GOODWE

Troubleshooting Guide

Hybrid Inverter

ET, ET PLUS+, EH, ESA, ES, EM, EHB and ES G2 Series

AC-Coupled Inverter

BT, BH, BP, SBP and SBP G2 Series

V1.0-2023-03-10

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NOTICE

The information in this user manual is subject to change due to product updates or other reasons. This guide cannot replace the product labels or the safety precautions in the user manual unless otherwise specified. All descriptions in the manual are for guidance only.

DISCLAIMER

This document does not replace the installation manual and does not give the right of any warranty claim beyond GoodWe's LIMITED WARRANTY TERMS. Document might change without any prior notice.

CONTENT

1 Purpose of this document

The purpose of this document is to provide qualified installers with a comprehensive troubleshooting overview for GoodWe's hybrid and retrofit inverters. It explains the possible errors, how to identify them and how to resolve them.
By following the steps in this guide, installers can solve most of the common installation or inverter errors with the lowest effort possible.

1.1 Symbol Definition

Different levels of warning messages in this manual are defined as follows:

DANGER
Indicates a high-level hazard that, if not avoided, will result in death or serious injury.
WARNING
Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.
CAUTION
Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.
NOTICE
Highlight and supplement the texts. Or some skills and methods to solve product-related problems to save time.

1.2 Updates

The latest document contains all the updates made in earlier issues.

V1.0 2023-03-10

- First Issue

2 How to Identify Errors

There are several tools or ways to identify errors in an installation or an inverter:

- LED status indicators on the cover of the inverter
- Alarms and error codes in SolarGo or PVMaster Apps (only for installers)
- Alarms in SEMS portal (only for installer accounts)
- Unexpected behaviour of the system

3 Troubleshooting of the System (Via LED indicators on the Inverter)

For most errors, GoodWe inverters display a status using the LED indicators on the cover of the inverter.

Step 1: As a first step, always check the LED indicators. If you are not on-site, ask the end-customer to do this step on your behalf if possible.

EM series

ET series

Step 2: Check the explanation of the LED indictors in the installation manual of the inverter or on the inverter itself. A label on the left side of each inverter housing provides the explanation of each blinking status.

NOTICE
• The LED indicators are different depending on the inverter series. • The manual uses ES, SBP Series (3.0-6.0kW) G2 Version, ET, ET PLUS+ and BT Series as examples to show the details of the LED indicators

ES, SBP Series (3.0-6.0kW) G2 Version:

Indicator	Status	Description
		The inverter is power on and in the standby mode.
		The inverter is starting up and in the self-check mode.
		The inverter is in normal operation under grid-tied or off-grid modes.
		BACK-UP output overload
		A fault has occurred.
		The inverter is powered off.
		The grid is abnormal and the inverter is in off-grid mode.
		The grid is normal and the inverter is in grid-tied mode.
		BACK-UP is off.
		The monitoring module of the inverter is resetting.
		The inverter fails to connect with the communication terminal device.
		Faults between the communication terminal device and Server.
		The monitoring of the inverter operates well.
		The monitoring module of the inverter has not been started yet.

ET / ET PLUS+ / BT Series:

Indicator	Status	Description
SYSTEM		ON = The system is ready.
		BLINK = The system is starting.
		OFF =The system is not working.
BACK-UP		ON = Back-up is ready / power available.
		OFF = Back-up is off / power not available.
BATTERY		ON = The battery is charging.
		BLINK 1 = The battery is discharging.
		BLINK 2 = The battery is low / soc is low.
		OFF = The battery is disconnected / not active.
GRID		ON = The grid is active and connected.
		BLINK = The grid is active but not connected.
		OFF = The grid is not active.
ENERGY		ON = Consuming energy from grid / buying.
		BLINK 1 = Supplying energy to grid / zeroing.
		BLINK 2 = Supplying energy to grid / selling.
		OFF = The grid is not connected or the system is not working.
COM		ON = Both BMS communication and meter communication are ok.
		BLINK 1 = BMS communication fails; meter communication is ok.
		BLINK 2 = BMS communication is ok; meter communication fails.
		OFF = BMS communicationand meter communication fail.
WiFi		ON = WiFi connected / active.
		BLINK 1 = WiFi is resetting.
		BLINK 2 = WiFi is not connected to the router.
		BLINK 4 = WiFi server problem.
		OFF = WiFi is not active.
FAULT		ON = A fault has occurred.
		BLINK 1 = Back-up output overload / reduce load.
		OFF = No fault.

Step 3: Follow the troubleshooting steps in the table below for each LED indicator status:

Indicator	Steps to take
System LEDs are off	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your local GoodWe support for help is the error persists
Back-Up LEDs are off	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your local GoodWe support for help is the error persists
Solar LEDs are off	If the sun is up, then follow the guide. If it is night-time this is normal.
	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your local GoodWe support for help is the error persists
Solar LED blinks once continuously	If only using one MPPT this is normal. If you are using both follow the guide
	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your local GoodWe support for help is the error persists
Solar LED blinks twice	If only using one MPPT this is normal. If you are using both follow the guide
	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your local GoodWe support for help is the error persists
Battery LEDs are off	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Follow battery manual instructions and ensure output is on (If there is no output then the issue is with the battery)
	Contact your installer/supplier for further assistance
	Contact your local GoodWe support for help is the error persists
Energy LED blinks	LED is solid: system is importing electricity from the grid. LED single blinking: system is limit power export to the grid. LED double blinking: system is exporting electricity to the grid.
	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your local GoodWe support for help is the error persists

Indicator	Steps to take
Energy LED is off	Is the grid power on? Yes, follow the guide. If no, this is normal during grid outages
	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your installer/supplier for further assistance
	Contact your local GoodWe support for help is the error persists
Com LED is off	Is the BMS for battery and meter normal? Yes, follow the guide. No, this is normal when battery BMS and meter communication abnormal.
	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your installer/supplier for further assistance
	Contact your local GoodWe support for help is the error persists
Wi-Fi LED blinks twice, blinks four times or off	Follow Wi-Fi Troubleshooting guide and FAQs
Fault LED is on	Connect to PV Master/Solar Go and Check Error Code
	Follow procedures in chapter “3. Error Codes” to resolve
	Contact your installer/supplier for further assistance
	Contact your local GoodWe support for help is the error persists
Fault LED Blinks once	Overloading of back up, reduce your load.

4 Troubleshooting of the System (Via SEMS Portal/PV Master/SolarGo)

In addition to changing the LED status indicators, GoodWe inverters generate alarms and errors messages, and displays them in the SolarGo App and SEMS Portal.

SolarGo App is one smart phone application used to communicate with the inverter via bluetooth, WiFi, 4G or GPRS modules. Commonly used functions:

1. Check the operating data, software version, alarms, etc.
2. Set grid parameters, communication parameters, etc.
3. Maintain the equipment.
4. Upgrade the software version of the inverter.

For more details, refer to the SolarGo APP User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SolarGo_User%20Manual-EN.pdf to get the user manual.

SolarGo App

SolarGo App User Manual

SEMS Portal is an monitoring platform used to communicate with the inverter via WiFi, LAN, 4G or GPRS. Commonly used functions:

1. Manage the organization or User information;
2. Add and monitor the power plant information;
3. Maintain the equipment.

For more details, refer to the SEMS Portal User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_SEMS%20Portal-User%20Manual-EN.pdf to get the user manual.

SEMS Portal App

SEMS Portal User Manual

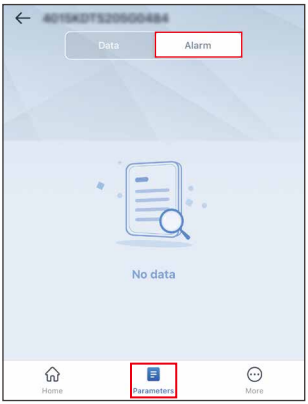
4.1 Checking Alarms (Via SolarGo App)

Step 1: To read out the Alarms on SolarGo App, first locally connect the application to the inverter.

NOTICE

Log in using the initial password for the first time and change the password as soon as possible. To ensure account security, you are advised to change the password periodically and keep the new password in mind.

Step 2 Tap **Home** > **Parameters** > **Alarm** to check the alarms.

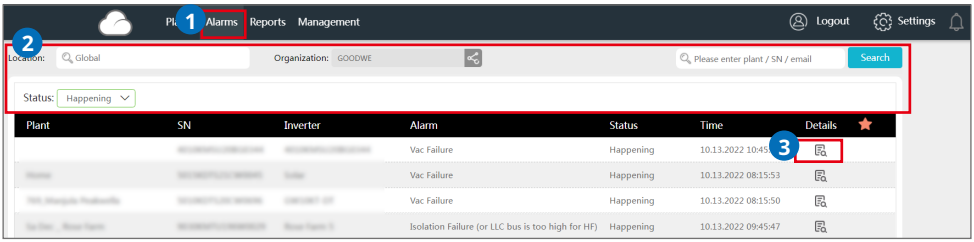


4.2 Checking Alarms (Via SEMS Portal WEB)

NOTICE

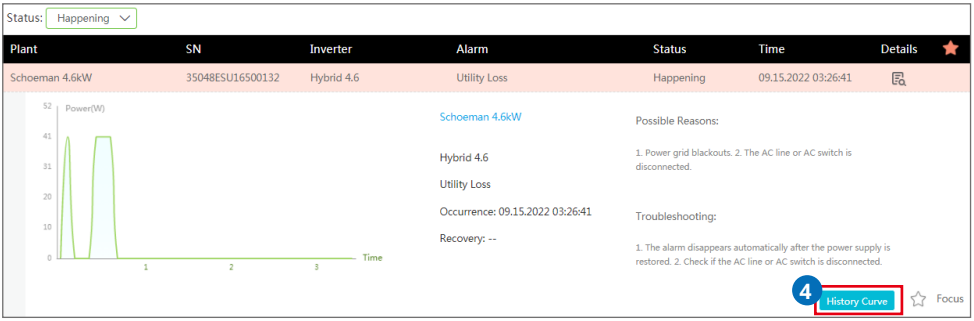
- To read out the Alarms on Semsportal, please log in to your account on https://www.semsportal.com and go through steps below.
- Please remember that administrator and technician accounts can check alarms for troubleshooting and maintenance.

Step 1 Click **Alarms** tag.
Step 2 (optional) Filter by Alarm type.
Step 3 Click **Details** on the plant list to see more information.



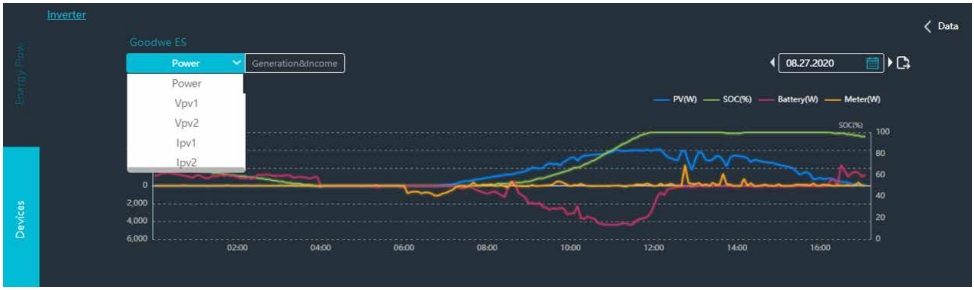
Step 4 (Optional): Click **History Curve**, and jumps to reports exporting interface to obtain more details.

Detailed alarming info:



Step 4 Tap **Devices** > **Parameters** > **Curve** to do first remote diagnosis.

NOTICE
On semsportal you can also do first remote diagnosis, like read historical measurements of AC and DC site when Alarm was occurred.



4.3 Troubleshootings for Each Error Message

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
00	GFCI Check Timeout	GFCI value is to a high during check.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
01	AC HCT Check Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
02ETU	AFCI Fault	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
04	DCI Consistency Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
05ETU	DC bus low	N/A	N/A
06	GFCI - Consistency Failure Device check failure Device failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
07	Relay Device Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
08	AC HCT Failure	1. AC output current sensor failure. 2 An intermittent fault, caused by external factors like external magnetic field etc. 3. Control board has a fault.	1. Update inverter to the latest firmware. 2.Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 3.Contact your service centre

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
09 17 29	Utility Loss ac Failure FAC Failure	1. Grid power failure. 2. AC is not connected well. 3. AC breaker fails. 4. Grid is not connected.	1. Make sure grid power is available. • 2a. Check with a multimeter if AC terminals have the correct voltage. • 2b. Check all terminations throughout the AC path are tight. 3. Check if AC breaker is functioning. 4. Check if AC connection is correct (Make sure L/N cable are connected in the correct terminal). 5. Make sure grid is connected and AC breaker turned ON. 6. If all is well, please try to turn off AC breaker and turn on again after 5 mins.
10	Ground I failure	1. Neutral & ground cables are not well connected on AC terminals. 2. Leakage current of the solar panels to the ground when humidity is high. 3. Utility ground loss.	1.Check with a multimeter if there is voltage between earth and inverter frame, normally it should be close to 0V. If there is a voltage, the Neutral & ground cable are not well connected on AC terminals. 2. If it only occurs on humid rainy days it is due to PV panel leakage.
11	DC bus high	1. The internal DC bus voltage is too high. 2. PV voltage exceeds inverter maximum as per user manual. 3. PV current leaking to ground.	1. Restart inverter. 2. Confirm PV voltage is within range as per user manual. 3. Measure the resistance between PV positive and negative to ground, it should be more than 30k ohm. 4. Contact your service centre.
12 12ETU	Internal Fan Failure (Back-Up Over Load for ES)	1. For ES inverter the backup loads exceed the inverter maximum output. 2. Internal fan is blocked by something. 3. Fan cable is not connected well in the inverter.	1. Reduce loads on the backup output. 2. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 3. If the error remains, contact your service centre.

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
13	Over Temperature	1. The air temperature around the inverter is to high for an extended period. 2. Installation location does not have sufficient airflow for inverter cooling system to work. 3. Obstruction of airflow around the inverter.	1. Try to decrease surrounding temperature. 2. Make sure the installation complies with the installation instructions in the inverter user manual, ensure there is enough space for inverter cooling system to function. 3. Check that the is no obstruction in the cooling fins of the inverter. 4. Try to switch off inverter for 15 mins, then on again.
14	Auto test Failure	N/A	N/A
14ETU	Phase order Fault	1. The AC phase are incorrectly connected to the inverter	1. Swap L2 and L3 on the AC terminals. 2. Update inverter to latest firmware
15 15ETU	PV overvoltage	1.The total voltage (open-circuit voltage) of each PV string is higher than the max DC input voltage of the inverter.	1. Test the DC voltage of the PV strings with a multimeter, to check if it is higher than the max DC Input voltage of the inverter. 2. If the voltage is to high, then please decrease panels connected to make sure the total DC voltage of each string of panel (open-circuit voltage) is with the max DC input voltage of the inverter. 3. Use the EZ designer to calculate the temperature coefficient of your PV strings to ensure the will not exceed max voltage.
22	Fac Consistency Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
23	Vac Consistency Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
24ETU	Bus Soft start Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
25	Relay check failure	1. Neutral & ground cables are not well connected on AC terminals. 2. Utility ground loss	1. Measure voltage between ground and neutral on the grid, ensure it is less than 10V. 2. Measure the resistance between ground and neutral on the backup output, ensure it is less than 10Ohm. 3. Contact your service centre.
26	Battery Licence Fault	1. Battery activation code incorrect	1. Contact your service centre.
27ETU	Phase Angle Failure	1. The AC phase are incorrectly connected to the inverter	1. Swap L2 and L3 on the AC terminals. 2. Update inverter to latest firmware
28ETU	DSP communication failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
30	EEPROM R/W Failure	1 An intermittent fault, caused by external factors like external magnetic field etc.2. Control board storage chip read and write failure.	1. Restart the inverter, check if error remains, if not, means it is just an intermittent fault. 2. Locally update DSP of inverter2. Contact your service centre

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
31	Internal Communication Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
N/A	Reference Voltage Check Failure	1. An intermitted fault, caused by external factors like external magnetic fields etc. 2. It is possible that an internal component is faulty.	1. Restart the inverter, check if the fault reoccurs, if not, it is just an intermittent fault. 2. If the error remains, contact your service centre.
N/A	DC Injection high	1. Inverter detects a higher DC component in AC output than what is allowed by your country settings.	1. Please contact your service centre if you receive this error massage.
N/A	DC overvoltage	1.1.The total voltage (open-circuit voltage) of each PV string is higher than the max DC input voltage of the inverter.2. To many batteries modules installed in series (HV batteries)	1. Test the DC voltage of the PV strings with a multimeter, to check if it is higher than the max DC Input voltage of the inverter.2. If the voltage is high, then please decrease panels connected to make sure the total DC voltage of each string of panel (open-circuit voltage) is with the max DC input voltage of the inverter.3. Measure battery voltage if it exceeds the maximum voltage as per inverter spec sheet remove one battery

Error Code on App	Error Message	Possible Reasons:	Troubleshooting:
N/A	ISO failure	1. The Ground cable of PV panels is not connected or not well connected. 2. DC cable insulation has been damaged. 3. Neutral & ground cables are not well connected on AC terminals. 4. The ISO failure happens on rainy days or early morning or sunset, when the humidity is high.	1. Connect PV strings one by one to check which PV string cause the problem.2. Check if the insulation resistance of the DC cables is less than 10kOHM.3. Check with a multimeter if there is voltage between N&PE cable on AC terminals. If the voltage is higher than 10V, it means the Neutral & ground cables are not well connected on AC terminals.4. Check if the ground cable of each panel is well connected.
N/A	SPI	1. Internal communication failure or failure of reading the master and slave chips of the control board.	1. Locally update DSP of inverter. 2. Contact your service centre.

5 Troubleshooting of the System (Without Alarms or indicators)

NOTICE
Some installation or system errors do not generate any error message or any change of the LED indicators on the inverter. Follow the steps in the table to identify the possible reasons and how to resolve the issues.

5.1 System Faults

NO.	Fault description	Possible Reasons:	Troubleshooting
1	Abnormal battery charging	1. CT not oriented correctly on the incomer. 2. Economical mode timer is ON. 3. Smart meter supply not on the same phase as the inverter its communication cable is connected to. 4. Communication cable between batteries has failed.	1. Run the PVMaster meter test. 2. Check Economical mode timer settings. 3. Switch off supply to meter and observe if the COMM LED starts blinking. 4. Test communication cables.
2	Abnormal battery discharging	1. CT not oriented correctly on the incomer. 2. Economical mode timer is ON. 3. Smart meter supply not on the same phase as the inverter its communication cable is connected to. 4. Communication cable between batteries has failed.	1. Run the PVMaster meter test. 2. Check Economical mode timer settings. 3. Switch off supply to meter and observe if the COMM LED starts blinking. 4. Test communication cables.
3	Terminal Burnt	1. Incorrect crimping of ferrules. 2. Using non-compatible PV connectors. 3. AC terminals not tightened correctly.	N/A
4	All LED off	1. Abnormal control board functionality. 2. Firmware update interrupted. 3. LED ribbon cable came loose during transport	1. Confirm if unit is powered on (Solar Wi-Fi visible) . 2. Locally update inverter DSP. 3.Contact support.

NO.	Fault description	Possible Reasons:	Troubleshooting
5	All LED on	1. Abnormal control board functionality. 2. Firmware update interrupted.	1. Locally update inverter DSP. 2.Contact support
6	Backup output shut down	1. Exceed maximum backup power. 2. When on battery only exceed the battery discharge limits. 3. Low battery. 4. Inductive load spikes are to high for backup capacity.	1. Confirm the peak load demand on the backup output. 2. View the maximum discharge current on SEMS and ensure that the loads do not exceed this rated power. 3. Confirm that the SOC limit set has been reached. 4. Ensure that minimal inductive loads are connected to backup, pumps and motors may require a soft starter
7	Meter test fail	1. Less than 150w is being drawn from the grid. 2. Communication cable damaged. 3. BMS Communication conflict. 4. No power to meter5. Meter failure.	1. Ensure there is sufficient current draw from the grid. 2. Replace the meter cable with correct pin out cable. 3. Unplug the BMS cable if meter communication is restored, ensure BMS cable is only using the required 2 pins. 4. Check supply to meter. 5. Contact support or replace with new smart meter.
8	No meter data can be seen on the SEMS portal	1. No power to meter. 2. Communication cable damaged. 3. BMS Communication conflict. 4. Meter failure	1. Check supply to meter. 2. Replace the meter cable with correct pin out cable. 3. Unplug the BMS cable if meter communication is restored, ensure BMS cable is only using the requires 2 pins. 4. Contact support or replace with new smart meter.

NO.	Fault description	Possible Reasons:	Troubleshooting
9	PV production is much lower than expected	1. Export limitation is enabled and the load consumption is low. 2.Grid parameters out of range for country selection. 3. Solar voltage out of range. 4.High temperature. 5. incorrect size of AC cable used.	• 1a. If Export limit is enabled, examine if the production matches the load and if batteries are nearly fully charged (charge-I-MAX has decreased). • 1b. Check position and direction of CT. 2. Measure the grid voltage and frequency and ensure the correct country is selected on PV Master. 3. Inspect the solar Voltage and see if it matches the inverter requirement. 4. Ensure the installation environment is not too hot and the airflow of the inverter is not obstructed. 5. Ensure AC cables are sized per quick installation manual.
10	The batteries do not communicate with the inverter	1. Battery not switched ON. 2. Battery polarity incorrect. 3. BMS communication cable damaged or incorrect for battery. 4.incorrect battery selection in APP. 5.Incompatable firmware on battery or inverter. 6.Battery internal fault.	1. Is the battery switched on and started. Check battery status LEDS. 2. Check the polarity from battery is presented correctly to the inverter terminals. 3. Confirm the cable pinout is correct for the battery or try an external cable. 4.Ensure correct battery is selected on PV master. 5.If your battery model is unavailable contact your supplier to update the firmware. 6.Reboot your battery if it shows an error please consult battery manufacturer guide.
11	The inverter does not power on	1. Inverter is not receiving any power. 2. Only PV available and PV voltage is to low or DC switch is off.	1. Measure AC voltage on inverter terminal. 2. Ensure DC voltage is in range and DC switch is enabled. 3. Contact support

NO.	Fault description	Possible Reasons:	Troubleshooting
12	Wi-Fi connection	1. Router out of range. 2. Incompatible characters used in SSID0.	1.Refere to Wi-Fi connection guide.
13	Noise	1. Inductor making excessive noise	1. Measure the decibels if they exceed the rated volume contact service centre.
14	Reconnecting	1. The incorrect country is selected. 2. The local grid does not comply to the set regulation. 3. Pv voltage is below start-up voltage. 4. Loose ground or Neutral cable.	1. Test PV voltage to ensure it is within operating range. 2. Select the correct country on PV Master. 3. Confirm grid complies to the aforementioned selected code. 4. Measure voltage between ground and neutral it should be less than 10V.
15	Waiting	1. There is no DC power source available to run loads. 2. The incorrect country is selected. 3. The local grid does not comply to the set regulation. 4. Pv voltage is below start-up voltage. 5. DRED remote shut down is active	1. Test PV voltage to ensure it is within operating range. 2. Select the correct grid code in PV Master. 3. Confirm grid complies to the aforementioned selected code. 4. Select the default grid code 50/60HZ as per your grid frequency. 5. If the DRED is connected confirm if it is active, If it is unused confirm the bridge is installed.
16	ET inverter disconnects from the grid upon a BMS alarm 4096 Inverter & battery are restarted and inverter reconnects however disconnects upon another BMS 4096 alarm	Unsure at this moment, service and R&D investigating	N/A

5.1 Battery Faults

No.	Alarm	Troubleshooting
1	High battery temperature	The battery is overloaded. You are recommended to reduce loads. If the problem persists, contact the after-sales service for help.
2	Low battery temperature	The ambient temperature is too low to run the battery.
3	Battery cell voltage differences	If the problem persists, contact the after- sales service for help.
4	Battery over total voltage	
5	Battery discharge overcurrent	If the problem persists, contact the after-sales service for help.
6	Battery charge over current	If the problem persists, contact the after-sales service for help.
7	Battery under SOC	If the PV works properly but the problem persists, contact the after-sales service for help.
8	Battery under total voltage	
9	Battery communication failure	Check the electrical connections by professionals.
10	Battery output shortage	
11	Battery SOC too high	If the problem persists, contact the after-sales service for help.
12	BMS module fault	
13	BMS system fault	
14	BMS internal fault	
15	High battery charge temperature	
16	High battery discharge temperature	The battery is overloaded. You are recommended to reduce loads. If the problem persists, contact the after-sales service for help.
17	Low battery charge temperature	The ambient temperature is too low to run the battery.

6 Troubleshooting of Wi-Fi Connection

NOTICE

Before you go through troubleshooting, please make sure that:

1. You did Wifi configuration step by step according to instruction manual (
1. For more details, refer to the SEMS Portal User Manual. Scan the QR code or visit https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_WiFi%20Configuration%20Instruction-EN.pdf to get the user manual.)
2. If you bought external Wifi dongle, please check that you use compatible with your inverter wifi dongle.

WiFi Quick Installation Guide

No.	Problem	Troubleshooting
1	Cannot find Solar-Wi-Fi	1. Make sure the inverter is powered on. 2. Move your smart device closer to the inverter. 3. Restart inverter 4. Perform "Wi-Fi Reload" 5. If the problem remains, contact your service centre.
2	Cannot connect to Solar-WiFi	1. Try password "12345678" 2. Restart Inverter 3. Make sure there is no other device connected to Solar WiFi 4. Perform "Wi-Fi Reload" 5. If the problem remains, contact your service centre.
3	Cannot Login Website 10.10.100.253	1. Make sure the username and password you use are both admin 2. Perform "Wi-Fi Reload" 3. Try using a different browser (Suggest Google, FireFox IE, Safari etc) 4. Make sure the website you log in is 10.10.100.253 5. If the problem remains, contact your service centre.
4	Cannot Find Router SSID	1. Move router closer to inverter or use a Wi-Fi repeater 2. Connect to router and login the settings page to check the channel it uses. Please make sure the channel is not larger than 13. Otherwise, modify it. 3. If the problem remains, contact your service centre.

No.	Problem	Troubleshooting
5	Wi-Fi LED indicator blinks twice continuously with all configuration steps done.	1. Restart the inverter 2. Check if the SSID, encryption method, encryption algorithm and password on Wi-Fi configuration page is the same with that of Wireless Router and 3. correct if different 4. Check if the maximum amount of devices allowed to connect to the router has exceeded. If yes, please disconnect some devices or expand the limitation 5. Restart router 6. Move router closer to inverter or use a Wi-Fi repeater. 7. If the problem remains, contact your service centre.
6	Cannot find Solar-Wi-Fi Signal	1. Restart the inverter 2. Connect to Solar-WiFi and login again, check the "SSID", "Security Mode", "Encryption Type" and "Pass Phrase" is matching with that of the router or not. 3. Connect to router and login to check if the connection reaches maximum signal strength or not and check the channel it uses. Please make sure the channel is no larger than 13. Otherwise modify it. 4. Restart router 5. Move router closer to inverter or use a Wi-Fi repeater. 6. If the problem remains, contact your service centre.
7	Inverter keep going offline	1. Upgrade inverter firmware to the latest version (go to section upgrade inverter) 2. Contact with service support for upgrade firmware of Wifi module. 3. If problem still exist please contact with service support again
8	After configuration WiFi LED on the inverter blinks 4 times repeatedly	1. Connect to the router and visit the portal www.semsportal.com. Check if the portal is available or not; 2. Ensure that your router SSID and password does not containn any unsupported characters. **` ~ ! @ # $ % ^ & * ( ) _ + = - [ ] / . , < > ? { } ; ‘ :** Please note Blank Spaces are not allowed in password or SSID 3. Ensure that the following port is not blocked by your router or firewall. tcp.goodwe-power.com TCP port: 20001 4. Restart the router and inverter. 5. If the problem remains, contact your service centre.
9	Offline status of inverter on SEMS Portal with Wi-Fi LED indicator always on	1. Please wait a few minutes for data transmission and check on SEMS Portal later 2. If the problem remains, contact your service centre.

7 Troubleshooting of SEC1000S

SEC1000S is a communication device used for the parallel connection of ET, ET PLUS+ or BT inverters (5-10kW).

If you face any problems with SEC1000S please check guidelines below:

1. Make sure to use SEC1000S with a compatible inverter series. Only ET, ET PLUS+ or BT Series Series in the power range 5-10kW are compatible with SEC1000S.
2. Make sure that you are using SEC1000S (and not the similar device SEC1000). (For differentiate you need to check Serial Number, If your serial number start from number 99XXXXX it is SEC1000S.
3. For connection use STP (shielded twisted pair) cable.
4. Please use a single twisted pair per span.
5. Whenever possible please connect a single inverter per port (Inverter 1 <--> COM1; Inverter 2 <--> COM2).
6. Assign different Modbus addresses to each inverter; set up addresses from 1 to 10.
7. Check that there is no potential difference between the grounds of the different elements involved in the communication (inverters, SEC1000s, router).
8. Check polarity of the bus before and when making the connection. When everything is correct there is between 3 and 5 Vdc at both ends of the chain. Please check polarity at the end of the communications cable before and after finishing the connection.
9. Connect the shield to ground at a single point, preferably at the SEC1000s.
10. Once the connection has been made, check that the EzLogger is communicating correctly with the inverter via the Promate.
11. If daisy-chain inverters are connected, make the connection one by one, checking polarity and communication individually.
12. Upgrade the inverter firmware to the latest version.
13. If you still have troubles, please contact GoodWe Support.

8 Update Firmware

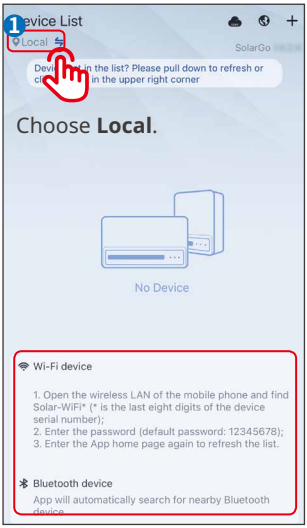
Updating the inverter to the latest firmware versions can be a solution for several issues. Newer firmware versions contain bug fixes and increase stability of devices.
There are 2 methods to update firmware of GoodWe hybrid inverters.

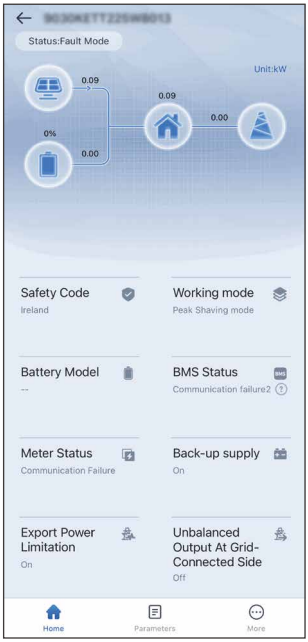
8.1 Local Update Firmware with PV Master/Solar Go

NOTICE
• Only for ES, ES G2 and ET PLUS+ Series inverters. • The upgrade patch has been obtained from the dealer or the after sales service. • Duplicate the upgrade patch to the smart phone for the Android system.

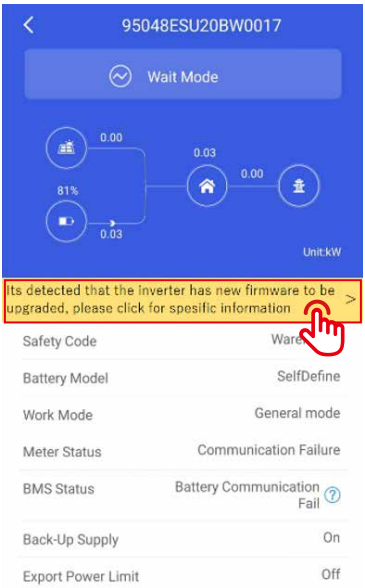
Procedure:

Step 1: Connect the bluetooth module into the USB port of the inverter. If necessary, remove the wifi module first. (The Bluetooth module is provided with all ES and ET PLUS+ inverters manufactured from December 21.)
Step 2: Turn on mobile data on your phone and turn off Wi-Fi.
Step 3: Connect to PV Master/Solar Go.

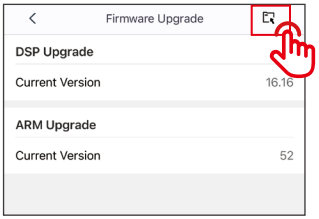




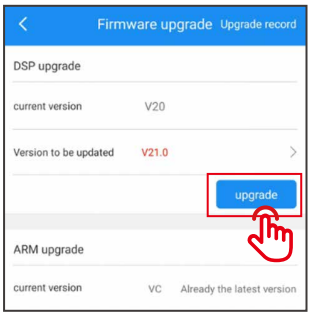
Step 4 (Method One): After connecting with inverter, if you inverter has old firmware app will find the newest one shows in yellow button – click on the button



Step 4 (Method Two): Tap **Home** > **More** > **Equipment Maintenance** > **Firmware Upgrade** to upgrade the firmware version.



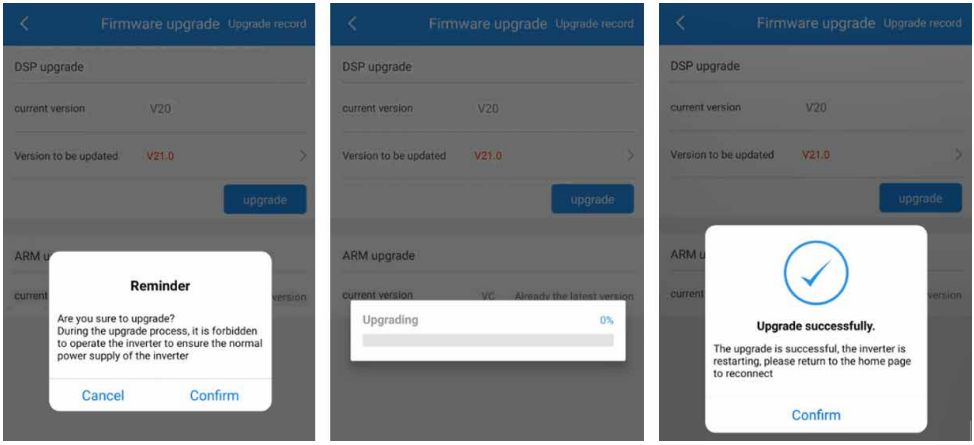
Step 5: Click on upgrade button.



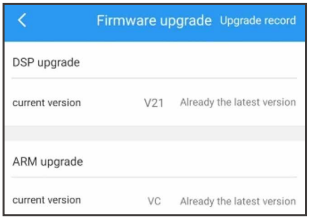
Step 6: The firmware update takes a few minutes to complete.

NOTICE

Once the prompt states successful you will have to wait 5 to 10 min until the device physically reboots. Thereafter you will be able to access the settings and confirm if the update was successful.



Step 7: After reboots check the firmware version in SolarGo.



8.2 Online Update Firmware

Contacting GoodWe service for remote upgrade if the inverter is online.

9 Commissioning and Configuration Videos

WARNING

If you need to know how to configure and commission our inverters from the beginning up to create a plant on our SEMS portal, below, you can find the list of helping videos. Please remember that videos never replace instruction manuals.

No.	Instruction/Videos	QR code
1	GoodWe Lynx Home F Series battery connection	
2	GoodWe Battery Ready Solution - How to activate your EHR & ETR battery function?	
3	GoodWe All in one Single Phase Storage Inverter ESA	
4	GoodWe ET Installation&Configuration with BYD High Voltage Battery	

No.	Instruction/Videos	QR code
5	GoodWe ET storage system Components& Installation	
6	GoodWe Hybrid Inverter ET PLUS+ Series (5-10kW) unboxing and installation	
7	GoodWe SEC1000 Installation & Configuration	
8	GoodWe Wi-Fi Configuration for PV Plant Monitoring	
9	GoodWe PV Master APP introduction for energy storage system	

No.	Instruction/Videos	QR code
10	Remote Configuration for Energy Storage Plant on SEMS App	
11	GoodWe Monitoring platform introduction for energy storage system	
12	How to create and manage your PV plants online in 5 min	

Apps	Android	iOS
Setup Wifi connection using SEMS app		

No.	Instruction/Videos	QR code
1	Instruction how to set up WiFi module via browser	
2	Full instruction manual for WiFi module	
3	GoodWe Wi-Fi Configuration for PV Plant Monitoring Video	
4	Instruction manual of SEC1000S	
5	Instruction on ET Paralleling System Composition	

10 How to Contact GoodWe Support

If you go through all troubleshooting steps, and you have still problem with your device, please contact with your local service support. You can find the contact data in our website: https://emea.goodwe.com/contact-us

WARNING

- If you go through all troubleshooting steps, and you have still problem with your device, please contact with your local service support.
- Please have the data above ready when you contact GoodWe support.
- Missing information may cause a longer processing time of your request and could also cause additional travels on site for you.
- GoodWe support will use the data above to advise you about further solutions or to initiate the warranty replacement procedure.

GoodWe support may ask you for the following data:

1. Product serial number.
2. Photographs of the inverter in its installation environment.
3. Problem description.
4. Status of the LED indicators (with a video where possible).
5. Error code from PVMaster/SolarGo app (with a screenshot where possible).
6. List of troubleshooting steps done with the testing result.
7. Results of measurement with photographs.
8. A video in case of noise issue.

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Contact Information