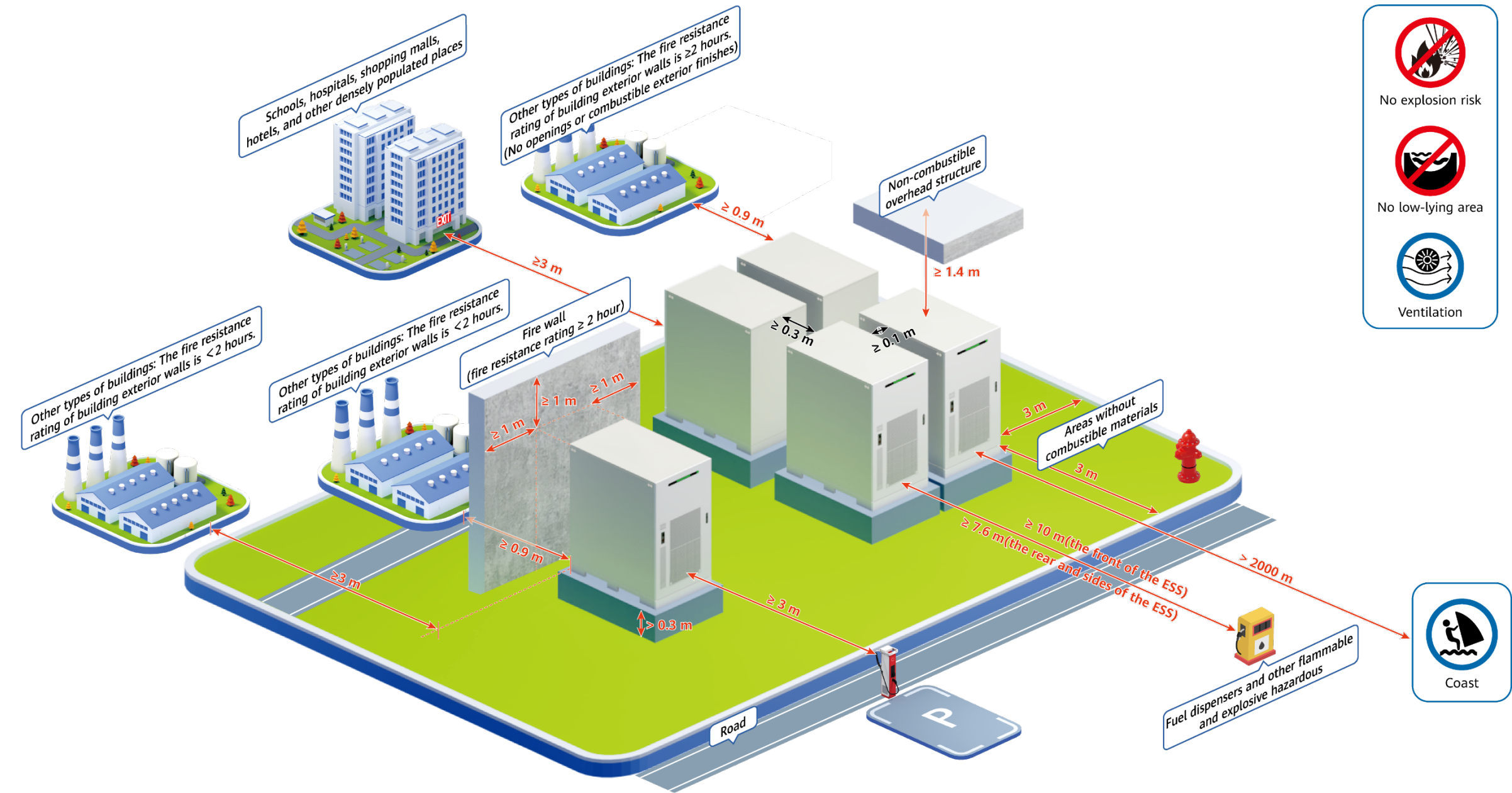


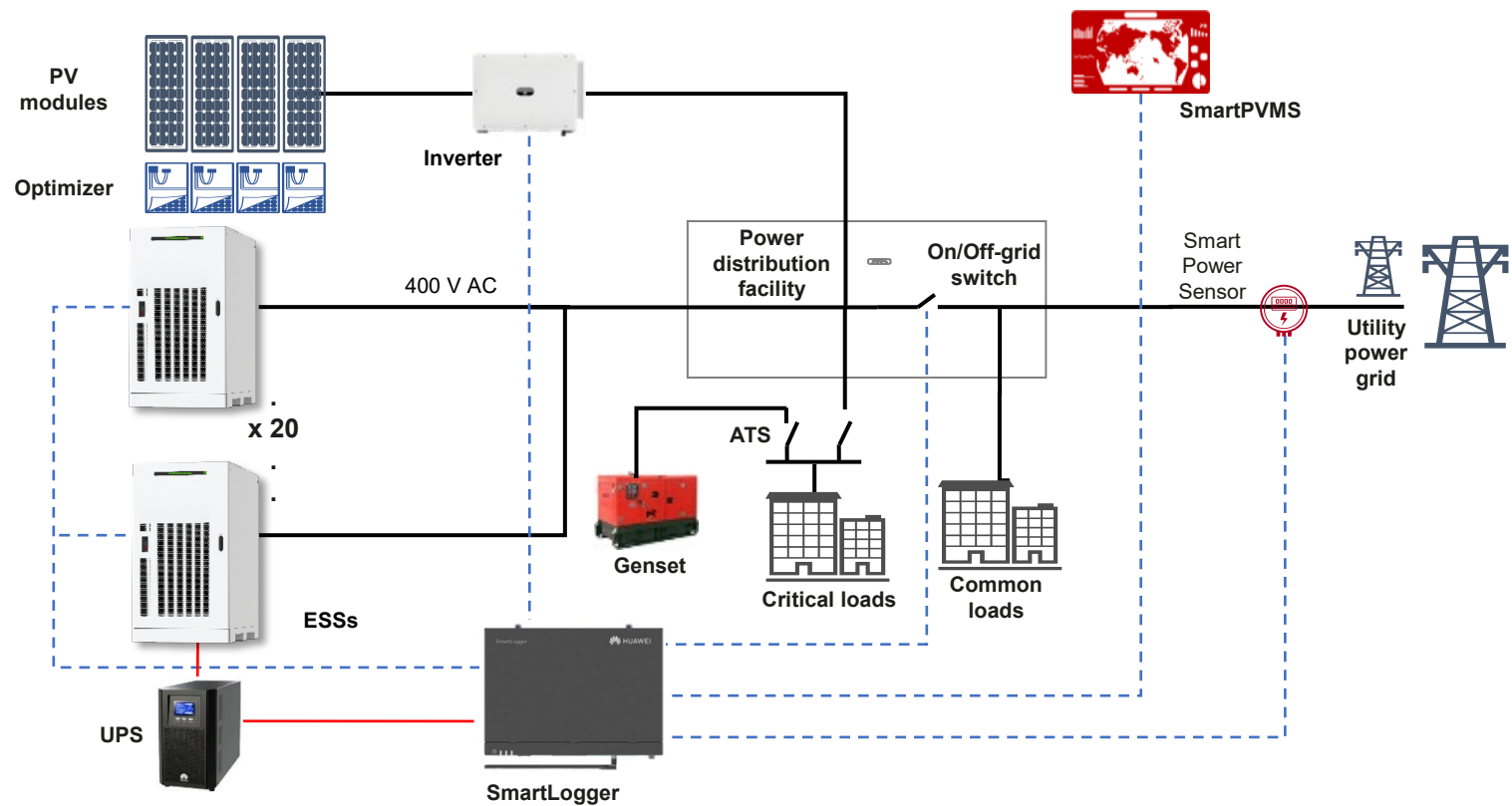
Services & Maintenance



2. C&I Hybrid Cooling Grid Forming ESS Site Requirements



Scenario 1: PV+ESS On/Off-Grid Seamed Switching System



Product combination relationship

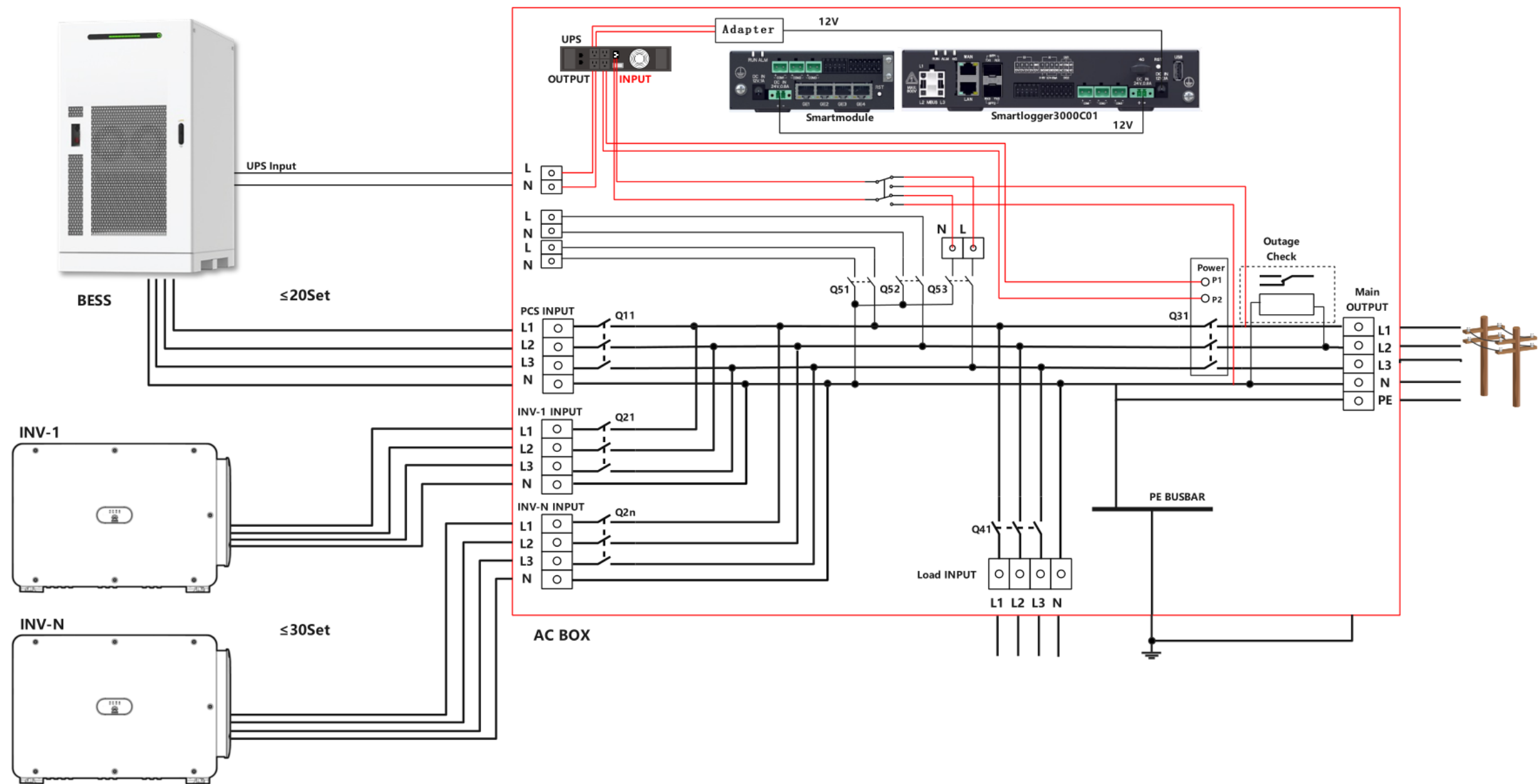
ESS	LUNA2000-215-2S10; 380/400/415 V AC
PV inverter	V3, M3, V5/V5+, and V6, for example, SUN2000-(50KTL-M3)
Data logger	SmartLogger

Type	Performance Specification/Requirement
Number of grid connection points	Single grid connection point, single SmartLogger
Capacity	PV-to-ESS ratio < 2:1
Number of ESSs connected in parallel	≤ 20
Number of PV modules connected in parallel	≤ 30
Communication distance limit	RS485: 1000 m FE: 100 m 4G (SmartPVMS)
On/Off-grid controller	The SmartLogger functions as an on/off-grid controller.
On/Off-grid feature	Seamed manual/automatic on/off-grid switching Switching time: 3s for a single ESS and 10s for multiple ESSs. The power backup function is supported.
Meter	Self-developed meter
Management system/app	The FusionSolar SmartPVMS is supported.
On-grid operation	The on-grid mode is supported. (When the SmartLogger is used as the on/off-grid controller, and remote communication scheduling is not supported.)

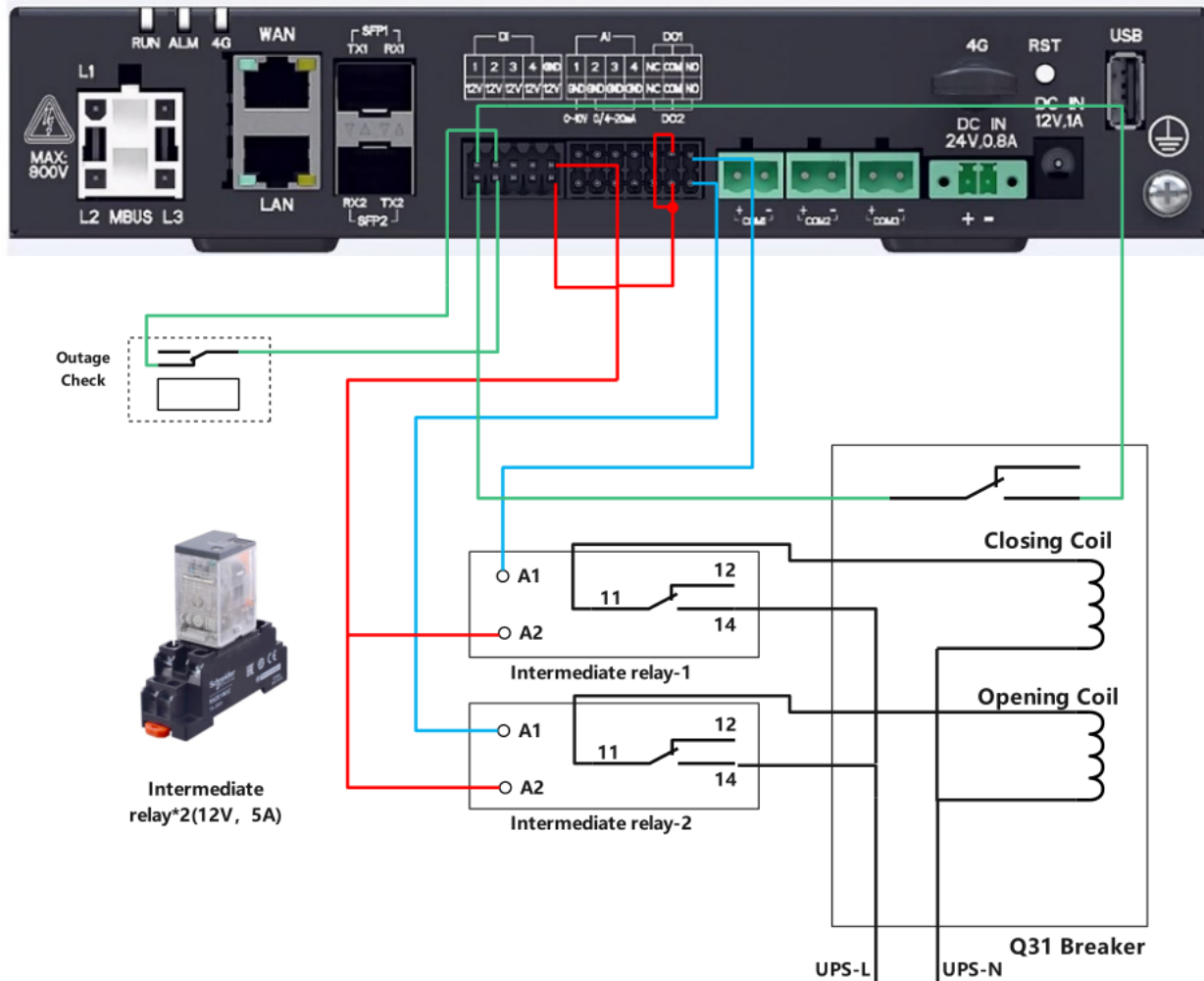
Main Devices in On/Off-Grid PV+ESS Scenarios (Seamed On/Off-Grid Switching)

No.	Device	Model	Unit	Qty.	Supplier	Remarks
1	Smart String ESS	LUNA2000-215-2S10	pcs	≤ 20	Huawei	
2	On/Off-grid controller/SmartLogger	SmartLogger3000+SmartModule	pcs	1	Huawei	For details about the configuration in China and other specific regions, see the configuration manual. Can be installed in a third-party switch cabinet.
3	PV inverter	V3, M3, V5/V5+, V6	pcs	≤ 30	Huawei	- V3 is used only in the installed base market. - To prevent resonance and stability risks, inverters of different models cannot be used together.
4	Optimizer	Compatible with the inverter	pcs	N/A	Huawei	Optional
5	Management system	FusionSolar SmartPVMS	pcs	1	Huawei	
6	Three-phase meter	Self-developed meter	pcs	1	Huawei	
7	On/Off-grid switch cabinet	- Integrates the on/off-grid switch. UPS power distribution switch: The UPS input supports dual power supply switching. - The automatic switching mode requires the power failure detection relay and controllable switch. UPS: ≥ 1 kVA, online UPS, 220 V AC input power distribution switch for PV modules and ESSs - Space shall be reserved in the cabinet for installing the SmartLogger and SmartModule.	pcs	1	Third party	The three-phase voltage monitoring relay is recommended for the automatic switching mode.

Electrical Networking Mode - Seamed Switching Scenario



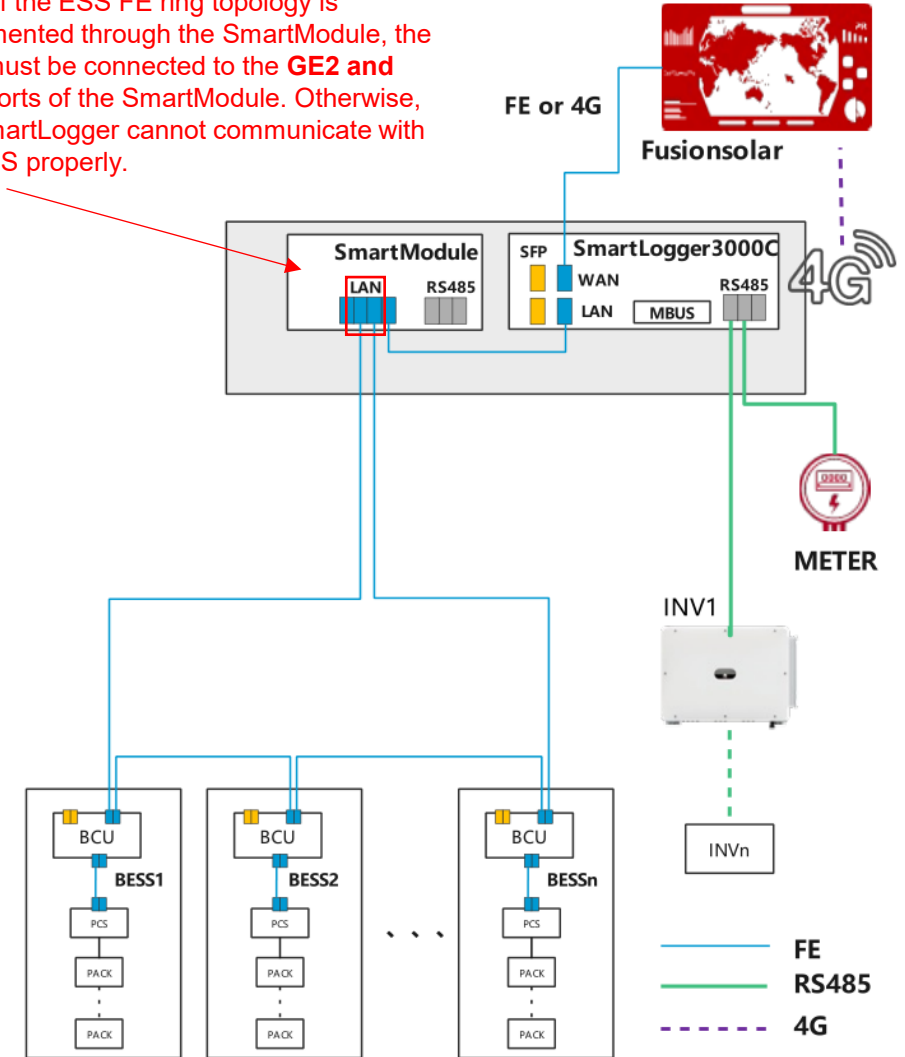
Communication Networking Mode - Seamed Switching Scenario



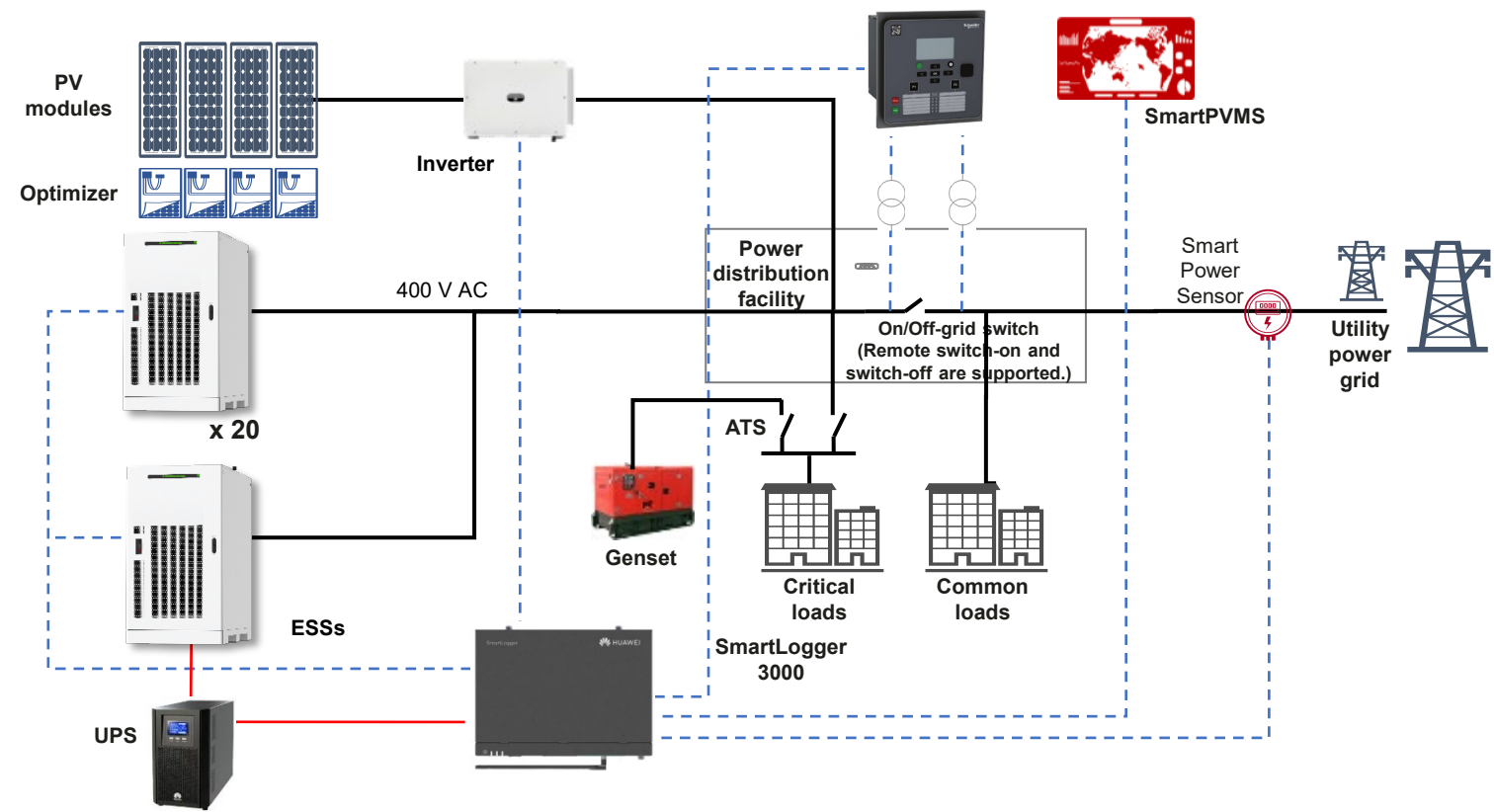
The PV+ESS on/off-grid system can be networked using the SmartLogger and SmartModule. The restrictions are as follows:

- (1) The PV inverter and meter support RS485 communication networking.
- (2) The ESS supports FE ring networking.
- (3) The SmartLogger connects to the SmartPVMS over 4G.

Note: If the ESS FE ring topology is implemented through the SmartModule, the ESS must be connected to the **GE2** and **GE3** ports of the SmartModule. Otherwise, the SmartLogger cannot communicate with the ESS properly.



Scenario 2: PV+ESS On/Off-Grid Switching System (VSG) - Genset Connection Using the ATS



Product combination relationship

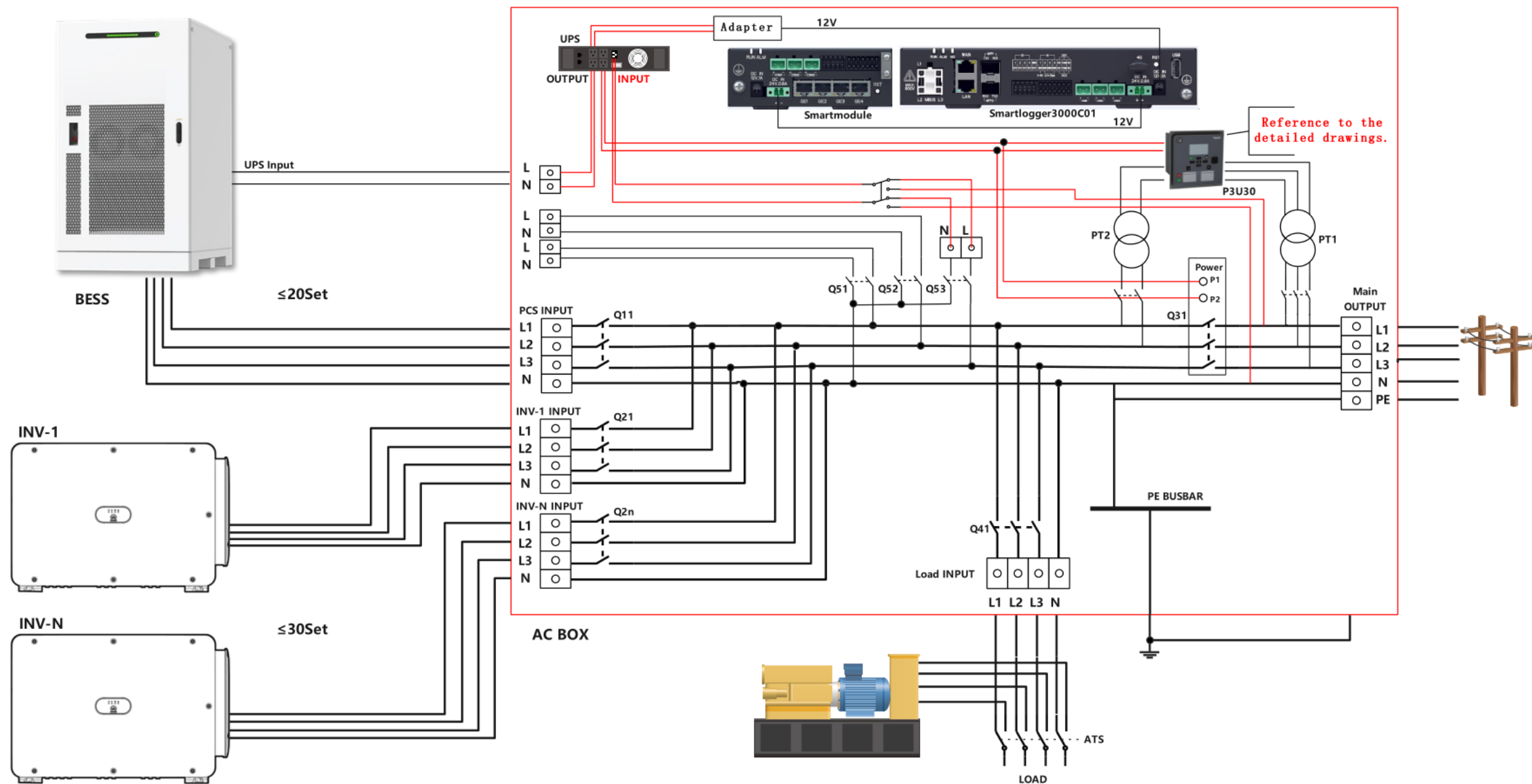
ESS	LUNA2000-215-2S10; 380/400/415 V AC
PV inverter	M3, V5/V5+, and V6, for example, SUN2000-(50KTL-M3)
Data logger	SmartLogger3000

Type	Performance Specification/Requirement
Number of grid connection points	Single grid connection point, single SmartLogger
Capacity	PV-to-ESS ratio < 2:1
Number of ESSs connected in parallel	≤ 20
Number of PV modules connected in parallel	≤ 30
Communication distance limit	RS485: 1000 m FE: 100 m 4G (SmartPVMS)
On/Off-grid controller	The SmartLogger functions as an on/off-grid controller.
On/Off-grid feature	The on/off-grid switching time in VSG mode is less than 150 ms. Backup power function. The power is preferentially backed up.
Meter	Self-developed meter
Management system/app	The FusionSolar SmartPVMS is supported.
On-grid operation	Supports self-consumption, TOU, and does not support zero feed-in.
Third-party protective relay	Schneider (P3U30)
Genset	Connects to the genset using the ATS.

Main Devices in On/Off-Grid PV+ESS Scenarios (On/Off-Grid Switching in VSG Mode)

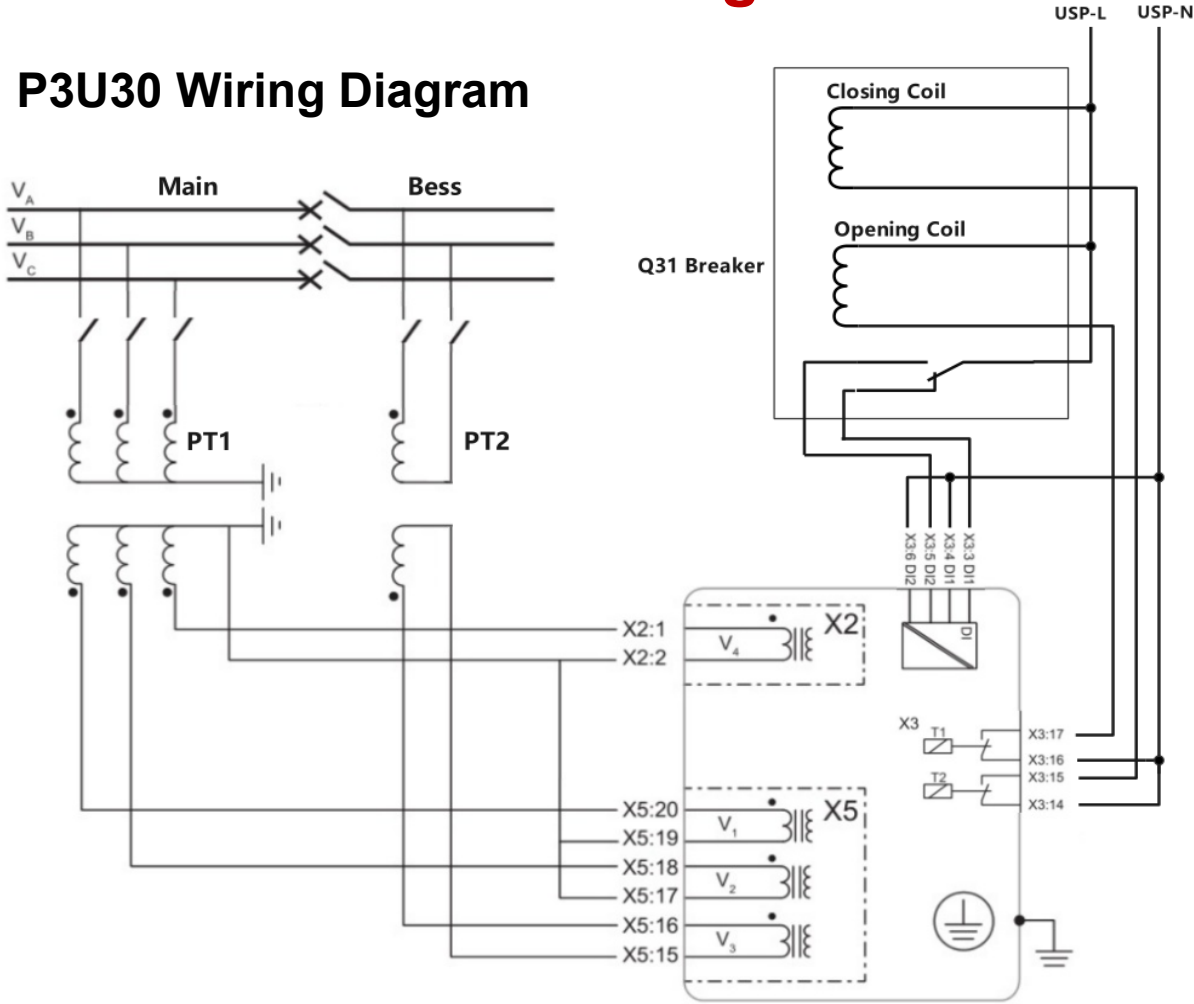
No.	Device	Model	Unit	Qty.	Supplier	Remarks
1	Smart String ESS	• LUNA2000-215-2S10	pcs	≤ 20	Huawei	
2	On/Off-grid controller/SmartLogger	SmartLogger3000+SmartModule	pcs	1	Huawei	For details about the configuration in China and other specific regions, see the configuration manual. It is installed in the third-party switch cabinet.
3	PV inverter	M3, V5/V5+, V6	pcs	≤ 30	Huawei	
4	Optimizer	Compatible with the inverter	pcs	N/A	Huawei	Optional
5	Management system	FusionSolar SmartPVMS	pcs	1	Huawei	
6	Three-phase meter	Self-developed meter	pcs	1	Huawei	
7	On/Off-grid switch cabinet	1. Integrates the on/off-grid switch. 2. Protective relay: one Schneider P3U30 with the PT 3. UPS power distribution switch: The UPS input supports dual power supply switching. 4. UPS: ≥ 1 kVA, online UPS, 220 V 5. AC input power distribution switch for PV modules and ESSs 6. Space shall be reserved in the cabinet for installing the SmartLogger and SmartModule. 7. Load switch 8. The cables from the inverter and battery to the PDC shall be at least 5 m long.	pcs	1	Third party	The third-party integrated cabinet is configured based on the number of PV modules and ESSs.
8	ATS	Based on the customer's onsite situation	pcs	1	Third party	

Electrical Networking Mode - Seamless Switching Scenario



Communication Networking Mode - Seamless Switching Scenario

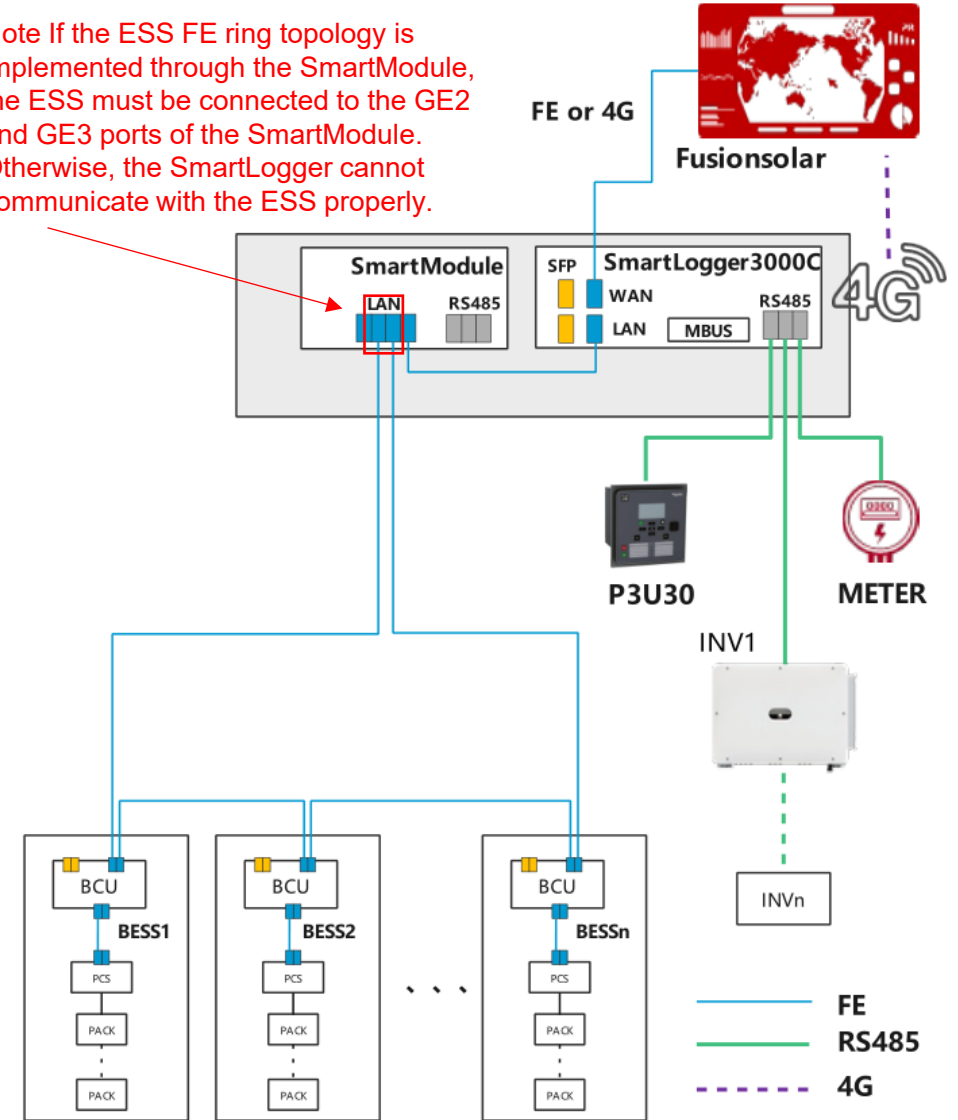
P3U30 Wiring Diagram



The PV+ESS on/off-grid system can be networked using the SmartLogger and SmartModule. The restrictions are as follows:

- (1) The PV inverter, meter, and universal relay support RS485 communication networking.
- (2) The ESS supports FE ring networking.
- (3) The SmartLogger connects to the SmartPVMS over 4G.

Note If the ESS FE ring topology is implemented through the SmartModule, the ESS must be connected to the GE2 and GE3 ports of the SmartModule. Otherwise, the SmartLogger cannot communicate with the ESS properly.



Communication Networking

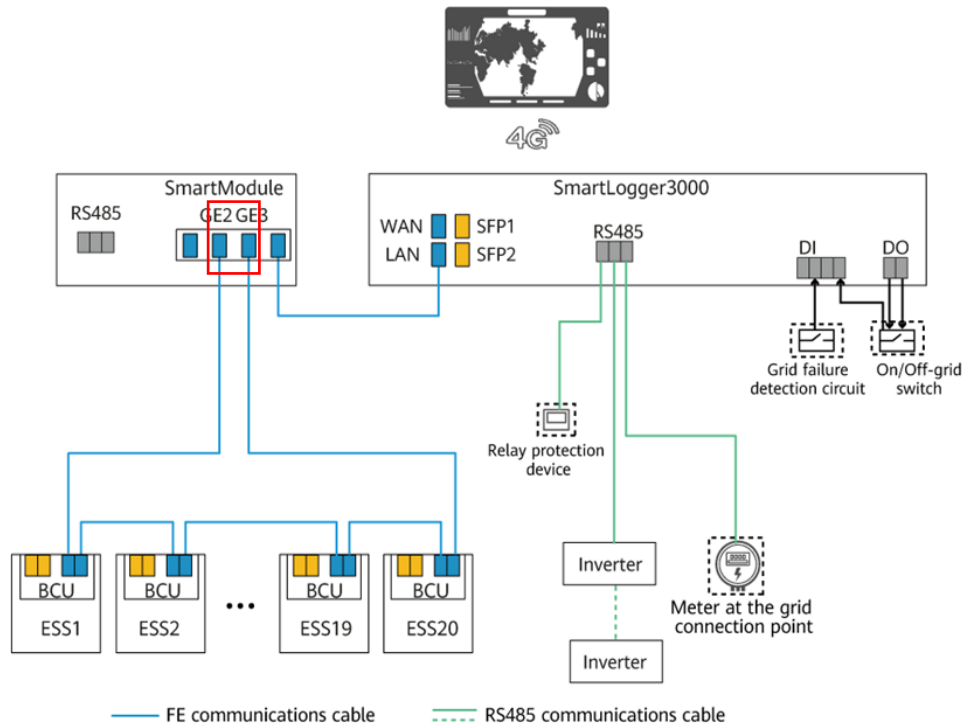
In actual networking, select a networking mode based on the number of ESSs in the array and the SmartLogger model.

Note: Currently, the inverter **does not support the MBUS** communication mode .

Typical scenario 1: SmartLogger+ESS FE ring networking

In this scenario, the SmartLogger3000 and SmartModule are configured.

- A single FE ring network supports a maximum of 20 ESSs, and the distance between any two nodes is less than 100 m.
- One SmartLogger can connect to a maximum of 20 ESSs.



IB07N10306

Maximum communication distance:

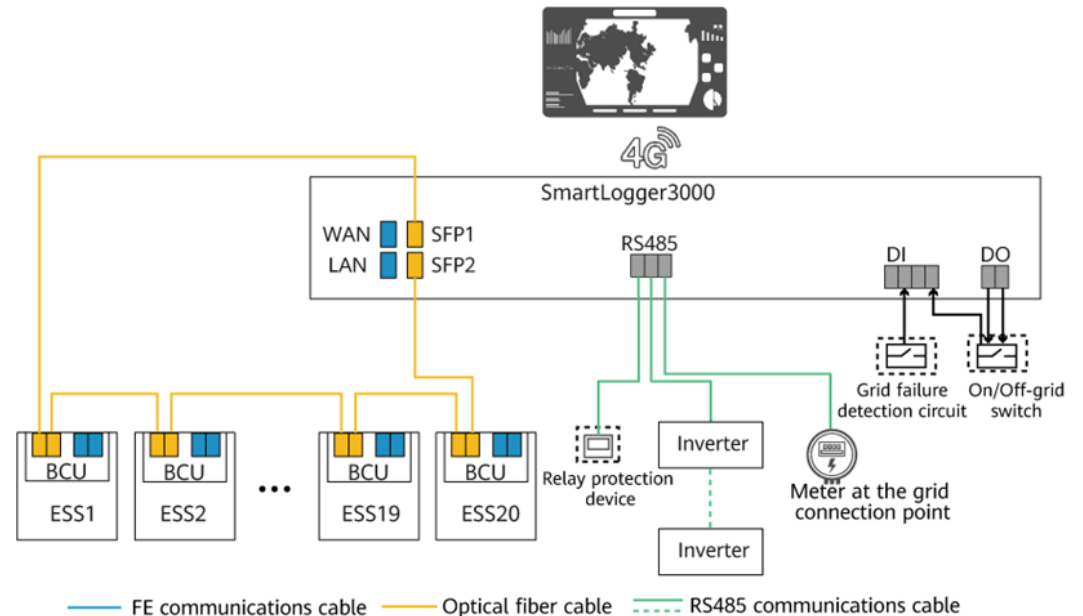
□ RS485: 1000 m

□ FE: 100 m

Typical scenario 2: SmartLogger+ESS fiber ring networking

In this scenario, the SmartLogger3000 is configured.

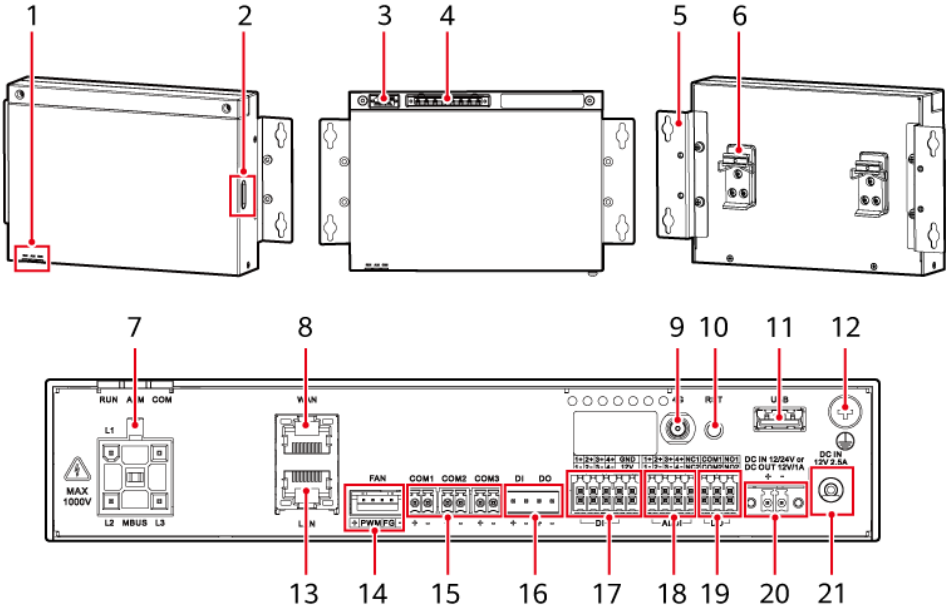
- One fiber ring network supports a maximum of 20 ESSs.
- One SmartLogger can connect to a maximum of 20 ESSs.



IB07N10307

1. SmartLogger5000B Exterior: Appearance

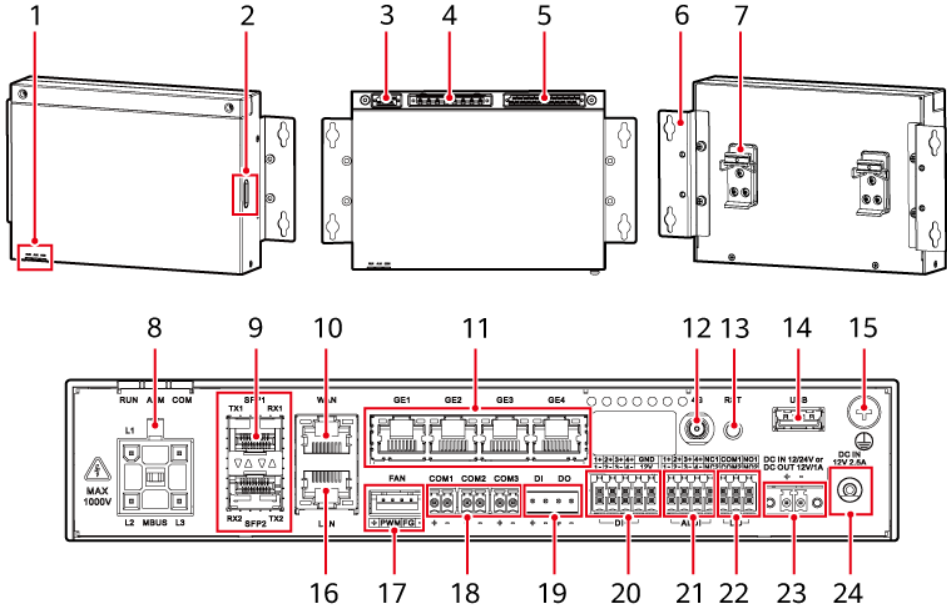
SmartLogger5000B appearance



S000483

(1) Indicators	(2) SIM card slot	(3) I_AC port
(4) U_AC port	(5) Mounting ear	(6) Guide rail clamp
(7) MBUS port	(8) WAN port	(9) 4G antenna
(10) RST button	(11) USB port (reserved)	(12) Protective earthing (PE) point
(13) LAN port	(14) FAN port	(15) COM port
(16) Active/Standby DI/DO ports	(17) DI port and 12 V output power port	(18) AI/DI port
(19) DO port	(20) Power input/output port	(21) Power input port

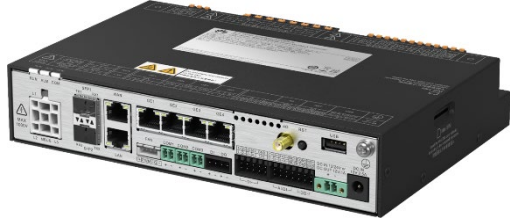
SmartMGC5000B appearance



S000499

(1) Indicators	(2) SIM card slot	(3) I_AC port
(4) U_AC port	(5) DO (HV) and DI (HV) ports	(6) Mounting ear
(7) Guide rail clamp	(8) MBUS port	(9) SFP ports
(10) WAN port	(11) GE ports	(12) 4G antenna
(13) RST button	(14) USB port (reserved)	(15) PE point
(16) LAN port	(17) FAN port	(18) COM port
(19) Active/Standby DI/DO ports	(20) DI port and 12 V output power port	(21) AI/DI port
(22) DO port	(23) Power input/output port	(24) Power input port

SmartLogger3000 vs SmarLogger5000B: Hardware Configuration

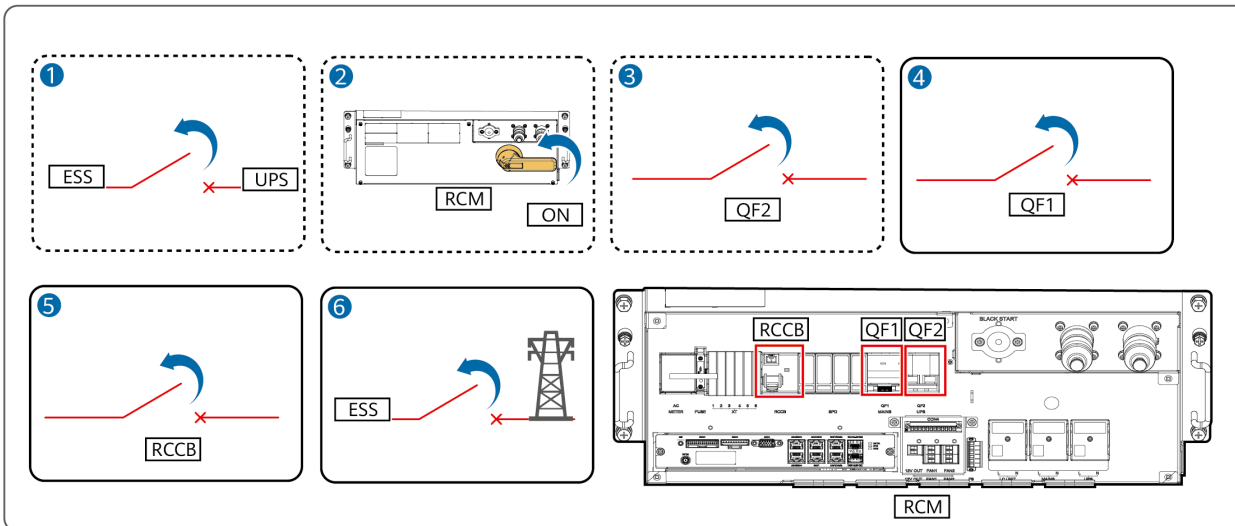
	SmartLogger3000	SmartLogger5000B	SmartMGC5000B
Solution	-	Basic main control board + 3U3I collection board	Standard main control board + 6U3I collection board
Image			
Minimum system	CPU: dual-core ST-A7 DDR: 512 MB NOR flash: 128 MB NAND flash: 1 GB	CPU: quad-core Cortex-A55 DDR: 1 GB NOR flash: 256 MB NAND flash: 1 GB	CPU: quad-core Cortex-A55 DDR: 2 GB NOR flash: 256 MB NAND flash: 1 GB Extended flash: 32 GB
Network ports	2	2	6
Optical ports	/	/	2
High-voltage DI/DO	/	/	4 x DI + 8 x DO
Voltage and current sampling	/	3U3I	6U3I

4. Key Features of SmartLogger5000B: Feature List

Feature	Description	3000	5000B (Basic)	5000B (Premium)
Hierarchical load control	1. Supports switching control of loads at different levels based on different SOC to maximize the off-grid power supply duration for critical loads. 2. Provides fast and stable control in the hierarchical load control scenario. The time from AC microgrid fluctuation to adjustment completion is less than 200 ms (excluding delay setting). The function can be enabled or disabled.	○	○	●
PV asynchronous black start	1. 5000B V100R025C00: If the black start capability becomes unavailable because the SOC of the ESS is too low, grid-forming inverters can supply power to charge the ESS. During the charging process, loads are automatically disconnected. 2. If the SOC is less than 3% and black start cannot be performed, when the estimated PV power is greater than 10% (configurable on the WebUI) of the rated power of the ESS, the VSG (grid forming) mode is enabled so that the ESS can be charged.	○	○	●
Fault recording	Fault recording reduces the time for locating problems and improves user experience. This function can be automatically triggered when the current, voltage, or frequency exceeds the threshold. Users can also manually trigger fault recording as required.	○	●	●
Onsite data check	Data can be manually and automatically checked for the configured teleindication and telemetry signals.	○	●	●
Baud rate negotiation	The baud rate for communicating with inverters can be negotiated.	○	●	●
AC charger connection	1. MENNEKES [AMEDIO® Professional] 2. AMPERFIED GMBH [connect.business]	○	○	●
DC charger connection	HUAWEI	○	○	●
PT/CT direct sampling	AC PT/CT direct sampling and PT/CT disconnection detection are supported.	○	●	●

Powering Off the System

1. Log in to the SmartLogger WebUI, choose **Maintenance** > **Connect Device**, and click .
2. Choose **Overview** > **Active Alarm** to view system alarms generated after the shutdown. If any alarm is generated, handle the alarm according to the alarm handling suggestions.
3. Click **Monitoring**, view the device status, and ensure that the shutdown is successful.
4. (Optional) Turn off the ESS power switch on the UPS side. This operation is required when a UPS is configured.
5. (Optional) Turn off the RCM disconnecter. This operation is required when a disconnecter is configured.
6. (Optional) Turn off the UPS AC input switch QF2 on the RCM. This operation is required when a UPS is configured.
7. Check that the AC voltages of the mains input terminals (MAINS), UPS input terminals (UPS), and PCS input terminals in sequence are within the normal ranges using a multimeter.
8. Turn off the mains AC input switch QF1 on the RCM.
9. Turn off the RCCB on the RCM.
10. Turn off the auxiliary power switch and general power distribution switch of the customer's power distribution cabinet.



Monthly Maintenance

Check Item	Troubleshooting	Power-Off Required or Not
Check that the cabinet exterior is free from obvious coating peeling and scratches.	Contact engineers to evaluate and handle the problem.	No
Check that there is no obvious paint peeling or rust on the cabinet.	Repaint the damaged part.	No
Check that the cabinet door lock is intact.	Replace the door lock.	No
Check that there is no dust buildup at the vents of the cabinet.	Clean up the dust.	No
Check that the explosion relief panel ^[1] is free from obvious paint peeling or rust.	Repaint in time.	No
Check that the protective steel rope of the explosion relief panel is not rusty or damaged.	Replace the protective steel rope of the explosion relief panel.	No
Check that there is no foreign matter, ice, or snow on the top of the explosion relief panel.	Clean up accumulated objects in a timely manner.	No
Check that there are no potential hazards, contaminants, or rubbish around the unit.	Handle potential hazards and clean up rubbish.	No
Check that the fan blades rotate properly and are free from deformation, damage, interference, abnormal noise, and abnormal vibration.	Repair or replace the fan.	No
Check and clean the air filter of the heat exchanger and the outdoor fan vent to ensure that there is no scale, dirt, or blockage.	Clean the air filter of the heat exchanger. (You are advised to use a vacuum cleaner, cloth, or brush to clean the air filter. You do not need to remove the air filter for cleaning.) • If the dirt or blockage is severe, increase the maintenance frequency. • In harsh scenarios such as deserts and catkins, the heat exchanger must be cleaned periodically to ensure that there is no blockage or dust buildup.	No
Check and clean the smoke exhaust vent of the cabinet.	Clean the smoke exhaust vent of the cabinet.	No
Check that the air filter is not damaged or distorted.	Replace the filter.	No
Note [1]: In areas with severe sandstorms or heavy ice or snow, perform maintenance based on the actual situation. Ensure that there is no foreign matter, ice, or snow on the explosion relief panels. Clean the foreign matter, ice, or snow in the specified area to avoid damaging the explosion relief devices due to improper operations.		

Quarterly Maintenance

Component	Check Item	Troubleshooting	Power-Off Required or Not
PACK	Check whether leakage occurs at the coolant inlet and outlet and the liquid cooling bottom plate of the battery pack.	Replace the coolant inlet and outlet of the pack. 1. Leakage at the coolant inlet and outlet: Replace the valves at the inlet and outlet after draining the coolant. 2. Leakage at the liquid cooling bottom plate: Replace the battery pack.	Yes
PCS	Check for leakage at the coolant inlet and outlet of the PCS.	Replace the coolant inlet and outlet of the PCS.	Yes
LTMS	Check and clean the air filter of the heat exchanger to ensure that there is no scale, dirt, or blockage.	Clean the air filter of the heat exchanger. (You are advised to use a vacuum cleaner, cloth, or brush to clean the air filter. You do not need to remove the air filter for cleaning.) • If the dirt or blockage is severe, increase the maintenance frequency. • In harsh scenarios such as deserts and catkins, the heat exchanger must be cleaned periodically to ensure that there is no blockage or dust buildup.	No
Liquid cooling pipe	Check whether leakage occurs on the liquid cooling pipe and coolant inlet and outlet.	Replace the liquid cooling pipe.	Yes

Semi-annual Maintenance

Component	Check Item	Troubleshooting	Power-Off Required or Not
Battery pack/PCS maintenance fixture	Apply lubricating grease to the lead screw periodically: Apply grease to the nut, and then turn the handwheel to rotate the lead screw until the grease is evenly spread around the lead screw.	N/A	No
Notes: - If the lead screw is kept idle indoors for more than 6 months, maintain the lead screw before using it each time. If the lead screw is used once or more times within 6 months, maintain it every 6 months. - Butter, aluminum-based grease, composite grease can be used for lubricating the lead screw.			
Battery pack	Check that there is no obvious damage, paint peeling off, or rust on the appearance.	Contact technical support.	Yes
	Check that cables are securely connected.	Secure the cables.	Yes
	Check that cables are intact, especially that the cable sheath contacting a metal surface is intact.	Replace the faulty cable.	/
	Check that the ground cable is securely connected.	Ensure reliable grounding.	Yes
PCS	•Check that the enclosure is not damaged or deformed. •Check that the system operates with no abnormal sounds. •Check whether the parameters are correctly set during operation.	•Contact technical support.	Yes
	Check that cables are securely connected.	Secure the cables.	Yes
	Check that cables are intact, especially that the cable sheath contacting a metal surface is intact.	Replace the faulty cable.	Yes
	Check that the ground cable is securely connected.	Ensure reliable grounding.	Yes

Semi-annual Maintenance

Component	Check Item	Troubleshooting	Power-Off Required or Not
LTMS	Check that the compressor is secured properly.	Tighten screws if the compressor is not secured.	Yes
	Check that the operating compressor generates no metal friction noise or collision noise from inside.	Replace the LTMS.	No
	Check that the AC power cable above the compressor is secured.	Secure the AC power cable.	Yes
	Check that the air intake vent of the electric control module is not blocked.	Clear the blockage.	Yes
	Check that the wiring terminals at the rear of the electric control module are securely connected.	Reconnect the cables.	Yes
	Check that the dehumidifying fan is not deformed and its blades are intact.	Replace the dehumidifying fan.	Yes
	Check that the dehumidifying fan runs smoothly.	Take out the foreign matter.	Yes
	Check that the dehumidifying fan screws are secured and not deformed.	Tighten the screws.	Yes
	Check that the dehumidifying fan wiring terminals are securely connected.	Reconnect the cables.	Yes
	Check that the gap between the impeller and the flow deflecting ring of the dehumidifying fan is even, to prevent the impeller from colliding with the flow deflecting ring.	Replace the dehumidifying fan.	Yes
	Check that the dehumidifying fan works properly without abnormal noise.		No
	Check that the coolant in the pump does not leak.	Replace the LTMS.	Yes
	Check that the pump works properly without abnormal noise.	Replace the LTMS.	No
	Check that the coolant in the tank is sufficient.	Add coolant.	Yes
	Check that coolant in the tank does not leak.	Replace the LTMS.	Yes
	Check that the multi-way valve generates no abnormal noise.	Replace the LTMS.	No
	Check that the multi-way valve does not leak.		Yes

Semi-annual Maintenance

Component	Check Item	Troubleshooting	Power-Off Required or Not
LTMS	Check that the liquid cooling evaporator does not leak.	Replace the LTMS.	Yes
	Check that the liquid cooling condenser does not leak.	Replace the LTMS.	Yes
	Check that the PTC electric heater does not leak and is heating properly.	Replace the LTMS.	Yes
	Check that the thermal insulation foam inside the indoor and outdoor units and on the refrigerant pipes connecting the indoor and outdoor units is intact.	Replace the LTMS.	Yes
	Check that the refrigerant pipe supports of the indoor and outdoor units are intact and secured properly.	Replace the refrigerant pipe support and secure it again.	Yes
	Check that the clamps are secured.	Tighten the clamps.	Yes
	Check that the drainage port is free from leakage and blockage.	Replace the component where leakage occurs and clear the blockage.	Yes
	- Check that the dehumidifying evaporator does not blow water. - Check that the dehumidifying evaporator surface is free of obvious dirt. - Check that the dehumidifying evaporator fins are not pushed down.	- Clean the evaporator. (It is recommended that you use 5% soda solution for cleaning.) - Use a fin brush to organize the fins that are pushed down. If the dirt or blockage is severe, increase the maintenance frequency.	Yes
	Check that all pipes are intact and free from leakage.	Replace the faulty pipe.	Yes
	Check that all pipe clamps are secured.	Tighten the clamps or replace the damaged clamp.	Yes
	Check that all cables are intact.	Replace the faulty cable.	No
	Check that all cable wiring screws are tightened and all terminals are secured.	Tighten the screws and reconnect the cables.	Yes

Annual Maintenance

Check Item	Troubleshooting	Power-Off Required or Not
• Visually check that the smoke detector and heat detector are normal and that the inspection indicators blink properly. • Spot check the detectors with smoke or heat generated by using dedicated devices. • Check whether the detector indicators are steady red and whether the temperature changes are updated on the SmartLogger WebUI and app.	Replace the faulty component.	Yes

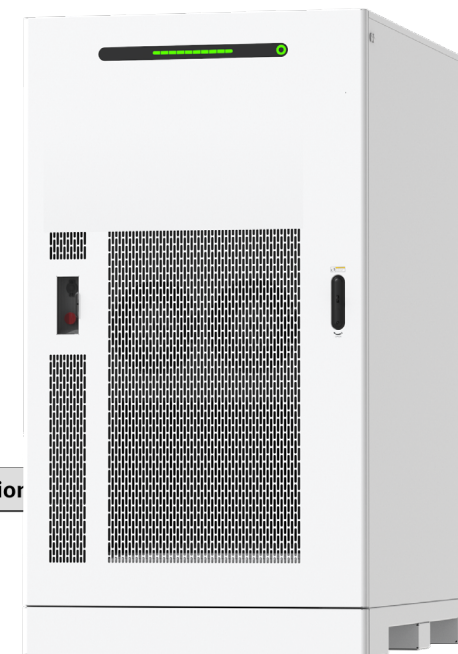
Note:

- ◆ Perform routine maintenance according to the corresponding schedule. For example, during quarterly maintenance, monthly maintenance should also be performed.
- ◆ During operations, wear PPE such as protective clothing, insulated shoes, goggles, safety helmets, and insulated gloves.
- ◆ Personnel who will perform special tasks such as electrical operations, working at heights, and operations of special equipment must possess the required local qualifications.

On/Off-Grid PV+ESS (PQ/VSG) System power on

First power on

- Power on the on/off-grid PV+ESS (PQ/VSG) system when an external power supply is available.



Step	Task	Power-On Operation
1	Powering on the power distribution equipment	- Turn on the on/off-grid switch in the power distribution equipment. - Turn on the switch of the grid failure detection circuit in the power distribution equipment.
2	Powering on the UPS	- Turn on the UPS power switch on the power distribution equipment side. - Start the UPS.
3	Powering on the UPS-SmartLogger auxiliary power supply	- Turn on the SmartLogger power switch on the UPS side. - Turn on the switch on the SmartLogger side: Turn on the power switch (if any) between the SmartLogger and the UPS based on site requirements.
	Powering on the UPS-ESS auxiliary power supply (for black start)	For details, see Power-On Operations .

Step	Task	Power-On Operation
4	Powering on the ESS auxiliary power supply (for LTMS and other devices)	Select a power-on method based on the inverter model. Method 1: - Set the DC SWITCH to ON. When you hear a click, the switch is completely turned on. - Check that the indicators are not steady red. Method 2: - Set the DC SWITCH 1 (MAIN SWITCH) to ON. When you hear a click, the switch is completely turned on. - Check the status of the PV connection indicator. If it is steady green, set DC SWITCH 2 and DC SWITCH 3 to ON. - Check that other indicators are not steady red.
5	Powering on the ESS AC side	
6	Powering on the inverter	

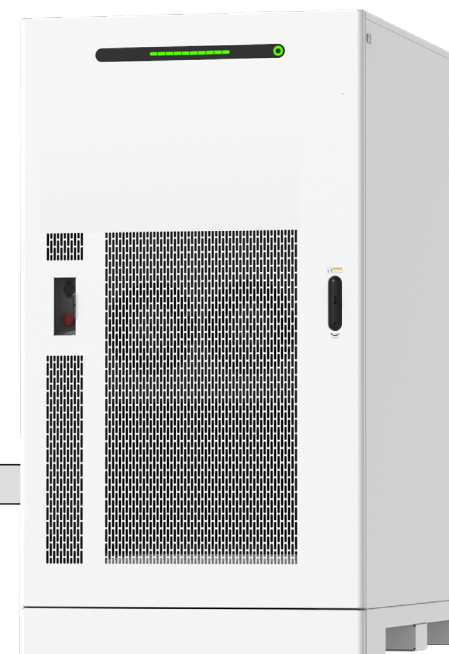
On/Off-Grid PV+ESS (VSG) System power on

First power on

- Power on the on/off-grid PV+ESS (VSG) system when an external power supply is available.

Step	Task	Power-On Operation
1	Powering on the power distribution equipment	Turn on the on/off-grid switch in the power distribution equipment.
2	Powering on the UPS	1. Turn on the UPS power switch on the power distribution equipment side. 2. Start the UPS.
3	Powering on the UPS-SmartLogger auxiliary power supply	1. Turn on the SmartLogger power switch on the UPS side. 2. Turn on the switch on the SmartLogger side: Turn on the power switch (if any) between the SmartLogger and the UPS based on site requirements.
	Powering on the UPS-relay protection device auxiliary power supply	Turn on the power switch of the relay protection device on the UPS side.
	Powering on the UPS-ESS auxiliary power supply (for RCM and other devices)	For details, see Power-On Operations .

Step	Task	Power-On Operation
4	Powering on the ESS auxiliary power supply (for LTMS and other devices)	
5	Powering on the ESS AC side	
6	Powering on the inverter	Select a power-on method based on the inverter model. Method 1: - Set the DC SWITCH to ON. When you hear a click, the switch is completely turned on. - Check that the indicators are not steady red. Method 2: - Set the DC SWITCH 1 (MAIN SWITCH) to ON. When you hear a click, the switch is completely turned on. - Check the status of the PV connection indicator. If it is steady green, set DC SWITCH 2 and DC SWITCH 3 to ON. - Check that other indicators are not steady red.



Off-Grid PV+ESS (VSG) System power on

First power on

- Power on the off-grid PV+ESS system when the UPS can supply power, the genset is not running, and the power distribution equipment has no power supply..

Step	Task	Power-On Operation
1	Starting the UPS	For details, see the documents provided by the vendor.
2	Powering on the UPS-SmartLogger auxiliary power supply	1. Turn on the SmartLogger power switch on the UPS side. 2. Turn on the switch on the SmartLogger side: Turn on the power switch (if any) between the SmartLogger and the UPS based on site requirements.
	Powering on the UPS-ESS auxiliary power supply (for black start)	For details, see Power-On Operations .
3	Powering on the ESS auxiliary power supply (for LTMS and other devices)	
4	Powering on the ESS AC side	

Step	Task	Power-On Operation
5	Powering on the inverter	Select a power-on method based on the inverter model. Method 1: - Set the DC SWITCH to ON. When you hear a click, the switch is completely turned on. - Check that the indicators are not steady red. Method 2: - Set the DC SWITCH 1 (MAIN SWITCH) to ON. When you hear a click, the switch is completely turned on. - Check the status of the PV connection indicator. If it is steady green, set DC SWITCH 2 and DC SWITCH 3 to ON. - Check that other indicators are not steady red.

