

Quick Installation Guide

Full manual and warranty terms available on: www.riello-solartech.com
ESS Inverter
 RS 3.6 HYBRID RS 6.0 HYBRID

Scan the QR code to download the APP



Risk of electric shock
 The device contains high voltages, both alternating and direct, and high leakage currents may be generated during operation. To avoid risk of electric shock during maintenance or installation, make sure that all DC and AC connection terminals are disconnected. First connect the grounding wire to grounding and disconnect it last for maintenance. Check proper phase and neutral connection. If the unit is used without following the specifications of the manufacturer, the protection provided by the equipment may be impaired. Disconnect the inverter from the grid and from the photovoltaic generator before cleaning photovoltaic modules: an unexpected capacitive current from the surface of the modules may surprise operators and cause them to fall from the roof.

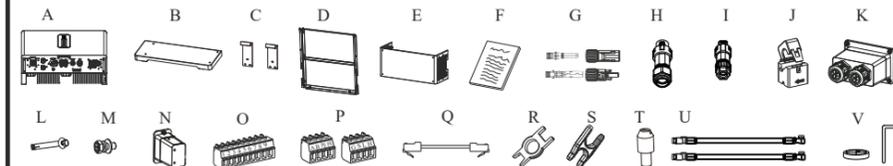
Handling the photovoltaic inverter
 The photovoltaic inverter must only be handled by qualified service personnel. When the photovoltaic generator is exposed to sufficient light intensity, it generates a DC voltage and, when connected to the device, it charges the bulk capacitor. After having disconnected the photovoltaic inverter from the grid and the photovoltaic generator, an electric charge may remain in the bulk capacitor. Please wait at least 5 minutes after disconnecting from the grid before handling.

Exclusively for the grid
 The PV inverter is designed for the sole purpose of converting energy from PV modules and injecting it into the grid. This inverter is not designed to be powered by sources of primary energy other than PV modules or to be connected to different loads other than the public grid.

Hot surfaces
 Although it has been designed in accordance with international safety standards, the photovoltaic inverter may become hot during operation.

1 Packing List

PACKING ASSY OF INVERTER

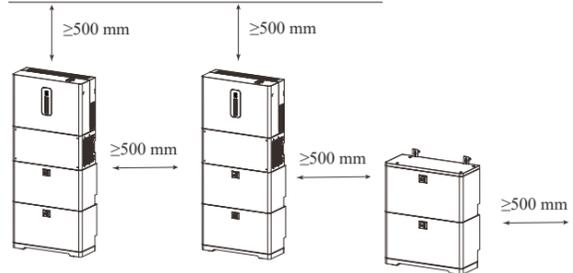


A Inverter	M M4 Security screws (8x)
B Base support	N WIFI module
C Bracket for base support	O 9-Pin terminal
D Bracket for inverter	P 4-Pin terminals (2x)
E Cable cover	Q BMS communication cable
F File package	R Removal tool for PV connector
G PV Terminal group connectors (PV+/PV-)	S Removal tool for Grid/Backup connector
H Grid connector	T Locating pins (4x)
I Backup connector	U Cables from BAT to INV (BAT+/BAT-, some inverter versions have them incorporated)
J Current measuring transformer	V Adjusting tools for base support (bubble level, hex key, only for some versions)
K Communication cables' cover	
L M6 Expansion screws (8x)	

PACKING ASSY OF PACK

A Battery	E M4 Security screws (6x)
B Mounting bracket	F Locating pins (4x)
C Connection strap for grounding	G Battery cables (BAT+/BAT-)
D M6 expansion screws (2x)	H LINK Communication cable (BAT to BAT)

2 Location



3 Base Support Installation

Hex key, Bubble level, 4 x Ø8 locating pins, 6 x M4 screws for two brackets; 1.2 N·m

Adjust the height of foot screws until base support is horizontal (only for some versions).

Install the two brackets and four locating pins.

Place the base against the wall. Fix the base support with 2 expansion screws. Refer to step 5-6 of section 4. It is recommended not to install washer in this operation.

Skirtboard spec.: width ≤ 15mm, height ≤ 100mm.

4 Installation (typical system with 2 batteries and inverter)

Align the first battery pack with the base support according to the locating pins. After installation, please press down the battery tightly.

Install four locating pins.

Mark the positions of 2 holes on the wall.

Cover the batteries with the shipping bag to avoid dust contact.

Drill the holes. Ø: 10mm; Depth: 60mm.

Expansion screw group (M6; 2 sets), 2 x M6 for two brackets; 2-2.5 N·m, 4 x M4 screws for two brackets; 1.2 N·m

Install expansion tubes.

Install the second battery pack according to the step 1 and step 2.

Remove the mounting bracket.

Cover the batteries with the shipping bag to avoid dust contact.

Drill 6 holes. Ø: 10mm; Depth: 60mm.

Install the expansion tubes. Refer to step 5.

Secure the mounting bracket again. Install 2 jam screws and M4 screw.

Install 6 expansion screws.

Lift up the inverter and tilt the inverter back slightly (10°-15°).

Move the inverter close to locating pins.

Put down the inverter, while locating pin guides it into position.

1 x M4 Security screw; 1.2 N·m

5 Wiring System

Ensure that inverter and all cables to be installed are completely powered off during whole installation and connection. Otherwise, fatal injury can occur due to the high voltage.

Normal Load, Critical Load, Grid, Main breaker, CT or Meter, BMS communication cable, BMS, CT/METER, USB, PARAL RS485, INV COM, PV Array, PE, N, L

6 Grounding

Ensure that inverter and all cables to be installed are completely powered off during whole installation and connection. Otherwise, fatal injury can occur due to the high voltage.

Items	Remark
Screw	M5 X 12mm; 2 N·m
OT Terminal	OT6-5
Yellow green lines	S (Yellow green lines) ≥ S (PE line of AC cable) S is the cross-sectional area.

7 Battery Connection

BMS/INV Cable, LINK Cables, BAT+ Cables, BAT- Cables

ON/OFF, PACK COM, INV COM, PACK COM, OFF DC BREAKER

8 GRID and BACKUP Connections

⚠ Before connecting the AC terminal, ensure that both the AC terminal and the DC terminal are powered off; the PV switch and DC switch are OFF. Otherwise there is a risk of high voltage shock.

It is recommended to use outdoor dedicated cables with multiple copper cores.

A. Diameter 14~20mm (grid for RS 6.0 HYBRID)
10~14mm (grid for RS 3.6 HYBRID and backup for all models)

B. Cross-section 8~14mm² (grid for RS 6.0 HYBRID)
4~6mm² (grid for RS 3.6 HYBRID and backup for all models)

C. Strip length ~10mm

1. Tighten three screws and ensure each screw cap does not exceed the surface.

2. Tighten nut to avoid loosening.

3. Insert the connectors in the ports. Please note that the grid connector is different in the RS 3.6 HYBRID model.

Backup for all models
Grid for RS 6.0 HYBRID

Grid for RS 3.6 HYBRID

Click

9 PV Connection

⚠ 1. Photovoltaic arrays exposed to sunlight will generate dangerous voltages!
2. Before connecting the PV terminal, ensure that both the AC terminal and the DC terminal are powered off; the PV switch and DC switch are OFF. Otherwise there is a risk of high voltage shock.

Diameter 4~6mm

4mm

4mm

Using crimping tool to stitch. Red-circled area can't be crimped.

Positive Connector

Negative Connector

Click

Click

Please do the following operations before inserting the PV terminals.

Tighten the waterproof nuts on each connector with a tool to avoid loosening.

Test string voltage and confirm string polarity.

Ensure that the PV switch is OFF.

Note: PV cable should be dedicated PV cable (suggest using 4~6mm² PVI-F-cable).

10 Communication Cables Connection (CT/Energy Meter and BMS)

⚠ Don't cut off any communication cables.

Press the communications cables in the seal via the side incisions.

Threaded sleeve

RJ45 terminals

BMS

Pin1: RS485_A
Pin2: RS485_B
Pin3: GND_S
Pin4: GND_S
Pin5: GND_S
Pin6: GND_S
Pin7: CAN_L
Pin8: CAN_H

Meter

Inverter Meter
Pin1 or Pin3(RS485_A) Pin24
Pin2 or Pin4(RS485_B) Pin25
Pin5(CT-) Black
Pin6(CT+) Red

Energy Meter or CT

Cables

Rubber nut

Seal

Waterproof cover

Inverter side

1. Make the RJ45 terminal according to each Pin definition. Lead the communication cables through the rubber nut, seal and waterproof cover in turn.

1. Insert RJ45 terminals into corresponding ports.

2. Screw the waterproof cover back to inverter firmly with 4 x M4 screws (1.2N·m).

3. Install the seal into the threaded sleeve, fasten the rubber nut.

11 Cable Cover Installation

The groove must be in the same direction of the cables outlet. And cables outlet can be either of two sides.

12 WIFI Module Installation

For details, please refer to the corresponding Module Installation Guide in the packing. The appearance of modules may be slightly different. The figure shown here is only for illustration.

1. Loosen two screws and move the cover.

2. Insert WiFi module into the port, and ensure that it does not fall off.

3. Install/secure the module.

Proper strength to avoid damage to the module.
2 x M4 screws; 0.8N·m

13 Startup/shutdown Procedure

Inspection

No. Items

- The inverter is firmly installed.
- There is enough heat dissipation space, no external objects or parts left on the inverter.
- It is convenient for operation and maintenance.
- The wiring of the system is correct and firm.
- Check whether the DC and AC connections are correct with a multimeter, and whether there is a short circuit, break, or wrong connection.
- Check whether the waterproof nuts of each part are tightened.
- The vacant port has been sealed. All gaps at the cable inlet and outlet holes have been plugged with fireproof/waterproof materials, such as fireproof mud.
- All safety labels and warning labels on the inverter are complete and without occlusion or alteration.

Startup Procedure

- Go to APP (Quick Setup) Click
- DC SWITCH OFF → ON
- PV SWITCH ON
- Backup Circuit Breaker ON
- AC Circuit Breaker ON
- Go to APP (Quick Setup)

***Note**

- Turn all DC breakers on battery packs to ON in step 3.
- Press the button on one battery for 1~2 seconds in step 4.

Shutdown Procedure

- Go to APP (Quick Setup) Click
- DC SWITCH OFF → ON
- Backup Circuit Breaker OFF
- AC Circuit Breaker OFF
- PV SWITCH OFF
- DC BREAKER OFF
- Go to APP (Quick Setup) Click

***Note**

- Press the button on the battery which is close to inverter for 3~6 seconds in step 4.
- Turn all DC breakers on battery packs to OFF in step 5.

⚠ At the first start-up, charge the batteries to 100% and keep them in charge for at least 8 hours. Refer to the user manual for more details.

⚠ After the inverter is powered off, the remaining electricity and heat may still cause electric shock and body burns. If need to disconnect the inverter cables, please wait at least 10 minutes before touching these parts of inverter.

14 Quick Setup

A Preparation

1. Scan the QR code to download the APP.
Note: You need to grant all access rights in all pop-up windows and activate all the necessary interfaces when installing the app.
2. Power on the inverter following the instructions in section 13.

B Connecting the Inverter

Activate the Bluetooth on your own phone, then open the APP. Then follow the instructions below.

Account name

Password

Remember Password

LOGIN

REGISTER NEW USER

Local Bluetooth Connection

Select local connection

Scanning machine SN barcode

If you cannot recognize or have no barcode, select "Enter SN" or "Manual connection"

Inverter Time Wrong

Do you want to synchronize date and time with the mobile phone?

Sync the time

CANCEL OK

Scan the barcode on the inverter or

Select the manual connection method

Inverter List

New inverters

BLE0004DH

Select the inverter you want to connect

Connected inverters

No connected device...

SCANNING NEW DEVICES...

C Quick Setup

Inverter name

0.00Wh E-Today 0.00Wh E-Total

Self used mode

0.00kW 0.00kW 0.00kW 0.00kW

Production: 0.00Wh 100.0%

Consumed directly: 0.00Wh To Grid: 0.00Wh

Select quick setup

Step1 Set parameters for the inverter to connect to the router.

WiFi SSID

WiFi PASSWORD

START THE CONFIGURATION

Step2 Set parameters for the inverter to connect to the power grid.

Standard Code IT(CEI 0-21)

Nominal voltage(V) 230

Nominal frequency(Hz) 50

Date and Time XXXX-XX-XX XX:XX:XX

1) Enter each information

2) Click next

3) Start the configuration

4) when success, proceed

Step3 Set parameters for the inverter to connect to the power limit.

Power control CT sensor

Meter location On Grid

Power flow direction From grid to inverter

Daximum feed in grid power(W) 6000

2) Click next

Step4 Set parameters for the inverter to connect to the workmode.

Hybrid work mode Self used mode

Battery type selection RS BATLJO 5120 Lithium-ion

Backup Output

Maximum charger power(W) 6000

1) Enter each information

2) Click next

Step5 Please click the button below to put on the inverter.

Start the inverter

15 Indicator

LED	Status	Description	LED	Status	Description
PV	On	PV input is normal.	COM	On	Wi-Fi OK Router OK Internet OK
	Blink	PV input is abnormal.		Blink	Wi-Fi abnormal Router OK Internet NO
	Off	PV is unavailable.		Fast flash	Sending data
BAT	On	Battery is charging or in standby.	Off	Wi-Fi is not connected	
	Slow blink	Battery is discharging.	On	Backup power available	
	Double flash	Battery is abnormal.	Double flash	Backup power abnormal	
GRID	On	Grid connected and normal	Off	Backup power disabled	
	Slow blink	Grid abnormal or not connected.	On	Fault occurred and inverter shuts down	
	Fast blink	Connecting to the grid	Blink	Fault occurred but inverter still on	
Off	Grid is unavailable.	Off	No fault		

As the technology is constantly updated and improved, the illustrations in this document are for reference only. Please refer to the actual situation. Contents including illustrations in this document are subject to change without notice.