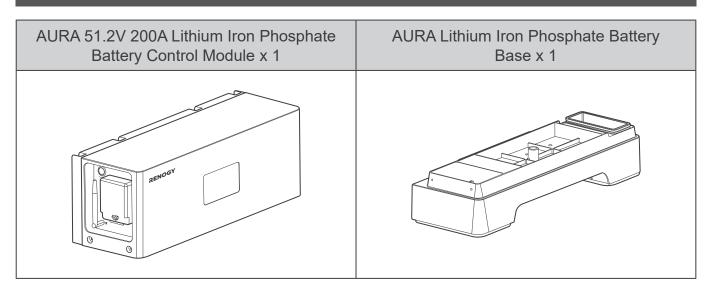
Safety and Reliability

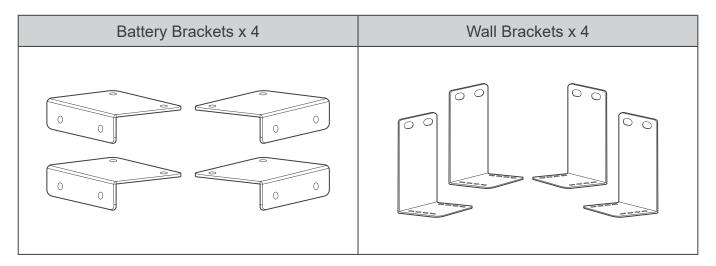
The built-in circuit breaker prevents potential hazards caused by overcurrent or short circuits.

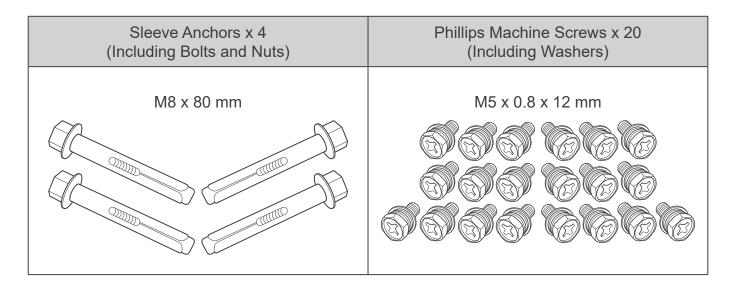
Control Kit

Battery Module

Control Kit

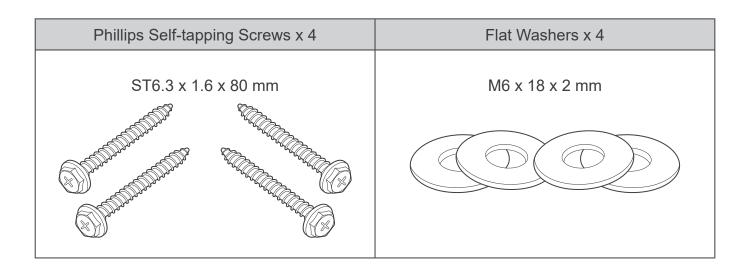






Control Kit

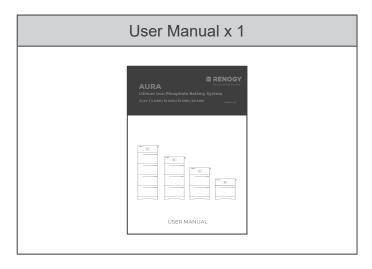
Phillips Self-tapping Screws x 4	Phillips Self-tapping Screws x 4
ST6.3 x 1.8 x 40 mm	ST6.3 x 1.8 x 60 mm



Flange Nuts x 4	Screw Cap Covers x 4
M8 O O O O O O O O O O O O O	

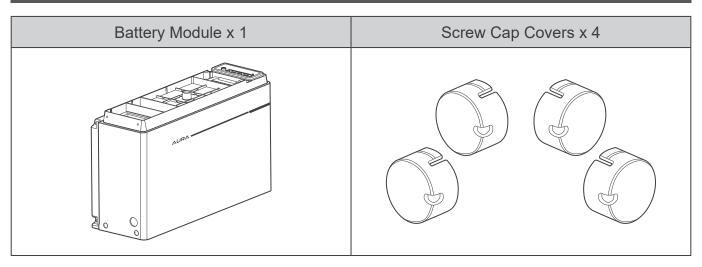
Control Kit

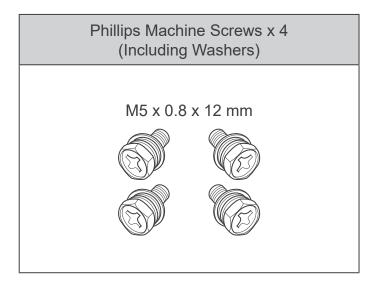
Ethernet Cable with RJ45 Plug Waterproof Housing x 1	Grounding Cable Ring Terminal x 1
	#10 Stud



Control Ki

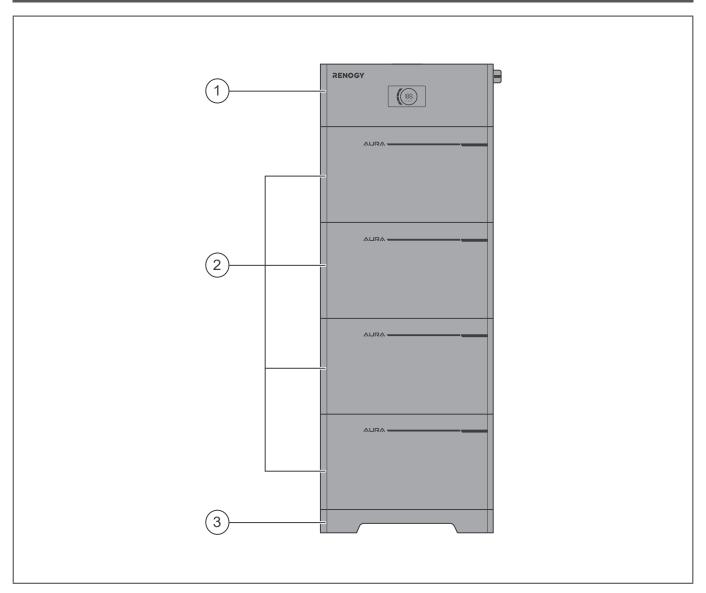
Battery Module





Battery Module

Battery System

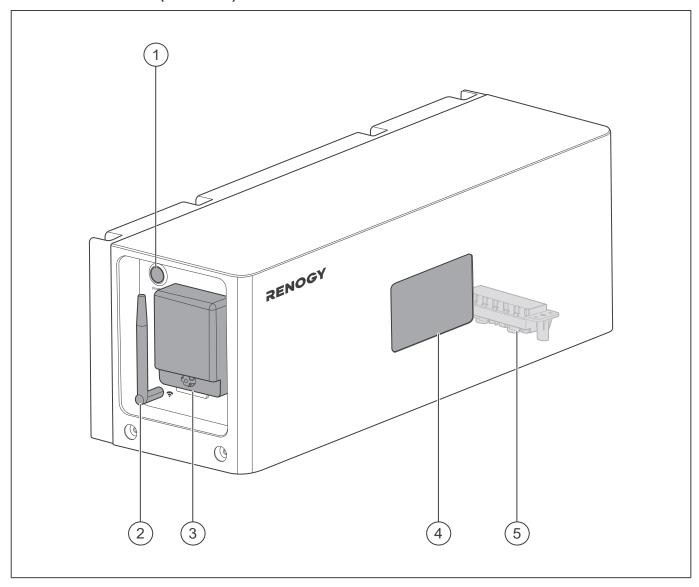


No.	Part	No.	Part
1	Control Module	3	Battery Base
2	Battery Modules		

Battery System Control Module

Control Module

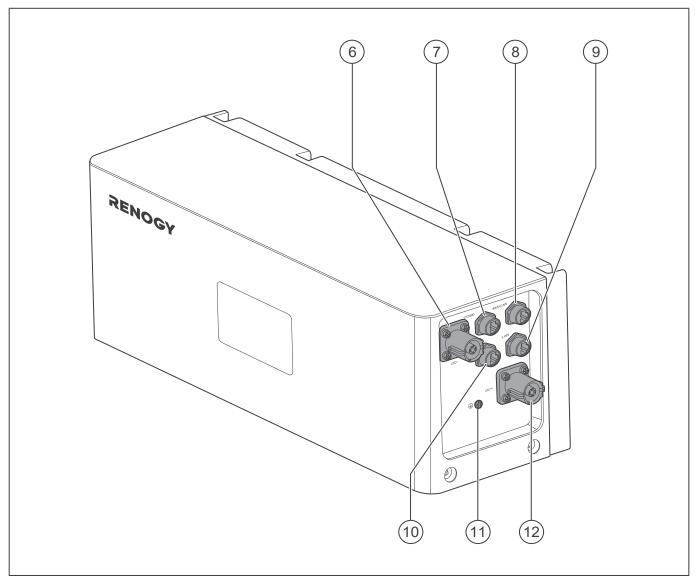
■ Control Module (Left Side)



No.	Part	No.	Part
1	Power Button	4	LCD Screen
2	Wi-Fi Antenna	5	Interconnection Connector
3	250A DC Circuit Breaker (Including Waterproof Cover)		

Battery System Control Module

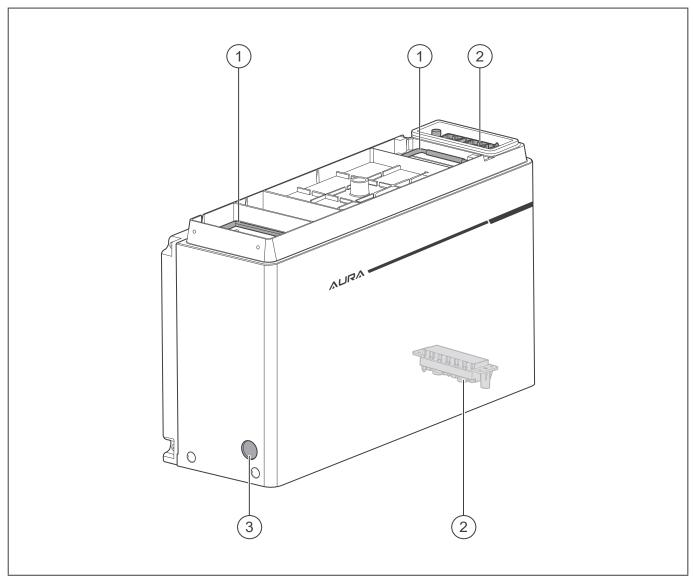
■ Control Module (Right Side)



No.	Part	No.	Part
6	Negative Power Connector	10	Parallel Communication Port 2 (Including Waterproof Cap)
7	Parallel Communication Port 1 (Including Waterproof Cap)	11	Grounding Terminal (Including Grounding Screw)
8	Hybrid Inverter Communication Port (Including Waterproof Cap)	12	Positive Power Connector
9	Diagnostic Communication Port (Including Waterproof Cap)		

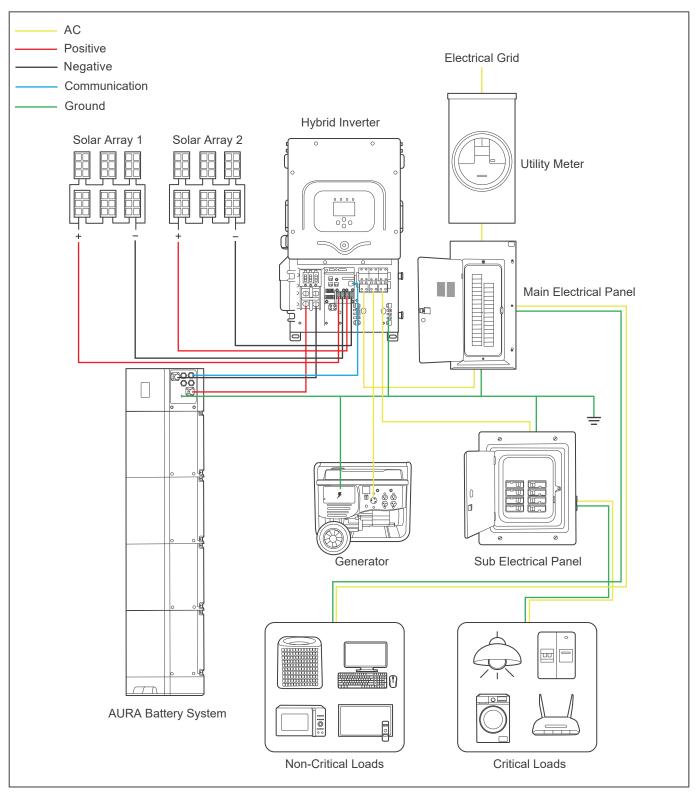
Battery System Control Module

Battery Module



No.	Part	No.	Part
1	Handles	3	Safety Valve
2	Interconnection Connectors		

Wiring Diagram



NOTE

• The wiring diagram only shows the key components in a typical DC-coupled residential energy storage system for the illustrative purpose. The wiring might be different depending on the system configuration. Additional safety devices, including disconnect switches, emergency stops, and rapid shutdown devices, might be required. Wire the system in accordance with the regulations at the installation site.

Inspection

Environment

Location

Clearance

System Size

Regulation

Required Tools

Stud Finder	Digital Beam Level
ZIRCON The CONTROL OF THE PROPERTY OF THE PRO	
Tape Measure	Marker Pen
Impact Driver	Hammer Drill
Phillips Driver Bit (#2)	Hammer

Preparation

Required Tools

Inspection

Environment

Location

Clearance

System Size

Regulations

Masonry Drill Bit (3/8 inch)	Masonry Drill Bit (15/64 inch)	
Wood Drill Bit (13/64 inch)	Digital Socket Wrench	
Socket (7/16 inch)	Socket (9/16 inch)	
7/16	9/16	

Inspection

Environmen

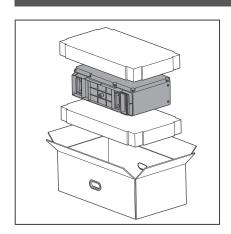
Location

Clearance

System Size

Regulation

Inspection

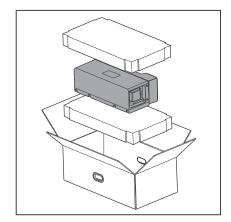


 Take the Battery Module out of the package. Inspect the Battery Module for any visible damages including cracks, dents, deformation, and other visible abnormalities before installation. The contacts of the Interconnection Connectors shall be dry, clean, and free of any dirt and corrosion. The alignment pins of the Interconnection Connectors shall be straight without any deformation.

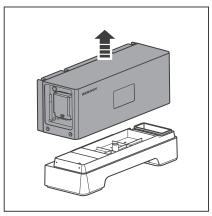


WARNING

- Do not use the Battery Module if it has any visible damage.
- Do not touch the exposed electrolyte or powder if the Battery Module is damaged. Please refer to "<u>Emergency Responses</u>" in this manual if uncovered electrolyte or powder accidentally contacts the skin or eyes.
- Team lift is required for the Battery Module to avoid back injuries.



2. Take the Control Module and the Base out of the package.



3. Take the Control Module and the Base apart. Inspect the Battery Module for any visible damages including cracks, dents, deformation, and other visible abnormalities before installation. The contacts of the Control Module and the Interconnection Connectors shall be dry, clean, and free of any dirt and corrosion. The alignment pins of the Interconnection Connectors shall be straight without any deformation.



WARNING

Do not use the Control Module and Base if they have any visible damage.

Inspection

Environment

Locati

Clearance

System Size

Regulations

Environment

AURA is IP55 rated for both indoor and outdoor installations. However, shadings are required for outdoor installation to keep AURA out of direct sunlight, rain, and snow. Ensure that the installation environment is clean, cool, and well-ventilated. Keep AURA away from oil and dirt. The accumulation of these substances can cause current leakage, resulting in self-discharge and possible short circuit. Make sure that AURA is installed with ambient temperature range from -14°F to 122°F or -10°C to 50°C. To ensure optimal working efficiency, it is recommended to keep the ambient temperature range from 59°F to 86°F or 15°C to 30°C. Make sure that AURA is installed in an environment with relative humidity between 10% and 95% and no condensation.



CAUTION

- AURA might limit the charge or discharge current when operating near the limit of operating environment temperature range and stop charging or discharge when operating outside the operating environment temperature range. Do not install AURA in the environment with sustained low or high temperatures.
- Do not install AURA in the environment with an altitude over 13123.4 feet (4000 m). The altitude over 6561.7 feet (2000 m) might affect the performance of AURA.



Inspection

Environment

Location

Clearance

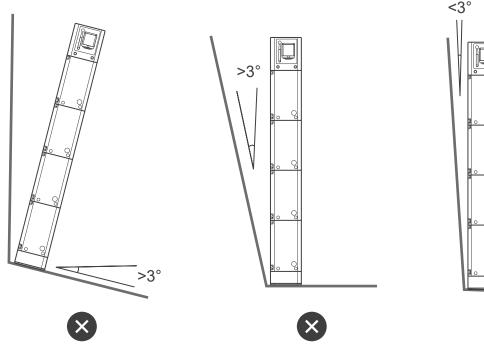
System Size

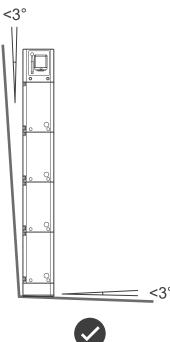
Regulations

Location

AURA is designed to be installed on the floor. The floor must be flat with a slope no greater than 3° and capable of supporting the weight of AURA and its mounting hardware. For secure mounting, AURA must be anchored to a wall with adequate strength, including wood studs with standard spacing, plywood sheets of sufficient thickness, and solid concrete or masonry wall. The wall must be flat with an inclination angle no greater than 3°. The wall must extend to all edges of AURA. The back of AURA is no longer accessible after installation.

AURA is only permitted to be installed in attached garages, detached garages, utility closets, or storage spaces, on exterior walls at least 3 feet (0.91 m) away from doors or windows, or outdoors at least 3 feet (0.91 m) away from doors or windows in accordance with NFPA 855. If AURA is installed indoors, alarms for smoke, heat, and / or flammable gas must be installed in the installation space. The exhaust fan is recommended to be used for efficient ventilation. If the indoor installation space is unfinished, the wall and ceiling need to be protected by at least 5/8 inch (16mm) gypsum board. If AURA is installed in a location with the risk of vehicle damage, it must be protected by approved barriers, usually in the form of safety bollards.







WARNING

- Keep AURA away from flammable or combustible materials.
- Do not install AURA at the location with flood risk.
- Do not expose AURA to harsh chemicals or vapors.
- Do not expose AURA to direct flame.
- Keep AURA away from heating equipment.
- Keep AURA out of the reach of young children and animals.

Inspectior

Environment

Location

Clearance

System Size

Regulations



CAUTION

- Ensure that there is no water source including downspouts, sprinklers, or faucets above or near AURA.
- Ensure that there is no snow accumulating around AURA.

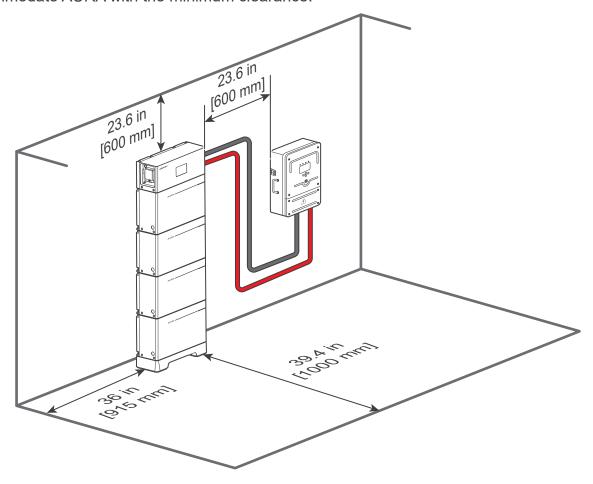


NOTE

• The included brackets are designed for wood studs with 16 inches (406.4 mm) and 19.2 inches (487.7 mm) spacing. For wood studs with other spacings, secure at least 1/2 inch thick plywood sheets to the wood studs and anchor AURA to the plywood sheets with the included brackets. The wood screws that secure the plywood sheets must be of sufficient length for at least 1.5 inches (38.1 mm) embedment into the wood studs.

Clearance

AURA requires adequate clearance for installation, wiring and ventilation. The minimum clearance is provided below. No objects are allowed to be mounted within the clearance zone except the devices and accessories required for the installation including conduits, disconnect switches, junction boxes, and emergency stops. Ensure that the installation location can accommodate AURA with the minimum clearance.



Inspection

Environmen[.]

Location

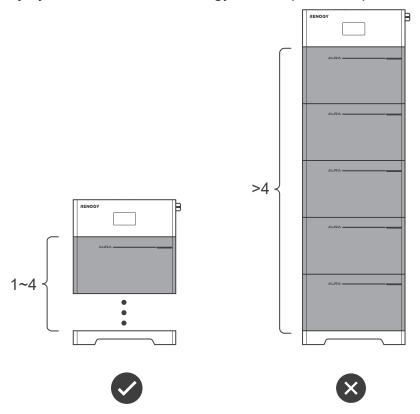
Clearance

System Size

Regulations

System Size

Up to four Battery Modules can be stacked in an AURA battery system. It is recommended to size the AURA battery system based on the energy consumption and peak demand.





CAUTION

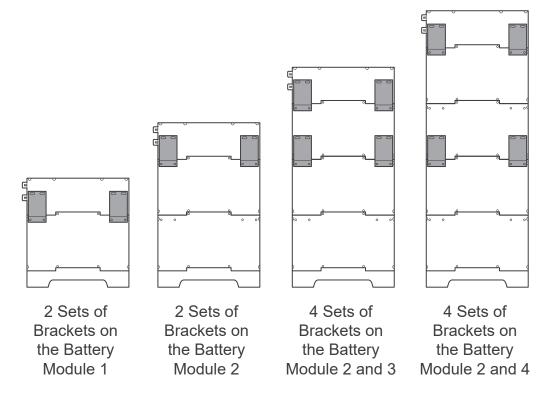
 Do not connect multiple AURA battery systems in parallel for residential installations in accordance with NFPA 855.

Regulations

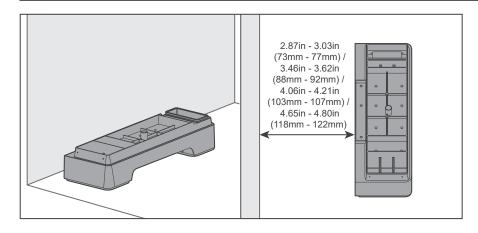
Ensure that installation meet the local disconnect and interconnection requirements and in accordance with local building and fire codes. All the electrical installations in the United States and Canada must be done in accordance the National Electrical Code (NEC) / NFPA 70 or the Canadian Electrical Code CSA C22.1.

Determining Bracket Positions

For AURA battery systems with different quantities of Battery Modules, the included brackets are required to be installed on different positions. The desired bracket installation locations are provided below.



Mounting the Base



Position the Base on the floor and keep it parallel to the wall. According to the actual use, keep the distance between the Base and the wall at 2.87 inches (73 mm) to 3.03 inches (77 mm), 3.46 inches (88 mm) to 3.62 inches (92 mm), 4.06 inches (103 mm) to 4.21 inches (107 mm), or 4.65 inches (118 mm) to 4.80 inches (122 mm). If plywood sheets are used for reinforcement, the thickness of the plywood sheets needs to be taken into consideration.

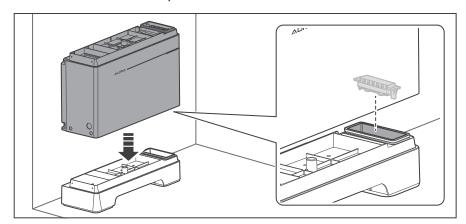


NOTE

 Place the Base in the middle of the two adjacent wood studs if the AURA battery system is to be secured to the wood studs.

Stacking the Battery Module(s)

The following mounting steps take an AURA battery system with four Battery Modules mounted on a floor as an example.

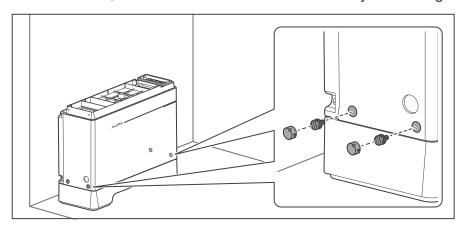


1. Stack the first Battery
Module on the Base.
Before stacking, align the
Interconnection Connector
at the bottom of the Battery
Module with the groove at
the top of the Base and
slowly lower down the end
with the Interconnection
Connector to the Base
until the connector fits
perfectly. Slowly lower
down the other end until
the first Battery Module fits
perfectly.

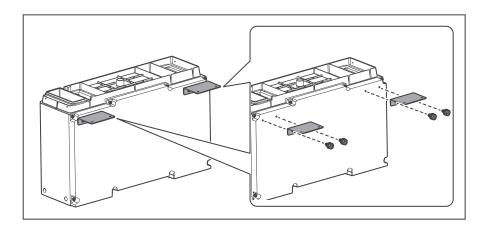


CAUTION

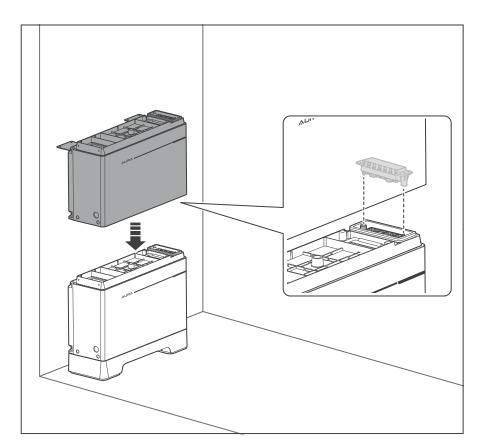
 Do not put down the Battery Module before aligning the Interconnection Connector with the groove on the Base or put down the end without the Interconnection Connector first. Otherwise, the Interconnection Connector may be damaged



2. Screw the attached M5
Phillips Machine Screws
into the mounting holes on
both sides of the Battery
Module, and tighten them
with the Impact Driver
and the Phillips Driver
Bit. Install the Screw Cap
Covers into the mounting
holes.



3. Use the included M5
Phillips Machine Screws
to secure two Battery
Brackets to the back of the
second Battery Module,
and tighten the M5 Phillips
Machine Screws with the
Impact Driver and the
Phillips Driver Bit.

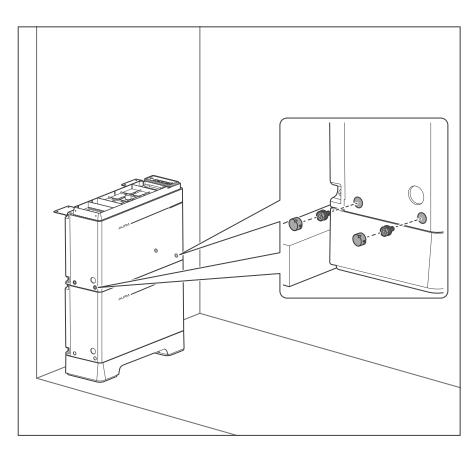


4. Stack the second Battery Module on the first Battery Module. Before stacking, align the Interconnection Connector at the bottom of the second Battery Module with the Interconnection Connector at the top of the first Battery Module and slowly lower down the end with the Interconnection Connector to the first Battery Module until the connector fits perfectly. Slowly lower down the other end until the second **Battery Module fits** perfectly.

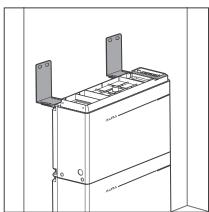


CAUTION

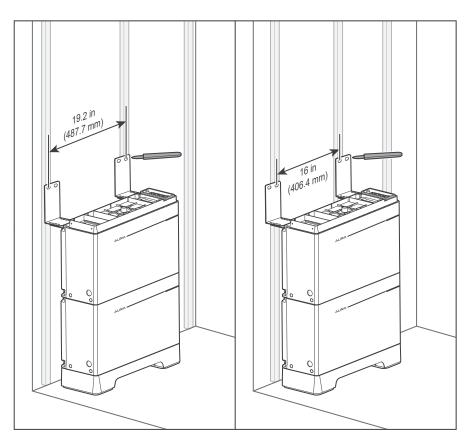
 Do not put down the Battery Module before aligning with the Interconnection Connectors or put down the end without the Interconnection Connector first. Otherwise, the Interconnection Connectors may be damaged.



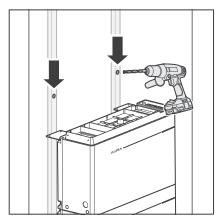
5. Repeat <u>Step 2</u> to secure the second Battery Module to the first Battery Module.



6. Place the two included Wall Brackets on the top of the Battery Brackets and against the wall. If AURA is mounted on the drywall, go to <u>Step 7</u> to <u>Step 10</u>. If AURA is mounted on the stucco wall, go to <u>Step 11</u> to <u>Step 14</u>. If AURA is mounted on the plywood sheets, go to <u>Step 15</u> to <u>Step 18</u>. If AURA is mounted on the concrete or masonry wall, go to <u>Step 19</u> to <u>Step 23</u>.



7. If AURA is mounted on the drywall, take the Wall Brackets as a template to locate and mark the corresponding hole location with the Marker Pen according to the spacing of the wood studs in the drywall. If the spacing of the wood studs is 16 inches (406.4 mm), mark the two inner holes. If the spacing is 19.2 inches (487.7 mm), mark the two outer holes.



8. Remove the Wall Brackets and drill the pilot holes with the Hammer Drill and the Wood Drill Bit at the marked locations.



WARNING

 Before drilling pilot holes on the drywall, confirm the positions of pipes and electrical wires inside the wall to avoid hitting them.



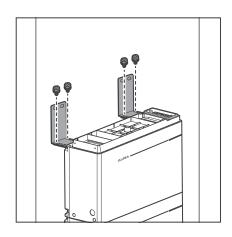
CAUTION

 Cover the Battery Module with a plastic bag during drilling to prevent dust and sawdust from falling onto the Interconnection Connectors or entering the Battery Module.

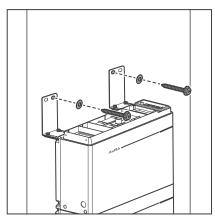


NOTE

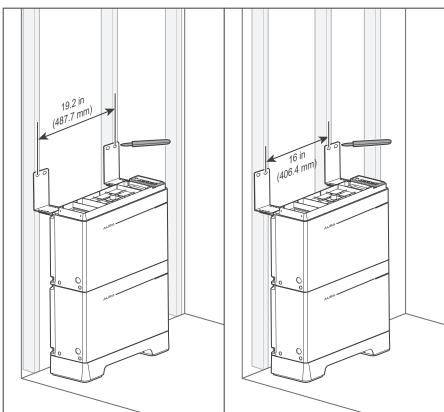
The depth of the pilot holes must be at least 2.4 inches (60 mm).



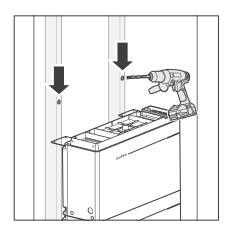
9. Use the included Phillips Machine Screws to secure the Wall Brackets to the Battery Brackets in the appropriate holes according to the spacing between AURA and the wall. Tighten the Phillips Machine Screws with the Impact Driver.



10. Use the included 60mm Self-tapping Screws and Flat Washers to secure the Wall Brackets to the wood studs in the drywall. Tighten them with the Digital Socket Wrench and the Socket (7/16 inch).



11. If AURA is mounted to the stucco wall, take the Wall Brackets as a template to locate and mark the corresponding hole location with the Marker Pen according to the spacing of the wood studs in the stucco wall. If the spacing of the wood studs is 16 inches (406.4 mm), mark the two inner holes. If the spacing is 19.2 inches (487.7 mm), mark the two outer holes.



12. Remove the Wall Brackets and drill the pilot holes with the Hammer Drill and the Masonry Drill Bit (15/64 inch) at the marked locations until the sawdust appears. Replace the Masonry Drill Bit with the Wood Drill Bit and continue drilling the pilot holes with the Hammer Drill.



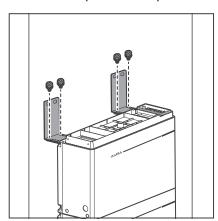
CAUTION

 Cover the Battery Module with a plastic bag during drilling to prevent dust and sawdust from falling onto the Interconnection Connectors or entering the Battery Module.

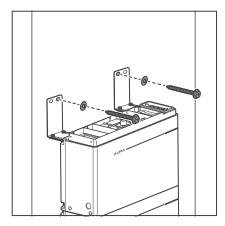


NOTE

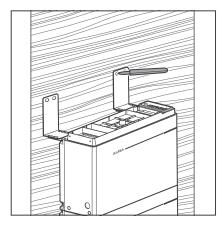
• The depth of the pilot holes must be at least 3.2 inches (80 mm).



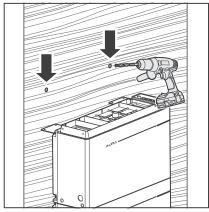
13. Use the included Phillips Machine Screws to secure the Wall Brackets to the Battery Brackets in the appropriate holes according to the spacing between AURA and the stucco wall. Tighten the Phillips Machine Screws with the Impact Driver.



14. Use the included 80mm Self-tapping Screws and Flat Washers to secure the Wall Brackets to the wood studs in the stucco wall. Tighten the 80mm Self-tapping Screws with the Digital Socket Wrench and the Socket (7/16 inch).



15. If AURA is mounted to the plywood sheets, take the Wall Brackets as a template to locate and mark one hole location on each side with the Marker Pen.



16. Remove the Wall Brackets and drill the pilot holes with the Hammer Drill and Wood Drill Bit at the marked locations.



WARNING

• Before drilling pilot holes on the plywood sheets, confirm the positions of pipes and electrical wires inside the wall to avoid hitting them.



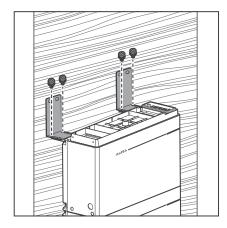
CAUTION

 Cover the Battery Module with a plastic bag during drilling to prevent dust and sawdust from contacting the Interconnection Connectors or entering the Battery Module.

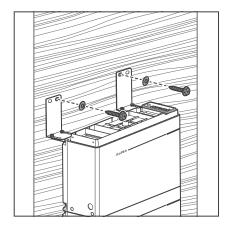


NOTE

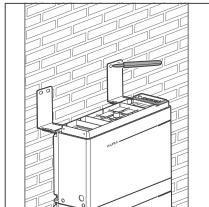
• The depth of the pilot holes must be at least 1.6 inches (40 mm).



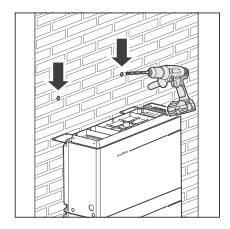
17. Use the included Phillips Machine Screws to secure the Wall Brackets to the Battery Brackets in the appropriate holes according to the spacing between AURA and the plywood sheets. Tighten the Phillips Machine Screws with the Impact Driver.



18. Use the included 40mm Self-tapping Screws and Flat Washers to secure the Wall Brackets to the wood studs in the plywood sheets. Tighten the 40mm Self-tapping Screws with the Digital Socket Wrench and the Socket (7/16 inch).



19. If AURA is mounted to the concrete or masonry wall, take the Wall Brackets as a template to locate and mark one hole location on each side with the Marker Pen.



20. Remove the Wall Brackets and drill the pilot holes with the Hammer Drill and the Masonry Drill Bit (3/8 inch) at the marked locations.



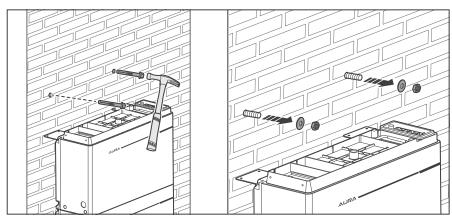
CAUTION

 Cover the Battery Module with a plastic bag during drilling to prevent dust and sawdust from contacting the Interconnection Connectors or entering the Battery Module.

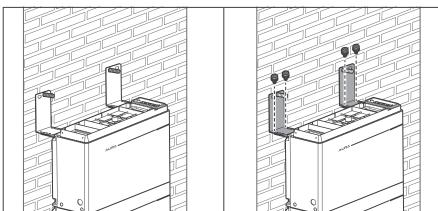


NOTE

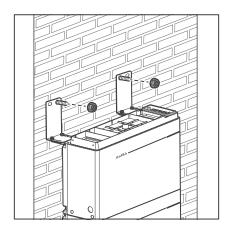
The depth of the pilot holes must be at least 2.4 inches (60 mm).



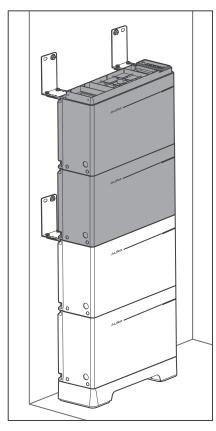
21. Knock down the included Sleeve Anchors into the pilot holes with the Hammer. Remove the Flat Washers and Flange Nuts from the Sleeve Anchors.



22. Pass the Sleeve Anchors through the corresponding holes on the Wall Brackets. Use the included Phillips Machine Screws to secure the Wall Brackets to the Battery Brackets in the appropriate holes according to the spacing between AURA and the concrete or masonry wall. Tighten the Phillips Machine Screws with the Impact Driver.



23. Use the included Flange Nuts to secure the Wall Brackets to the Bolts of the Sleeve Anchors. Tighten the Flange Nuts with the Digital Socket Wrench and the Socket (9/16 inch).



24. Repeat <u>Step 3</u> to <u>Step 23</u> to install the third and fourth Battery modules. There is no need to install the Battery Brackets and Wall Brackets for the third Battery Module.



CAUTION

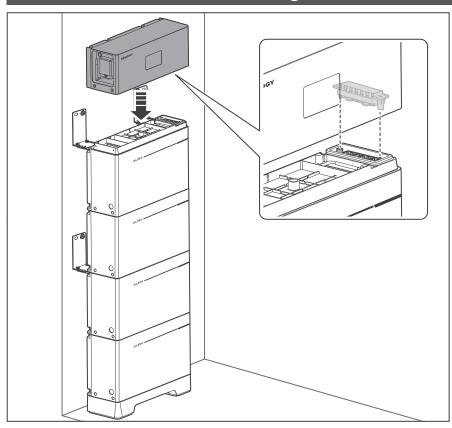
 Do not put down the Battery Module before aligning with the Interconnection Connector or put down the end without the Interconnection Connector first. Otherwise, the Interconnection Connector may be damaged.



NOTE

• It is recommended to mount the third and fourth Battery Modules with a step stand.

Installing the Control Module



1. Stack the Control Module on the fourth Battery Module. Before stacking, align the Interconnection Connector at the bottom of the Control Module with the Interconnection Connector at the top of the Battery Module and slowly lower down the end with the Interconnection Connector to the fourth Battery Module until the connectors fit perfectly. Slowly lower down the other end until the Control Module fits perfectly.



CAUTION

 Do not put down the Battery Module before aligning with the Interconnection Connector or put down the end without the Interconnection Connector first. Otherwise, the Interconnection Connector may be damaged.

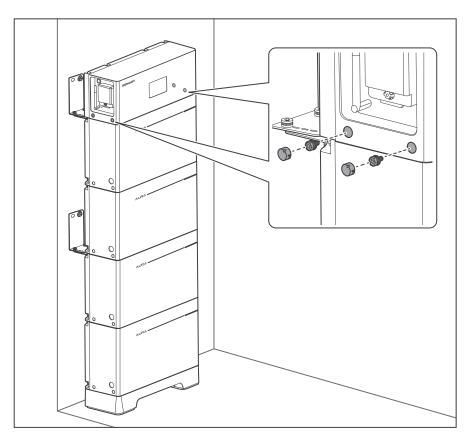
Installation

Determining Bracket Position

Mounting the Base

Stacking the Battery Module(s)

Installing the Control Module



2. Screw the attached M5
Phillips Machine Screws
into the mounting holes on
both sides of the Control
Module, and tighten them
with the Impact Driver
and the Phillips Driver
Bit. Install the Screw Cap
Covers into the mounting
holes.

Rated Voltage : 5	RSA200BCM-4REB5A V1 51.2V 200A 250A		i	RENOGY
Lithium Iron Phosph	ate Battery Syst	em		
Model Rated Energy Maximum Charge Current Maximum Discharge Current Nominal Voltage Protection Rating Protection Rating Protection Class Charge Environment Temperatur Discharge Environment Temperatur Maximum Short Circuit Current Maximum Short Circuit Current Maximum Short Circuit Duration	ture: -20°C-50°C : 3000A : 1ms	RES1009BS-51LFP : 10KWh : 100A : 180A : 180A : 180A : 180S : 10CS : 10CS : 10CS : 10CS : 10CS : 10CS : 20CS : 20CS : 20OOA : 1ms	RESISTORS-SILFP 15KWh 15KWh 15KDA 200A 51ZWD 15F55 Class1 -10C-59C 3000A 1ms	RES201085-S1LFP : 200Wh : 200A : 200A : 200A : 512VDC : IPSS : Class I : -10C-50C : -20C-59C : 3000A : 1 ms
Tanana Anna Anna Anna Anna Anna Anna Ann				

3. Select the corresponding model in the nameplate with the Marker Pen according to the quantity of the battery modules in the AURA battery system.



Grounding Wiring





WARNING

• Keep the circuit breakers on both AURA and the hybrid inverter off before the connections.

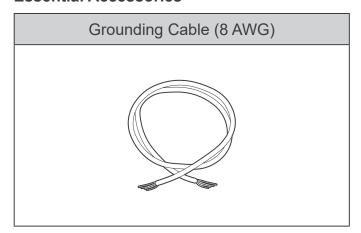
Tools

Digital Socket Wrench	Socket (7/16 inch)
	7/16
Manual Hydraulic Pliers	Wire Stripper
Heat Gun	Heat Shrink Tubing

Grounding Wiring

Grounding Wiring

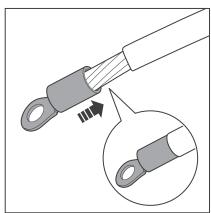
Essential Accessories



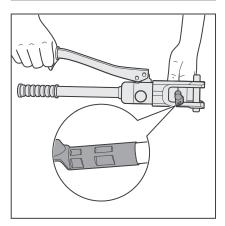
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NOTE

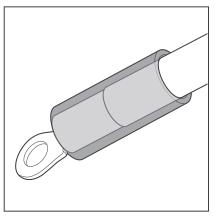
You need to prepare a proper grounding cable by yourself.



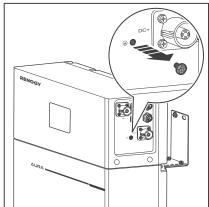
1. Strip some insulation off the Grounding Cable by using the Wire Stripper according to the depth of the wiring hole. Insert the Grounding Cable into the ring terminal.



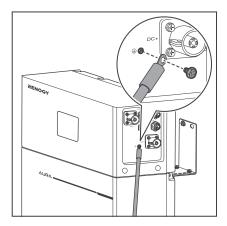
2. Press the ring terminal of Grounding Cable firmly with the Manual Hydraulic Pliers to ensure the connection is tight and secure.



 Sleeve the heat shrink tubing on the connected part between the Grounding Cable Ring Terminal and the Grounding Cable. Heat the heat shrink tubing with the Heat Gun until the tubing shrinks and tightly wraps around the connected part.



4. Remove the grounding screw from the Grounding Terminal of the Control Module with the Digital Socket Wrench and the Socket (7/16 inch).

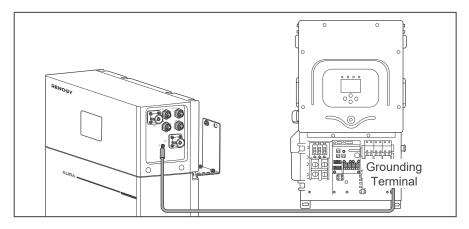


5. Connect the Grounding Cable Ring Terminal to the grounding terminal of the Control Module and tighten the grounding screw with the Digital Socket Wrench and the Socket (7/16 inch).



NOTE

• The torque of the grounding screw is 5 N·m. Do not overtighten it to prevent damage.



6. Strip some insulation off the other end of the Grounding Cable with the Wire Stripper. Connect the Grounding Cable to the grounding germinal of the hybrid inverter.

Grounding Wiring

Power Wiring

Communication Wiring

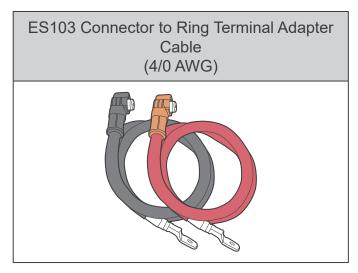


INFO

Refer to the user manual of the hybrid inverter for grounding wiring.

Power Wiring

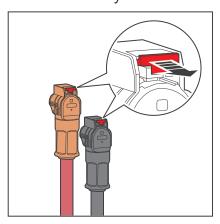
Essential Accessories



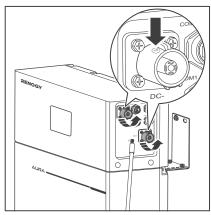


NOTE

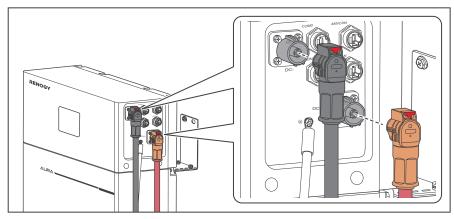
• You can buy essential accessories from renogyx.com.



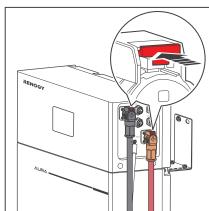
1. Pull out the snap on the ES103 Connectors of the adapter cables.



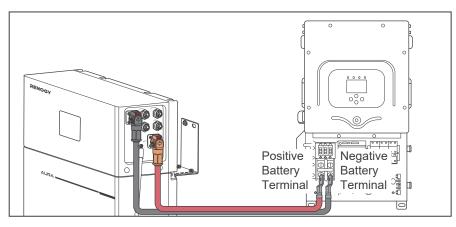
2. Turn the Negative Power Connector and the Positive Power Connector of the Control Module counterclockwise till the "TOP" label is upward.



3. Plug the red ES103 connector into the Positive Power Connector and the black ES103 connector into the Negative Power Connectors until hearing the "Click".



4. Push the snap on the ES103 connectors of the adapter cables.



5. Connect the Positive
Power Connector to the
Positive Battery Terminal
of the hybrid inverter
and the Negative Power
Connector to the Negative
Battery Terminal of the
hybrid inverter.



Refer to the user manual of the hybrid inverter for the battery terminals connection.

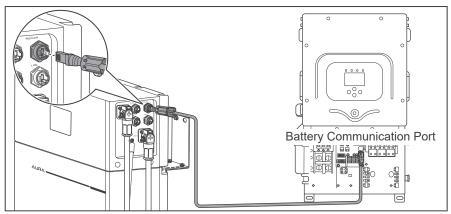


CAUTION

 Protect the adapter cables with the UL listed outdoor rated adapter cables or the UL listed conduits if AURA is installed outdoors.

Communication Wiring

AURA can communicate with the hybrid inverter, enabling safe operation, smart control, remote monitoring, and programmable settings. The Battery Management System (BMS) of AURA collects the data of the battery module(s) and sends it to the hybrid inverter which regulates the charging and discharging currents to protect the battery modules.



1. Insert the RJ45 plug into the 485 / CAN port of the Control Module and the other end of the Ethernet Cable into the battery communication port of the hybrid inverter.



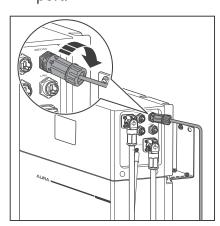
NOTE

• The pins of the communication port on the hybrid inverter varies with each other. Among them, Pin 1 is RS485A, Pin 2 is RS485B, Pin 4 is CAN_H, and Pin 5 is CAN_L. Different Ethernet Cables follow different pinouts.



INFO

 Refer to the user manual of the hybrid inverter for the details of the battery communication port.



2. Screw the RJ45 plug waterproof housing into the waterproof housing of the Hybrid Inverter Communication Port.

Power On

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Communication

Heater

Power Of

Power On



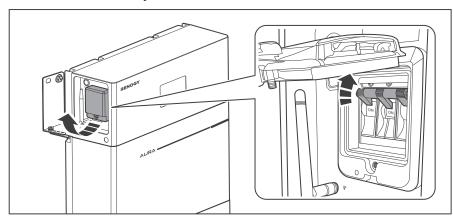
WARNING

• Check and make sure all cable connections are tight and secure.

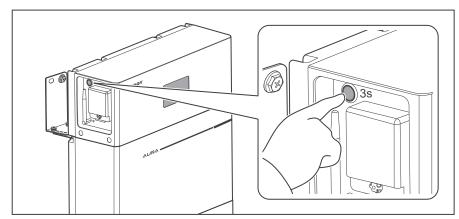


NOTE

Power on the hybrid inverter and turn on its circuit breaker.



 Open the waterproof cover of the 250A DC Circuit Breaker and push up the switch of the circuit breaker. Close the waterproof cover.



 Long press the power button for three seconds to turn on AURA. The LCD Screen and power button light up simultaneously.

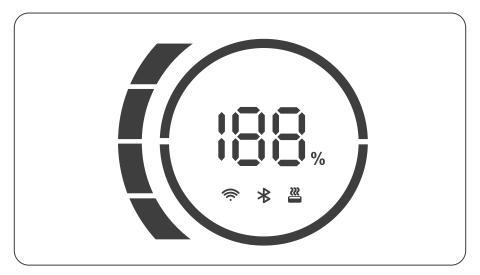


NOTE

- If the LCD Screen and power button do not light up, refer to "<u>Troubleshooting</u>" in this manual.
- The LCD Screen automatically turns off after lighting for 10 minutes. Press the power button and the LCD Screen lights up again.

Power On LCD Screen Communication Heater Power Off

LCD Screen



Icon	Name	Description		
Battery Module status		It indicates the quantity and status of the Battery Module(s) (Lights up from the bottom to top).		
		Solid On	The Battery Module is working normally.	
		Flashing	When the Battery Module is faulty, the corresponding icon starts to flash.	
		The fourth Battery Module.		
			The third Battery Module.	
			The second Battery Module.	
			The first Battery Module.	

Commissioning

Power On

LCD Screen Communication Heater Power Off

Icon	Name	Description		
	Operating status of AURA	It indicates the operating status of AURA:		
		Solid On	AURA is powering or charging devices.	
		Off	AURA is not working.	
		Slow Flashing (2s on, 1s off)	The hybrid inverter is charging AURA.	
		Fast Flashing (0.5s)	AURA needs Troubleshooting. Refer to "Troubleshooting" in this manual.	
133%	Battery Level	It indicates the remaining power of the Battery Modules.		
		It indicates the network status of AURA:		
(i)	Network	Solid On	AURA has connected to Wi-Fi.	
		Off	AURA has not connected to Wi-Fi.	
		It indicates the Bluetooth connection of AURA:		
*	Bluetooth	Solid On	AURA is paired with other Bluetooth devices.	
		Off	AURA is pairing or has not paired with other Bluetooth devices.	
		It indicates the Heater of the Battery Modules:		
	Heater	Solid On	The Heater is working.	
		Off	The Heater is not working.	

Power Or

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Communication

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Power Of

Communication

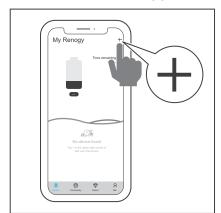
AURA is integrated with Wi-Fi and Bluetooth modules. After adding AURA to the DC Home app via Wi-Fi or Bluetooth, you can monitor the operation status of AURA in real time.

Bluetooth

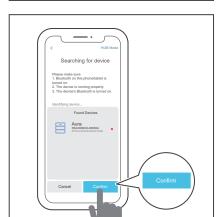


NOTE

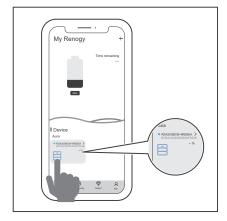
- Make sure that the Bluetooth is enabled on the phone is available and the distance between AURA and the phone is within three meters.
- Scan the QR code on the <u>last page</u> of the user manual to download the DC Home app.
- The DC Home app is exclusively used for over-the-air upgrades of the AURA firmware.



1. Open the DC Home app. Tap "+ > Add Devices" to search for new devices.



2. Tap "Confirm" to add the newly found device to the device list.



3. Tap AURA to check the operational status of AURA.

Power Or

LCD Screer

Communication

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4. On the battery parameter panels, swipe left or right to check the operational status of a specific battery module.



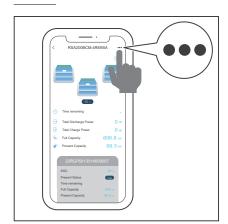
5. You can see error messages at the top of the interface when AURA experiences a fault.



NOTE

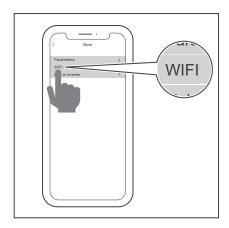
• For details about error messages, refer to "Troubleshooting" in this manual.

Wi-Fi

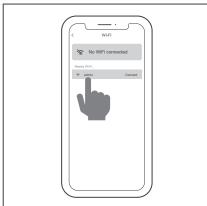


1. Tap "•••" in the upper-right corner.

Communication Heater



2. Tap "WIFI".



3. Tap the Wi-Fi you want to connect to and enter the password.



NOTE

Make sure the spectrum of Wi-Fi is 2.4 Hz.

Heater

The built-in Heater can be enabled automatically according to the temperature of the Battery Module to ensure the normal operation of AURA at a low ambient temperature. The Heater automatically stops working after the Battery Module meets the Off condition listed in the table below. It can be enabled again 60 minutes after the last operation.

Battery Module Status	Heater Status
The battery temperature is less than or equal to 41°F (5°C) within 10 seconds and the charging current is greater than or equal to 5A	On
The battery temperature is less than or equal to 32°F (0°C) within 10 seconds and the low-temperature protection is enabled	On
The battery temperature is greater than 50°F (10°C) within 10 seconds	Off
The voltage of the Battery Module is less than 3.25V	Off

Power Or

I CD Screet

Communication

Heater

Power Off



NOTE

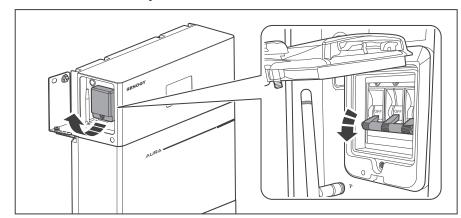
• If the Heater cannot work normally and the status icon of the Heater on the LCD Screen starts to flash, refer to "Troubleshooting" in this manual.

Power Off

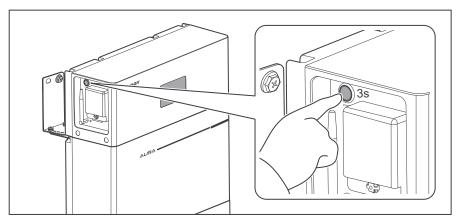


NOTE

Power off the hybrid inverter and turn off its circuit breaker first.



 Open the waterproof cover of the 250A DC Circuit Breaker and press down the switch of the Circuit Breaker. Close the waterproof cover.



 Long press the power button for three seconds to turn off AURA. The LCD Screen and power button go out simultaneously.



NOTE

• If the LCD Screen and power button do not go out, refer to "Troubleshooting" in this manual.

Troubleshooting

Issue	Possible Cause	Solution	
Power-on failure	The power button is damaged. Power cables are damaged, or there are contact failures.	Repair or replace the Control Module. For more technical support, contact our customer service through renogyx.com.	
Short discharge time	Low battery of the Battery Module.	Charge AURA immediately.	
	Improper ambient temperature.	Make sure that AURA is installed with an ambient temperature range from -14°F to 122°F or -10°C to 50°C. To ensure optimal working efficiency, it is recommended to keep the ambient temperature range from 59°F to 86°F or 15°C to 30°C.	
	Overload	Reduce quantity of the loads to make sure that the total power of the loads does not exceed that of AURA.	
	Insufficient capacity of the aging Battery Module.	Replace the battery module. For more technical support, contact our customer service through renogyx.com.	
Failure to charge or discharge	AURA needs troubleshooting.	Check the error code on the DC Home app. If the problem persists, contact our customer service through renogyx.com.	
	Charge or discharge protection failure.	Check the error code on the DC Home app. If you fail to troubleshoot the fault, contact our customer service through renogyx.com.	
	The voltage of the Battery Module is less than or equal to 2.8V.	Charge AURA immediately until the battery voltage reaches 3.25V.	
	Overtemperature of the Battery Module	 Turn off AURA and put it in idle mode for over three hours. Turn on AURA after the temperature drops to the normal range. Confirm the ambient temperature is within the normal range and ensure there is good ventilation. 	

Troubleshooting

Issue	Possible Cause	Solution	
The LCD Screen not lighting up or the display disorder after powering on	LCD Screen needs troubleshooting.	Repair or replace the Control Module. For more technical support, contact our customer service through renogyx.com.	
The LCD Screen not lighting up during operating	If the power button does not light up, the button is damaged or the cable connection is loose. Otherwise, the LCD Screen is damaged.	Repair or replace the Control Module. For more technical support, contact our customer service through renogyx.com.	
Abnormal communication of the Battery Module	The communication cable is disconnected or the Battery Module is damaged.	Ensure that the Ethernet Cable is intact and properly connected. If the battery module is damaged, check the status icon of the Battery Module on the LCD Screen. For more technical support, contact our customer service through renogyx.com.	
Fast flashing (0.5s) of the operating status of AURA icon	AURA needs troubleshooting.	Check the error code on the DC Home app. If you fail to troubleshoot the fault, contact our customer service through renogyx.com.	
Abnormal Bluetooth connection	Bluetooth or Bluetooth connection failure.	Check whether the DC Home app can be paired with AURA via Bluetooth. If Bluetooth is faulty, you need to repair or replace the Control Module. For more technical support, contact our customer service through renogyx.com.	
Abnormal Wi-Fi connection	Incorrect Wi-Fi connection. Abnormal Wi-Fi module or circuit.	Make sure the password is entered correctly and the spectrum of the Wi-Fi router is 2.4 Hz. If the Wi-Fi antenna is faulty, you need to repair or replace the Control Module. For more technical support, contact our customer service through renogyx.com.	
Discharge short circuit protection is automatically enabled when turning on AURA for the first time	Large parallel capacitance of AURA after connecting to the inverter.	AURA automatically enables the battery protection and can be restored later.	

Troubleshooting

Issue	Possible Cause	Solution	
Failure to power on the inverter	Low battery module voltage	Connect the hybrid inverter to utility power and turn on the inverter to charge AURA immediately.	

To discuss inaccuracies or omissions in the quick guide or user manual, contact us via contentservice@renogy.com.

For technical questions about your product, contact us via renogyx.com.



NOTE

• For more information about troubleshooting, see https://www.renogyx.com.

Technical Specifications

Model	RES0505BS -51LFP	RES1009BS -51LFP	RES1510BS -51LFP	RES2010BS -51LFP
Quantity	1 Battery Module	2 Battery Modules	3 Battery Modules	4 Battery Modules
Rated Power (kWh)	5	10	15	20
Maximum Discharging Current (77° F / 25° C)	100A	180A	200A	200A
Dimensions (W*H*D)	22.6 × 23.5 × 7.4 inches 573 × 597 × 189 mm	22.6 × 35.9 × 7.4 inches 573 × 912 × 189 mm	22.6 × 48.3 × 7.4 inches 573 × 1227 × 189 mm	22.6 × 60.7 × 7.4 inches 573 × 1542 × 189 mm
Net Weight	143.3 lb 65 kg	253.53 lb 115 kg	363.76 lb 165 kg	473.99 lb 215 kg
Rated Voltage		51.	.2V	
Working Voltage	44.8V to 55.2V			
Communication	CAN / RS485 / Wi-Fi			
Cycle Life	6000 times (77°F / 25°C, 0.5C / 0.5C, 90% DOD, 70% remained)			
Protection Grade	IP55			
Operating Temperature	Charging: 14°F to 122°F / -10°C to 50°C Discharging: -4°F to 122°F / -20°C to 50°C			
Storage Temperature	41°F to 77°F / 5°C to 25°C			
Humidity	10% to 95%, no condensation			
Altitude	<4000 m, derated above 2000 m			
Certifications	UL1973, UL9540, IEC62619, CE, UN38.3, and FCC			
Cell Type	LFP			
Internal Resistance	<30mΩ			
Heat Dissipation	Natural convection heat dissipation			
Heating	Silicone rubber heating film with rated voltage of 51.2V and total heating power of 160W			

Dimensions

Control Module Battery Module

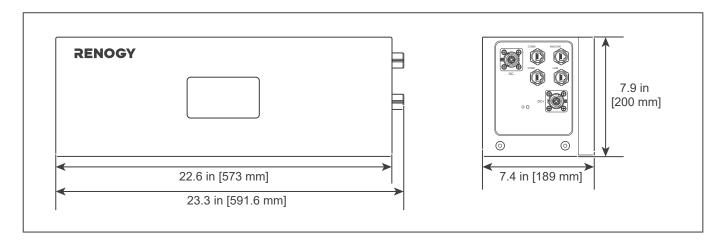
Battery Base



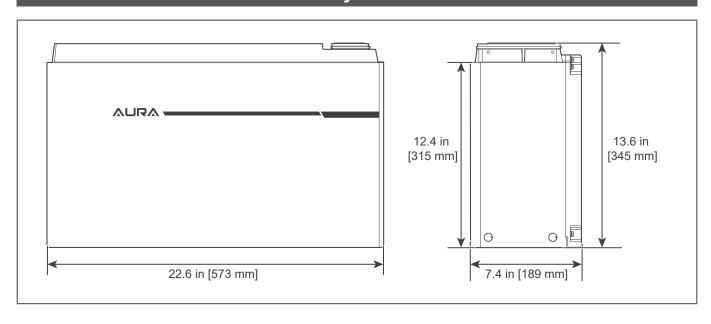
NOTE

Dimension tolerance: ±0.2 in (0.5 mm)

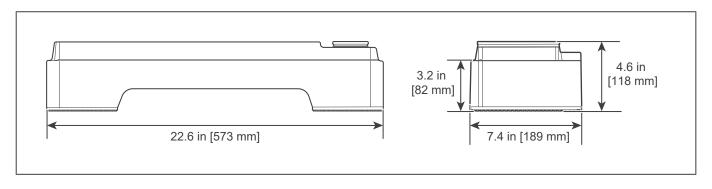
Control Module



Battery Module



Battery Base



Inspection

For optimum performance, it is recommended to perform these tasks regularly.

- Check the appearance of AURA to make sure it is clean and dry.
- Ensure AURA is mounted in a clean, dry and ventilated area.
- Ensure there is no damage or wear on the cables. Ensure the firmness of the Anderson connectors and check if there are any loose, damaged or burnt connections.
- Make sure that the indicators are in normal state.
- Ensure there is no corrosion, insulation damage, or discoloration marks of overheating or burning.
- Check the battery level of AURA. If the Battery Module is fully discharged, AURA should be charged at the following intervals:
 - Within 7 days at an ambient temperature of 113°F to 122°F or 45°C to 50°C.
 - Within 15 days at an ambient temperature of 95°F to 113°F or 35°C to 45°C.
 - Within 30 days at an ambient temperature below 95°F or 35°C.



NOTE

In some applications, corrosion may exist around the contacts inside the Anderson connector.

Corrosion can loosen springs and increase resistance, leading to premature connection failure. Apply dielectric grease to each connector contact periodically. Dielectric grease repels moisture and protects the connector contacts from corrosion.



WARNING

Risk of electric shock! Make sure that all power is turned off before touching the terminals on AURA.

Cleaning

Follow the steps below to clean AURA regularly.

- Disconnect all cables connected to AURA.
- Wipe the housing and connector contacts with a dry cloth or non-metallic brush. If it is still dirty, you can use household cleaners.
- Dry AURA with a clean cloth and keep the area around AURA clean and dry.
- When rewiring, strictly follow the installation steps of this manual.



NOTE

Do not use solvents, abrasives, or corrosive liquids to clean AURA.

Inspection Cleaning Storage

Storage

Follow the tips below to ensure that AURA is stored well.

- Make sure that the remaining power of the Battery Module is between 45% and 55% before storage.
- Disconnect all cables connected to AURA.
- By applying dielectric grease to each connector contact, the dielectric grease repels moisture and protects the connector contacts from corrosion.
- AURA contains lithium batteries. Keep the Battery Module stored in a clean, dry, ventilated environment with an ambient temperature of 77°F to 41°F or 25°C to 5°C and a relative humidity no greater than 75%.
- Keep AURA away from corrosive materials, fire, and heat sources.
- Do not store AURA upside down.
- AURA needs to be charge every six months at most. Make sure that the remaining power of the Battery Module is between 45% and 55%.

Emergency Responses

Fire Flooding Smell Noise Emergency

In the event of any threat to health or safety, always begin with the steps below before addressing other suggestions:

- Immediately contact the fire department or other relevant emergency response team.
- Notify all people who might be affected and ensure that they can evacuate the area.



WARNING

Only perform the suggested actions below if it is safe to do so.

Fire

■ The Battery Module is not burning

- Disconnect all cables that are connected to AURA.
- 2. Put out the fire with a fire extinguisher. Acceptable fire extinguishers include water, CO₂, and ABC.

■ The Battery Module is burnt

- 1. Do not attempt to put out the fire, as the battery module may release toxic gases. Evacuate people nearby immediately.
- 2. Be sure to wear a gas mask when approaching.
- 3. Disconnect all cables that are connected to AURA.
- 4. Put out the fire with a FM-200 or CO₂ fire extinguisher.



WARNING

- Do not use type D (flammable metal) fire extinguishers.
- If pungent gases are inhaled, leave the contaminated area immediately and seek medical attention.

Flooding

- 1. If AURA or the inverter is submerged in water, stay away from the water.
- 2. Disconnect all cables that are connected to AURA.
- 3. Do not reuse the Battery Module or Control Module that has been submerged.

Smell

- 1. Disconnect all cables that are connected to AURA.
- 2. Ventilate the room.
- 3. Ensure there is no discoloration marks of overheating or burning.
- 4. Make sure nothing is in contact with AURA.

Emergency Responses

Fire Flooding Smell Noise Emergency

Noise

- Disconnect all cables that are connected to AURA.
- Make sure no foreign objects are stuck in the AURA connector.

Emergency

Do not touch the Battery Module with damaged and leaked housings, and contact the local fire department or maintenance engineers immediately. If carelessly getting corrosive materials in your eyes or skin, do the following measures.

- 1. Flush your eyes with clean water for 15 minutes and seek medical attention immediately.
- 2. Wash your skin with soap and seek medical attention immediately.

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- (1) Orient or relocate the receiving antenna.
- (2) Increase the separation between the equipment and receiver.
- (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- (4) Consult the dealer or an experienced radio / TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



Renogy aims to empower people around the world through education and distribution of DIYfriendly renewable energy solutions.

We intend to be a driving force for sustainable living and energy independence.

In support of this effort, our range of solar products makes it possible for you to minimize your carbon footprint by reducing the need for grid power.



Live Sustainably with Renogy

Did you know? In a given month, a 1KW solar energy system will...



Save 170 pounds of coal from being burned



Save 300 pounds of CO₂ from being released into the atmosphere



Save 105 gallons of water from being consumed



Renogy Power PLUS

Renogy Power Plus allows you to stay in the loop with upcoming solar energy innovations, share your experiences with your solar energy journey, and connect with like-minded people who are changing the world in the Renogy Power Plus community.

Also, follow us on Youtube @Renogy Solar, Facebook @Renogy, and Instagram @renogyofficial.



 $\label{eq:visit_renogyx.com} \ \text{to find relevant documentation or get more support.} \\ \text{Renogy reserves the right to change the contents of this manual without notice.} \\$

