B-Box Res 2.5~10.0

User Manual

Rev. 1.0

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CONTENTS

1 General Information

1.1 Validity

This user manual is applied for the B-Box Res 2.5, B-Box Res 5.0, B-Box Res 7.5, and B-Box Res 10.0.

1.2 Application

This user manual introduces the B-Box product information, using guidance, safety, common issues and actions.

The B-Box Res is an energy storage unit that can be used in ON-grid system or Off-grid system for residential application.

The product is suitable for indoor use only.

1.3 Intended use

The B-Box is not suitable for supplying life-sustaining medical devices. A power outage must not lead to personal injury.

Use this product only in accordance with the information provided in the enclosed documentation and with the locally applicable standards and directives. Any other application may cause personal injury or property damage.

The illustrations in this manual meant only to help explain system configuration concepts, includes using guidance, safety caution and normal failure and actions.

Alterations to the product, e.g. changes or modifications, are only permitted with the express written permission of BYD. Unauthorized alterations will void warranty claims. BYD shall not be held liable for any damage caused by such changes. Any use of the product other than that described in the Intended use section does not qualify as appropriate. The enclosed documentation is an integral part of this product. Keep the documentation in a convenient place for future reference and observe all instructions contained therein. The type label must be attached to the product.

B-Box Res series products must work with compatible inverters which are listed in the "compatible inverter list" in this manual.

1.4 B-Box and B-Plus definition

B-Box: Abbreviation of battery box

B-Plus 2.5: battery unit with 2.56kWh nominal capacity, which can be installed inside the cabinet as an energy storage module.

B-Box Res 2.5: Battery nominal capacity is 2.56kWh (Includes 1pc B-Plus 2.5)

B-Box Res 5.0: Battery nominal capacity is 5.12kWh (Includes 2pcs of B-Plus 2.5)

B-Box Res 7.5: Battery nominal capacity is 7.68 kWh (Includes 3pcs of B-Plus 2.5)

B-Box Res 10.0: Battery nominal capacity is 10.24kWh (Includes 4pcs of B-Plus 2.5)

1.5 Identifying the product

The Type Label describes the product identification, which is attached on the product.

The Type Label includes following information:
Product Name:
Product Type:
Nominal Capacity:
Nominal Voltage:
Max Current Discharge & Charge:
Ambient Temperature Range:

2 SAFETY

This section contains safety information that must be observed at all times when working on or with batteries. To prevent personal injury or property damage and to ensure long-term operation of the batteries, read this section carefully and observe all safety information at all times.

WARNING

Environmental requirement

Do not expose the battery to temperature above 50℃.

Do not place the battery near any heat sources.
Do not expose the battery to moisture or liquids.
Do not expose the battery to direct sunlight for extended periods of time
Place battery in secure location away from children and animals.
Do not allow the battery power terminals to touch conductive objects such as wires.
Operation caution
Do not disassemble the battery.
Do not touch the battery pack with wet hands.
Do not crush, drop or puncture the battery.
Always dispose according to local safety regulations.
Store and recharge battery according to user manual strictly.
Ensure reliable grounding.
Do not reverse polarity
Do not short circuit the terminals, remove all jewelry items that could product a short circuit.
Disconnect battery from power and load, then power off battery before installation and maintenance.

Do not stack up batteries without package.
The packed batteries are not allowed to be stacked up more than specified layers stipulated on the package.
Continuous operation on a damaged battery can result in dangerous situation that may cause severe injury due to electrical shock.

3 Technical Data

	B-Box Res 2.5	B-Box Res 5.0	B-Box Res 7.5	B-Box Res 10.0
Battery Type	Lithium Iron phosphate battery			
Battery module	B-Plus 2.5			
Max Output power(kW)	2.5	5.0	7.5	10.0
Usable battery energy(kWh)(0.2C charge &discharge @+25℃)(kWh)	2.56	5.12	7.68	10.24
Nominal voltage(V)	51.2			
Operating Voltage Range(V)	43.2~56.4			
Operating Temperature Range[℃]	-10~+50			
Communication	RS485/CAN			
Cabinet Net Dimension(W*D*H mm)(Without ground feet)	620* 335* 1650			
Net Weight(Kg)	103	137	171	205
Enclosure Protection	IP55			

When B-Box works in different temperatures, the current of charge and discharge will be adjusted automatically, battery will permit lower current when operating temperature gets lower. Please refer to below table for the detail parameters setting:

Parameter setting of charge current in various temperatures	
Protect temp. /Resume temp. (℃)	Normal current(A)
-7~2	0.06C*N
2~12	0.12C*N
12~50	0.7C*N
Remark: 1. It will take 2 minutes for the charge current adjustment. 2. N= Quantity of B-Plus 2.5 battery	
Discharge current control under different temperatures?	
Protect temp. / Resume temp.(℃)	Normal current(A)
-10~50	0.7~1C*N
Remark: 1.N= Quantity of B-Plus 2.5 battery	

4 Technical Term

No.	Term	Comment
1	Discharge	Battery output power for load
2	Charge	To put electricity into battery by charger
3	Full charged	Battery had been full charged, SOC is 100%.
4	Idle	Ready for charging and discharging
5	Shutdown mode	Power off
6	SOC	State of charge
7	SW	Software
8	HW	Hardware
9	Battery voltage	The voltage between B+/B-
10	Pack voltage	The voltage between P+/P-
11	Cell voltage	Single cell voltage
12	Failure	Battery or BMS are broken, need to be replaced
13	Alarm	indicate that the battery is in abnormal status
14	Protect	Battery stops charging or discharging and is recoverable.
15	Over discharged	Battery is lack voltage, and needs to be recharged in time.

5 Product Overview

5.1 Brief introduction

The B-Box energy storage system, combined with high-performance BYD lithium battery, consists of cabinet, battery and BMU. Up to 4 battery modules can be installed in one cabinet for use, and the usable energy can be extended easily from 2.5kWh to 80kWh by parallel connection.
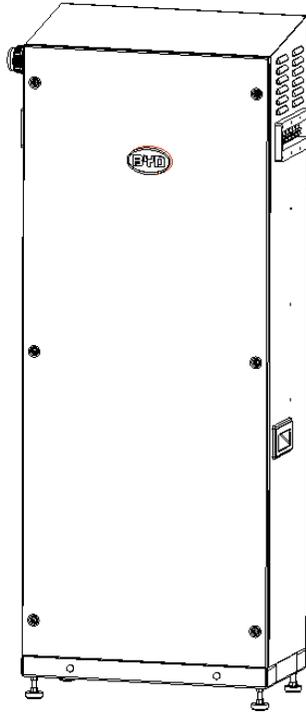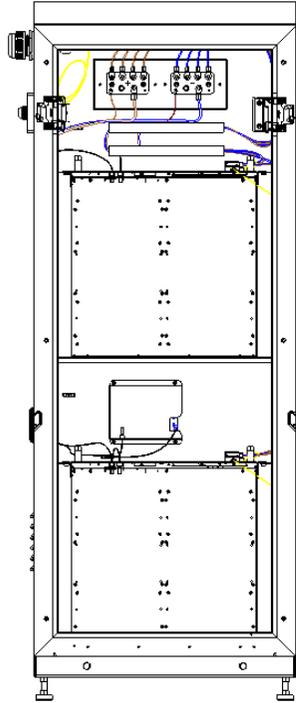
External drawing   Internal drawing

5.2 B-Box configuration table

No.	Component	Name	Description
1	Cabinet	B-Box Cabinet	The Cabinet, inside which B-Plus 2.5 can be installed, provides DC power and each cabinet can hold up to 4 pcs of B-Plus.
2	Battery	B-Plus2.5	Battery module with 51.2V50Ah, BYD's P/N is: U3A1-50P-A.
3	BMU	BMU	Battery management unit, communicates with external equipment.

5.3 General introduction of BMU

BMU installed inside cabinet, is battery management unit. The function is to manage the battery's charge and discharge, and collect information from battery and report to inverter.

Functions of BMU:

- ✓ CAN /RS485 communicate with inverter
- ✓ RS485 communicate with battery/BMS
- ✓ Dry contact terminal
- ✓ Other Communication interface for maintenance
- ✓ Charge and discharge management
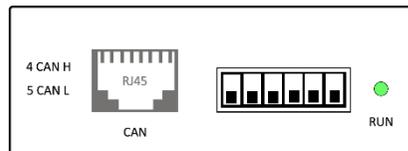
5.4 General introduction of B-Plus 2.5

B-Plus 2.5 is the commercial name of BYD U3A1-50P-A backup battery with 51.2V& 50Ah, which is designed for energy storage application. B-Plus 2.5 is an integrated battery which consists of enclosure, BMS and cells.

P-: Positive terminal
P+: Negative terminal
GND: Grounding terminal
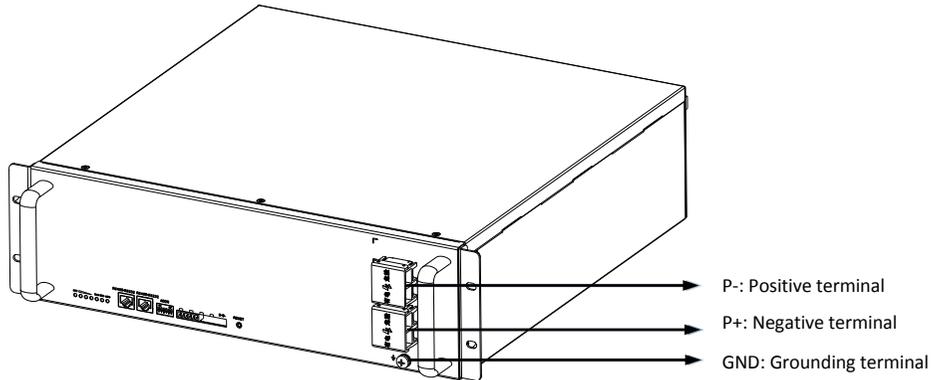
B-Plus 2.5 Drawing
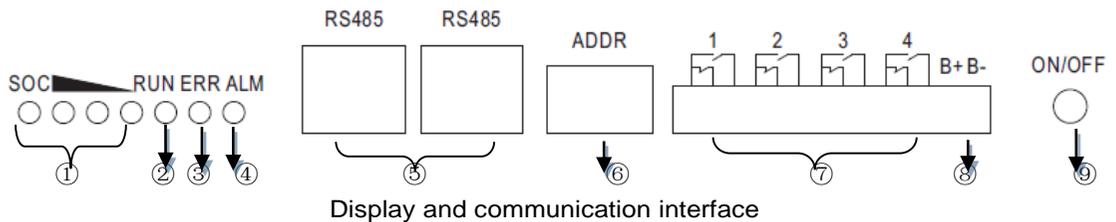
Display and communication interface

No.	Interface	Mark	Function
①	SOC LED	SOC	Indicate current SOC of battery
②	RUN LED	RUN	Indicate that the B-plus is in running status
③	ERR LED	ERR ADDR	Indicate error status
④	ALM LED	Alarm	Indicate alarm status
⑤	RJ45 terminal	RS485	Communication ports
⑥	Address	ADDR	Address needs to be set, if they are connected in parallel.
⑦	Alarm relay output	1.2.3.4	N/A
⑧	Test terminal	B- B+	Measure battery voltage when testing.
⑨	ON/OFF	ON/OFF	Power on/power off manually

5.5 Operating environment

Operating environment parameters

No.	Item	Min.	Typical	Max.	Unit	Remark
1	Discharging temperature	-10	25	50	℃	
2	Charging temperature	-10	25	50	℃	
3	Relative humidity	5		95	%	
4	Absolute humidity	0.26		25	g/m3	

| 5 | Elevation | - | 2000 | - | M |
| 6 | Enclosure | IP55 | | | |

6 Cleaning and Maintenance

6.1 Cleaning

> **CAUTION:**
>
> When user needs to clean the B-Box, Please power off the system first

The B-Box system is recommended to be cleaned periodically. If the enclosure is dirty, please use a soft , dry brush or a soot blower to remove the dust. Liquids such as solvents, abrasives or corrosive liquids are not allowed to clean the enclosure.

6.2 Maintenance

6.2.1 Recharge requirement

Batteries should be stored in position with the temperature range of -10℃ ~ +45℃, and maintained regularly according to the following table with 0.5C (25A) current for 1 hour after a long time of storage.

Recharge conditions when in storage

Storage environment temperature	Relative humidity of storage environment	Storage time	SOC
Below -10℃	/	prohibit	/
-10~25℃	5%~70%	≤12 months	30%≤SOC≤60%
25~35℃	5%~70%	≤6months	30%≤SOC≤60%
35~45℃	5%~70%	≤3months	30%≤SOC≤60%
Above 45℃	/	prohibit	/

6.2.2 Recharge requirement when battery is over discharged

Please recharge the over discharged batteries in time as per the following table, otherwise the over discharged ones will be damaged.

Recharge condition when battery is over discharged

Storage environment temperature	Storage time
-20~25℃	≤15 days
25~45℃	≤7 days

7 Compatible Inverter List

To make sure that the system can be operated normally, please use BYD compatible inverters and select battery quantity correctly, according to the "B-Box configuration list with different inverter" in Appendix 1 in this user manual.

8 Common Issues and Solutions

8.1Alarm indicated on the BMU and the solution

LED of the BMU	Possible cause	Solution
Flash 1 time	Inverter and BMU communication failure	step1. Check whether the CAN communication cable has been connected correctly and tightly； step2. If the connection is incorrect, please reconnect the cable correctly; if the connection is correct and reliable, then replace the BMU；
Flash 2 times	Battery not found	Check the connection between BMU and first battery.
Flash 3 times	Any of batteries are disconnected	1. Check RS485 cable and battery address 2. If the connection and the address are correct, please contact the after service provider
Flash 4 times	Any of battery failures	Check battery led status. If the red led is on and buzzer alarms, please contact your after service provider to replace the battery.

8.2 Alarm displayed on B-Plus 2.5 and the solution

Alarm indicated by flashing LED

Info B-Plus displayed	Flash	Possible cause	Solution
Only yellow led is ON SOC ▱ RUN ERR ALM ○○○○ ○ ○ ●	0.5Hz	Battery was powered off abnormally;	Press ON/OFF button for 2-3 seconds to restart the battery, If the battery cannot be recovered, contact the after service provider immediately;
Flow led flashes and alternates with capacity led	10s per cycle	Communication connection timeout	Step1.Check the communication wire/cable Step2.check battery address
NO.1/3 led and No.2/4 led flashing alternately	/	Update statue status	If the firmware is not updated, then reset the battery.

Alarm indicted by flashing yellow Led

	Times	Possible causes	Solution
1.Yellow led (Alarm) is always on **2 Press on/off button for 1S and release, then buzzer sounds shortly;** **3. The green Led (RUN) is always on, and yellow led (ALM) is flashing, which indicates alarm status.**	1time	Under voltage (BAT or CELL)	Contact the after service provider
	2times	Over charge	Contact the after service provider
	3times	Low temperature charge over-current	Contact the after service provider
	4times	Charge short circuit	Contact the after service provider
	5times	Discharge short circuit	Contact the after service provider
	6times	Parallel short circuit	Contact the after service provider
	7times	Discharge over-current protection	Contact the after service provider
	8times	High temperature protection	Contact the after service provider
	9times	Low temperature protection	Contact the after service provider
	10times	PACK over voltage protection	Contact the after service provider

Alarm indicted by flashing red Led

	Times	Possible causes	Solution
1.Red led (Err) is always on **2. Press the on/off button for1S and release, then buzzer sounds shortly**	1time	Voltage sensor failure	Change the battery
3. Green led (RUN) is always on, and red led (ERR) is flashing	2times	Temperature sensor failure	Change the battery
	3times	Charging circuit failure	Change the battery
	4times	Discharge circuit failure	Change the battery
	5times	Batteries failure	Change the battery
	6times	536 communication failure	Change the battery

Problems indicated by buzzer

Info displayed on B-Plus	Times	Possible cause	Solution
The buzzer sounds with different times at a 15 seconds interval.	4times	Reverse 、short circuit	1.Power off; 2.Inspect short/reverse connection of cable between P+&P-; 3.If short/reverse connection is confirmed, please reconnect cable correctly; 4.restart battery;
	3times	Batteries failure	Change the battery
	2times	Voltage sensor failure、 Temperature sensor failure	Change the battery
	1time	Charging/Discharge circuit failure	Change the battery

8.3 Common issues displayed on inverter and the solution

User also can check the battery's running, warning and alarm information from App or LED display of inverter, detail information please refer to Appendix 2 in this user manual.

8.4 Emergency

Please cut off the power supply and turn off the battery in emergency.

9 Warranty

BYD provides warranty when the product is installed and used according to the description of user manual / installation manual / warranty letter.

1. Please contact our installation company, if you have any technical problems or inquiries for usage,

2. Please contact after service provider if you have any after service requirements.

3. Please download the Warranty Letter via BYD official website.

10 Registration

Please register[1] your B-Box information in our after service website within 3 months since the installation date.

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[1] BYD will not ask for your personal information unless we truly need it, and we only disclose personally information to those of its employees, or affiliated organizations that need to know that information in order to process it on behalf of BYD, or to provide timely services.

The following information is required for timely customer service.

2	**Serial Number of Battery- Box Cabinet**		
3	Serial Number of B-Plus		
4	Serial Number of BMS		
5	Installation Date		
6	Invoice Number		

If you have any questions during the usage please contact our local contacts

APPENDIX 1: MINIMUM CONFIGURATION WITH DIFFERENT BRANDS OF INVERTERS

1 Minimum configuration with SMA Sunny Island inverter

Inverter Firmware version: minimum required firmware version for SI is V1.73.
B-Box firmware version: minimum required firmware version for BMU is V2.7.
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
SI 3.0M	≥1	≥1
SI 4.4M	≥1	≥1
SI 6.0H	≥1	≥1
SI 8.0H	≥1	≥1

3 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
SI 3.0M	≥3	≥1
SI 4.4M	≥4	≥1
SI 6.0H	≥4	≥1
SI 8.0H	≥4	≥1

1 Phase off Grid[2]

Inverter Type	B-Plus 2.5	Cabinet
SI 3.0M	≥3	≥1
SI 4.4M	≥3	≥1
SI 6.0H	≥5	≥2
SI 8.0H	≥5	≥2

3 Phase off Grid[1]

Inverter Type	B-Plus 2.5	Cabinet
SI 3.0M	≥8	≥2
SI 4.4M	≥8	≥2
SI 6.0H	≥12	≥3
SI 8.0H	≥12	≥3

Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.

2 Minimum configuration with GOODWE inverter

2.1 Minimum configuration with ES

Inverter Firmware version: minimum required firmware version for ARM is 03.
B-Box firmware version: minimum required firmware version for BMU is V4-10.
Shall bypass main circuit breaker when the system is off grid application.

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[2] Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
GW3648D-ES	≥1[2]	≥1
GW5048D-ES	≥1[2]	≥1

1 Phase off Grid

Inverter Type	B-Plus 2.5	Cabinet
GW3648D-ES	≥2	≥1
GW5048D-ES	≥2	≥1

Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.

2.2 Minimum configuration with BP

Inverter Firmware version: minimum required firmware version for ARM is 03.
B-Box firmware version: minimum required firmware version for BMU is V4-10.

1 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
GW2500-BP	≥1	≥1

Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.

2.3 Minimum configuration with EM

Inverter Firmware version: minimum required firmware version for ARM is 03.
B-Box firmware version: minimum required firmware version for BMU is V4-10.
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
GW3048-EM	≥1[2]	≥1
GW3648-EM	≥1[2]	≥1
GW5048-EM	≥1[2]	≥1

1 Phase off Grid

Inverter Type	B-Plus 2.5	Cabinet
GW3048-EM	≥2	≥1
GW3648-EM	≥2	≥1
GW5048-EM	≥2	≥1

Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.

2.4 Minimum configuration with SBP

Inverter Firmware version: minimum required firmware version for ARM is 03.
B-Box firmware version: minimum required firmware version for BMU is V4-10

1 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
GW3600S-BP	≥1[2]	≥1
GW5000S-BP	≥1[2]	≥1

Back-up mode

Inverter Type	B-Plus 2.5	Cabinet
GW3600S-BP	≥2	≥1
GW5000S-BP	≥2	≥1
Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.		

3. Minimum configuration with Victron inverter

3.1 Minimum configuration with Multiplus

Inverter Firmware version: minimum required firmware version for CCGX is V2.01, which applies to ESS mode.
B-Box firmware version: minimum required firmware version for BMU is V4-13, which applies to ESS mode.
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥1	≥1
48/5000/70	≥1	≥1
3 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥3	≥1
48/5000/70	≥3	≥1
1 Phase off Grid[1]		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥2	≥1
48/5000/70	≥3	≥1
3 Phase off Grid[1]		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥6	≥2
48/5000/70	≥9	≥3
Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.		

3.2 Minimum configuration with Multigrid

Inverter Firmware version: minimum required firmware version for CCGX is V2.01, which applies to ESS mode.
B-Box firmware version: minimum required firmware version for BMU is V4-13, which applies to ESS mode.
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥1	≥1
3 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥3	≥1

1 Phase off Grid[3&1]

Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥2	≥1

3 Phase off Grid[3&1]

Inverter Type	B-Plus 2.5	Cabinet
48/3000/35	≥6	≥2

Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.

3.3 Minimum configuration with Quattro

Inverter Firmware version: minimum required firmware version for CCGX is V2.01, which applies to ESS mode.
B-Box firmware version: minimum required firmware version for BMU is V4-13, which applies to ESS mode.
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinets
48/5000/70-100/100	≥1	≥1
48/8000/110-100/100	≥1	≥1
48/10000/140- 100/100	≥1	≥1
48/15000/200- 100/100	≥1	≥1

3 Phase on Grid

Inverter Type	B-Plus 2.5	Cabinet
48/5000/70-100/100	≥3	≥1
48/8000/110-100/100	≥4	≥1
48/10000/140- 100/100	≥5	≥2
48/15000/200- 100/100	≥6	≥2

1 Phase on Grid[3&1]

Inverter Type	B-Plus 2.5	Cabinet
48/5000/70-100/100	≥3	≥1
48/8000/110-100/100	≥5	≥2
48/10000/140- 100/100	≥6	≥2
48/15000/200- 100/100	≥9	≥3

3 Phase off Grid[3&1]

Inverter Type	B-Plus 2.5	Cabinet
48/5000/70-100/100	≥9	≥3
48/8000/110-100/100	≥15	≥4
48/10000/140- 100/100	≥18	≥5
48/15000/200- 100/100	≥27	≥7

Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.

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[3] When system works in off grid mode, please bypass the main circuit breaker when installation, and operate according to Victron's guidance before new firmware is released. Website:https://www.victronenergy.com/live/battery_compatibility:byd_Battery- Box

3.4 Minimum configuration with CCGX of Easysolar

Inverter Firmware version: minimum required firmware version for CCGX is V2.01, which applies to ESS mode.
B-Box firmware version: minimum required firmware version for BMU is V4-13, which applies to ESS mode.
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35-50 MPPT150/70	≥1	≥1
48/5000/70-100 MPPT150/100	≥1	≥1
3 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35-50 MPPT150/70	≥3	≥1
48/5000/70-100 MPPT150/100	≥3	≥1
1 Phase off Grid[3&1]		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35-50 MPPT150/70	≥2	≥1
48/5000/70-100 MPPT150/100	≥3	≥1
3 Phase off Grid[3&1]		
Inverter Type	B-Plus 2.5	Cabinet
48/3000/35-50 MPPT150/70	≥6	≥2
48/5000/70-100 MPPT150/100	≥9	≥3
Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.		

4 Minimum configuration with Solax

4.1 Minimum configuration with SK-SU

Inverter Firmware version: minimum required firmware version is V2.31.
B-Box firmware version: minimum required firmware version for BMU is V4-10.

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
SK-SU 3000E	≥2	≥1
SK-SU 3700E	≥2	≥1
SK-SU 5000E	≥2	≥1

4.2 Minimum configuration with SK-TL

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
SK-TL3000E+SK-BMU2500	≥2	≥1
SK-TL3700E+SK-BMU2500	≥2	≥1
SK-TL5000E+SK-BMU2500	≥2	≥1
SK-TL5000E+SK-BMU5000	≥4	≥1
Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.		

5 Minimum configuration with Sungrow

5.1 Minimum configuration with SH5K

Inverter Firmware version: minimum required firmware version is V13.
B-Box firmware version: minimum required firmware version for BMU is V4-10.
Identification label on package is V1.2
Shall bypass main circuit breaker when the system is off grid application.

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
SH5K	≥2	≥1
1 Phase off Grid[3&1]		
Inverter Type	B-Plus 2.5	Cabinet
SH5K	≥2	≥1
Remark: Maximum quantity of B-Plus is 8, Cabinet quantity is 8.		

6 Minimum configuration with Selectronics

6.1 Minimum configuration with SP PRO

Inverter Firmware version: minimum required firmware version is V0.27.
B-Box firmware version: minimum required firmware version for BMU is V4-10.
Identification label on B-Box cabinet package: V2.2

1 Phase on Grid		
Inverter Type	B-Plus 2.5	Cabinet
SPMC481-AU	≥2	≥1
SPMC482-AU	≥2	≥1
1 Phase off Grid1&2		
Inverter Type	B-Plus 2.5	Cabinet
SPMC481-AU	≥5	≥2
SPMC482-AU	≥6	≥2
Remark: Maximum quantity of B-Plus is 32, Cabinet quantity is 8.		

APPENDIX 2: COMMON ISSUES DISPLAYED ON INVERTER AND SOLUTIONS

1 Alarm code displayed on the SRC of SMA sunny island and solution

SMA SRC	Possible causes	Solution
F221	External Alarm-Invalid Bat Type	Reset battery type to "Li" on SRC.
F920(XA01General)	1.AnyB-Plus2.5 has failed to communicate with the BMU; 2.RS485communication between the BMU and the B-Plus 2.5 is failed;	1.Check if the RS485 communication cable has been connected correctly and tightly ; 2.Check DIP switch setting according to the setting of DIP switch guidance in user manual; 3.Change BMU in cabinet ;
F921(XA02DcHiVolt)	External Alarm - Battery High Voltage	
F922(XA03DcLoVolt)	External Alarm - Battery Low Voltage	If the red led of the B-Plus 2.5 is on, please contact the service provider to change the battery. If not, check the system setting according to the guidelines.
F923(XA04DcHiTmp)	External Alarm - Battery High Temp	
F924(XA05DcLoTmp)	External Alarm - Battery Low Temp	
F925(XA06DcHiTmpC)	External Alarm - Battery High Temp Charge	
F926(XA07DcLoTmpC)	External Alarm - Battery Low Temp Charge	
F927(XA08DcHiCur)	External Alarm - Battery High Current Discharge	
F928(XA09DcHiChgCur)	External Alarm - Battery High Current Charge	
F930(XA11Short)	External Alarm - Short circuit	1.Power off; 2.Check if there is short connection of cable between P+&P-; 3.If short connection is confirmed, please reconnect cable correctly; 4.restart battery;
F931(XA12Bms)	External Alarm - BMS internal	If the red led of the B-Plus 2.5 is on, please contact the service provider to change the battery. If not, check the system settings according to the guidelines.
F932(XA13CellBal)	External Alarm - Cell imbalance	
F952	External Alarm –Ext BMS Timeout	1.Check whether the CAN communication cable has been

		connected correctly and tightly ; 2.Change BMU in cabinet;

2 Alarm displayed on the APP of GOODWE and the solution

APP of GOODWE	Possible causes	Solution
BMS status: Battery communication fail	Inverter and BMU communication failure	1.check whether the CAN communication cable has been connected correctly and tightly ; 2.Change BMU in cabinet;

3 Alarm displayed on the screen of Solax and the solution

Screen of Solax	Possible causes	Solution
BMS LOST	Inverter and BMU communication failure	1.check if the CAN communication cable has been connected correctly and tightly ; 2.Change BMU in cabinet;

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