BLUETTI EP900

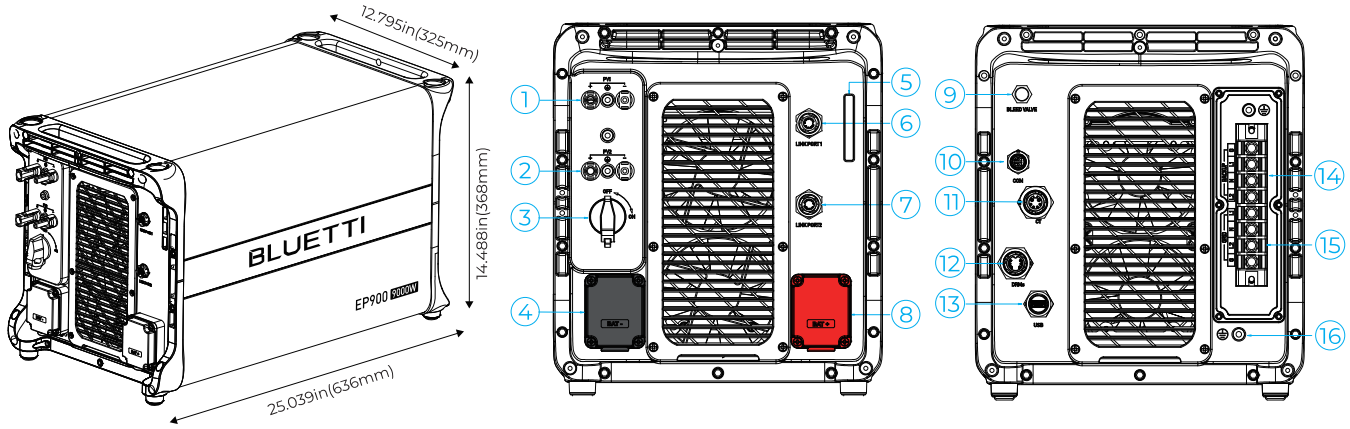
Quick Guide V2.9

Contents

1. Special tools and parts need before installation for EP900

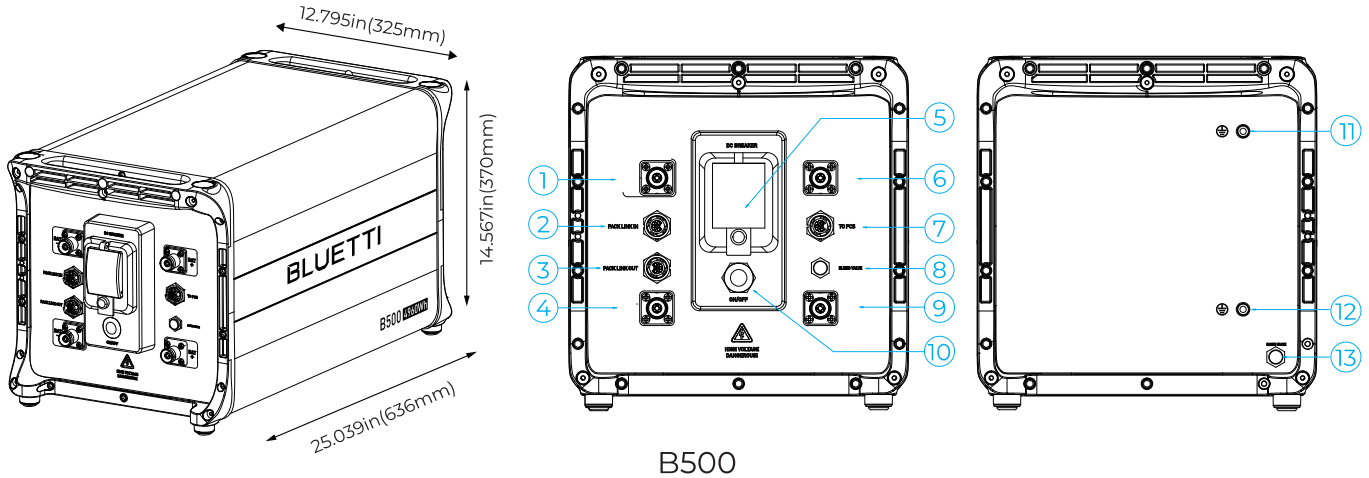
No.	Item	Picture	Remarks
1	Crimping tools		It is not provided by BLUETTI
2	Sub panel (Transfer Switch)		The sub panel with interlock breaker is provided by the BLUETTI
3	AC disconnect		The safety switch is connect-ed between the main panel to the EP900 grid input terminal .60A ,240V. It is not provided by BLUETTI
4	Junction box , and junctions		Recommend to connect the cables from sub panel to EP900 backup teminal or grid teminal. It is not provided by BLUETTI
5	Electric cable		White, black, red ,green , 6 AWG electric cables . It is not provided by BLUETTI
6	Liquid-tight conduit		3/4 inch or above, it is not provided by BLUETTI
7	Electric metallic tube and other accessories		3/4 inch or above, it is not provided by BLUETTI

2. Overview



EP900

1	PV input 1	5	LED indicator	9	Bleed valve	13	USB port
2	PV input 2	6	IoT signal port (Link Port 1)	10	COM Port (For grid communication module)	14	BACKUP Terminal
3	DC switch	7	Battery signal port (Link Port 2)	11	CT	15	GRID Terminal
4	BAT- terminal	8	BAT+ terminal	12	DRMs port (For generator & meter)	16	GND Terminal (Grounding)

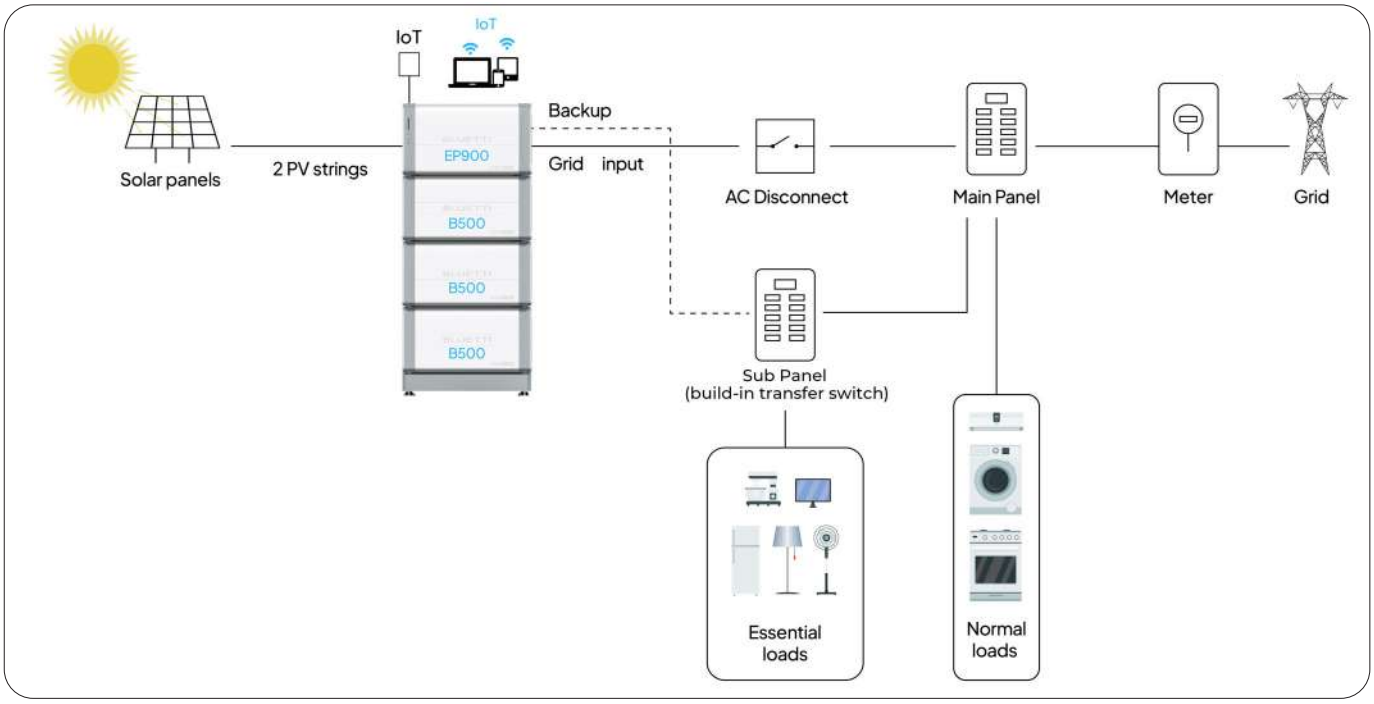


B500

1	BAT- terminal 1	6	BAT+ terminal 1	11	Grounding port 1
2	Pack link-in	7	To Pcs (Inverter signal port)	12	Grounding port 2
3	Pack link-out	8	Bleed valve 1	13	Bleed valve 2
4	BAT- terminal 2	9	BAT+ terminal 2		
5	Breaker switch	10	Power button		

3. Installation

3.1 Overview

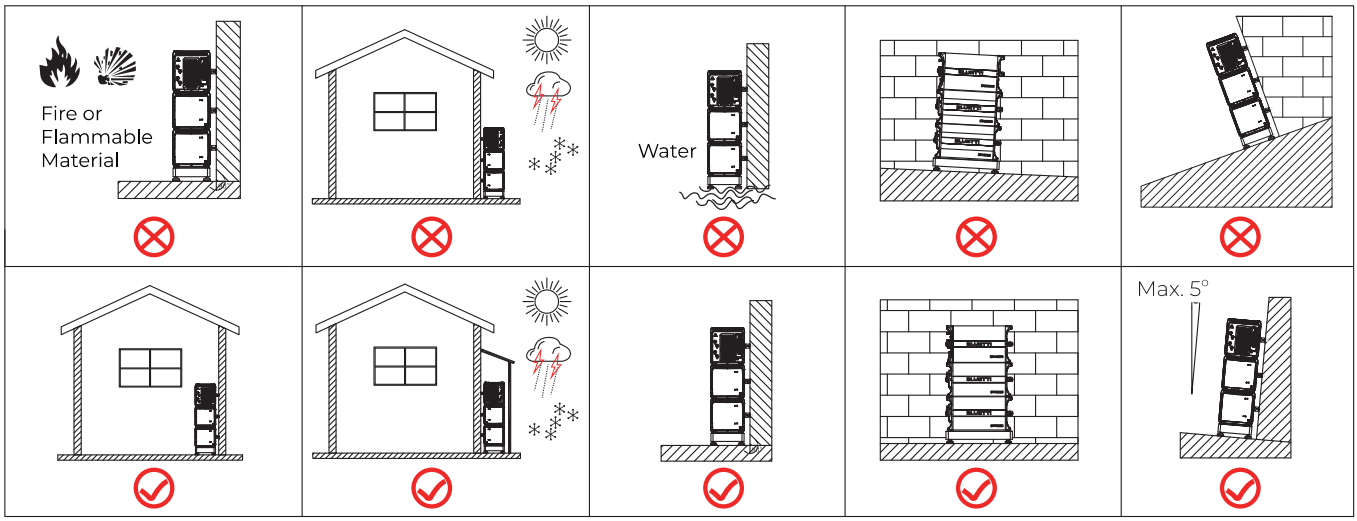


3.2 Installation requirements

Before Installation: Important Notes

- The installation must be performed by a licensed electrician. Improper installation may result in death or serious injury and property damage.
- Prepare necessary tools and accessories.
- Read the EP900 User Manual and Quick Start Guide.
- Recommended the open circuit voltage of solar system is between 240V and 500V.

Select an Appropriate Installation Location



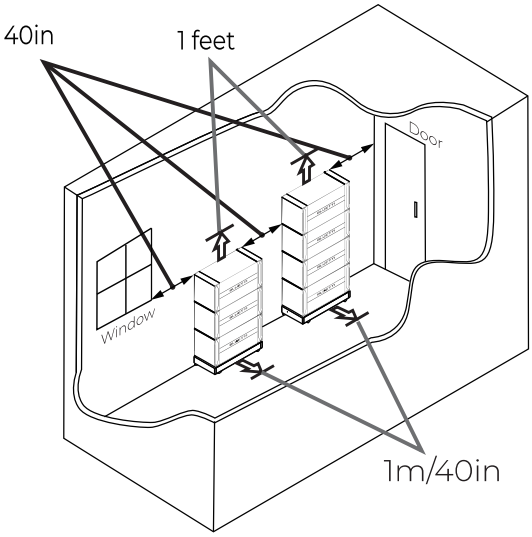
Operating Instructions

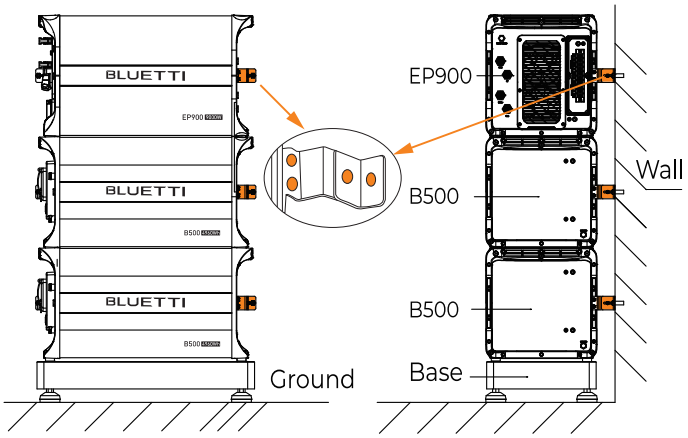
- If there's no power input and the SoC drops to 1%, switch off all battery main switches to prevent over-discharging. Only restart the system when recharging from the grid.
- Charge the batteries when the SoC is below 5% and maintain it at least at 5% for continuous operation.
- For long-term storage, charge the batteries to 40%-60% SoC and perform a full cycle at least every 3 months.

Temperature considerations:

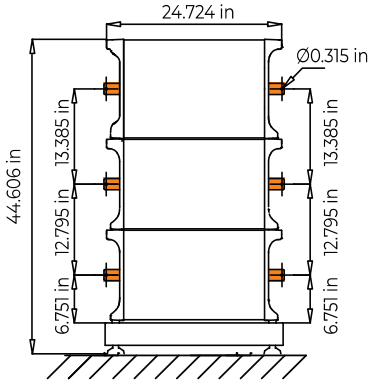
Operating Temperature	Charging	Off-grid: 0°C to 40°C / 32°F to 104°F On-grid: -20°C to 40°C / -4°F to 104°F
	Discharging	-20°C to 40°C / -4°F to 104°F
Storage Temperature	-20°C to 0°C / -4°F to 32°F (Fully cycle monthly) 0°C to 35°C / 32°F to 95°F (Fully cycle every 3 months)	

3.3 Wall mounting





(3 layers)



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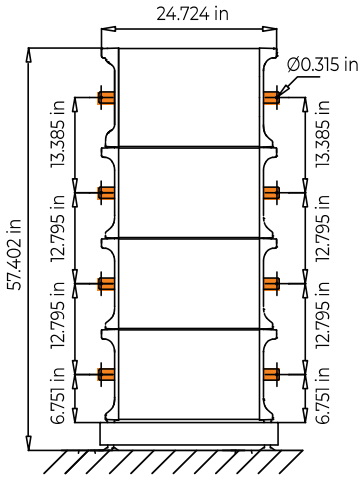

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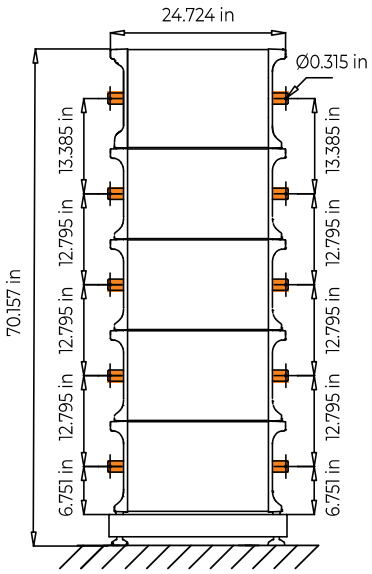
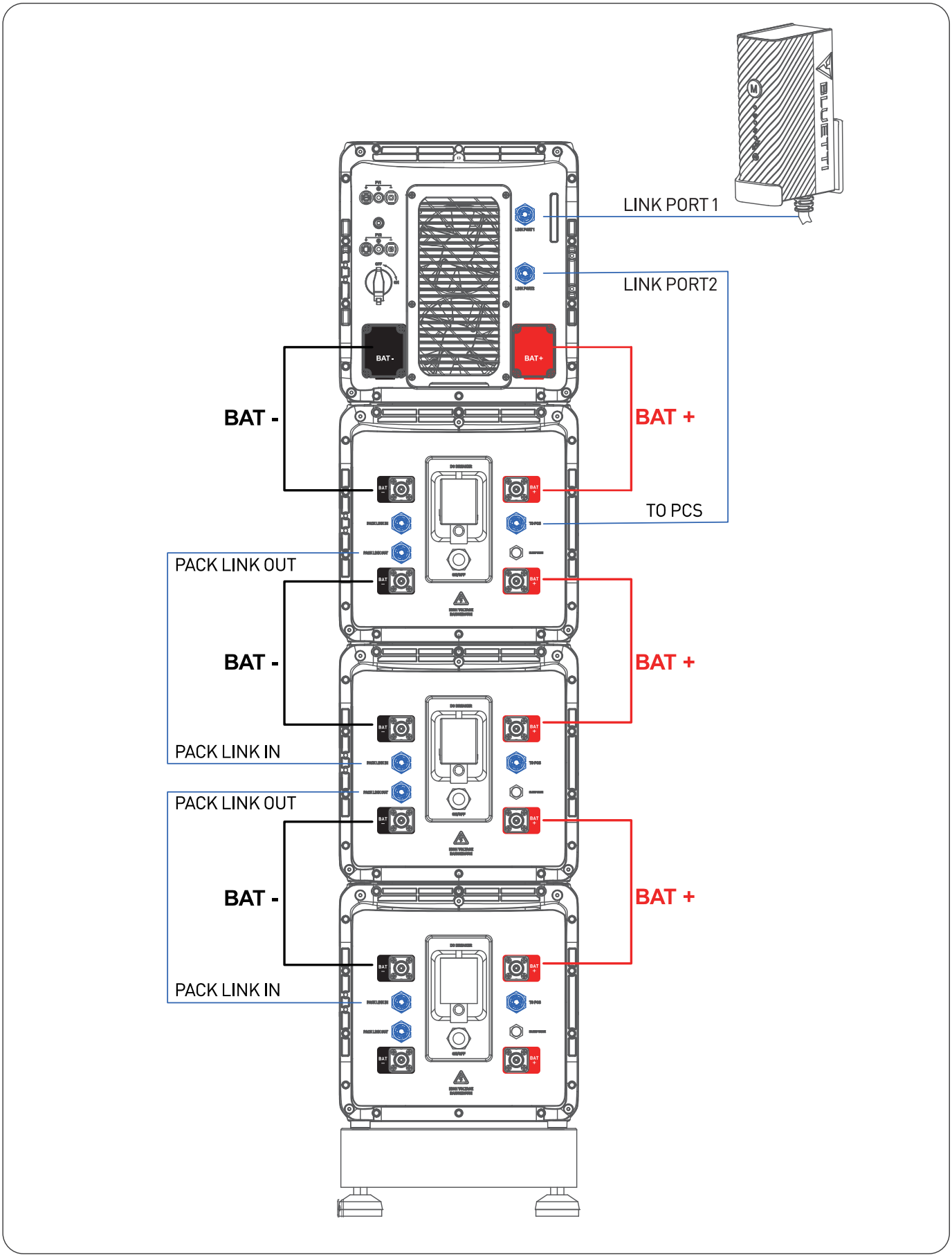
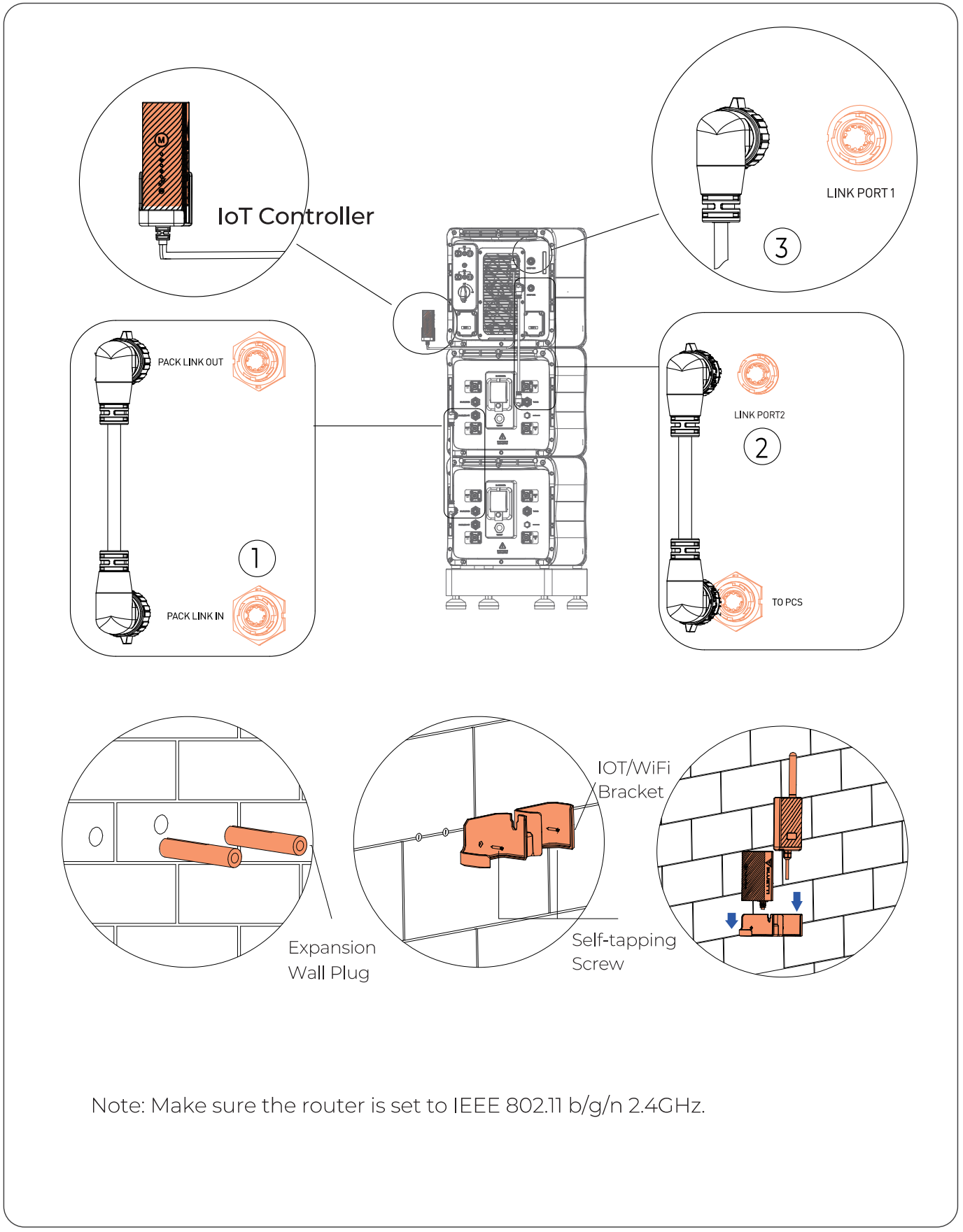


4. Electrical connection

4.1 Overview

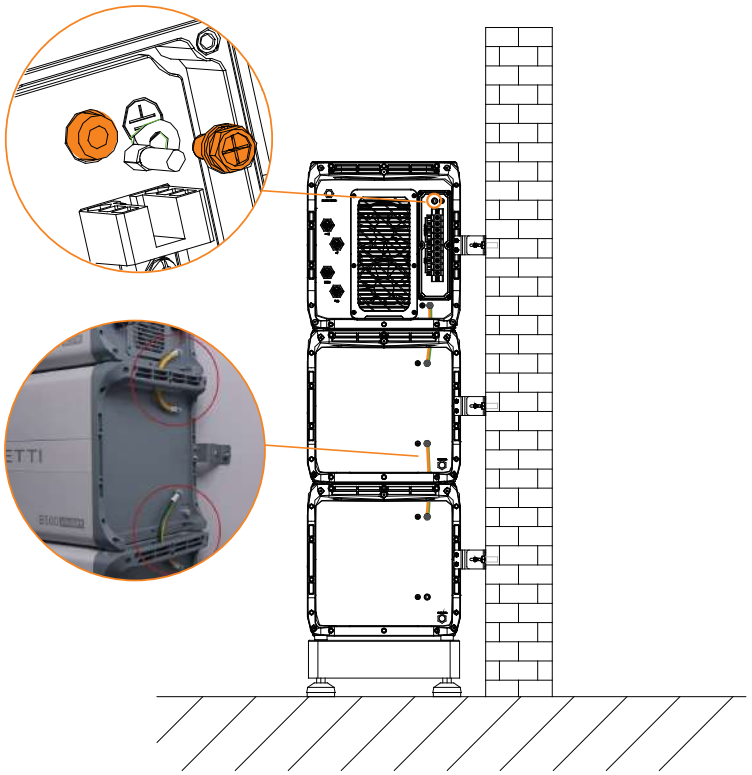


4.2 Connect the communication cable

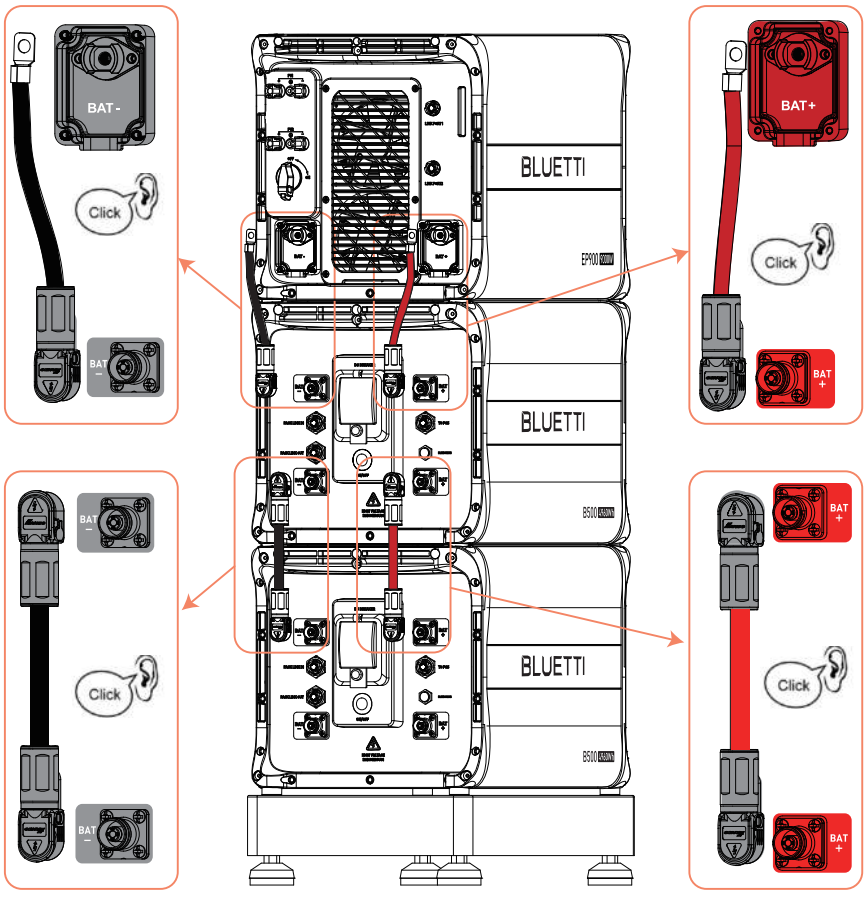


Note: Make sure the router is set to IEEE 802.11 b/g/n 2.4GHz.

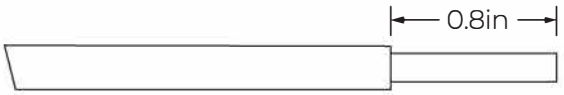
4.3 Connect the Grounding Cables

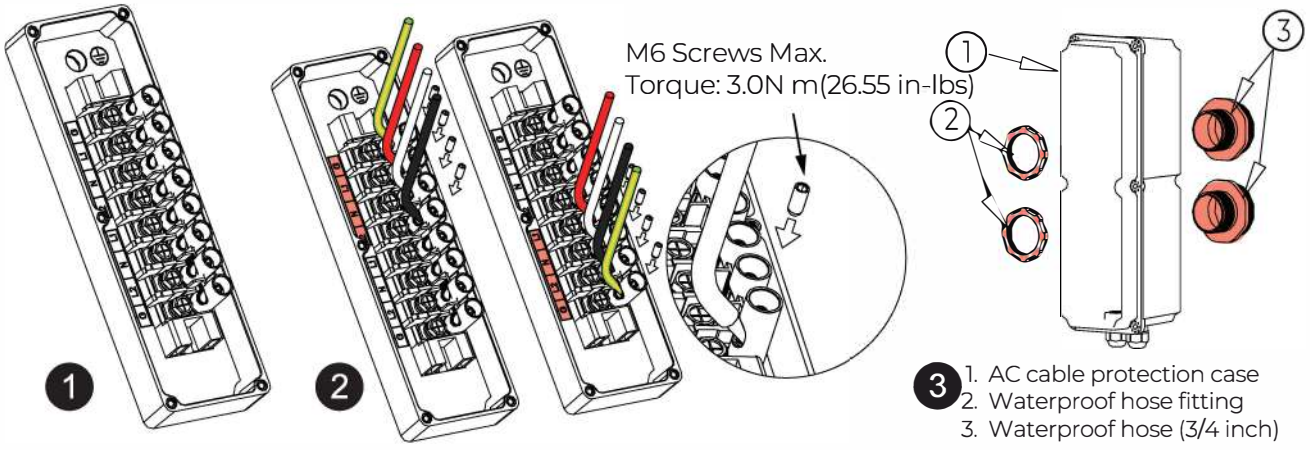


4.4 Connect the battery power cables

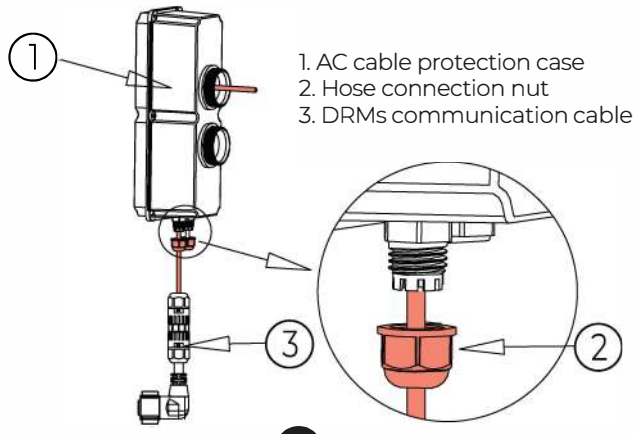


4.5 Connect the GRID and BACKUP cables



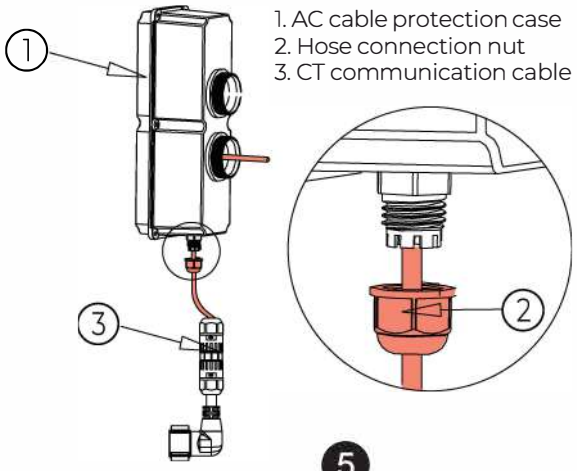


3
1. AC cable protection case
2. Waterproof hose fitting
3. Waterproof hose (3/4 inch)



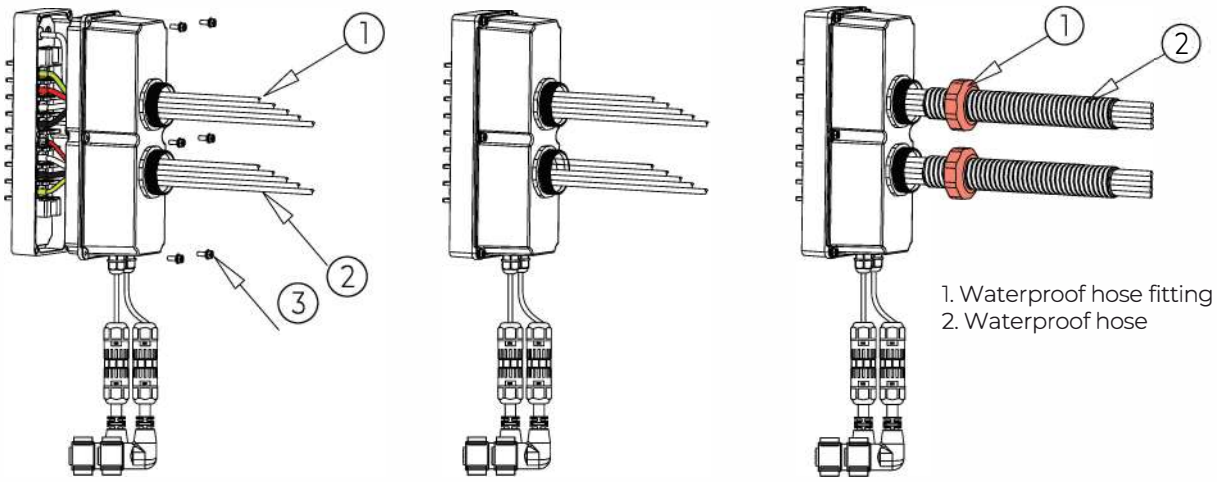
1. AC cable protection case
2. Hose connection nut
3. DRMs communication cable

4



1. AC cable protection case
2. Hose connection nut
3. CT communication cable

5

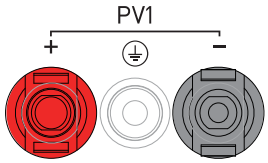
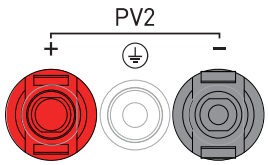


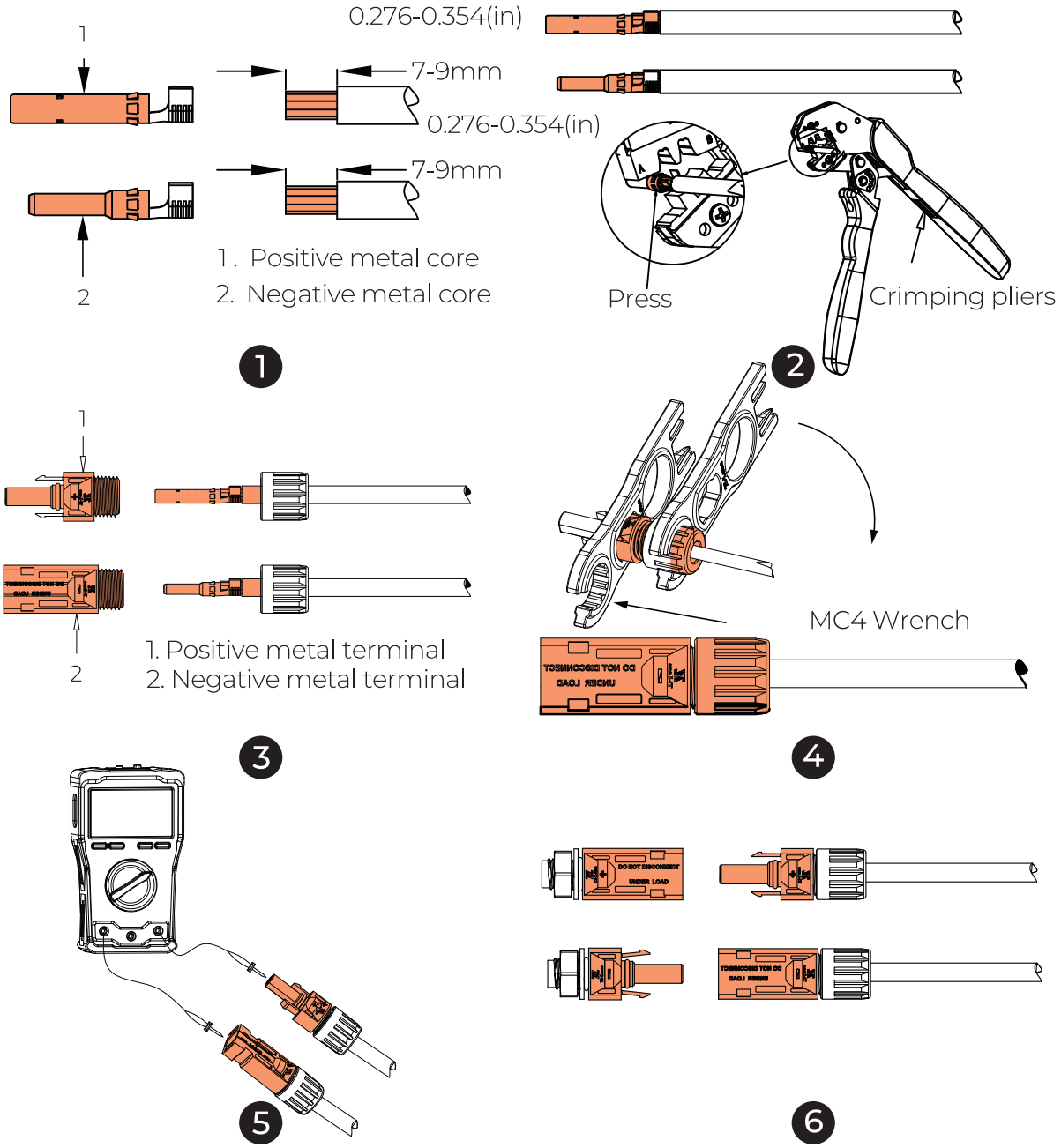
1. Waterproof hose fitting
2. Waterproof hose

6
1. BACKUP cables & DRMs communication cable
2. GRID cables & CT communication cable
3. M4*12 screws, Max. Torque: 1.2N m(10.62 in-lbs)

7

4.6 Connect PV cables

	PV1+: To solar panel positive PV1-: To solar panel negative PV1 PE: PV1 to solar panel ground	Conductor cross-sectional area: PV1 12AWG PV2 10AWG
	PV2+: To solar panel positive PV2-: To solar panel negative PV2 PE: PV2 to solar panel ground	



NOTE: Please check the open circuit voltage of PV arrays, which should be less than 500V.

DRMs Port(Generator+Meter)

PIN	Category	Definition	Specifications
1	GEN COM(Red)	Single-pole & double-throw relay common terminal	External DC input limit: 30VDC / 3A. (For generator input)
2	GEN NC(Black)	Single-pole & double-throw relay normally closed output	
3	GEN NO(Green)	Single-pole & double-throw relay normally open output	
4	INS GND(White)	Signal ground	/
5	485-A3(Yellow)	A: RS485 differential signal +	Connect to meter A2
6	485-B3(Orange)	B: RS485 differential signal -	Connect to meter B2

Note: Pin 4, 5, and 6 are for communication with the electric meter. Refer to the meter's user manual for wiring details..

Grid Communication Module

PIN	Definition	Function
485-A5	A: RS485 differential signal +	Connect to WiFi
485-B5	B: RS485 differential signal -	Connect to WiFi
INS_12V	WiFi power source	/
INS_GND	WiFi power source grounding	/

Note: Refer to Section 5.3 for installation instructions of the grid communication module and IoT controller.

CT Port

PIN	Definition	Function	Remarks
1	CT-L1+ (Red)	CT output positive terminal	Connect to the Phase L1 CT in the grid.
2	CT-L1- (Black)	CT output negative terminal	
3	CT-L2+ (Red)	CT output positive terminal	Connect to the Phase L2 CT in the grid.
4	CT-L2- (Black)	CT output negative terminal	
5	NC	/	/
6	NC	/	

Step1: Rotate the M20 6-pin connector cap counterclockwise and take it off.

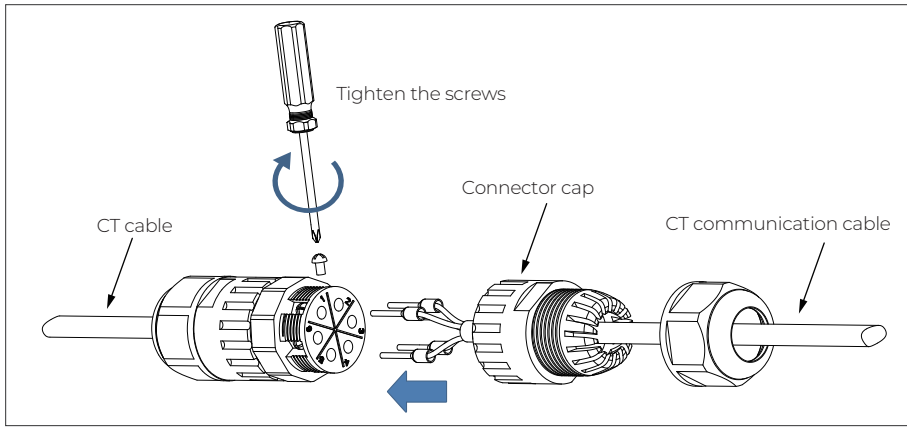
Step2: Put the CT communication cable through the connector cap. Identify the connector pins and connect the signal wires according to the table below.

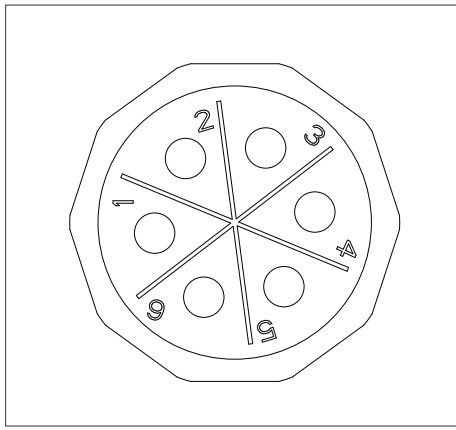
Pin	1	2	3	4	5
Wire	Red	Black	Green	White	N/A

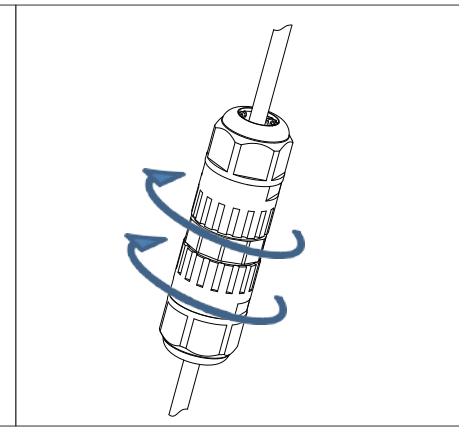
Step3: Tighten the screws with a screwdriver.

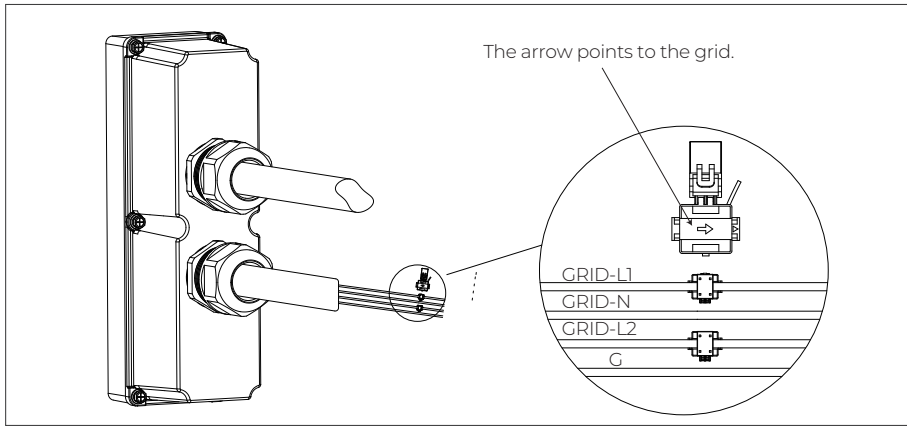
Step 4: Make sure the cables are secured until they can't be pulled out.

Step 5: Tighten the connector cap and nut clockwise.

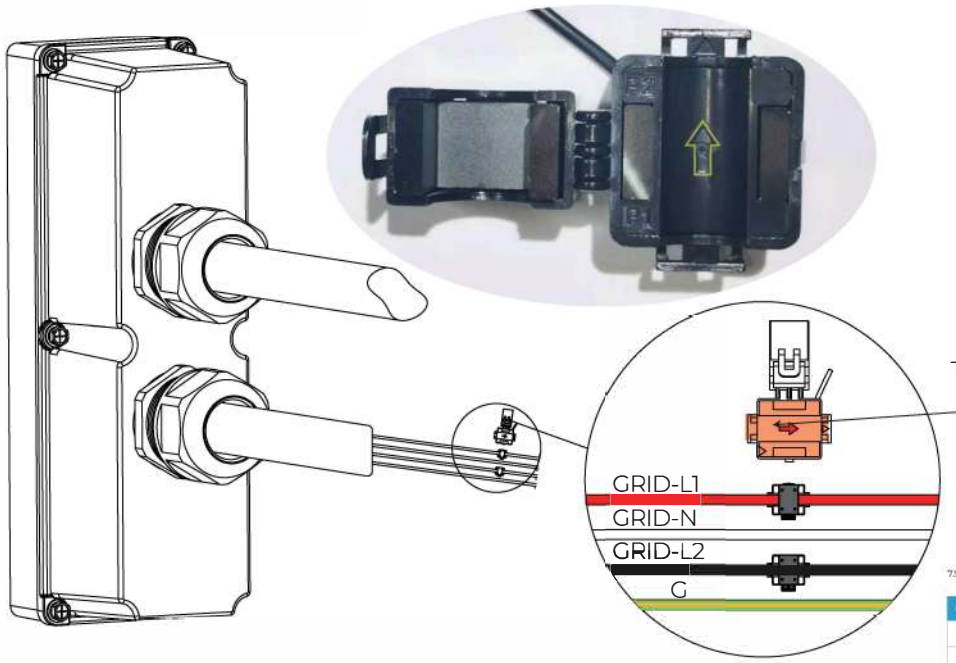

Tighten the screws
Connector cap
CT cable
CT communication cable


1
2
3
4
5
6




The arrow points to the grid.
GRID-L1
GRID-N
GRID-L2
G

4.7 Attach the CT



7.9.5 CT Port

Table 7-7

PIN	Definition	Function	Remarks
1	CT-L1+ (White)	CT output positive terminal	Connect to the Phase L1 CT in the grid.
2	CT-L1- (Black)	CT output negative terminal	
3	CT-L2+ (White)	CT output positive terminal	Connect to the Phase L2 CT in the grid.
4	CT-L2- (Black)	CT output negative terminal	
5	NC	/	/
6	NC	/	

NOTE:

1. The arrow inside the CT points to the grid.
2. Phase sequence: L1-L1, L2-L2 .
3. The CT should be tied to the L1, L2 cables of the main circuit breaker of the grid.

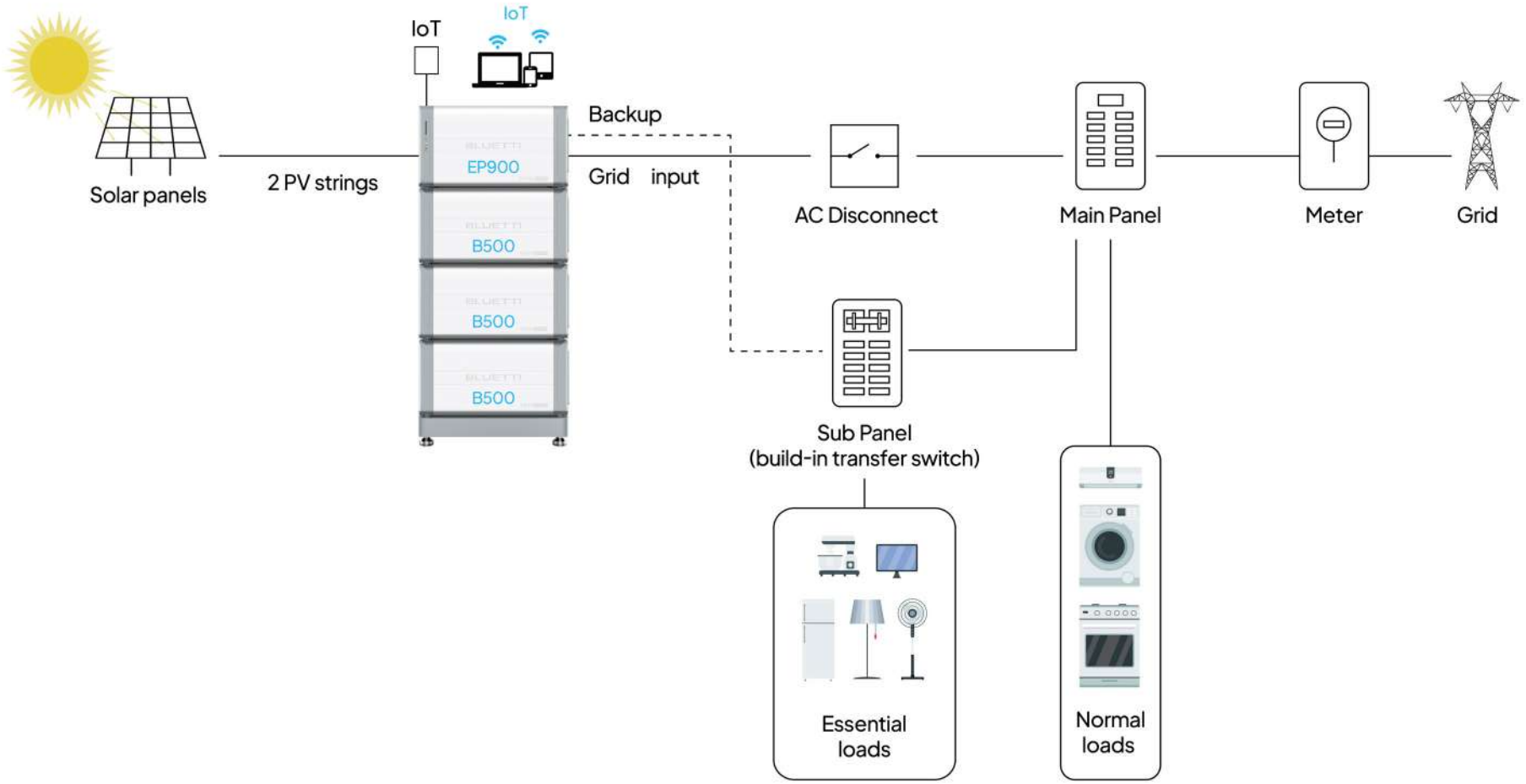
4.8 Install the Sub panel

Connect EP900 ESS to the sub-panel to build a partial home backup system.

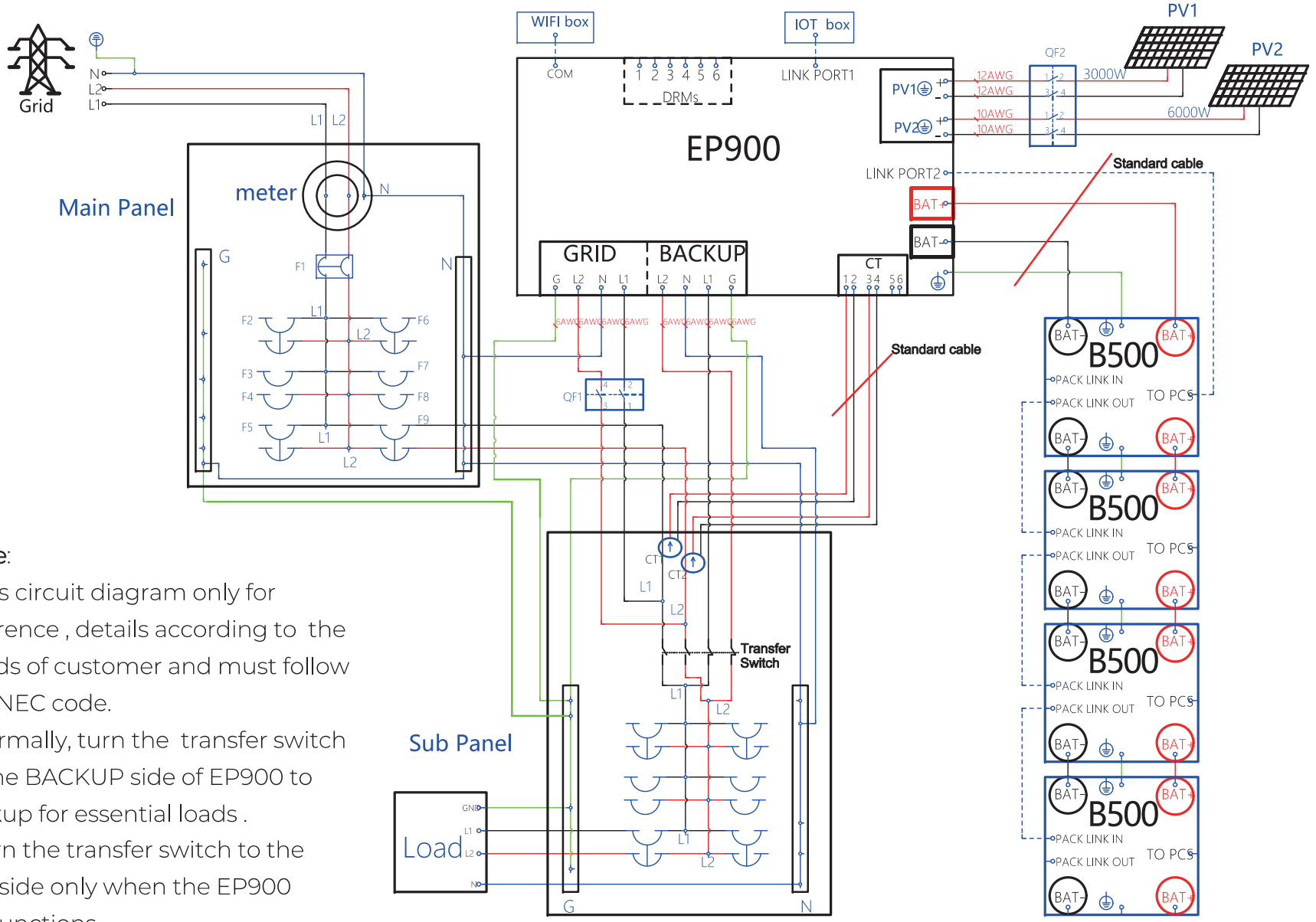
The Panel/Link TRK offers circuit breaker combinations of 50A utility and 50A generator.

1. Connect the Public Grid to utility input of the sub-panel.
2. Connect the EP900 BACKUP output to generator input of the sub-panel.
3. Connect the essential loads to the branch circuit breakers of the sub-panel.

Solution1: For new installation solar panels



Note: This circuit diagram is for reference only, details are subject to customer requirements and must follow NEC specifications.



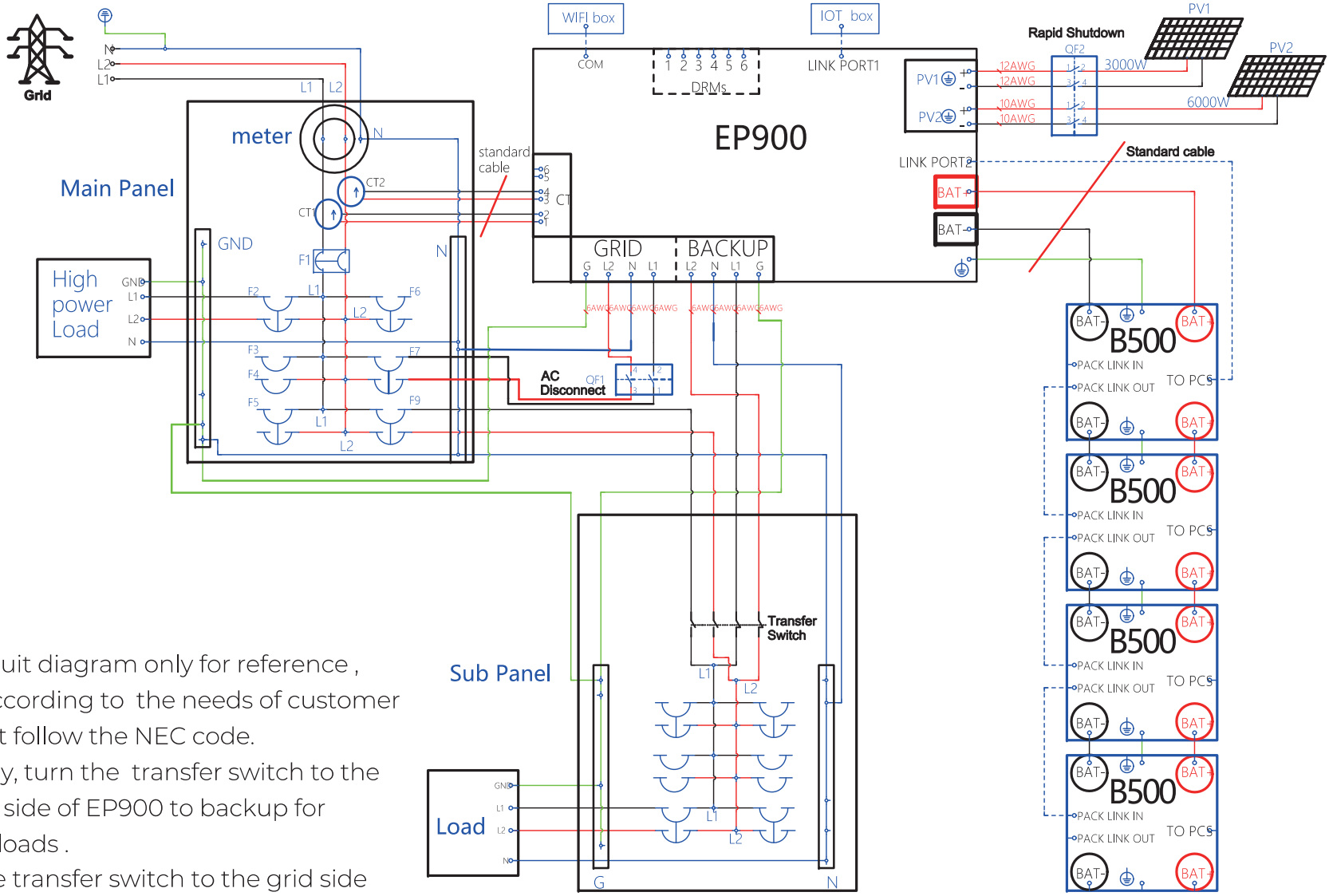
Note:

1.This circuit diagram only for reference , details according to the needs of customer and must follow the NEC code.

2.Normally, turn the transfer switch to the BACKUP side of EP900 to backup for essential loads .

3.Turn the transfer switch to the grid side only when the EP900 malfunctions.

Connection method 2



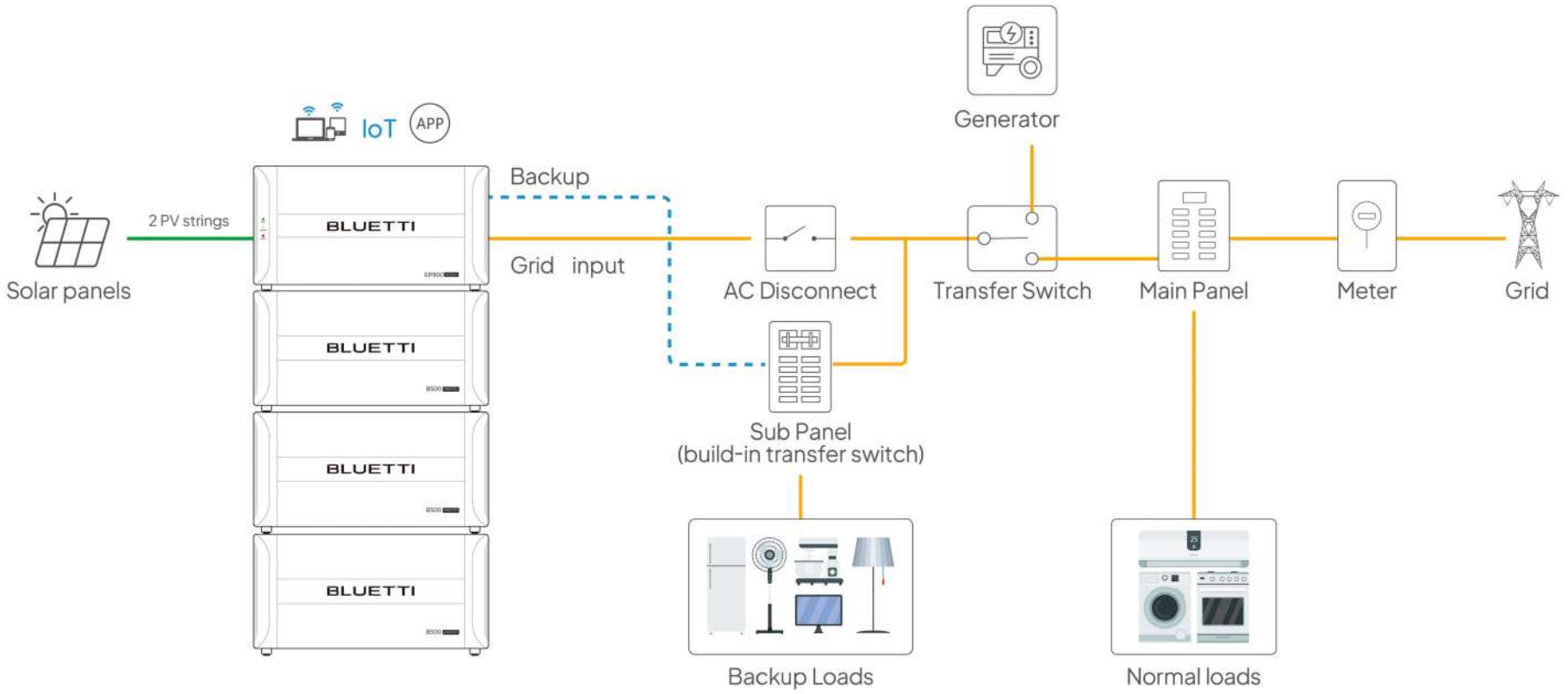
Note:

1.This circuit diagram only for reference , details according to the needs of customer and must follow the NEC code.

2.Normally, turn the transfer switch to the BACKUP side of EP900 to backup for essential loads .

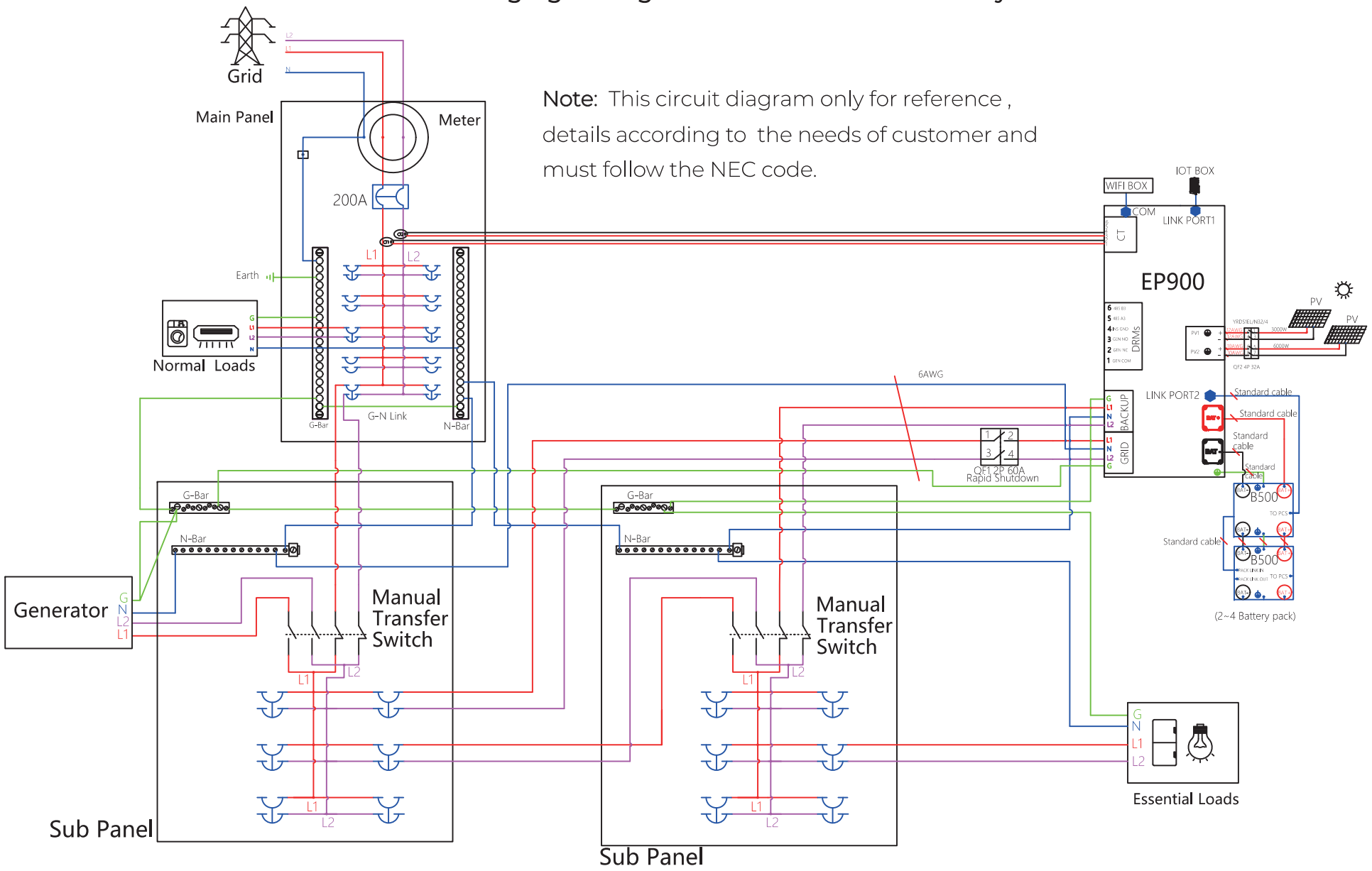
3.Turn the transfer switch to the grid side only when the EP900 malfunctions.

Solution 2: Charging from generator and new solar PV system

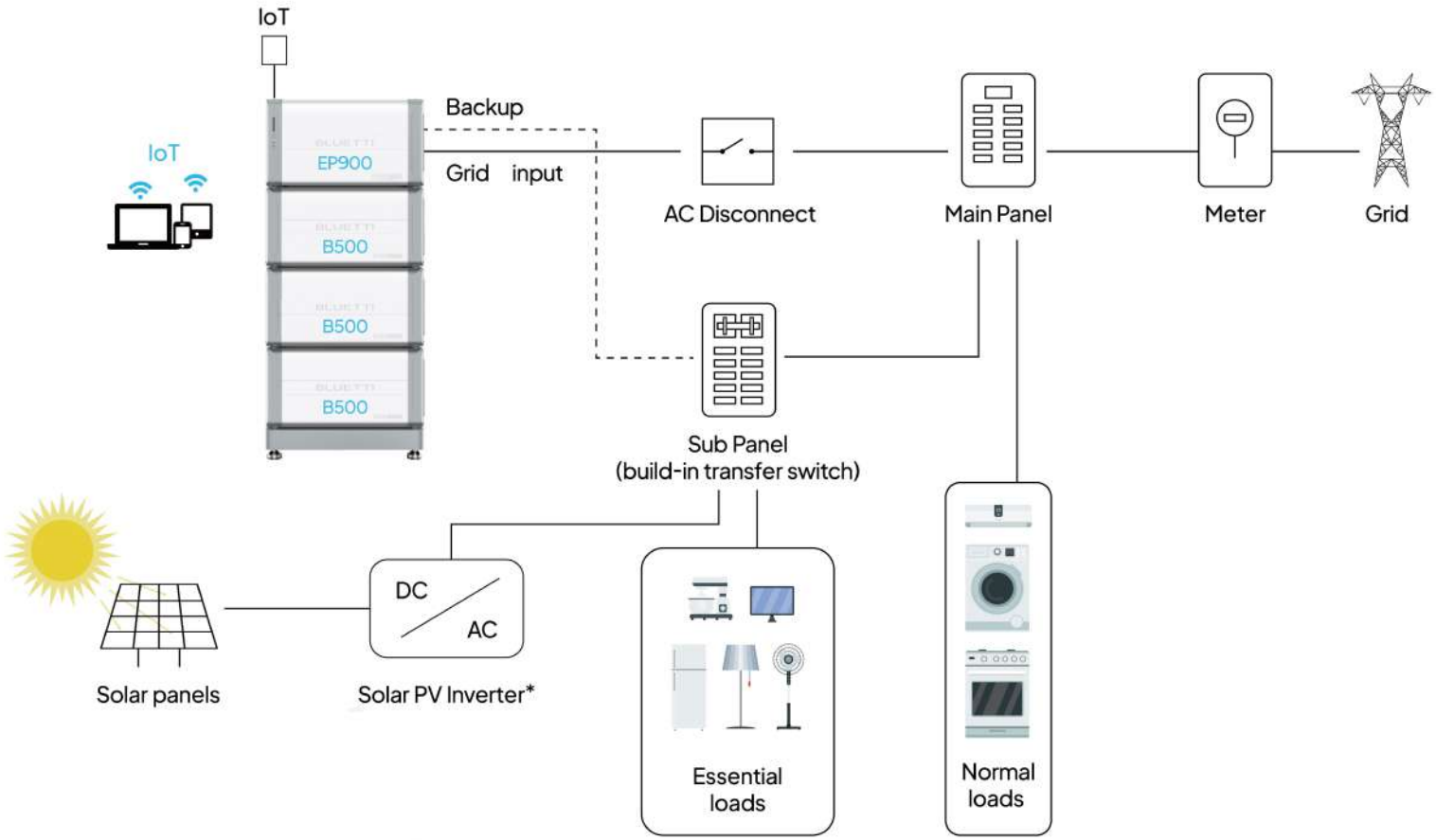


Note: Not all generators are compatible with EP900, please contact BLUETTI before installation.
If you want to use a generator for charging, please purchase a Sub Panel with a transfer switch from the official website.
Purchase link: https:/wwww.bluettipower.com/collections/ep800-ep900-accessories

Solution 2: Charging from generator and new solar PV system



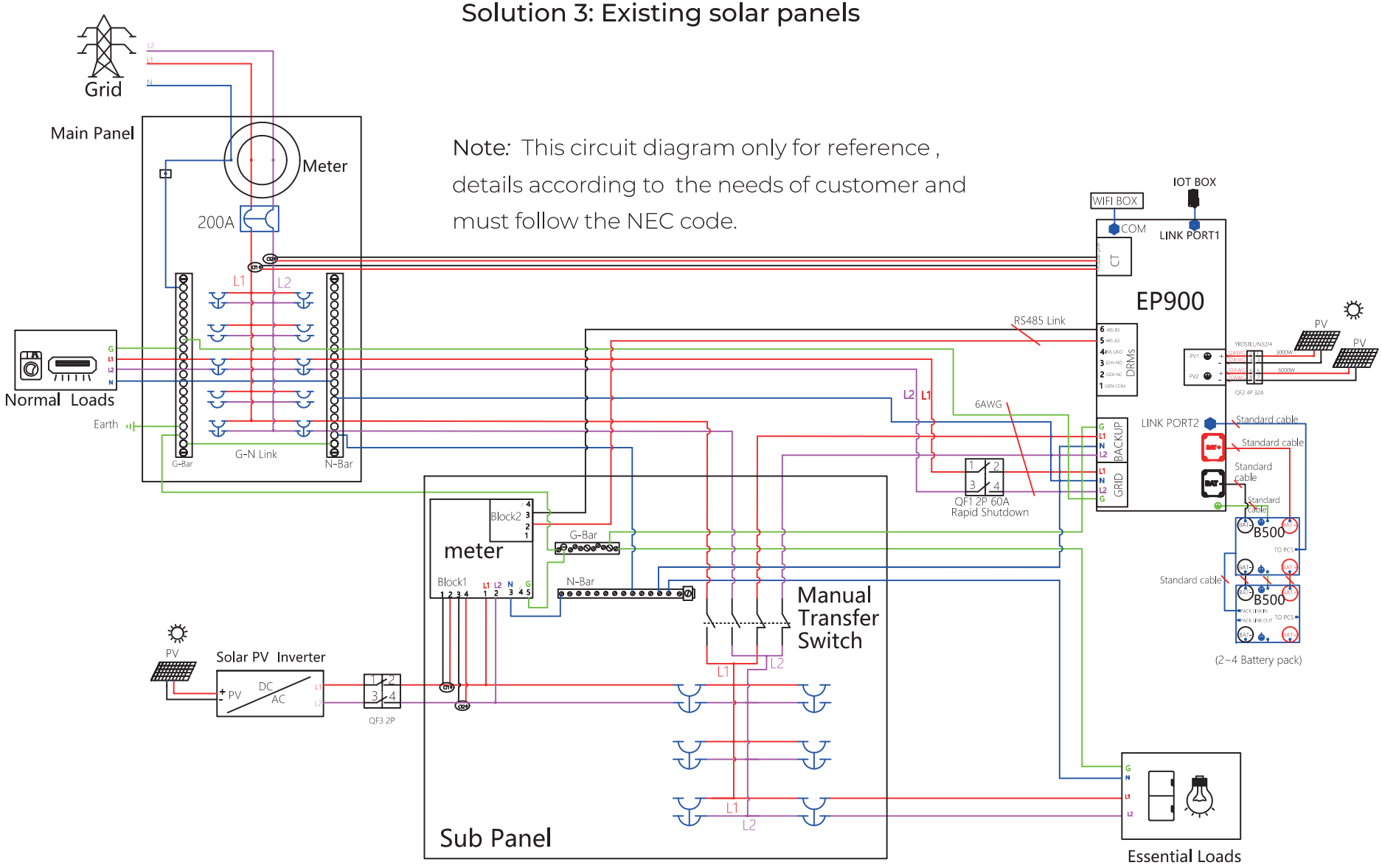
Solution 3: Existing solar panels



Note: For all solutions that include existing solar systems, We should note that changing the system may require updating the permits and designs with the utility company/local government. This can affect warranty + rebate cost (SGIP). Please contact installer for details.

Note: Not all solar PV inverters are compatible with EP900, please contact BLUETTI before installation if you want to use existing solar panels, please purchase CT and Meter from the official website. **Purchase link:** https/www.bluettipower.com/collections/ep800-ep900-accessories

Solution 3: Existing solar panels



Note: For all solutions that include existing solar systems, We should note that changing the system may require updating the permits and designs with the utility company/local government. This can affect warranty + rebate cost (SGIP). Please contact installer for details.

5. Power on

Step 1 Switch on the DC circuit breakers on EP900.

Step 2 Switch on the DC circuit breakers on B500 battery packs. Press and hold the power button of any battery pack for about 3 seconds, and the green indicator on the button will light up.

Step 3 About 40 seconds later, the indicator on EP900 will stay green.

Step 4 Switch on the AC circuit breakers connected to the EP900 GRID terminal.

Step 5 Power on the system via BLUETTI app.

Step 6 Check the voltage of BACKUP terminal.

Step 7 Switch on the AC circuit breakers connected to the EP900 load port.

Step 8 Check the EP900 system operation in the App.

LED / System Status	Green	Yellow	Red
Run	ON	OFF	OFF
Run +Alarm	ON	ON	OFF
Fault	OFF	OFF	ON
Alarm and fault	OFF	ON	ON

For more information, please visit:

Web: https://www.bluettipower.com

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Email: sale@bluettipower.com (Pre-sales), service@bluettipower.com (After-sales)

BLUETTI

Just Power On

P/N:17.0307.0093-01