



INSTALLATION MANUAL

Residential Battery Unit

- Please read this manual carefully before operating and retain it for future reference.
- For stable operation and periodic system updates, LG Electronics highly recommend the user to subscribe to EnerVu and maintain connection.

Model

BUEL011HBC1 (Pack*3+BCU+Enclosure)

BUEL015HBC1 (Pack*4+BCU+Enclosure)



* M F L 1 1 9 9 - 0 0 4 9 4 - 0 0

Rev. 01 21/04/2022

<https://www.lg.com/global/business/ess/business-resources/download>
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Safety Information

IMPORTANT : THIS PRODUCT SHOULD NOT BE USED FOR ANY PURPOSE OTHER THAN THE PURPOSE DESCRIBED IN THIS INSTALLATION MANUAL.

For stable operation and periodic system updates, LG Electronics highly recommend the user to subscribe to EnerVu and maintain connection.



WARNING

Indicators for a potentially dangerous situation.

- There is a high possibility of electric shock or serious burns due to the high voltages in the ESS.
- High voltages on DC cables. Do not short circuit positive and negative conductors.
- A potentially hazardous circumstance such as excessive heat or electrolyte mist may occur due to improper operating conditions, damage, misuse and/or abuse.
- This product poses potential danger such as death or serious injury by fire, high voltages, or explosion if appropriate precautions are not read, fully understood, and followed.
- Do not place or install flammable or potentially explosive objects near the product or in explosive atmospheres.
- Do not place objects of any kind on top of the product during operation.
- All work on the ESS must be carried out by LG-certified service providers only.
- Electrical installations must be done in accordance with the local and national electrical safety standards.
- Wear rubber gloves and protective clothing (including protective glasses and boots) when working on the ESS.
- There is a risk of electric shock. Do not remove cover. There is no user serviceable parts inside. Refer servicing to qualified and accredited service technician.
- In the event of fault, try not to disassemble or repair the product. Product maintenance and repairs must be performed by qualified electrician.
- Do not damage the unit in such ways as drop, deform, impact, cut or spearing with a sharp object. It may cause electrolyte leakage or fire.
- Breakdown of the unit may cause electrolyte leakage or flammable gas generation.
- When electrolyte leak out, avoid contact with eyes, skin or clothes. In event of accident, flush with water and get medical help immediately.
- Do not sit or step on the product or the product package. It may cause serious injury or product damage.
- Do not smoke or bring open flames near the product.



CAUTION

Indicates a situation where damage or injury may occur.

- This product is intended for **residential use only** and should not be used for industrial.
- Serious injury may occur due to the heavy weight of the product. Therefore, special care must be taken in handling. Make sure to have at least two persons deliver and move the package.
- Do not use any damaged, cracked, or frayed electrical cables or connectors. Protect the electrical cables from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or stepped on. Periodically examine the electrical cables of your product. If the appearance indicates damage or deterioration, discontinue use of this product and have the cables replaced with an exact replacement part by a qualified personnel.
- The product should not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, should be placed on the product.
- The product has IP Protection class 55. Please avoid installation in dusty or high humidity environment.
- The metal enclosure may heat to a high temperature during operation.
- The product must be disposed of according to local regulations.
- Connect the DC+ and DC- cables to the correct DC+ and DC- terminals on the product.
- Do not place heavy objects on this product. It may cause deformation or fracture.
- Make sure the DC switch of this product is switched off before connecting.
- Never use any solvents, abrasives or corrosive materials to clean this product.
- Keep out of reach of children or animals.
- Do not put any object inside the product. It may cause fire, electric shock or serious injury.
- Install the product on a flat surface.
- There should be no foreign object that could damage the bottom of the product.



NOTE

Indicates a risk of possible damage to the product.

- Never use any solvents, abrasives or corrosive materials to clean this product.
- Do not store or place any objects on top of or against the product. It may cause serious malfunction or other problems.
- This unit is designed and operational for LG ESS PCS Home 8 (D008E1N211) and Home 10 (D010KE1N211) only. Do not connect this unit to a device which makes AC voltage such as an AC power source or a generator. Connecting the product to external devices could result in serious damage to your equipment.
- Handling of batteries should be performed or supervised by an LG service person or a qualified installer.
- The battery does not discharged when the load is under the certain level.
- For the latest ESS documents and full Limited Warranty , visit: <https://www.lg.com/global/business/ess/business-resources/download>
- **For stable operation and periodic system updates, LG Electronics highly recommend the user to subscribe to EnerVu and maintain connection.**

First Aid Measures

The Product includes internal fault mechanisms designed to prevent failures and subsequent risk hazards. However, LG Electronics cannot guarantee safety performance of the Product if it is ever exposed to abuse, damage, or negligence.

If a person is exposed to the internal materials of the battery cell due to damage on the outer casing, the following actions are recommended.

- In case of inhalation: Leave the contaminated area immediately and seek medical attention.
- In case of contact with eyes: Rinse eyes with running water for 15 minutes and seek medical attention.
- In case of contact with skin: Wash the contacted area with soap thoroughly and seek medical attention.
- In case of ingestion: Induce vomiting and seek medical attention.

Fire Fighting Measures

Suitable extinguishing media

Use metal fire extinction powder or dry sand if only few cells are involved.

In case of large fire, use large amount of water to extinguish or an Lithium fire extinguisher to extinguish.

Special hazards arising from the chemical

May form hydrofluoric acid if electrolyte comes into contact with water.

In case of fire, the formation of the following flue gases cannot be excluded: Hydrogen fluoride (HF), Carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters

If batteries are on charge, shut off power.

Wear self-contained breathing apparatus and protective suit.



WARNING

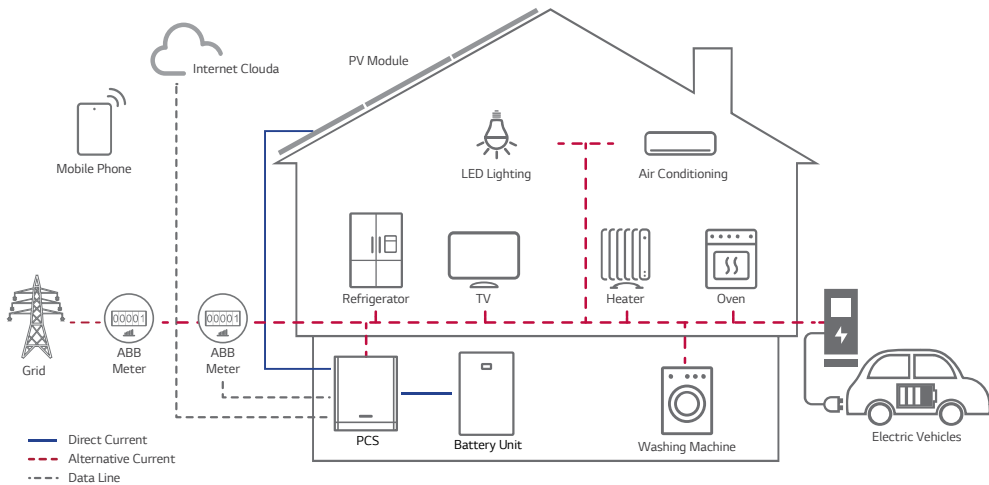
The battery cell may catch fire when heated above 130 °C (266 °F). When the battery pack is burning, it will leak poisonous gases. Do not approach it.

Effective way to deal with accidents

- On land: Place the damaged battery into a separate place and call your local fire department or service engineer.
- In water: Stay out of the water and do not touch the product if any part of the battery, inverter, or wiring is submerged.
- Do not use the submerged battery again. Contact your service engineer for assistance.

Product Features

This product is a Lithium-Ion Battery unit for the Energy Storage System. The direct current (DC) electricity generated from photovoltaic (PV) generated is stored to the battery unit. The direct current (DC) electricity on the battery unit is converted to alternating current (AC) electricity and feed this into home load or power grid on the connected PCS.



Product Specifications

All specifications and descriptions contained in this document are verified to be accurate at the time of printing. However, since continuous improvement is a goal at LG Electronics, we reserve the right to make product modifications at any time.

The images provided in this document are for demonstration purposes only. Depending on product version and market region, details may appear slightly different.

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Symbol Used on the Labels

Symbol	Description
	The relevant equipment complies with the requirements in the EC guidelines.
	UL approval Recognized
	Risk of Electric shock
	This product should not be disposed of with other household waste. Disposal regulations of the country should be observed.
	Refer to the installation manual or operating manual.
	Caution: risk of danger
	Caution: hot surface
	Caution: risk of electric shock, energy storage timed discharge
	Caution: risk of electric shock
	No open flame, open ignition source, or smoking
	Wear protective glasses when working on the battery unit.
	Install this product out of reach of children.
	Read the instruction manual/booklet before starting work or before operating equipment or machinery.
	Take care when handling corrosive substances
	Take care when handling explosive materials
	Serious injury may occur due to the heavy weight of the product.
	Observe precautions for handling electrostatic discharge sensitive devices.

Symbol	Description
	Disconnect the machine or equipment before carrying out maintenance or repair
	Take care to avoid causing a fire by igniting flammable material
	Ensure adequate ventilation of the charging area and take care to avoid coming in contact with acid.
	In case of contact with acid material, immediately flush the area with plenty of water. Get medical attention immediately. Wash contaminated clothing before reuse with sufficient water.
	Fire extinguishers must be used to put out flames.
	Ensure the conductive terminals are matched to their corresponding counterparts.

Abbreviations in this Manual

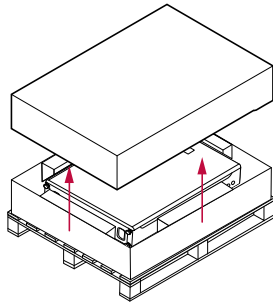
Abbreviation	Designation	Explanation
ESS	Energy Storage System	Inverter system that stores energy in a battery and uses it.
PCS	Power Conditioning System	A device intended to convert AC/DC electricity to charge and discharge the battery.
PV	Photovoltaic	A solar panel system that converts solar energy into direct current electricity
SOC	State of charge	The current charge level of a rechargeable battery relative to its capacity
BCU	Battery Control Unit	An electronic system that controls a rechargeable battery system for securing battery safety
BIC	Battery Interface Circuit	An electronic system that measures and monitors a rechargeable battery status
DC	Direct Current	-
AC	Alternating Current	-

Unpacking

Unpacking the battery unit

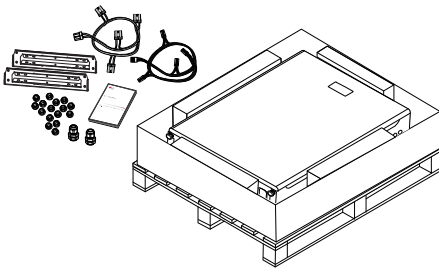
Unpack the battery unit from its packaging.

1



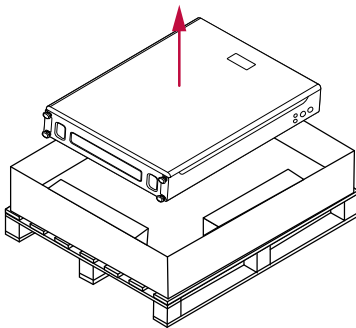
Remove the packing tape and open the box.

2



Take out the all the accessories and components.

3

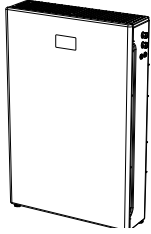


Remove the battery unit from the packaging.

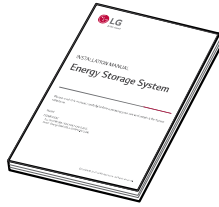
WARNING

- When working on the battery installation, at least 2 people are needed for safe installation and moving.
- This product is heavy. Wear appropriate personal protective equipment (such as gloves and protective footwear) when handling the unit. Only a sufficient number of trained movers should lift the product.

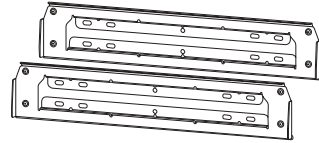
Contents of this product



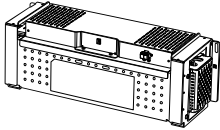
Battery unit



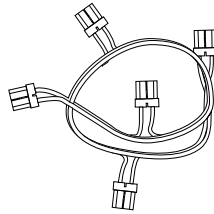
Installation Manual & Quick Installation Guide



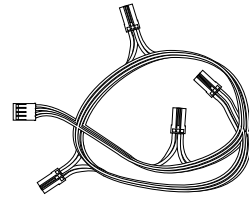
Wall brackets



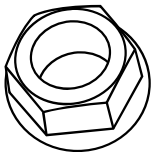
Battery module
(BUEL011HBC1 : 3EA,
BUEL015HBC1 : 4EA)



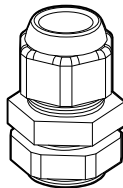
Power cable harness



Communication cable harness



Nuts (17 EA)



Cable glands (2 EA)

Additional Components for Installation

Applied to	Additional Components
Wall mounting	<ul style="list-style-type: none">• Refer to "Floor Standing Wall Mount".• Recommended Screw : stainless steel screws with TX M8 x 50mm• Proper anchor to wall type
Communication connection	<ul style="list-style-type: none">• Follow the local code.• CAT V (better CAT VI) with 4 x 2 x 0.4 mm² or 4 x 2 x 0.6 mm² TWP Cable• Minimum 300 V rated 3-conductor (twisted pair) or double-insulated (with one twisted pair) shielded copper (Cu) cable.
Power connection	<ul style="list-style-type: none">• 600V Twisted Shielded Pair Cable (at least 3-pair cable is required)• Cable with minimum 1 x 6 mm² in the color black and red, grounding green minimum 1 x 6 mm²• Minimum 600 V rated copper (Cu) cable rated at 90°C

Required Tools



Insulated gloves



Safety glasses



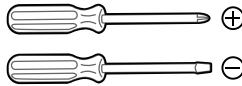
Protective footwear



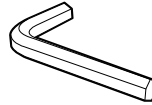
Drill and drill bit



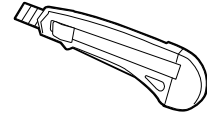
200 mm magnet bit holder and T-Handle torque wrench with magnet hex socket (M5, M6, M8)



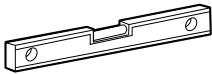
Screw driver
Phillips (5 mm)
Flat head (6, 5, 4, 2 mm)



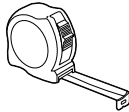
Hex wrench
(6 mm, 8 mm)



Cutter



Inclinometer



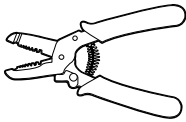
Tape measure



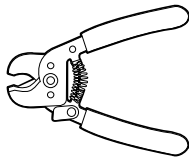
Writing utensil



Wire strippers (A)



Wire strippers (C)

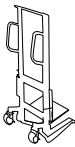


Wire cutter (B)

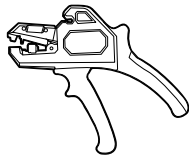


Spanner (17 mm)

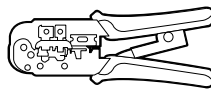
Recommended Tools



Lift equipment



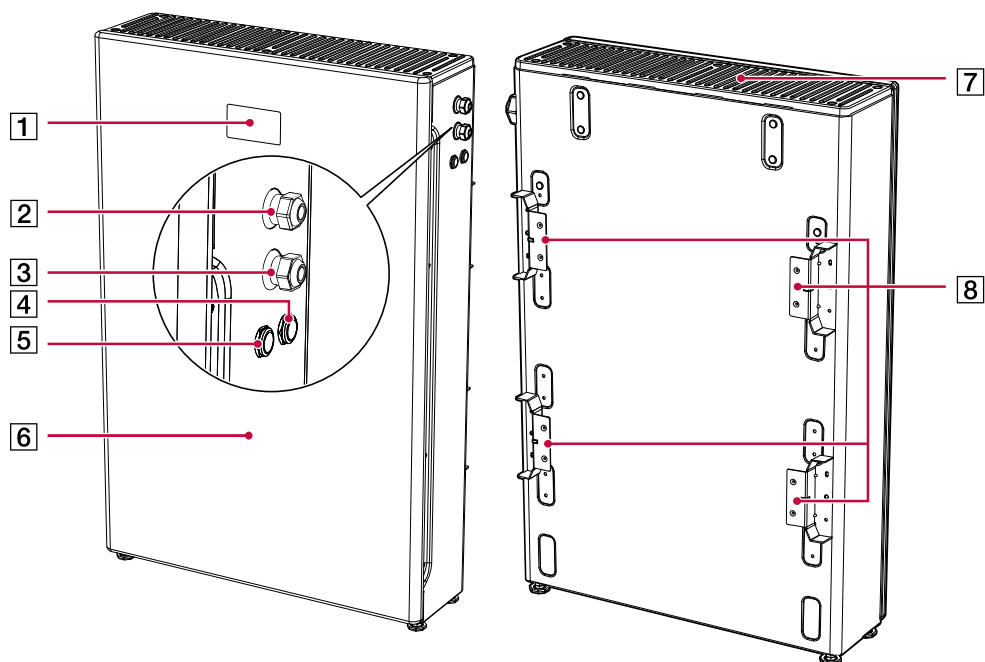
Wire strippers (B)



RJ 45 Clipping tool

Name of each part

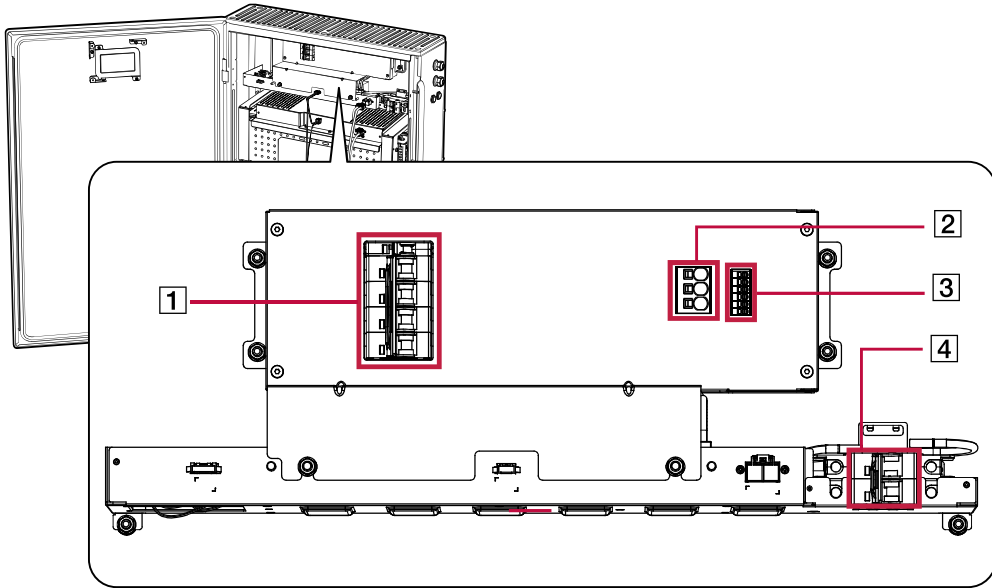
Front and Rear



- 1** LED Indication
- 2** Cable gland (communication)
- 3** Cable gland (power)
- 4** START (5s) button
- 5** POWER button

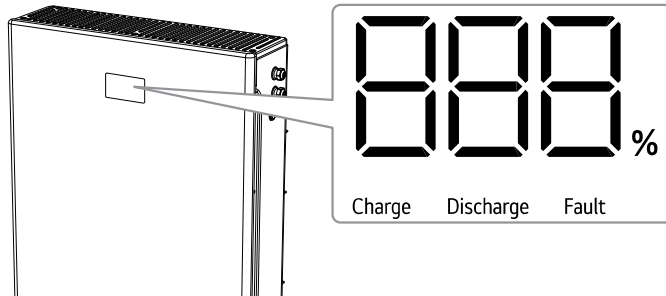
- 6** Front cover
- 7** Top cover
- 8** Wall bracket connected parts


Connection parts



- 1** Circuit breaker of PCS
- 2** Power terminals (Positive, GND(Earth), Negative)
- 3** Communication terminal
- 4** Circuit breaker of battery pack

LED Indicators



LED	Status and Indications	
	SOC level + %	Error code*
	Operating	Fault
Charge	On	Off
	BAT. Charging	Not operating
Discharge	On	Off
	BAT. Discharging	Not operating
Fault	On	Off
	Fault	Normal

* Refer to "Error Codes and Messages" for more information.

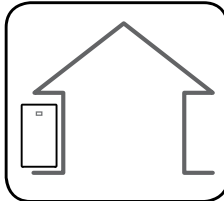
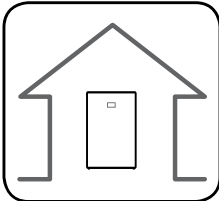
Installation Location

WARNING

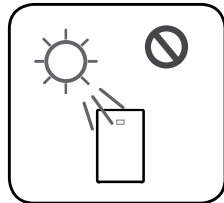
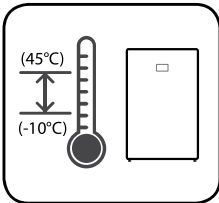
- Read all of the instructions, cautions, and warnings for the battery unit and documentation on other associated components.
- Wear protective gloves when handling equipment. Sharp edges may cause personal injury.
- Dispose of the packing materials safely.
 - Packing materials, such as nails and other metal or wooden parts, may cause puncture wounds or other injuries.

CAUTION

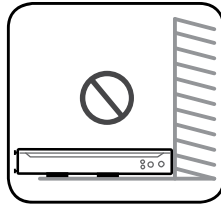
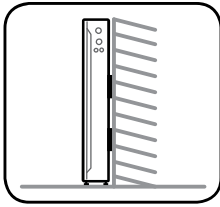
- The secondary short-circuit current rating is increased at the transfer connection point to the public electricity supply system by the nominal current of the connected ESS PCS.
- Exercise extreme caution when transporting the product. There is risk of the product falling and causing physical injury.
- Use appropriate moving equipment to transport; make sure that the equipment is capable of supporting the weight of the equipment.



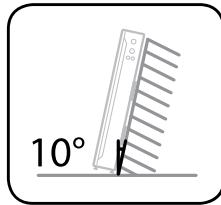
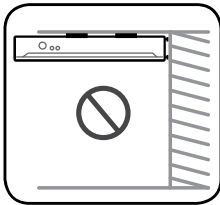
- This product is designed to be installed for indoor/outdoor use.



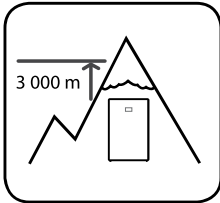
- The operating temperature range is from -10°C to 45°C.
- Do not install this product in a location exposed to the direct sunlight.
- Install the product in a clean, cool room.



- This product is designed to be installed on the floor standing with a wall mounting. Wall mounting is only for supporting purpose. Do not use in case of the wall brackets are used for wall mounting at higher level (without floor standing) as safety concerns may arise.
- The mounting surface must be able to support the weight of this product.
(apprx. HBC 11H - 117Kg / HBC15H - 142kg)
- The floor of installing location must be able to support the weight of this product.
(apprx. HBC 11H - 117Kg / HBC15H - 142kg)



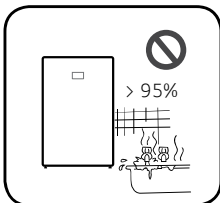
- Do not install the product on the ceiling.
- Do not install the product widthwise or install on a wall with a lean of more than 10 degrees.
- Do not install the product tilting forward.



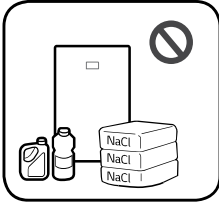
- This product must not be installed or used at altitudes above 3 000 m.



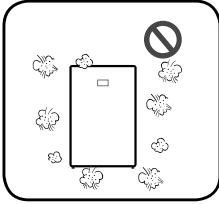
- Do not install this product in an area prone to flooding



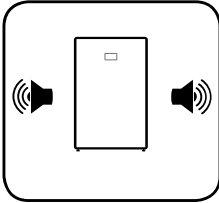
- Do not install this product in a highly humid area such as a bathroom.
- Do not install the product in an area with vibrations.



- Do not install this product in a place with ammonia, corrosive vapours, acids or salts.
- Install this product out of reach of children and animals.

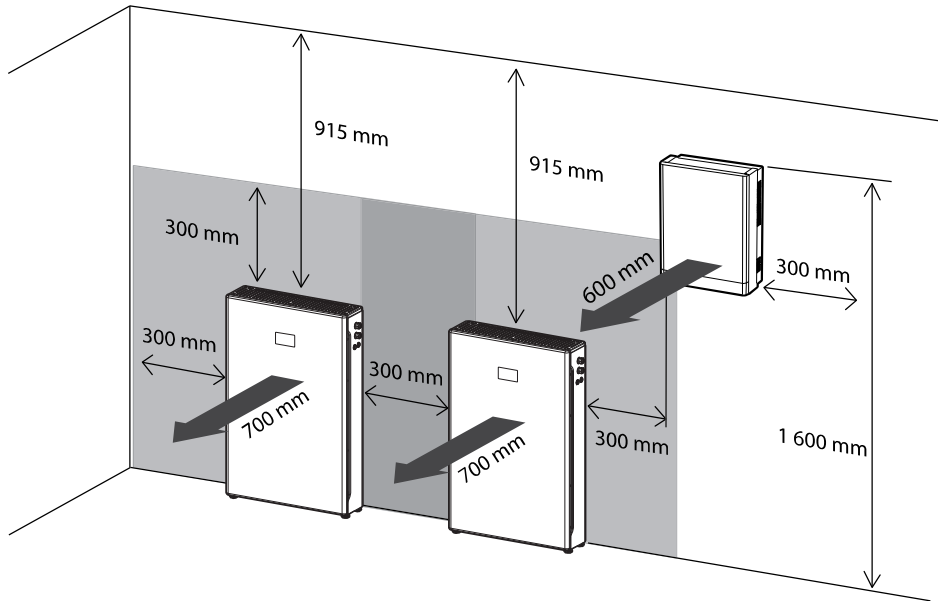


- Do not install this product in places or environments subject to the heavy build-up of dust.
- Do not block the air ventilation openings for cooling.
- When cleaning the air duct, shut off all of the systems including battery unit.



- This product generates some noise at times and should not be installed close to living or sleeping areas.
- Please consult the location with your installer when installing in places subject to noise sensitivity.

Minimum clearance



This product must be installed with clearance at the left, right, top, bottom and front of the product as shown in the figure.

Make sure to keep at least a 300 mm distance between enclosure and enclosure, enclosure and other devices.

Keep the 700 mm distance between the front door and in order to allow space for installation and servicing.

If the door is closed, all other products should be away at least 300 mm from the front door for safety operation.

Be sure not to place any object on top of the enclosure. Risk of fire or serious injury due to high temperature.

If the ESS is installed outdoors with eaves, there must be at least 915 mm clearance to eaves.

Floor Standing Wall Mount

This product must be installed on the wall considering appropriate environments described in "Installation Location". Be sure to follow this instructions exactly.



WARNING

- It is important to ensure that the drilling locations are not located on any electrical wiring within the wall.
- Align both bracket positions correctly. If the bracket positions are not correct, the battery unit may not be mounted properly.



CAUTION

- Make sure the screws, anchors and additional supports are appropriate for the wall type.
- Make sure the pilot hole size matches the anchor type.

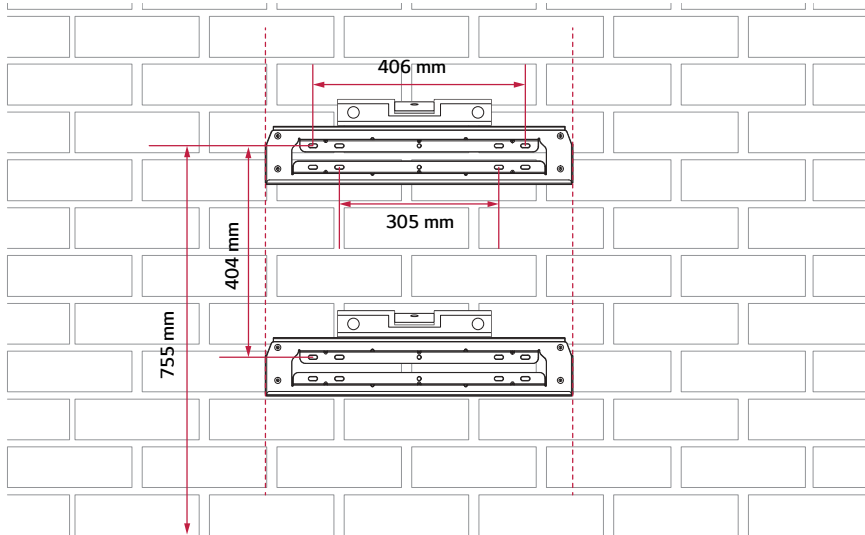


INFO

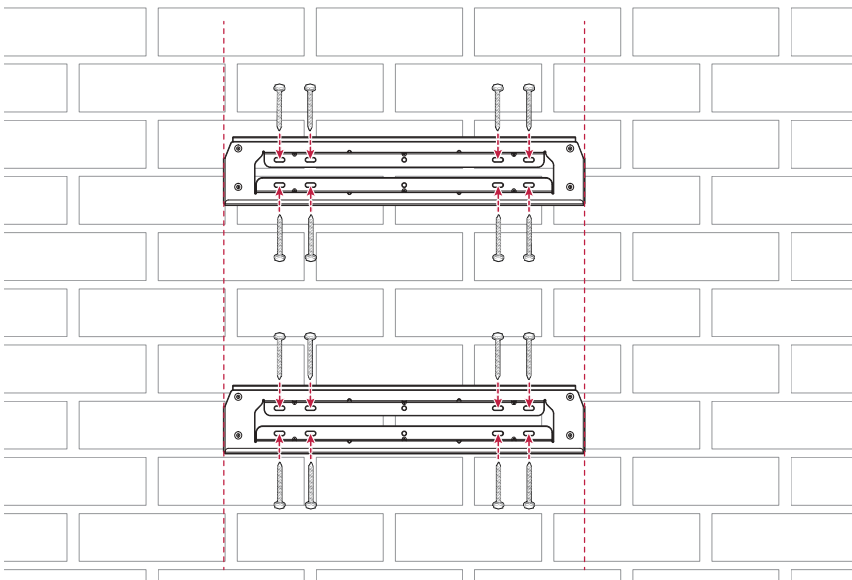
- When attaching the wall bracket to a wall, adjust the horizontal level using inclinometer.
- When indicate the position to drill you can refer to the Quick Installation Guide which is true to scale print of the actual wall bracket if required.
- Quick Installation Guide is in the accessory package.
- Before fixing the bracket screws, check the horizontal level once again using inclinometer.
- Depending on the surface, different screws and anchors may be required for installing the wall bracket. Therefore, these screws and anchors are not content of the product. The system installer is responsible for selecting the proper screws and anchors.
- It is recommended to use stainless steel screws with TX M8 x 50 mm.

- 1 Place the wall bracket on a wall which meets every installation conditions and clearance requirement.

And indicate the positions to drill using a pencil or other writing utensil. Drill holes in the indicated positions. (Mount bracket hole guide Template)



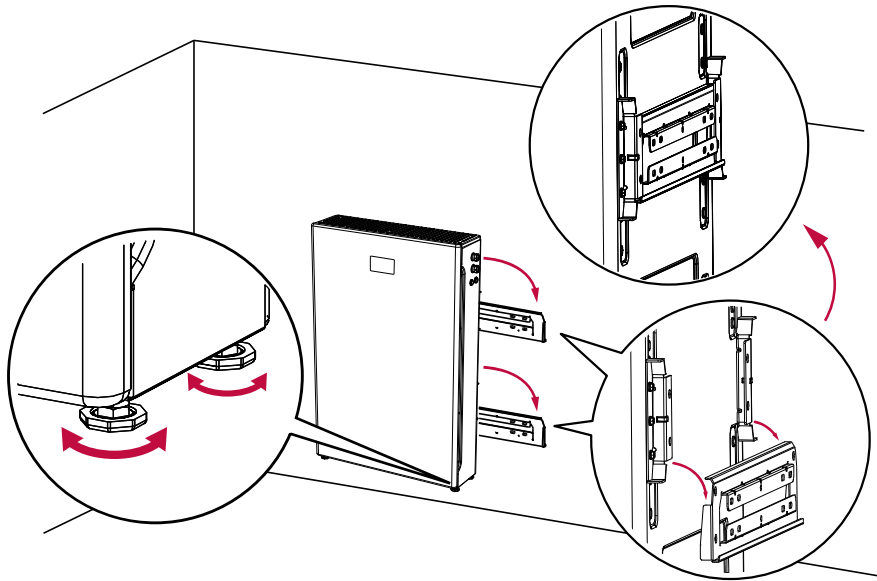
- 2 Affix the wall bracket to the wall with screws and anchors.



! WARNING

- The battery unit must be installed on the floor due to its heavy weight. Wall mounting is only for supporting purposes.
- Rotate the legs at the bottom of the battery unit to adjust the level.
- Install the product on a flat surface.
- There should be no foreign object that could damage the bottom of the product.

- 3** Hang the enclosure on the wall bracket.
Then, rotate the legs to bring the product level with the floor.



i INFO

- Depending on the surface, different screws, anchors and additional supports may be required for installing the wall brackets. Therefore, these screws and anchors are not provided. The system installer is responsible for selecting the proper screws and anchors.
- It is recommended to use stainless steel screws with TX M8 x 50 mm.

Installing battery modules

This product does not have battery modules inside. Before wiring, assemble the battery modules that are separately supplied.

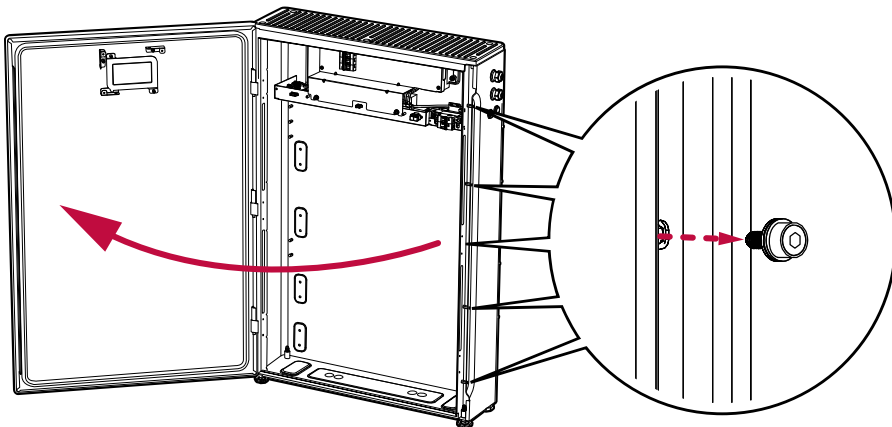
WARNING

- Wear rubber gloves and protective clothing (protective glasses and boots) when working on high voltage/high current systems such as battery modules.
- Before starting electrical connection, make sure that the circuit breaker of PCS and the circuit breaker of battery pack are off securely.

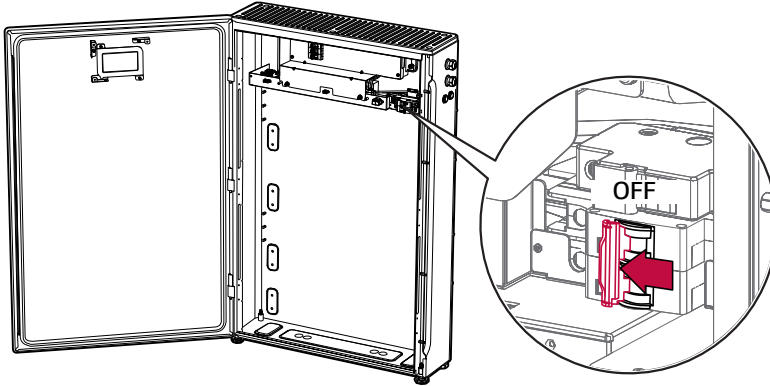
CAUTION

- Serious injury may occur due to the heavy weight of the product. Therefore, special care must be taken in handling. Make sure to have at least two people to move the package.
- All installation work must be done only as described in this manual. Otherwise, it may cause fire, electric shock or serious injury.

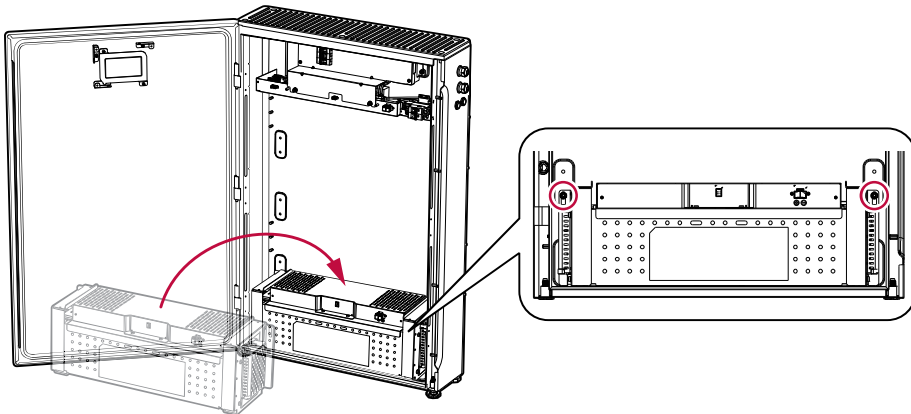
- 1 After mounting the enclosure to a wall, remove the 5 screws on the right side of the enclosure and open the door.



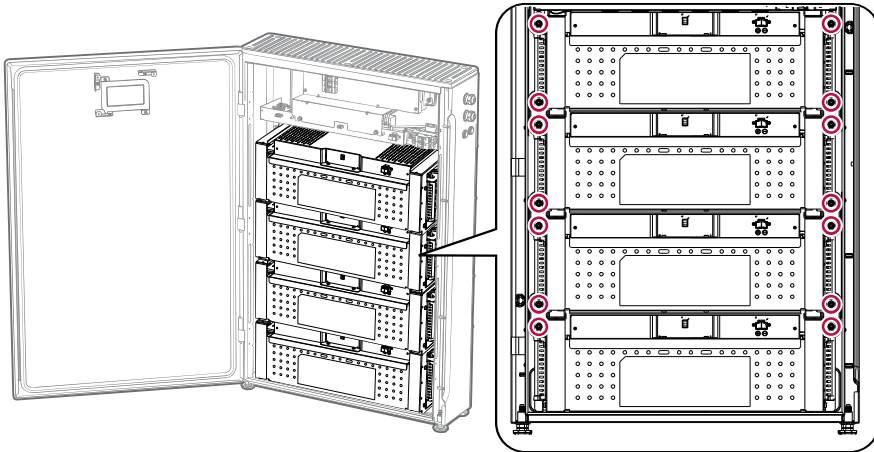
- 2 Before start the wiring, make sure the circuit breaker of the battery unit is OFF.



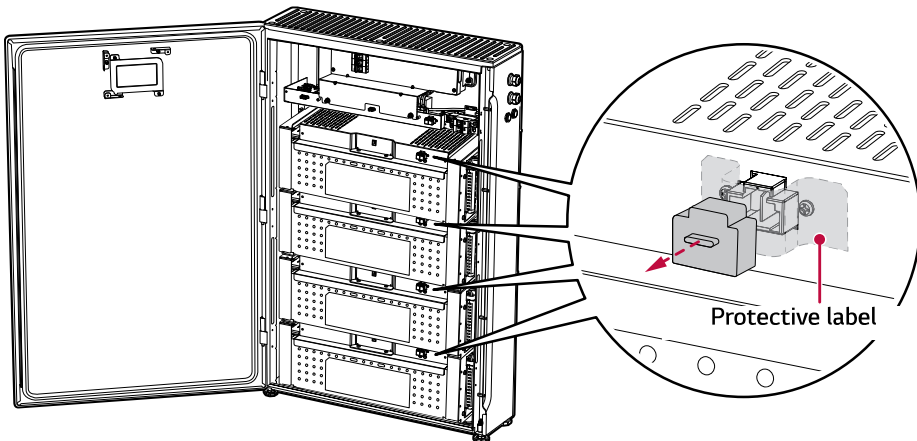
- 3 Place a battery module inside the enclosure and fix the battery module using supplied nuts (2 positions, 25 kgfcm).



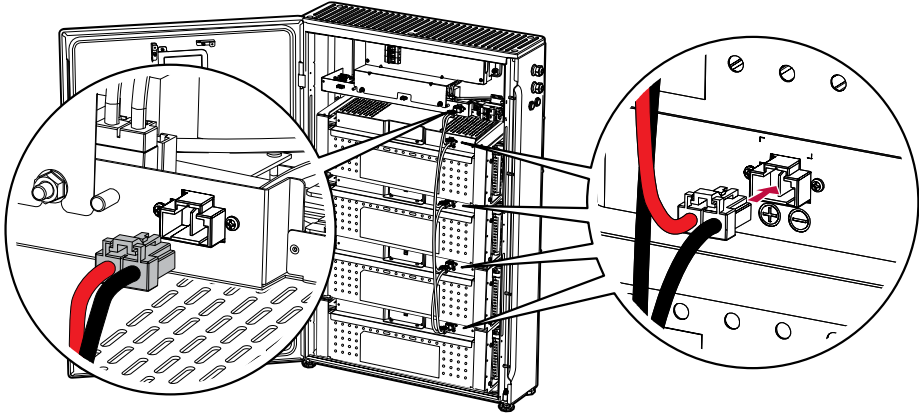
- 4 Stacks the remaining battery modules inside the enclosure and fix them with supplied nuts referring to previous step. Nut assembling positions are indicated in the figure. Total number of battery modules may differ depending on your model.



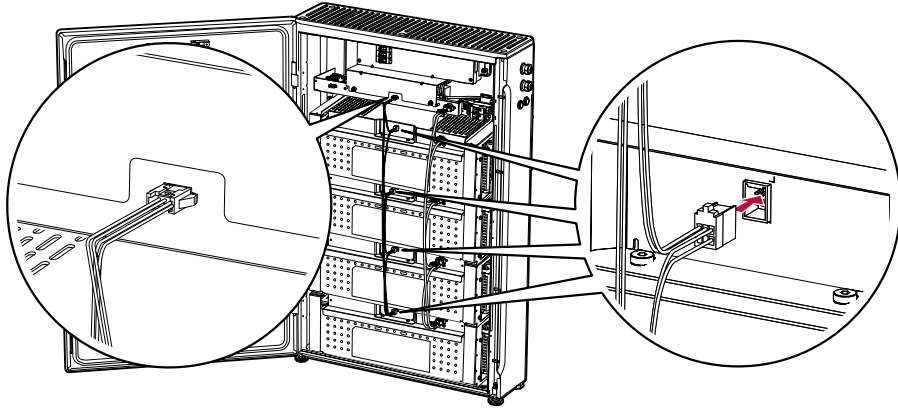
- 5 Remove protective labels and covers on the power connector of the battery modules. Do not touch the terminals after removing the protective label and cover.



- 6 Connect the power cable harness as shown in the figure.



- 7 Connect the communication cable harness as shown in the figure.



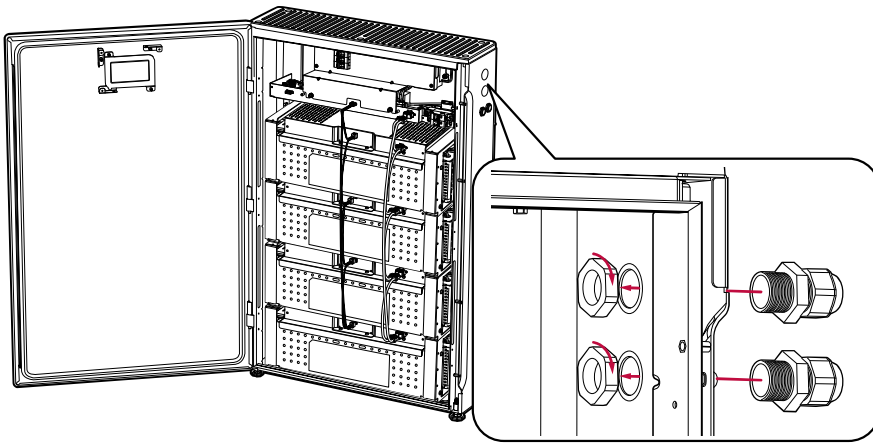
Wiring connection between battery unit and PCS

This product requires an electrical connection to the PCS.

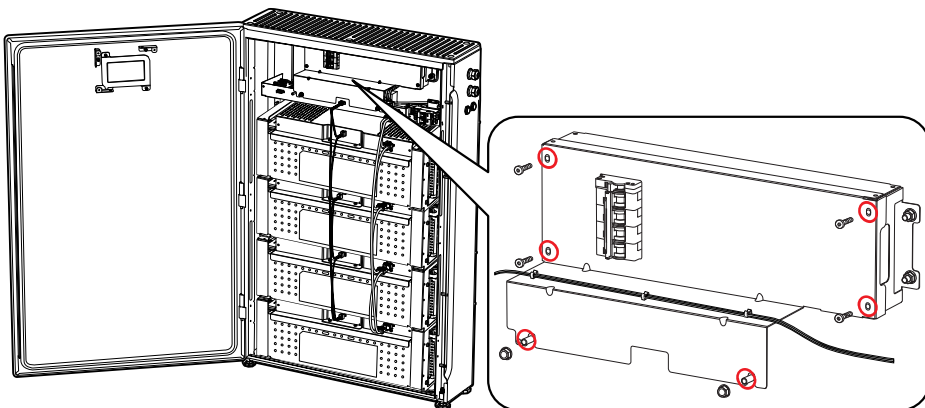
Before connecting the battery to the PCS, install the PCS in place where the battery cables can easily access battery unit.

Refer to the installation manual of the PCS for more information.

- 1 Assemble the supplied cable glands to the right side of the battery unit.

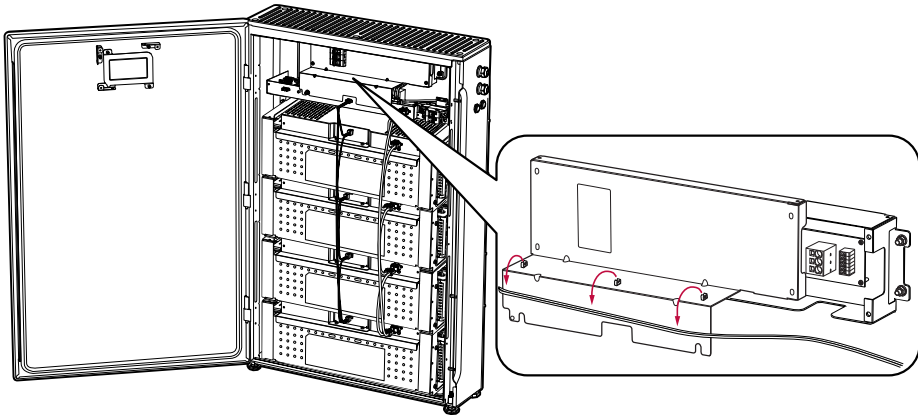


- 2 In order to making the electrical connections, the connection box cover should be removed. Loosen the 4 bolts and 2 nuts indicated in the figure.

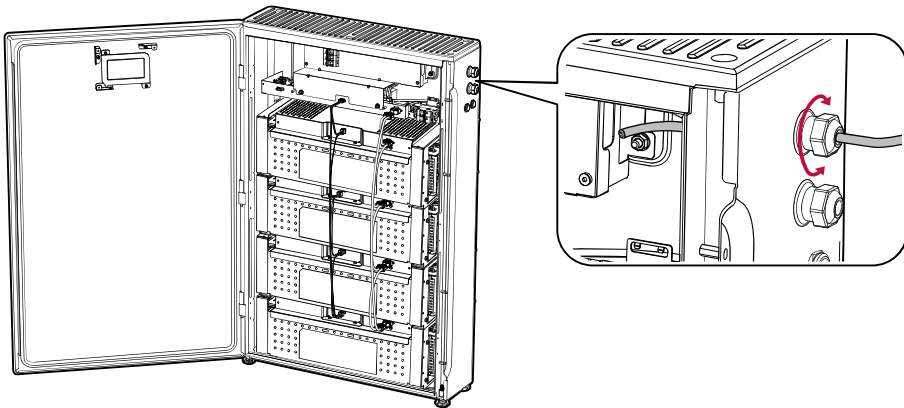


3 Remove the connection box cover.

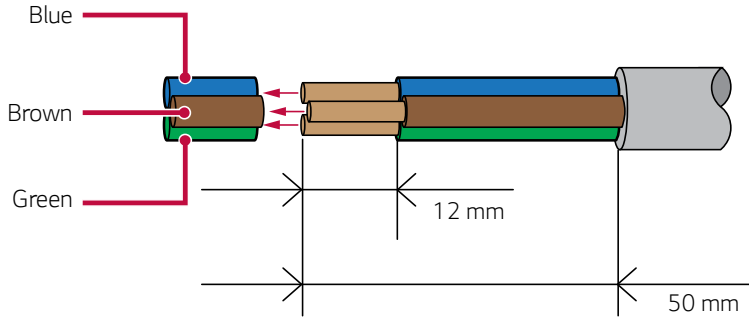
When removing the connection box cover, it may be necessary to temporarily remove cables passing through the connection box cover. After completing all connections, temporarily removed cables must be restored to their original state.



4 Pass the 3-conductor communication cable through the upper cable gland to the right side of the battery unit.
Rotate the cable gland to tighten the gland hole.

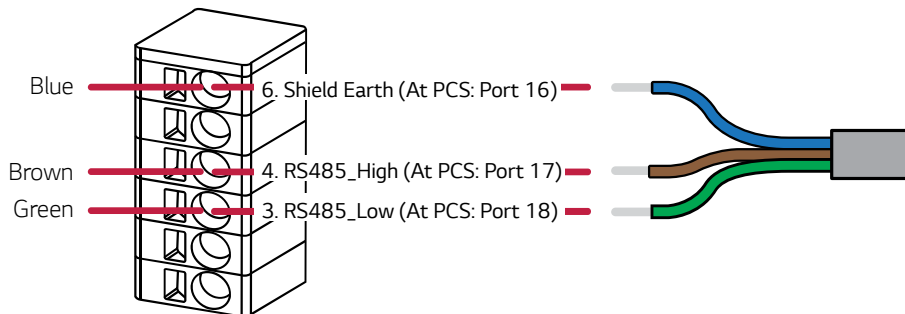
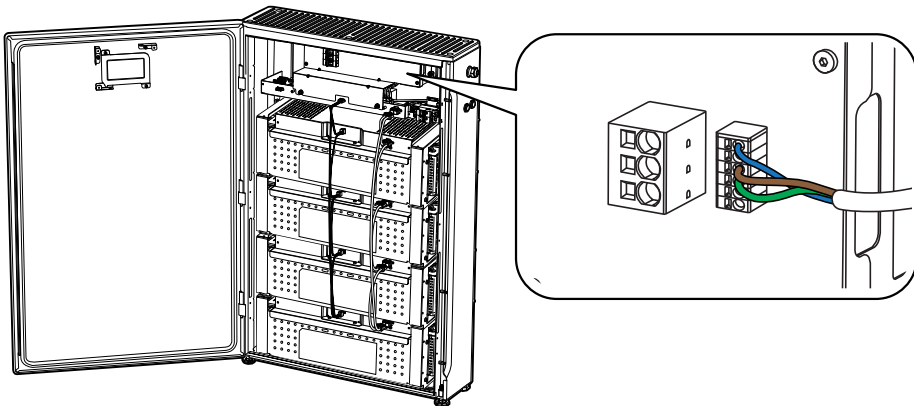


- 5 Strip off the 3-conductor communication wires at the battery unit as shown in the figure.

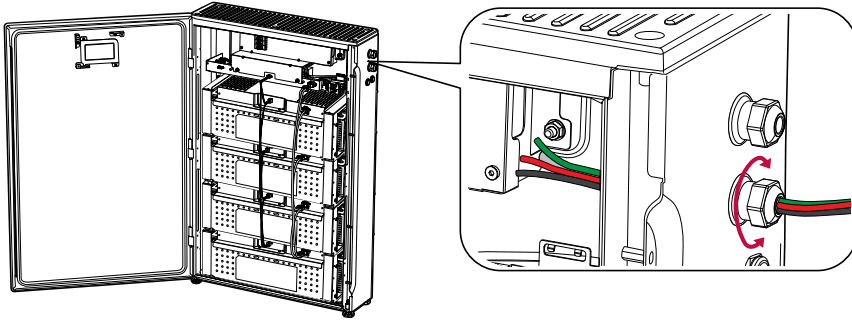


- 6 Connect the 3-conductor communication wires to the communication terminal block as shown in the figure.

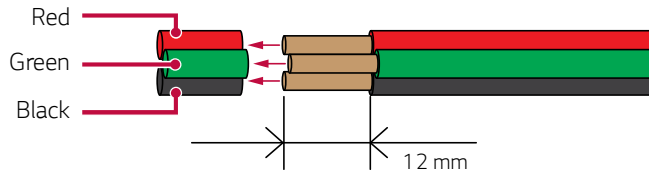
For connection at LG ESS PCS, please refer to the PCS manual chapters "ATS, BMS, EV METER Communication Connections".



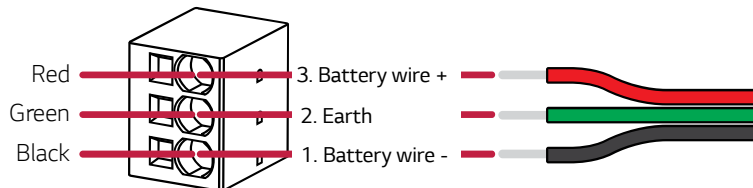
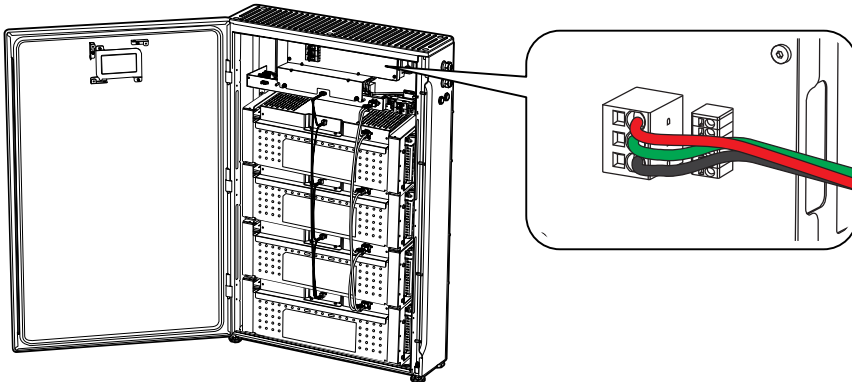
- 7** Pass the 3 power cables (Positive, Negative and Ground) through the lower cable gland on the right side of the battery unit. Rotate the cable gland to tighten the gland hole. For connection at LG ESS PCS please refer to the PCS Manual chapter "Battery Connection".



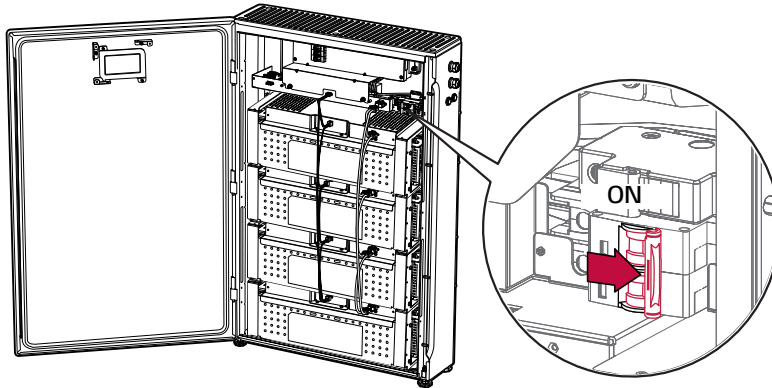
- 8** Strip off the 3 power cables at the battery unit as shown in the figure.



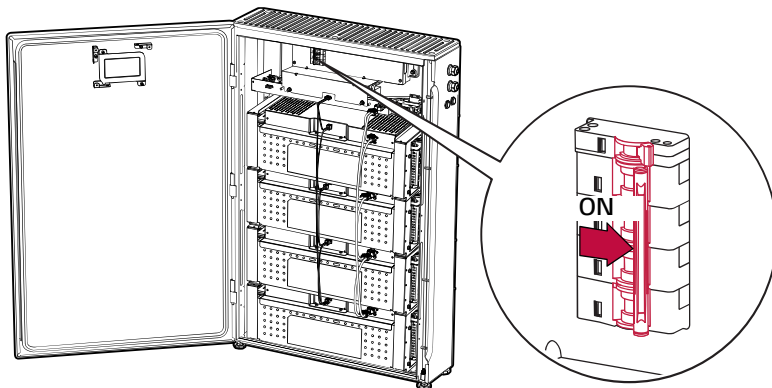
- 9** Connect the 3-conductor power wires to the power terminal block as shown in the figure. After completing all connections, temporarily removed connection box cover and cables must be restored to their original state.



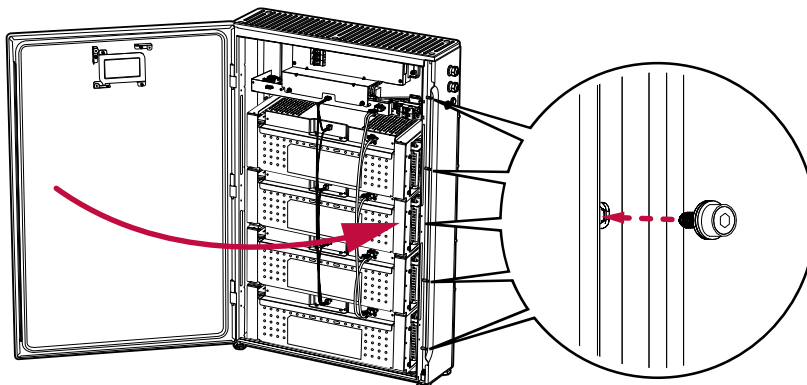
- 10 Switch the main circuit breaker of battery pack to the ON.



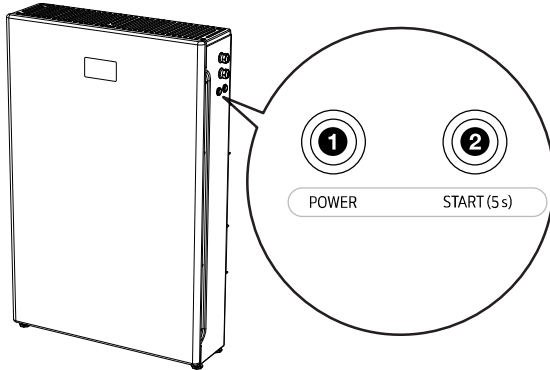
- 11 Switch the circuit breaker of PCS to the ON.



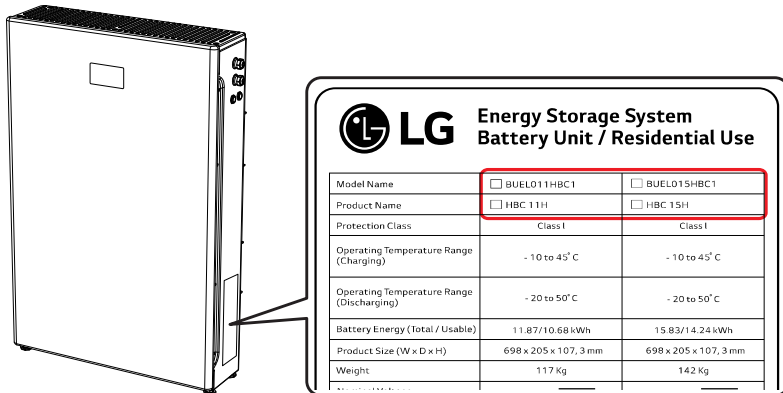
- 12 Close the front door and fasten the bolts on the right side. (30 kgf.cm)



- 13** Press the POWER button to turn the battery unit on. And then press and hold the START (5s) button for 5 seconds. You can hear the sound "click".
If SOC level is shown on the LED display, the battery operation has been normally succeeded.



- 14** Find the main label on the right side of the battery unit and mark the checkboxes of the applicable items using oil-based autograph pen (black).



Maintenance



WARNING

Be sure to turn off the battery unit before cleaning or inspecting it.

Cleaning the Product

Wipe off the outside of the product with a soft towel moistened with lukewarm water and a neutral detergent, then wipe it with a clean hand towel so that dirt will not be attracted to the product.

When cleaning the outside of the product, do not use a rough brush, toothpaste, or flammable materials. Do not use cleaning agents containing flammable substances.

- It may cause discoloration or damage the product.
- Flammable substances : Alcohol (Ethanol, Methanol, Isopropyl alcohol, Isobutyl alcohol, etc.), Thinners, Benzene, Flammable liquid, Abrasives etc.

Cleaning with strong pressure while cleaning may damage the surface. Do not leave rubber or plastic products in contact with the product for a long period of time.

Inspecting Regularly

It is recommended to check the operating status and connection status once a year. It should be done by an LG-certified service provider. Contact an authorized dealer or the seller you purchased the system from.

Contact

If you have technical problems or questions, contact installation company or LG Electronics.

1. Installation Company

Address :

Tel :

2. Customer Service

LG Electronics ESS Service

E-Service Supro GmbH

Stolberger Straße 25

06493 Harzgerode

Tel : Germany: 0049 (0)39484 / 976 380

Austria: 0043 (0)720 / 11 66 01

Switzerland: 0041 (0)44 / 505 11 42

Belgium, Netherlands, Luxembourg:
0031 20 / 456 1660

E-Mail : lge@e-service48.de

3. LG Electronics Contact

LG Electronics Deutschland GmbH

Alfred-Herrhausen-Allee 3-5

65760 Eschborn

Tel. : + 0049 18 06 807 020

E-Mail: b2b.service@lge.de

LG Electronics Benelux

Krijgsman 1, 1186 DM, Amstelveen,

The Netherlands

Tel: +0031 (0)20 456 3100

E-Mail: b2b.service@lge.de

Disposing the product

When the product reached to the end of its service life or defect beyond repair, dispose the product according to the disposal regulations for electronic waste in your area. Disposing the product must be carried out by qualified personnel only. Contact authorized dealer or where you purchased.



1. This crossed-out wheeled bin symbol indicates that waste electrical and electronic products (WEEE) should be disposed of separately from the municipal waste stream.
2. Old electrical products can contain hazardous substances so correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
Your old appliance may contain reusable parts that could be used to repair other products, and other valuable materials that can be recycled to conserve limited resources.
3. You can take your appliance either to the shop where you purchased the product, or contact your local government waste office for details of your nearest authorised WEEE collection point. For the most up to date information for your country please see www.lg.com/global/recycling

Removal of waste batteries and accumulators (Product with embedded battery ONLY)

You can take your appliance either to the shop where you purchased the product, or contact your local government waste office for details of your nearest authorised WEEE collection point. Please note that some distributors are obliged:

- to take back old devices from end-users upon selling a new equivalent equipment to them and
- provide free-of-charge collection for electrical and electronic equipment of very small dimensions (not exceeding 25 cm) without the obligation for end-users to purchase new equipment of an equivalent type.

When distributors deliver new equipment to private households, they are obligated to collect old equipment directly from them or to propose a take-back solution in a reasonable distance. Therefore, we recommend you to contact your distributor for more information.

LG Electronic Deutschland GmbH is duly registered as Producer in Germany. As such, LG contributes to the country-wide collection and recycling of WEEE that you bring to municipal separate collection facility. For the most up to date information please see www.lg.com/global/recycling or <https://www.lg.com/de/support/altgeraete-rueckgabe>

Entsorgung Ihrer Altgeräte



1. Das durchgestrichene Symbol eines fahrbaren Abfallbehälters weist darauf hin, dass Elektro- und Elektronik-Produkte (WEEE) getrennt von Hausmüll entsorgt werden müssen. Bitte entsorgen Sie Altgeräte getrennt von anderem Abfall und bringen Sie diese zu einer ausgewiesenen Sammelstelle für das Recycling von elektrischen und elektronischen Geräten. Falls die Geräte Batterien oder Lampen enthalten, die vom Endverbraucher ohne Beschädigung leicht entnommen werden können, trennen Sie diese bitte vor der Entsorgung von den Hauptgeräten, es sei denn, Sie möchten, dass die alten Geräte wiederverwendet werden (alte Batterien und Lampen werden getrennt gesammelt).
Bitte beachten Sie auch, dass Sie persönlich dafür verantwortlich sind, personenbezogene Daten auf dem Gerät zu löschen, bevor Sie Ihre Geräte entsorgen.
2. Alte elektrische Produkte können gefährliche Substanzen enthalten, die eine korrekte Entsorgung dieser Altgeräte erforderlich machen, um schädliche Auswirkungen auf die Umwelt und die menschliche Gesundheit zu vermeiden. Ihre ausgedienten Geräte können wiederverwendbare Teile enthalten, mit denen möglicherweise andere Produkte repariert werden können, aber auch sonstige wertvolle Materialien enthalten, die zur Schonung knapper Ressourcen recyclet werden können.
3. Sie können Ihr Gerät entweder in den Laden zurückbringen, in dem Sie das Produkt ursprünglich erworben haben oder Sie kontaktieren Ihre Gemeindeabfallstelle für Informationen über die nächstgelegene autorisierte WEEE Sammelstelle.
Bitte beachten Sie, dass einige Vertreiber verpflichtet sind :
 - bei der Abgabe eines neuen Elektro- oder Elektronikgerätes an einen Endnutzer ein Altgerät des Endnutzers der gleichen Geräteart unentgeltlich zurückzunehmen, und
 - Altgeräte, die in keiner äußeren Abmessung größer als 25 Zentimeter sind, im Einzelhandelsgeschäft oder in unmittelbarer Nähe hierzu unentgeltlich zurückzunehmen;
 Wenn Händler Neugeräte an Privathaushalte liefern, sind sie verpflichtet, Altgeräte direkt bei diesen abzuholen oder Rückgabemöglichkeiten in zumutbarer Entfernung anzubieten. Daher empfehlen wir Ihnen sich für weitere Informationen an Ihren Händler zu wenden.
4. LG Electronic Deutschland GmbH ist ordnungsgemäß als Hersteller in Deutschland registriert. Damit trägt LG deutschlandweit zur Sammlung von Elektro- und Elektronik-Altgeräten bei, die Sie in kommunalen Getrenntsammlungen abgeben. Die aktuellsten Informationen finden Sie unter: www.lg.com/global/recycling oder <https://www.lg.com/de/support/altgeraete-rueckgabe>.

Specifications

Battery Unit	Unit	SPEC	
		BUEL015HBC1	BUEL011HBC1
Module Configuration (e.g. XSYP)		4S 1P	3S 1P
Battery Package Types		Cylindrical	Cylindrical
Total Capacity	[kWh]	15.83	11.87
Usable capacity ¹⁾	[kWh]	14.24	10.68
Rated Power	[kW]	5.00	5.00
Nominal voltage	Vdc	406.56	304.92
Charging Voltage range	Vdc	361.76 ~ 458.3	271.32 ~ 343.7
Discharging Voltage range	Vdc	361.76 ~ 458.3	271.32 ~ 343.7
Minimal Capacity	Ah	36.90	36.90
Cell Configuration (e.g. XSYP)		112S 9P	84S 9P
Module Configuration (e.g. XSYP)		28S 9P	28S 9P
Maximum charging voltage	Vdc	458.3	343.7
End of discharging voltage	Vdc	361.76	271.32
Maximum charging current	A	16.00	16.00
Maximum discharging current	A	13.22	17.63
Standard charging current	A	11.1	11.1
Standard discharging current	A	7.38	7.38
Size	mm	698 (W) x 205 (D) x 1073 (H)	698 (W) x 205 (D) x 1073 (H)
Weight	kg	142.00	117.00
Over Voltage Cut off Parameter	Vdc	4.1	4.1
Over Current Cut off Parameter (Charge)	A	≥18.0	≥18.0
Over Current Cut off Parameter (Discharge)	A	≥25.0	≥25.0
Over Temperature Cut off Parmeter (Charge)	°C	45.00	45.00
Over Temperature Cut off Parmeter (Discharge)	°C	50	50
Upper limit charging voltage	Vdc	458.3	343.7
Upper limit charging Temp.	°C	45.00	45.00
Calculated Rated Capacity	Ah	36.9	36.9

Battery Unit	Unit	SPEC	
		BUEL015HBC1	BUEL011HBC1
Method For calculating Rated Capacity		M48F cell min capacity (4.100Ah×9P)	M48F cell min capacity (4.100Ah×9P)
Recommended Charge Instructions		CC : 11.1A / CV : 458.3V / Cut off 600mA	CC : 11.1A / 343.7V / Cut off 600mA

1) Value for battery cell only(depth of discharge 92%) capacity may be limited to protect system. The capacity may decrease as the battery ages.

Battery Module	Unit	SPEC (BPLG004HBG1)
Cell Configuration (e.g. XSYP)		28S 9P
Nominal voltage	Vdc	101.64
Capacity (Ah)	Ah	36.90
Maximum charging voltage	Vdc	114.60
End of discharging voltage	Vdc	70.00
Maximum charging current	A	18.27
Maximum discharging current (@ 5.0kW)	A	19.80
Standard charging current	A	11.10
Standard discharging current	A	7.38
Module size	mm	600.2 (W) x 191.6 (D) x 211.9 (H)
Module weight	kg	26

Battery Cell	Unit	SPEC (JPTUV-11151560379313 001)
Model Name		INR/22/71/M/0+50/90
Nominal voltage	Vdc	3.63
Capacity (Ah)	Ah	4.60
Maximum charging voltage	Vdc	4.20
End of discharging voltage	Vdc	2.50
Maximum charging current	A	3.32
Maximum discharging current	A	6.90
Standard charging current	A	1.38
Standard discharging current	A	0.92

Appendix

Battery Cell	Unit	SPEC (JPTUV-11151560379313 001)
Upper limit charging voltage	Vdc	4.20
Upper limit charging Temp.	°C	45.0
Operating Temp. range	°C	Charging (-10~45) Discharging (-20~55)
Dimension	mm	21.16 x 70.15
Weight	g	68.60

Feature & function	SPEC
Limited Warranty	10 years (Battery : 70% @ 10 years)
Certification	UL1973, UN38.3, IEC62619, IEC63056, IEC60730-1 Annex H, IEC61000(CE), IP55

- Design and specifications are subject to change without notice.

To ensure the full performance of the battery, it is recommended not to exceed the period of six month, from the manufacturing date to the date of commissioning.



Contact office for compliance of this product : LG Electronics European Shared Service Center
B. V Krijgsman 1, 1186 DM Amstelveen, The Netherlands
www.lg.com/global/business/ess

Error Codes and Messages

Code	Message	Description	Solution
670	Cell Over Voltage Warning	Cell Voltage level of battery cell is higher than the limit	Automatically released after warning condition is cleared
671	Cell Under Voltage Warning	Cell Voltage level of battery cell is lower than the limit	Automatically released after warning condition is cleared
673	Unit Over voltage Warning	Unit Voltage level of battery cell is higher than the limit	Automatically released after warning condition is cleared
674	Unit Under voltage Warning	Unit Voltage level of battery cell is lower than the limit	Automatically released after warning condition is cleared
678	Discharge Over Temperature Warning	Discharge temperature level is higher than the limit	Automatically released after warning condition is cleared
679	Discharge Under Temperature Warning	Discharge temperature level is lower than the limit	Automatically released after warning condition is cleared
680	Charge Over Temperature Warning	Charge temperature level is higher than the limit	Automatically released after warning condition is cleared
681	Charge Under Temperature Warning	Charge temperature level is lower than the limit	Automatically released after warning condition is cleared
682	Terminal Over Temperature Warning	Power Terminal temperature level is higher than the limit	Automatically released after warning condition is cleared
686	Discharge Over Current Warning	Discharge current level is higher than the limit	Automatically released after warning condition is cleared
687	Charge Over Current Warning	Charge current level is higher than the limit	Automatically released after warning condition is cleared
689	Atmosphere Discharge Over Temperature Warning	Discharge Atmosphere temperature level is higher than the limit	Automatically released after warning condition is cleared
690	Atmosphere Discharge Under Temperature Warning	Discharge Atmosphere temperature level is lower than the limit	Automatically released after warning condition is cleared
691	Atmosphere Charge Over Temperature Warning	Charge Atmosphere temperature level is higher than the limit	Automatically released after warning condition is cleared
692	Atmosphere Charge Under Temperature Warning	Charge Atmosphere temperature level is lower than the limit	Automatically released after warning condition is cleared
694	Over Discharge Power Limit Warning	Discharge Power level is higher than the limit	Automatically released after warning condition is cleared

Code	Message	Description	Solution
695	Over Charge Power Limit Warning	Charge Power level is higher than the limit	Automatically released after warning condition is cleared
697	ADC Interrupt Warning	Warning of the MCU AD interrupt operation	Automatically released after warning condition is cleared
701	Safety CRC Check Error	Warning of the safety memory range CRC data	Automatically released after warning condition is cleared
702	Cell Over Voltage Fault1	Cell Voltage level of battery cell is higher than the limit	Automatically restart after fault condition is cleared
703	Cell Under Voltage Fault1	Cell Voltage level of battery cell is lower than the limit	Contact service center
705	Unit Over voltage Fault1	Unit Voltage level of battery cell is higher than the limit	Automatically restart after fault condition is cleared
706	Unit Under voltage Fault1	Unit Voltage level of battery cell is lower than the limit	Automatically restart after fault condition is cleared
707	Unit Voltage ADC Mux Fault1	Unit voltage AD conversion multiplex fault	Automatically restart after fault condition is cleared
710	Discharge Over Temperature Fault1	Discharge temperature level is higher than the limit	Automatically restart after fault condition is cleared
711	Discharge Under Temperature Fault1	Discharge temperature level is lower than the limit	Automatically restart after fault condition is cleared
712	Charge Over Temperature Fault1	Charge temperature level is higher than the limit	Automatically restart after fault condition is cleared
713	Charge Under Temperature Fault1	Charge temperature level is lower than the limit	Automatically restart after fault condition is cleared
714	Terminal Over Temperature Fault1	Power Terminal temperature level is higher than the limit	Automatically restart after fault condition is cleared
718	Discharge Over Current Fault1	Discharge current level is higher than the limit	Automatically restart after fault condition is cleared
719	Charge Over Current Fault1	Charge current level is higher than the limit	Automatically restart after fault condition is cleared
721	Atmosphere Discharge Over Temperature Fault1	Discharge Atmosphere temperature level is higher than the limit	Automatically restart after fault condition is cleared
722	Atmosphere Discharge Under Temperature Fault1	Discharge Atmosphere temperature level is lower than the limit	Automatically restart after fault condition is cleared
723	Atmosphere Charge Over Temperature Fault1	Charge Atmosphere temperature level is higher than the limit	Automatically restart after fault condition is cleared

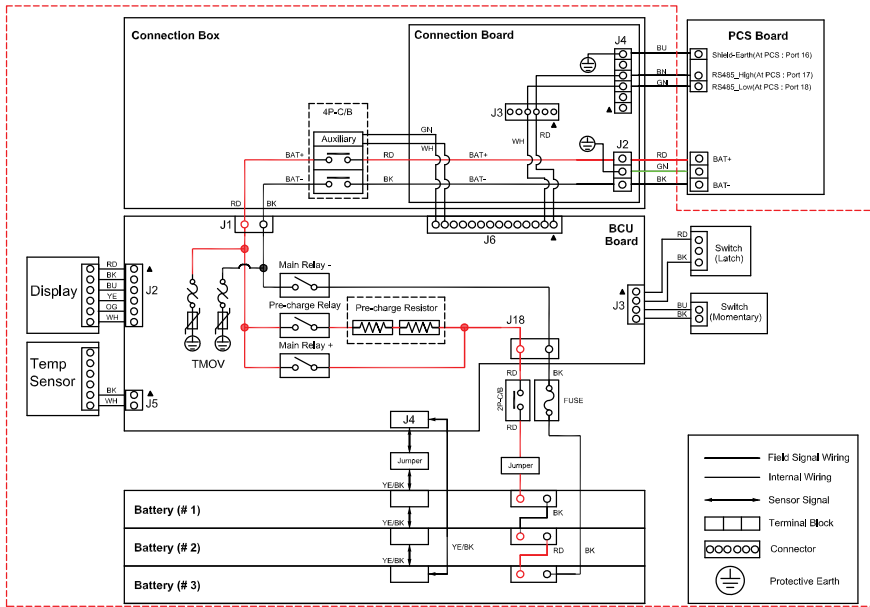
Code	Message	Description	Solution
724	Atmosphere Charge Under Temperature Fault1	Charge Atmosphere temperature level is lower than the limit	Automatically restart after fault condition is cleared
725	Current ADC Mux Fault1	Current AD conversion multiplex fault	Automatically restart after fault condition is cleared
734	Cell Over Voltage Fault2	Cell Voltage level of battery cell is higher than the limit	Contact service center
735	Cell Under Voltage Fault2	Cell Voltage level of battery cell is lower than the limit	Contact service center
737	Unit Over voltage Fault2	Unit Voltage level of battery cell is higher than the limit	Contact service center
738	Unit Under voltage Fault2	Unit Voltage level of battery cell is lower than the limit	Contact service center
740	Cell Voltage Imbalance Fault2	Cell voltage difference between battery cells is higher than the limit	Contact service center
741	Pack Voltage Imbalance Fault2	Pack voltage difference between battery packs in higher than the limit	Contact service center
742	Discharge Over Temperature Fault2	Discharge temperature level is higher than the limit	Contact service center
743	Discharge Under Temperature Fault2	Discharge temperature level is lower than the limit	Contact service center
744	Charge Over Temperature Fault2	Charge temperature level is higher than the limit	Contact service center
745	Charge Under Temperature Fault2	Charge temperature level is lower than the limit	Contact service center
746	Terminal Over Temperature Fault2	Power Terminal temperature level is higher than the limit	Contact service center
750	Discharge Over Current Fault2	Discharge current level is higher than the limit	Contact service center
751	Charge Over Current Fault2	Charge current level is higher than the limit	Contact service center
753	Atmosphere Discharge Over Temperature Fault2	Discharge Atmosphere temperature level is higher than the limit	Contact service center
754	Atmosphere Discharge Under Temperature Fault2	Discharge Atmosphere temperature level is lower than the limit	Contact service center
755	Atmosphere Charge Over Temperature Fault2	Charge Atmosphere temperature level is higher than the limit	Contact service center

Code	Message	Description	Solution
756	Atmosphere Charge Under Temperature Fault2	Charge Atmosphere temperature level is lower than the limit	Contact service center
762	Relay Opreation Fault2	Battery power supply relay operation Fault	Contact service center
764	Reset Over Count Fault2	Error of reset count	Contact service center
766	BIC ADC Reference Voltage Error	BIC ADC Reference Voltage Error	Contact service center
767	Cell Voltage Sensor Open Wire	Cell Voltage Sensor Open Wire	Contact service center
768	Temperature Sensor Error	Temperature Sensor Error	Contact service center
769	Current Sensor Line Error	Current Sensor Line Error	Contact service center
772	Unit High Voltage Error (H/W)	Unit High Voltage Error (H/W)	Contact service center
773	Circuit break switch Open	Circuit break switch Open	Contact service center
774	Magic Number Error	Magic Number Error	Contact service center
775	Pack Number Error	Pack Number Error	Contact service center
776	MCU ADC Stuck Error	MCU ADC Stuck Error	Contact service center
777	Temperature ADC Stuck Error	Temperature ADC Stuck Error	Contact service center
778	Cell ADC Stuck Error	Cell ADC Stuck Error	Contact service center
779	BCU ADC Reference Voltage Error	BCU ADC Reference Voltage Error	Automatically restart after detecting fault
782	BCU OSC HR object Error	BCU OSC HR object Error	Automatically restart after detecting fault
783	Internal Communication Error (BCU ↔ BIC)	Internal Communication Error (BCU ↔ BIC)	Automatically restart after detecting fault
784	External Communication Error (PCS ↔ BIC)	External Communication Error (PCS ↔ BIC)	Automatically restart after detecting fault
785	Watchdog Counter Error	Watchdog Counter Error	Automatically restart after detecting fault
787	CPU Register Error	CPU Register Error	Automatically restart after detecting fault

Code	Message	Description	Solution
788	FPU Register Error	FPU Register Error	Automatically restart after detecting fault
789	VCU Register Error	VCU Register Error	Automatically restart after detecting fault
790	PIE RAM Error	PIE RAM Error	Automatically restart after detecting fault
791	PIE Handler Error	PIE Handler Error	Automatically restart after detecting fault
792	BCU ROM ECC Check Error	BCU ROM ECC Check Error	Automatically restart after detecting fault
793	BCU RAM ECC Check Error	BCU RAM ECC Check Error	Automatically restart after detecting fault
794	BCU MCU Clock Check Error	BCU MCU Clock Check Error	Automatically restart after detecting fault
795	MarchC 1 region Copy Error	MarchC 1 region Copy Error	Automatically restart after detecting fault
796	MarchC 2 region Copy Error	MarchC 2 region Copy Error	Automatically restart after detecting fault
797	BCU Oscillator Source Error	BCU Oscillator Source Error	Automatically restart after detecting fault

Wiring Diagram

BUELO11HBC1 (Pack*3+BCU+Enclosure)



BUELO15HBC1 (Pack*4+BCU+Enclosure)

