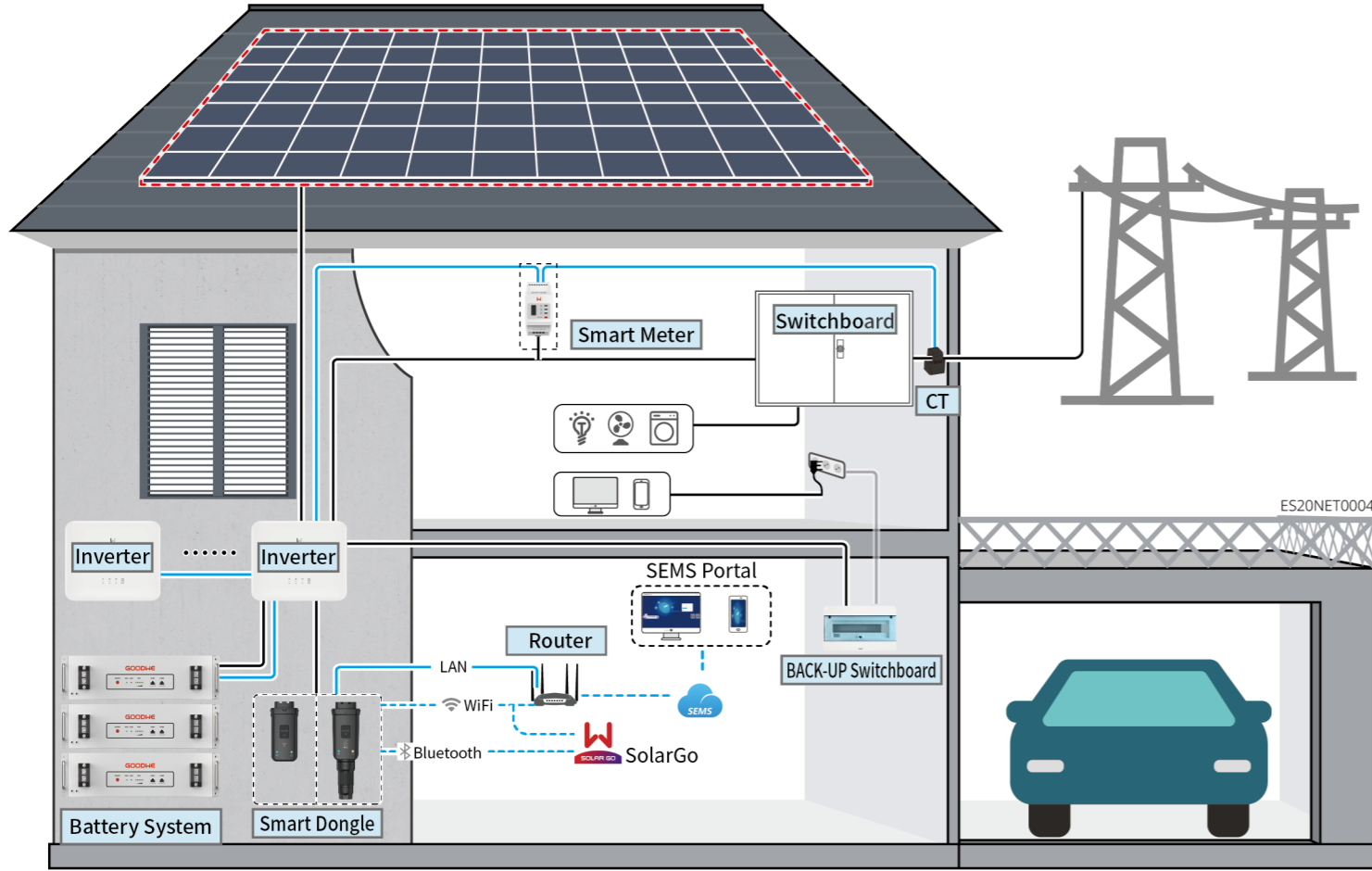


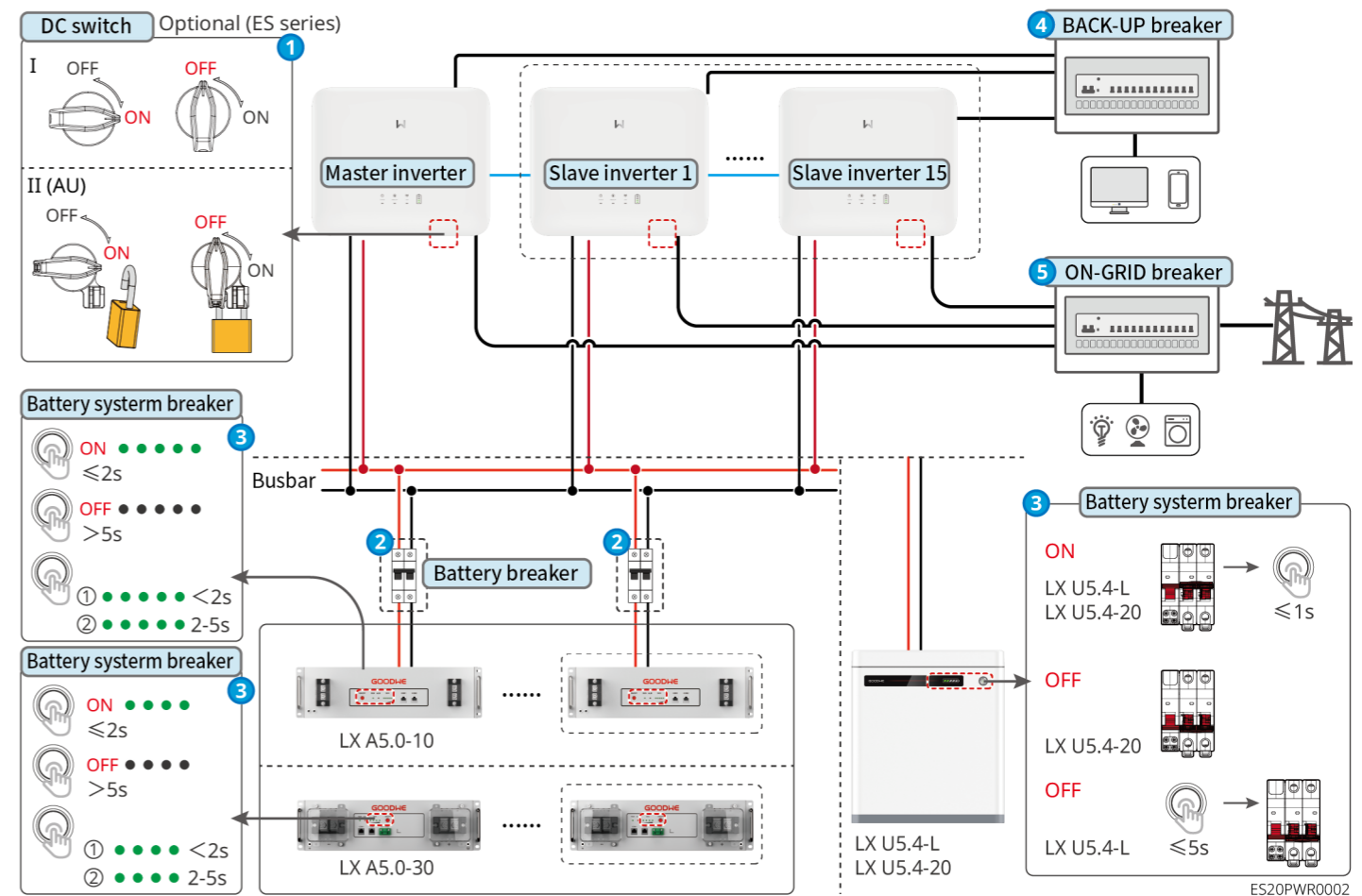
**01 Networking**



Device	Model	Description
Inverter	GW3000-ES-20 GW3600-ES-20 GW3600M-ES-20 GW5000-ES-20 GW5000M-ES-20 GW6000-ES-20 GW6000M-ES-20 GW3600-SBP-20 GW5000-SBP-20 GW6000-SBP-20 GW3500L-ES-BR20 GW3600-ES-BR20 GW6000-ES-BR20	<ul style="list-style-type: none"> <li>• A maximum of 16 inverters are supported to form a parallel system.</li> <li>• When the number of inverters in the parallel system is <math>\leq 3</math>, UPS function is supported; When the number of inverters in the parallel system exceeds 3, UPS function is not supported.</li> <li>• The complexity of the parallel system increases with the increase of the number of inverters in parallel. When the number of inverters in parallel system is <math>\geq 6</math>, please contact the after-sales service to confirm the installation and application environment of the inverters to ensure stable operation of the system.</li> <li>• GW3600M-ES-20, GW5000M-ES-20, GW6000M-ES-20, GW3600-SBP-20, GW5000-SBP-20, GW6000-SBP-20: Lead-acid battery is not supported.</li> <li>• GW3600-SBP-20, GW5000-SBP-20, GW6000-SBP-20: Parallel system is not supported.</li> <li>• Only supports parallel connection of inverters of the same model.</li> <li>• When connecting in parallel, the DSP software version of the inverter must be 01 or higher.</li> <li>• When connecting on-grid inverters to form a coupled scenario, parallel connection is not supported.</li> <li>• Requirements for parallel system for GW3000-ES-20, GW3500L-ES-BR20, GW3600-ES-BR20, GW3600-ES-20, GW3600M-ES-20, GW5000-ES-20, GW5000M-ES-20, GW6000-ES-20, GW6000M-ES-20, GW6000-ES-BR20: <ul style="list-style-type: none"> <li>• The software version of all inverters in the system is the same.</li> <li>• The ARM software version of the inverter is 08 (418) and above.</li> <li>• The DSP software version of the inverter is 08(8808) and above.</li> </ul> </li> <li>• GW3000-ES-20, GW3500L-ES-BR20, GW3600-ES-BR20, GW3600-ES-20, GW3600M-ES-20, GW5000-ES-20, GW5000M-ES-20, GW6000-ES-20, GW6000M-ES-20, GW6000-ES-BR20 In the coupled scenario, dual meters can be used to simultaneously monitor the power generation of on-grid inverters and load power consumption. This solution requires that the inverter software version supports dual meter data access, and that the inverter software meets the following version requirements: <ul style="list-style-type: none"> <li>• The ARM software version of the inverter is 12.440 and above.</li> </ul> </li> </ul>
	Battery System	<ul style="list-style-type: none"> <li>• Battery of different models cannot be mix used.</li> <li>• LX A5.0-10: The nominal charge and discharge current of a single battery is 60A; a maximum of 15 batteries can be connected in parallel in the same system.</li> <li>• LX A5.0-30: The nominal charge current of a single battery is 60A, and the discharge current is 100A; the maximum continuous charge current is 90A; the maximum continuous discharge current is 150A. A maximum of 30 batteries can be connected in parallel in the same system.</li> <li>• LX U5.4-L, LX U5.4-20: The nominal charge and discharge current of a single battery is 50A; a maximum of 6 batteries can be connected in parallel in the same system.</li> <li>• LX U5.0-30: The nominal charging current of a single battery is 60A, and the discharging current is 100A; the maximum charging current is 90A; the maximum discharging current is 100A. A maximum of 30 batteries can be connected in parallel in one system.</li> </ul>
	Lead-acid Battery	<ul style="list-style-type: none"> <li>• Supports connection to lead-acid batteries of AGM, GEL, and Flooded types.</li> <li>• The number of batteries that can be connected in series is calculated based on the voltage of lead-acid batteries, and the total voltage of batteries connected in series is not allowed to exceed 60V.</li> </ul>

Device	Model	Description
Bus Bar	BCB-11-WW-0 BCB-22-WW-0 BCB-32-WW-0 (Purchase from GoodWe)	<ul style="list-style-type: none"> <li>When the charging and discharging current between the battery and the inverter is less than 120A, it supports direct connection between battery and inverter without using a busbar. For example: it supports connecting GW3000-ES-20 to LX A5.0-30 without using a busbar. For detailed battery wiring methods, refer to section 6.6 Connecting the Battery Cable.</li> <li>When multiple inverters are used in the system, a busbar needs to be connected. If using batteries from other brands, consult the corresponding manufacturer for the method of connecting the battery to the busbar.</li> <li>When the charging and discharging current between battery and inverter is <math>\geq 120A</math>, a busbar or busbar box must be used to connect the inverter. (Current <math>\geq M \times IBat</math> nominal. (M: the quantity of batteries connected in parallel in the system, IBat nominal: the nominal current of the battery). <ul style="list-style-type: none"> <li>BCB-11-WW-0: <ul style="list-style-type: none"> <li>used with LX A5.0-10, the battery system supports a maximum working current of 360A, working power of 18kW, and can be connect to a maximum of 3 inverter, and 6 batteries.</li> </ul> </li> <li>BCB-22-WW-0: <ul style="list-style-type: none"> <li>used with LX A5.0-10, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverter, and 12 batteries.</li> <li>used with LX A5.0-30, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverter, and 6 batteries.</li> </ul> </li> <li>BCB-32-WW-0: <ul style="list-style-type: none"> <li>used with LX U5.0-30, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverter, and 6 batteries.</li> </ul> </li> </ul> </li> <li>BCB-11-WW-0: <ul style="list-style-type: none"> <li>used with LX A5.0-10, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverters and 12 batteries.</li> <li>used with LX A5.0-30, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverters and 15 batteries.</li> </ul> </li> <li>BCB-22-WW-0: <ul style="list-style-type: none"> <li>used with LX U5.0-30, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverter, and 8 batteries.</li> </ul> </li> <li>BCB-33-WW-0: <ul style="list-style-type: none"> <li>used with LX U5.0-30, the battery system supports a maximum working current of 720A, working power of 36kW, and can be connected to a maximum of 6 inverters, and 15 batteries. When the number of batteries exceeds 8, two 600A fuses need to be connected in parallel.</li> </ul> </li> <li>Others: prepare the busbar based on actual system power and current.</li> </ul>
Smart Meter	<ul style="list-style-type: none"> <li>GMK110</li> <li>GMK110D</li> <li>GM1000</li> <li>GM1000D</li> <li>GM3000</li> </ul>	<p>It is not supported to change CT to other type, default CT ratio: 120A: 40mA</p> <ul style="list-style-type: none"> <li>GMK110, GM1000: CT x 1; GMK110 or GM1000 is standard meter.</li> <li>GM1000D, GM110D: CT x 2; Used for AC coupled inverters; Purchase separately</li> <li>GM3000: CT x 3; When a three-phase load is used in the system and output power needs to be controlled, a GM3000 meter is required; Purchase separately.</li> </ul>
Smart Dongle	<ul style="list-style-type: none"> <li>Wi-Fi Kit</li> <li>Wi-Fi/LAN Kit-20</li> <li>Ezlink3000</li> </ul>	<ul style="list-style-type: none"> <li>Please use Wi Fi Kit or Wi Fi/LAN Kit-20 in single inverter system.</li> <li>In parallel system, only the master inverter needs to be connected to Ezlink3000, and the slave inverter does not need to be connected to smart dongle. Ezlink3000 requires a firmware version of 04 or above.</li> </ul>

## 02 Power On/Off



### Power On/Off

⑤ → ④ → ② → ③ → ① ② : Install or not based on local laws and regulations.

### 03 Installations

Steps	1 Installation	2 PE	3 PV	4 Battery	5 AC	6 COM	7 Communication module		
Inverter									
Tools	1 D: 80mm φ: 8mm 2 M5 1.2-2N·m	M5 1.5-2N·m	Recommend: PV-CZM-61100 	M8 7-9N·m	1 M3 0.8N·m 2 M3 0.8N·m	M3 0.6N·m	4G Kit-CN LS4G Kit-CN 4G Kit-CN-G20 4G Kit-CN-G21		

Steps	1 Installation						2 PE	3 Battery	4 COM
Battery	LX A5.0-10	LX A5.0-30	LX A5.0-30	LX U5.4-L/LX U5.4-20	LX U5.0-30	LX U5.0-30	LX A5.0-10/LX A5.0-30 LX U5.4-L/LX U5.4-20 LXU 5.0-30	LX A5.0-10 LX U5.4-L LX U5.4-20	LX A5.0-10 LX A5.0-30 LXU 5.0-30 LX U5.4-L LX U5.4-20
Tools							1 M5 4N·m 2 M5 2N·m 3 M5 4N·m	1 M6 6N·m 2 M8 12N·m	Recommend: PV-CZM-61100 
	M4 1.4N·m	M6 6N·m	M4 1.4N·m	M6 6N·m	1 D: 80mm φ: 8mm 2 M6 6N·m 3 M4 1.4N·m	1a D: 80mm φ: 8mm 1b D: 65mm φ: 13mm 2a ST5.5 +70 2b M10 10N·m 1 3 M5 2N·m			

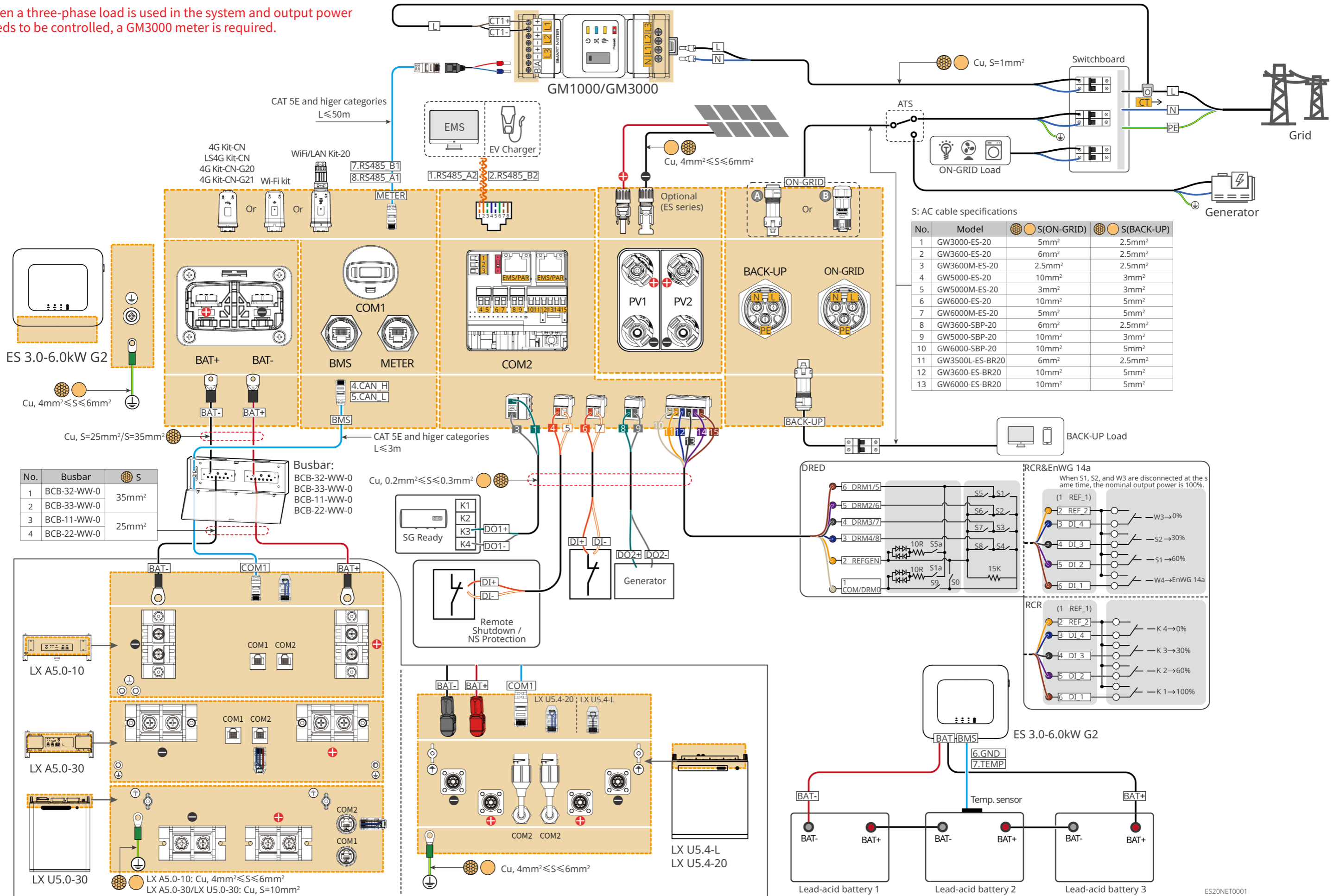
Steps	1 Installation	2 Cable Connections	3 Power	4 Commissioning	
Smart meter	GMK110/GMK110D GM1000/GM3000/GM1000D	GMK110/GMK110D   0.3-0.5N·m	GM1000/GM3000/GM1000D   1.2-2N·m	AC breaker 	   SolarGo APP or  SEMS Portal APP  SEMS Portal WEB
	GMK110: CT1+/CT1- GMK110D: CT1+/CT1- CT2+/CT2- GM1000: CT x 1 GM1000D: CT x 2 GM3000: CT x 3				

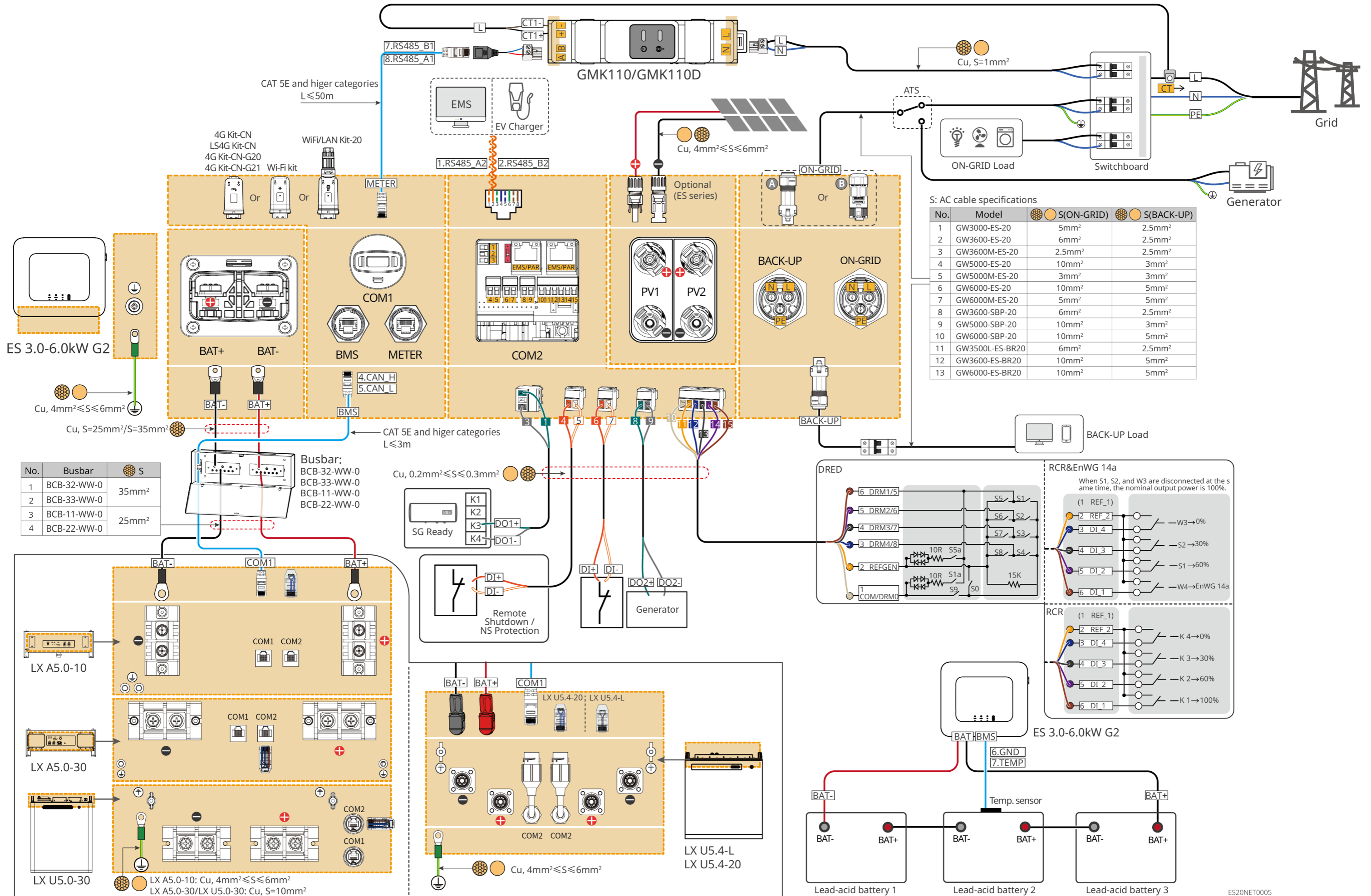
# 04 Wiring Diagram

## General Scenario

### Single Inverter + GM1000

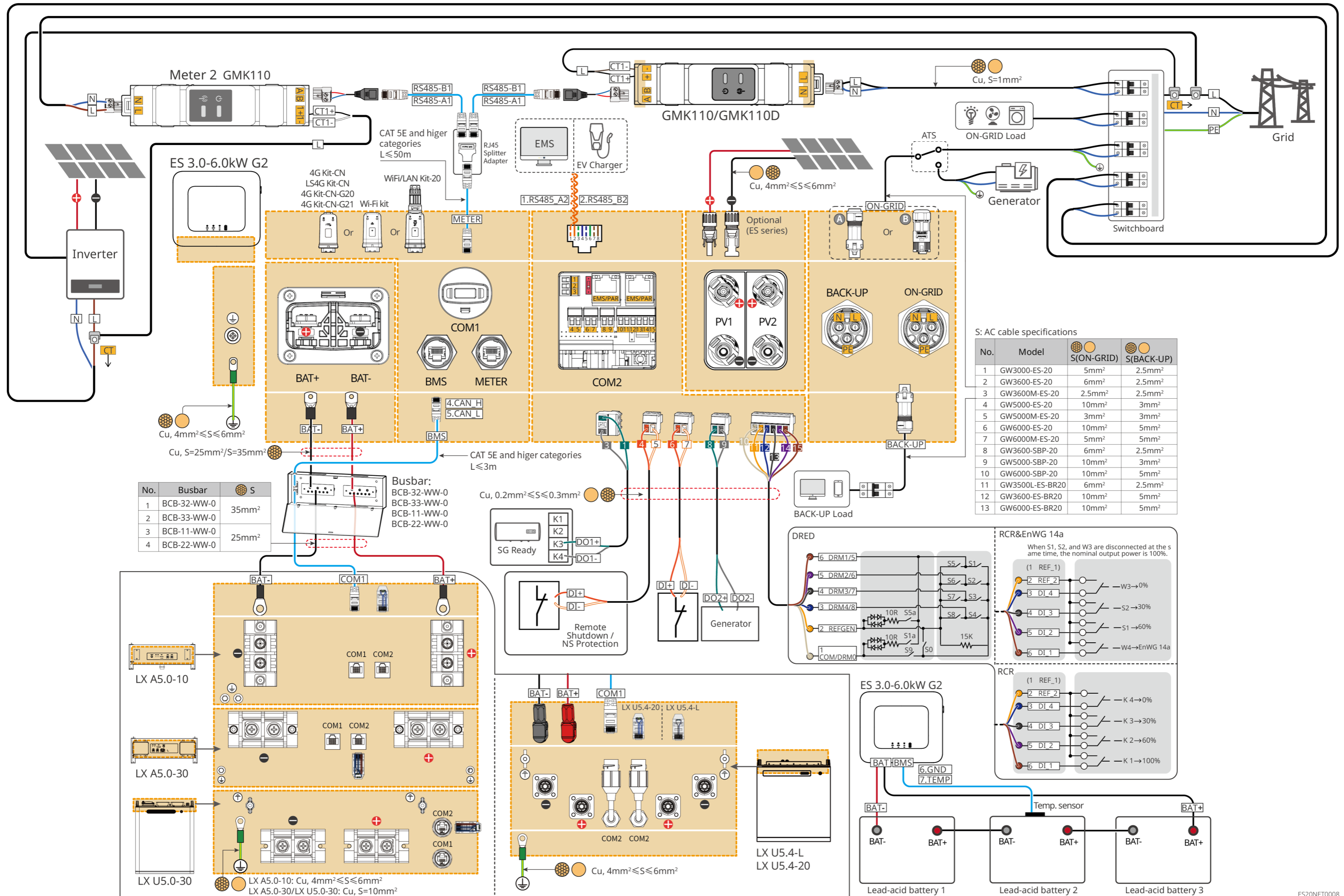
When a three-phase load is used in the system and output power needs to be controlled, a GM3000 meter is required.

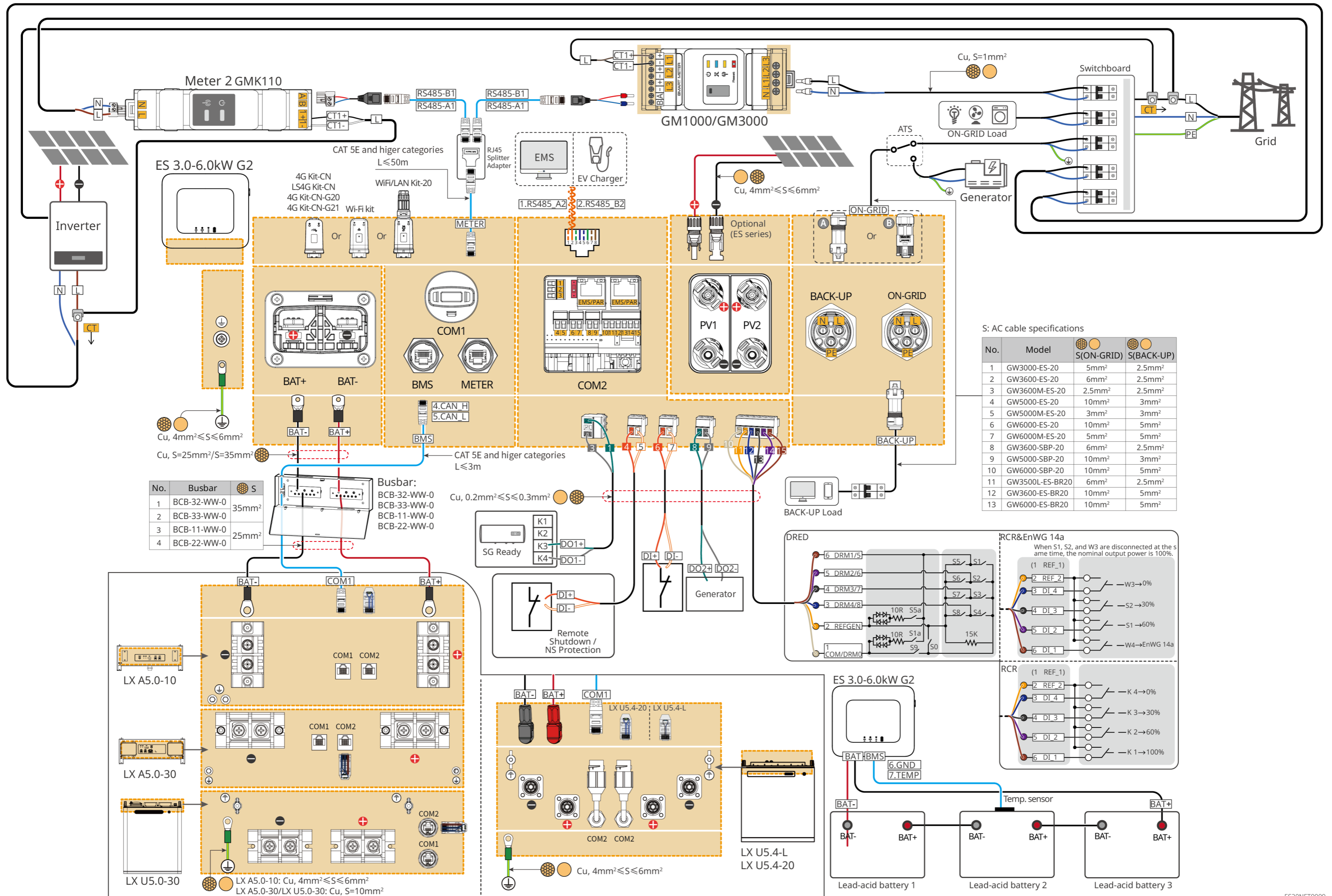




Networking Scheme for Load Monitoring and Power Generation Monitoring of Grid-Tied PV inverter in Coupled Scenarios

GMK110/GMK110D+GMK110 Scenario



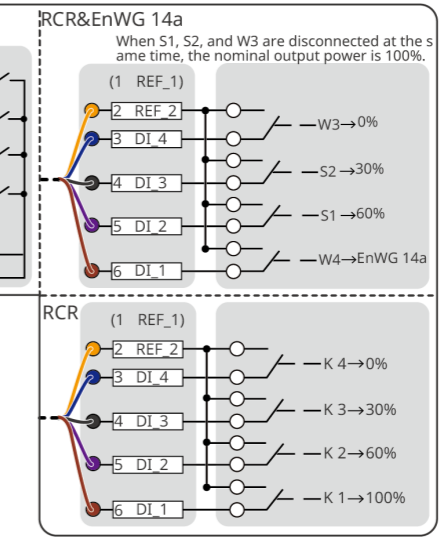


S: AC cable specifications

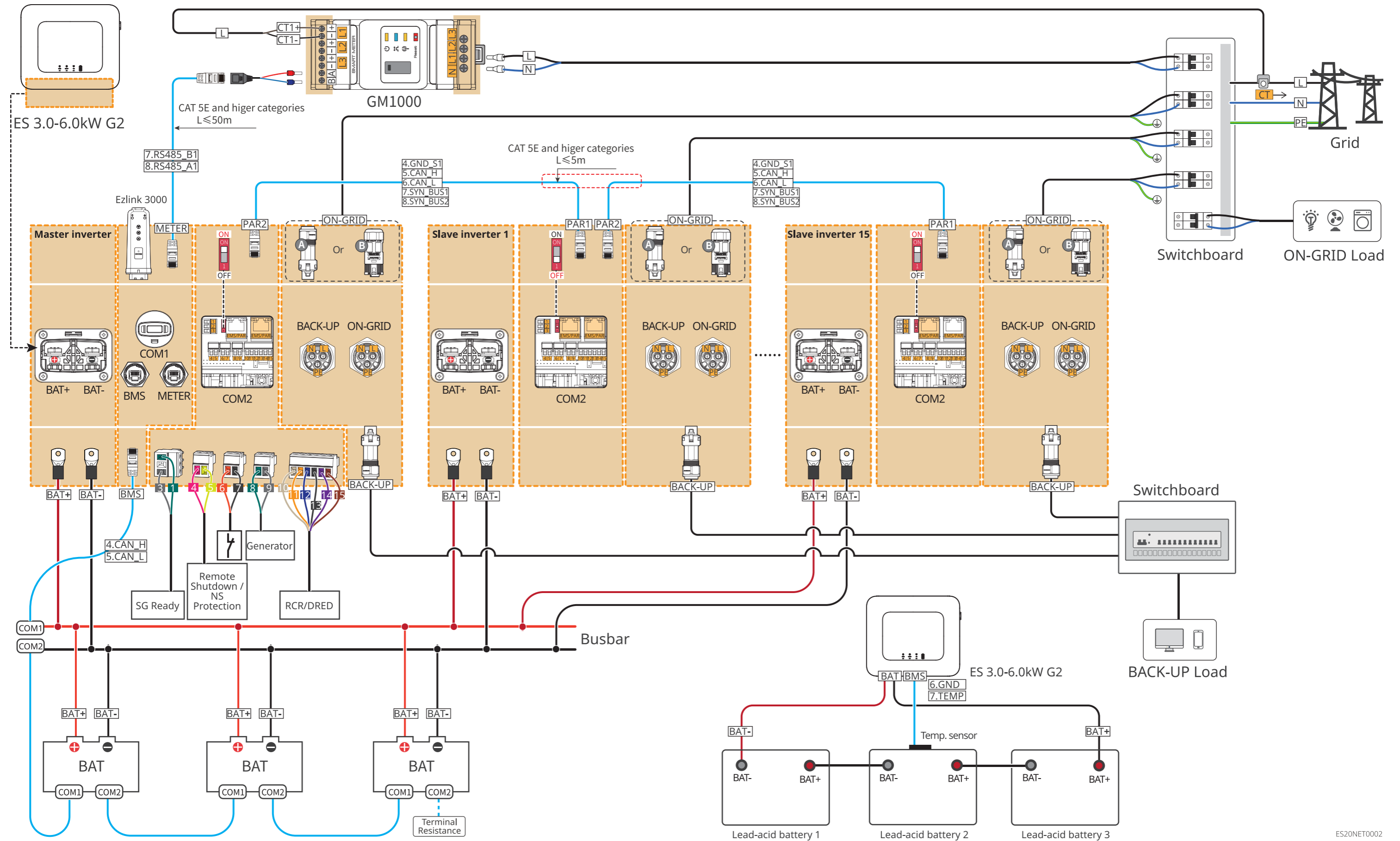
No.	Model	S(ON-GRID)	S(BACK-UP)
1	GW3000-ES-20	5mm²	2.5mm²
2	GW3600-ES-20	6mm²	2.5mm²
3	GW3600M-ES-20	2.5mm²	2.5mm²
4	GW5000-ES-20	10mm²	3mm²
5	GW5000M-ES-20	3mm²	3mm²
6	GW6000-ES-20	10mm²	5mm²
7	GW6000M-ES-20	5mm²	5mm²
8	GW3600-SBP-20	6mm²	2.5mm²
9	GW5000-SBP-20	10mm²	3mm²
10	GW6000-SBP-20	10mm²	5mm²
11	GW3500L-ES-BR20	6mm²	2.5mm²
12	GW3600-ES-BR20	10mm²	5mm²
13	GW6000-ES-BR20	10mm²	5mm²

No.	Busbar	S
1	BCB-32-WW-0	35mm²
2	BCB-33-WW-0	35mm²
3	BCB-11-WW-0	25mm²
4	BCB-22-WW-0	25mm²

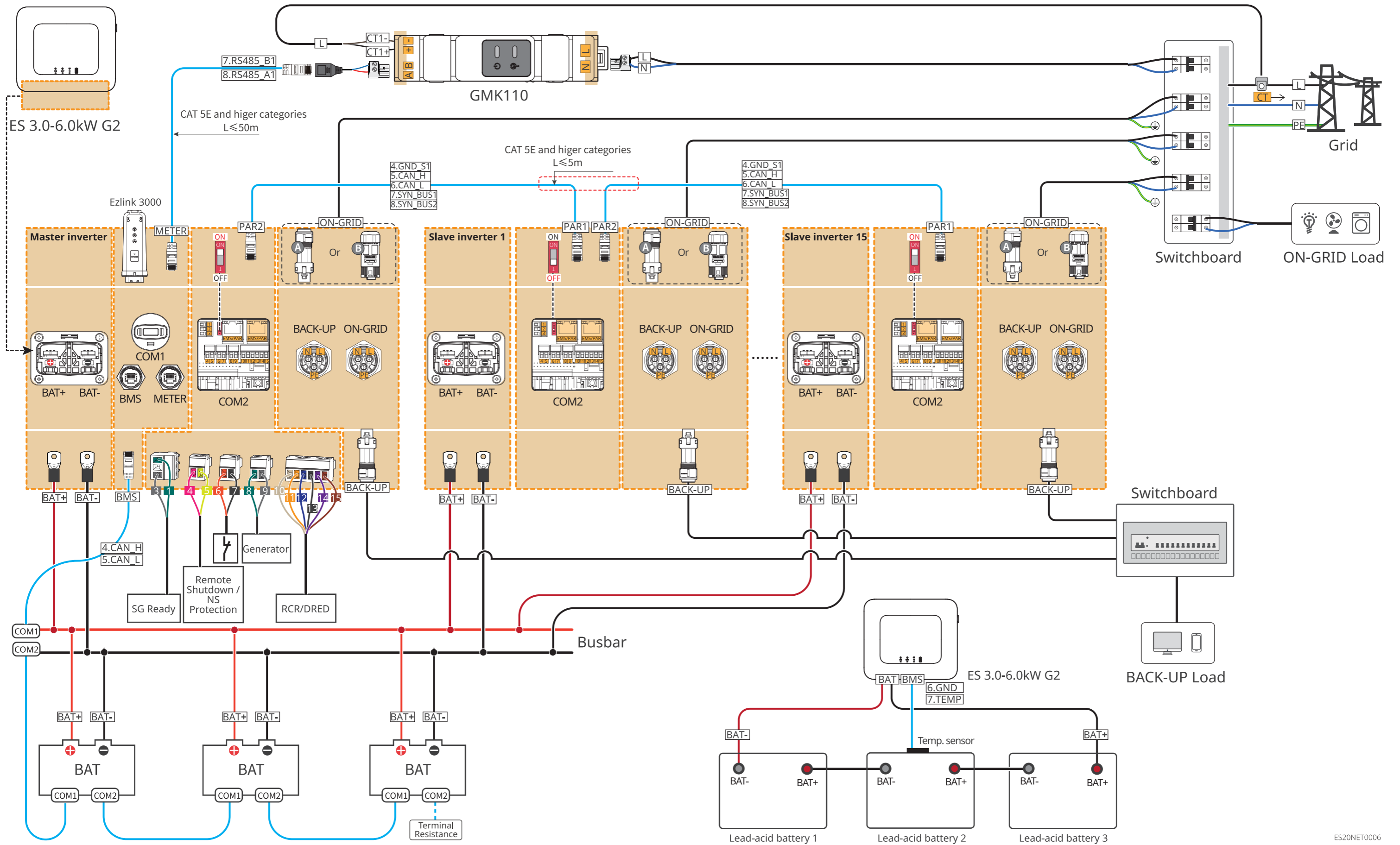
Busbar:  
 BCB-32-WW-0  
 BCB-33-WW-0  
 BCB-11-WW-0  
 BCB-22-WW-0



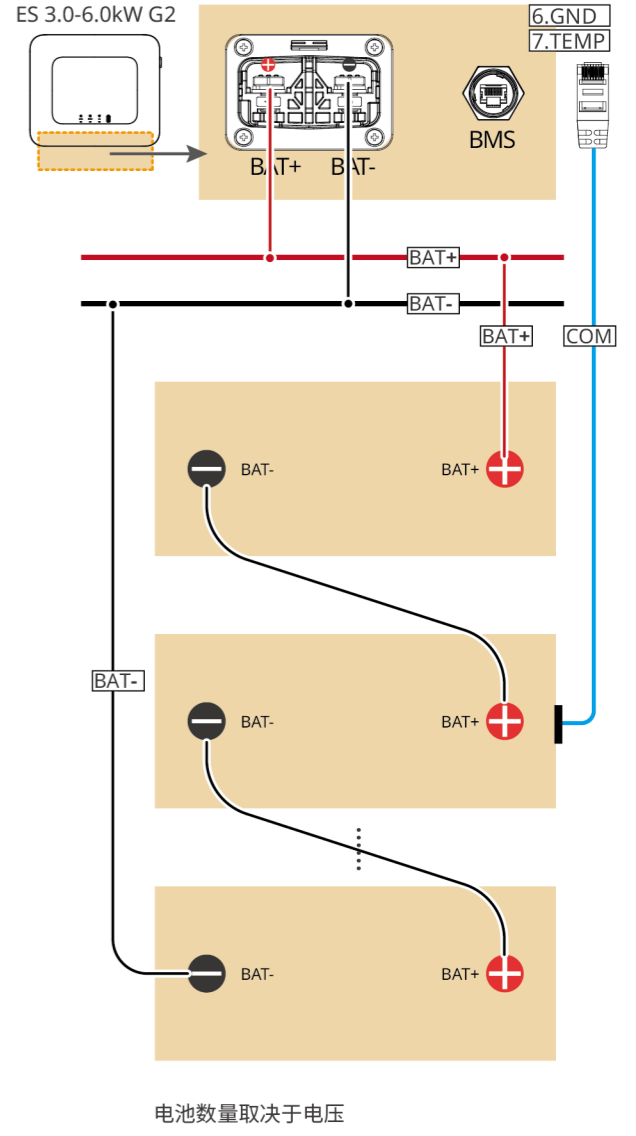
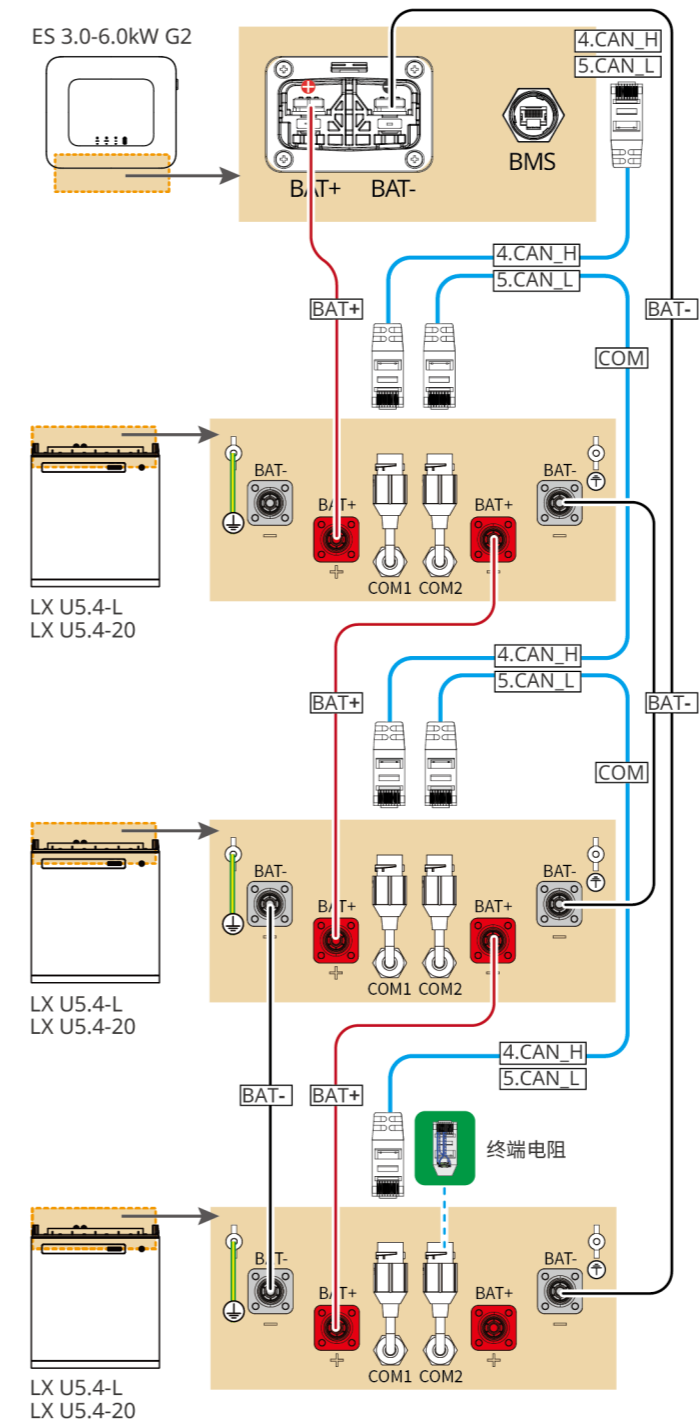
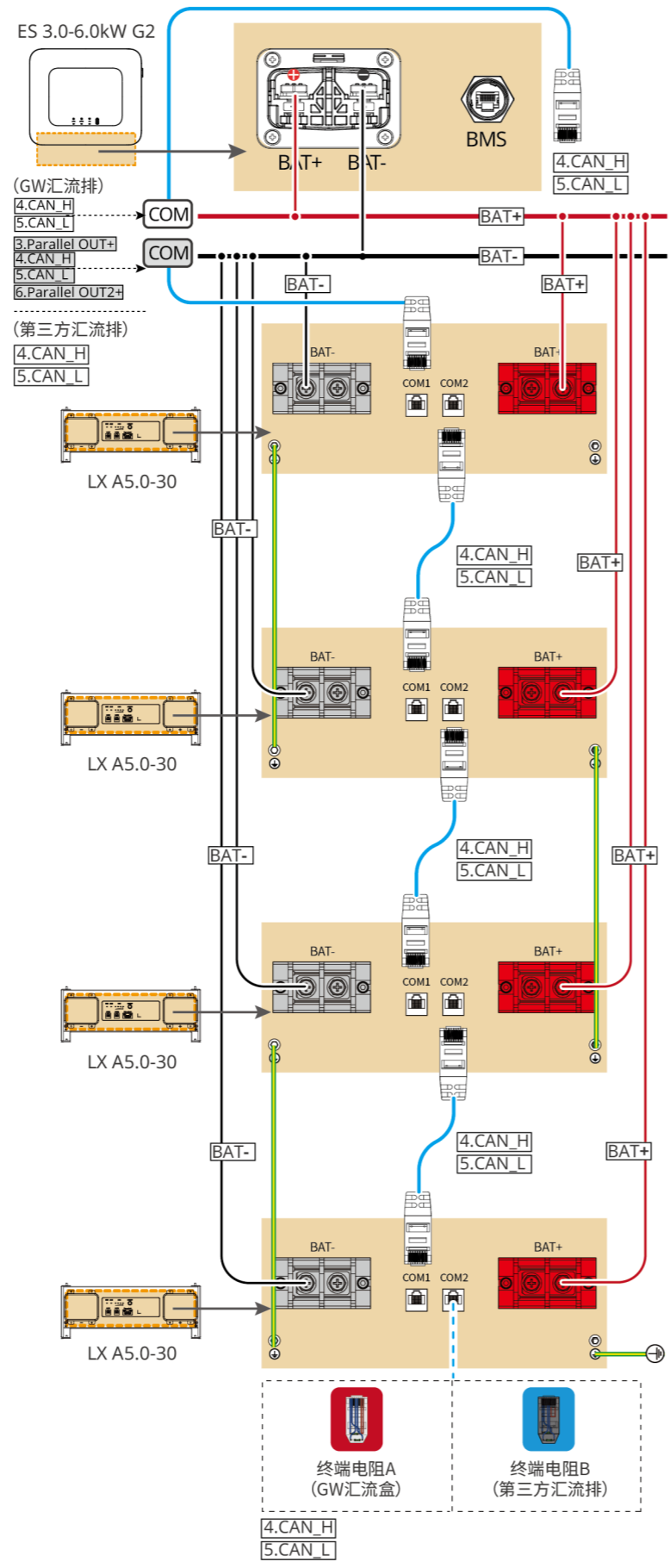
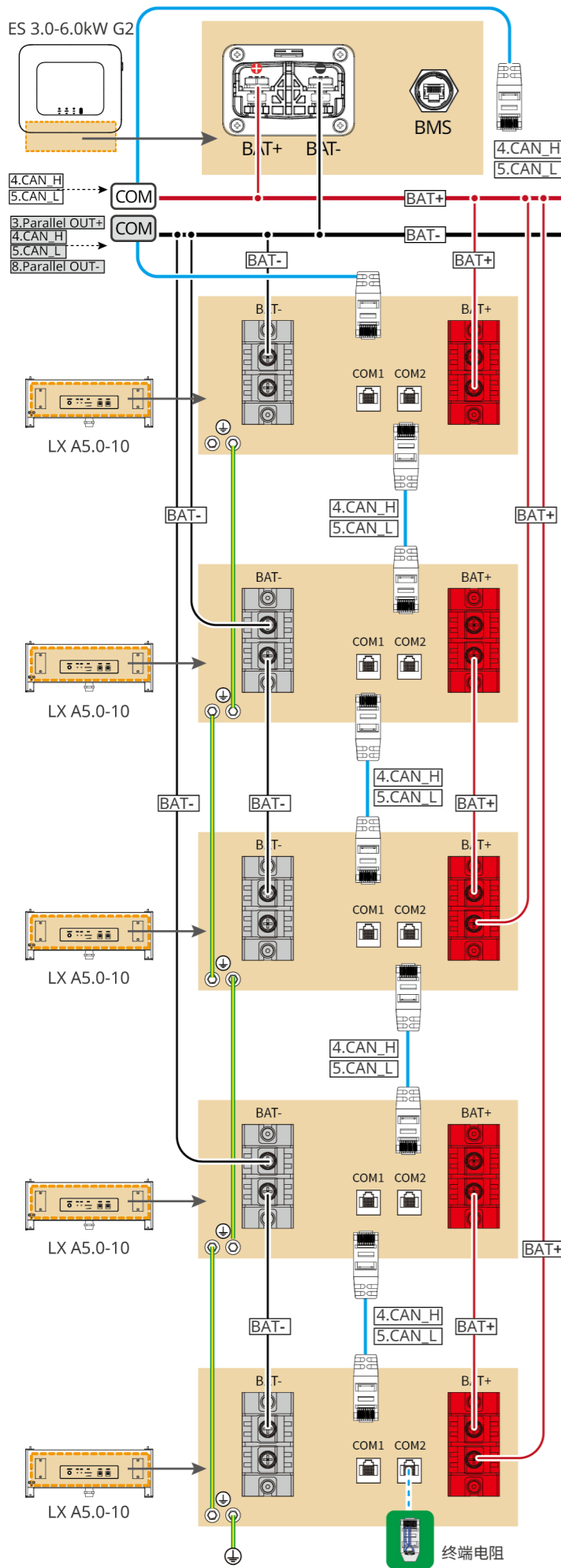
Multi inverters + GM1000 + Ezlink3000







# 05 Battery System Wiring Diagram



电池数量取决于电压

CAT 5E 及以上

## 06 Equipment Commissioning



SolarGo App

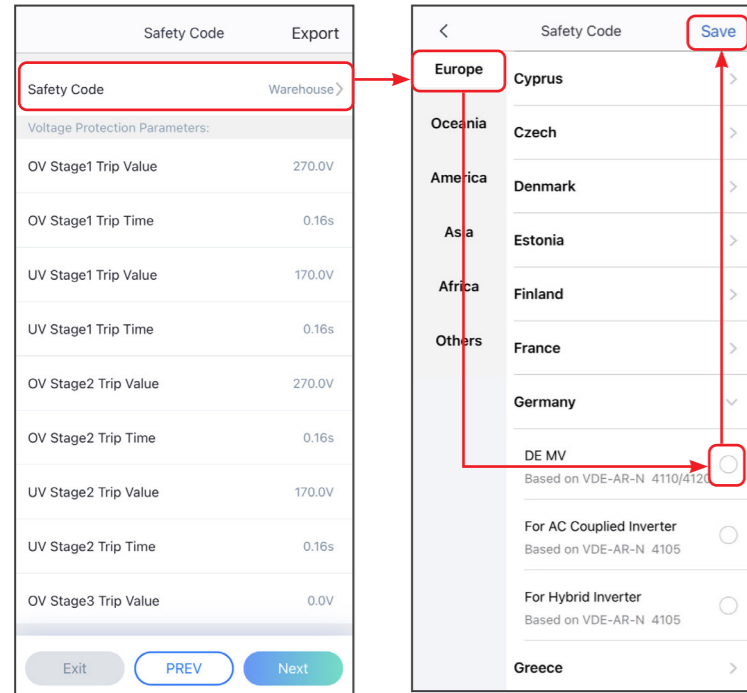
Download and open the APP, then follow the prompts to connect inverter signal.

### Quick Settings

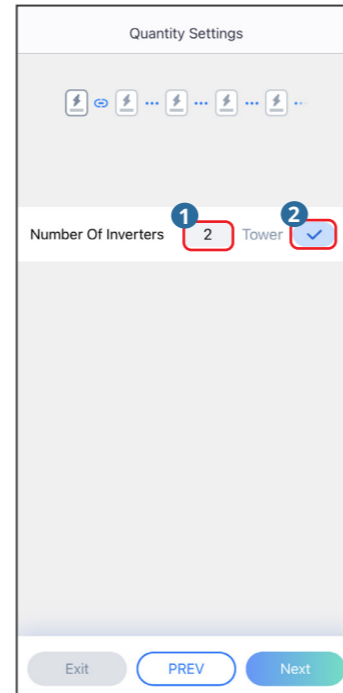
Tap Home > Settings > Quick Settings to complete quick settings step by step.

Installer password: goodwe2010

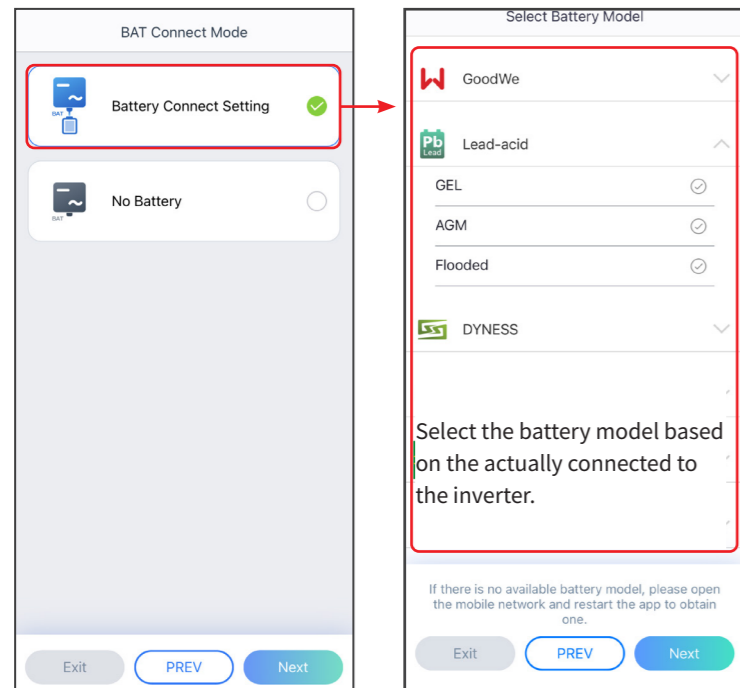
### Setting the Safety Code



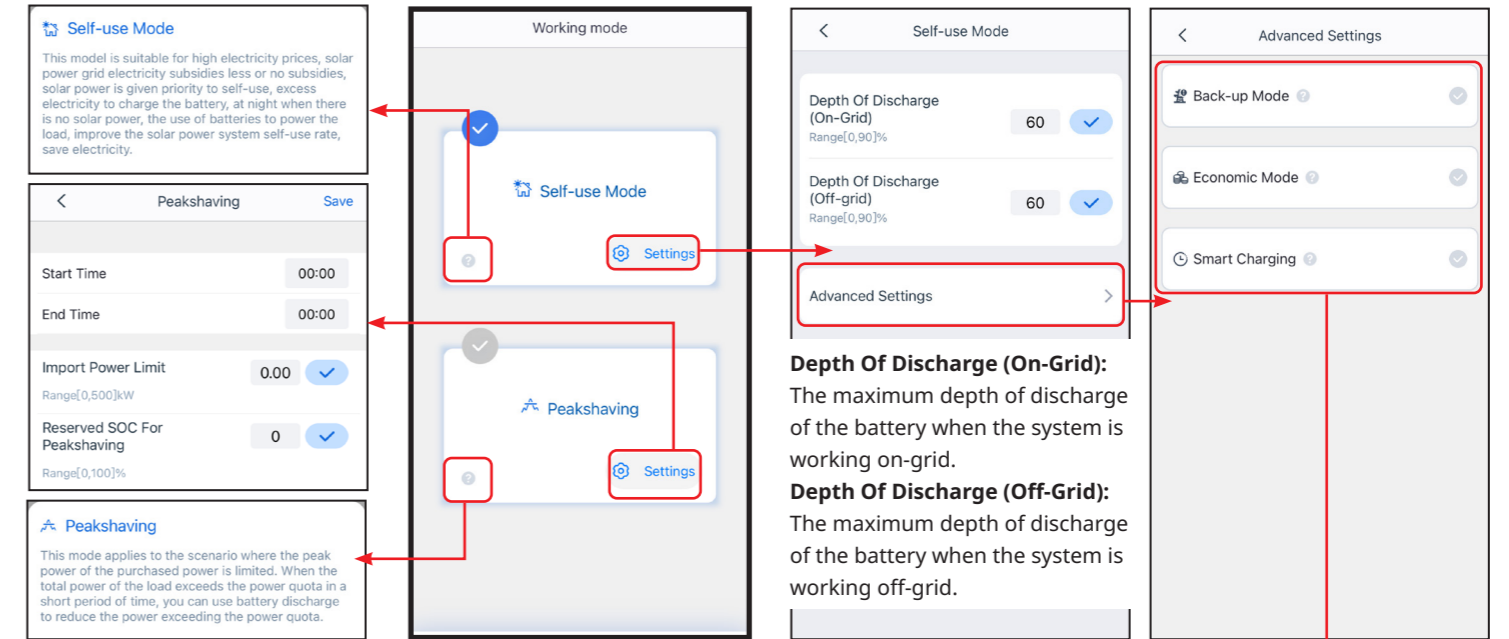
### Setting Inverter Quantity (Only For Parallel Connections)



### Setting the BAT Connect Mode



## Setting the Working Mode



**Depth Of Discharge (On-Grid):**  
The maximum depth of discharge of the battery when the system is working on-grid.

**Depth Of Discharge (Off-Grid):**  
The maximum depth of discharge of the battery when the system is working off-grid.



## Setting the Advanced Parameters

Tap **Home** > **Settings** > **Advanced Settings** to set the following functions.

**Power Limit**

Power Limit

Export Power (W) 4800 4800 ✓

External CT Ratio 3000 3000 ✓

Range[0,3000]

1. If the current of the primary side and secondary side of the selected CT is 3000A-5A, please enter the CT ratio value of 600, and so on.

2. The secondary current of the external CT should be ≤5A.

Only the CT ratio of the electric meter GM330/ GM3000C can be set. For other models (such as GM3000), it is forbidden to set the CT ratio, otherwise the electric meter cannot work normally.

**Advanced Settings**

**DRED/Remote Shutdown/RCR**    
 ON: The DRED/Remote Shutdown/RCR function is enabled. Please check if turned on this function and cable connection. For the option, please refer to the manual and local regulations.

**Backup N And PE Relay Switch**    
 ON: During off-grid operation, Backup N and PE are connected inside the inverter. OFF: During off-grid operation, Backup N and PE are disconnected inside the inverter. Set this parameter according to local power grid installation regulations.

**Battery Ports Busbar Connection**    
 This function is disabled by default. To use the DRED/Remote Shutdown/RCR function, turn on this switch.

**Battery Function**    
 This function is disabled by default. If the battery busbar is used in the system, turn on this switch.

**Battery Function**

SOC Protection    
 ON: Turn on the protection function when the battery capacity is lower than the set threshold.

Depth Of Discharge (On-Grid) 90 90 ✓   
 Set the discharge depth for the battery grid-connected application, unit: %

Depth Of Discharge (Off-Grid) 90 90 ✓   
 Set the battery discharge depth for off-grid applications, unit: %

Backup SOC Holding    
 ON: When the power grid is functioning normally, the battery discharges to the State of Charge (SOC) protection level, maintaining the battery capacity without further decline for use as a backup power supply during power outages. If solar energy is weak or unavailable, the grid can be utilized to charge the battery and sustain the reserved SOC.

Immediate Charging Charge Complete

SOC For Stopping Charging 65 65   
 Range[0,100]%

## Configuring the Network

Tap **Home** > **Settings** > **Communication Setting** to set network parameters.

**Network Settings**

WLAN

Network Name GOODWE-yanfa-test

Encryption Type

WPA2/WPA

Password

DHCP    
 If you need to set a specific IP address, you can manually enter it after turning off DHCP.

IP address 192.168.209.206

Subnet Mask 255.255.255.0

Gateway address 192.168.209.254

DNS server 192.168.181.167

**LAN**

DHCP    
 If you need to set a specific IP address, you can manually enter it after turning off DHCP.

IP address 0.0.0.0

Subnet Mask 0.0.0.0

Gateway address 0.0.0.0

DNS server 0.0.0.0

Restore factory communication settings

## Port Connection

Setting Generator or Load Control Parameters

**Settings**

Communication Settings

Quick Settings

Basic Settings

Advanced Settings

**Port Connection**

Meter/CT-Assisted Test

Firmware Information

APP Version

**Generator Control**

Generator Type: Manual control of generator (Doesn't support dry node connection)

Manual control of generator (Doesn't support dry node connection) ✓

Automatic control generator (Supports dry node connection)

Not Installed generator

Range [80,280]V

Lower Voltage 180 180 ✓

Range [80,280]V

Upper Frequency 55.00 55.00 ✓

Range [45,65]Hz

Lower Frequency 45.00 45.00 ✓

Range [45,65]Hz

**Load Control**

Load Control

Dry Contact Mode Time Mode SOC Mode

Switch OFF >   
 Turn The Load On Or Off

## Setting the meter parameters

**Meter Binding**

Binding GOODWE meters Only

Quantity/Location of Meters Meter1(Built-in) Meter2(External)

Meter 1: Meter used for On-grid, can be used for grid-connected power inverter.

Meter 2: Meter used for monitoring third-party Generators/Inverters.

Meter1 Location Built-in

Meter2 Location External

**External Meter CT Ratio**

External Meter CT Ratio 0 0 ✓

Range[0,3000]

1. If the selected CT has a primary-to-secondary current ratio of 3000A/5A, please enter a CT ratio value of 600, and so on.

2. The secondary current of the external CT should be ≤5A.

Only the CT ratio of the electric meter GM330/ GM3000C can be set. For other models (such as GM3000), it is forbidden to set the CT ratio, otherwise the electric meter cannot work normally.

SLG00CCN0123

## Creating a Power Plant

Create power plants and add equipments via SEMS Portal App.

