

Continue



























Page 1 User Manual Hybrid Inverter ET Series (40-50kW) V1.0-2024-04-08...	Page 2 Copyright © GoodWe Technologies Co.,Ltd. 2023. All rights reserved. No part of this manual can be reproduced or transmitted to the public platform in any form or by any means without the prior written authorization of GoodWe Technologies Co.,Ltd. Trademarks and other GoodWe trademarks are trademarks of GoodWe Technologies Co.,Ltd. Page 3 CONTENT User Manual V1.0-2024-04-08 CONTENT 1 About This Manual	1.1 Applicable Model	1.2 Target Audience	1.3 Symbol Definition	1.2 Safety Precaution
2.2.2 PV String Safety	2.3 Inverter Safety	3.2.4 Battery Safety	4.2.5 Personnel Requirements	4.2.6 EU Declaration of Conformity	4.3.2 Application Scenarios WARNING
39.6.7 Connecting the AC Cable	41.6.8 Communication	43.6.8.1 Connecting the Communication Cable	47.6.8.2 (Optional) Connecting the STS/BMS/METER communication cable	49.6.9 Installing the Communication Module	5 All the installers and users have to be familiar with the product features, functions, and safety precautions. This manual is subject to update without notice. For more product details and latest documents, visit . 1.1 Applicable Model This manual applies to the listed hybrid inverters below (ET for short):
					Page 6 The manufacturer shall not be liable for equipment damage or personal injury if you do not follow the instructions. For more warranty details, please visithttps://en.goodwe.com/warranty. 2.2 PV String Safety DANGER Connect the DC cables using the delivered DC connectors and terminals. Page 7 02 Safety Precaution User Manual V1.0-2024-04-08 2.3 Inverter Safety WARNING The voltage and frequency at the connecting point should meet the on-grid requirements. Additional protective devices like circuit breakers or fuses are recommended on the AC side. Specification of the protective device should be at least 1.25 times the rated AC output rated current. Page 8 Only qualified professionals or trained personnel are allowed to install, operate, maintain, and replace the equipment or parts. 2.6 EU Declaration of Conformity GoodWe Technologies Co., Ltd. hereby declares that the inverter with wireless communication modules sold in the European market meets the requirements of the following directives:
					Page 9 GW40K-ET-10 • GW50K-ET-10 Referring to Brand Code GW: GoodWe Rated Power • 40K: the rated power is 40 kW. • 50K: the rated power is 50 kW. Series Code ET: ET Series hybrid inverter Version Code 10 : First version inverter. Page 10 03 Product Introduction User Manual V1.0-2024-04-08 Supported Grid Types TN-S TN-C TN-C-S Inverter Inverter Inverter Inverter 3.2 Application Scenarios WARNING A STS static switch cabinet is needed to use the BACK-UP function of the inverter. The PV system is not suitable to connect equipment that relies on a stable power supply, such as medical equipment to sustain life. Page 11 03 Product Introduction User Manual V1.0-2024-04-08 Scenarios without STS Smart meter Inverter Utility meter Utility grid On-grid AC circuit breaker PV string Battery Switch AC circuit breaker Battery Normal loads Power Line Signal Line Parts Description PV string PV string is composed of series connected PV panels. Inverter Supports ET40-50kW series inverters. Page 12 03 Product Introduction User Manual V1.0-2024-04-08 Parts Description (Optional) It must meet local regulatory requirements. AC breakers should be prepared by the customers. Battery Switch Recommended specifications: the nominal voltage is ≥ 1000Vdc, the nominal current is ≥ 125A AC circuit Depend on the actual using load. Page 13 03 Product Introduction User Manual V1.0-2024-04-08 Parts Description PV string PV string is composed of series connected PV panels. Inverter Supports ET40-50kW series inverters. Supports STS series static transfer switches. On-grid AC Please prepare AC circuit breaker by yourself. Page 14 03 Product Introduction User Manual V1.0-2024-04-08 Parts Description BACK-UP AC Please prepare AC circuit breaker by yourself. Recommended specifications: circuit breaker • GW40K-ET-10: the nominal voltage is ≥ 400Vac, the nominal current is ≥ 80A • GW50K-ET-10: the nominal voltage is ≥ 400Vac, the nominal current is ≥ 100A. Page 15 03 Product Introduction User Manual V1.0-2024-04-08 NOTICE In the self consumption mode, when paired with STS, the battery can supply power to the BACK-UP loads when the grid is out of power. Economic mode NOTICE Select Economic mode when it meets the local laws and regulations, e.g., whether the grid is allowed to charge the battery. Page 16 03 Product Introduction User Manual V1.0-2024-04-08 When the electricity price is at its valley, set the time for the grid to charge the battery. When the electricity price is at its peak, the battery will power the load first, and the remaining power can be sold to the grid. Page 17 03 Product Introduction User Manual V1.0-2024-04-08 Back-up mode NOTICE Backup function can be used with STS. Different battery SOC values can be set for on-grid and off-grid condition under the backup mode. When the grid is disconnected, the inverter turns to off-grid mode to supply power to the load and to ensure that the BACK-UP loads are powered. Page 18 03 Product Introduction User Manual V1.0-2024-04-08 Peakshaving mode NOTICE Peak shaving mode is mainly applicable to industrial and commercial scenarios. When the total power consumption of the loads exceeds the peak shaving limit in short time, the battery discharges to reduce the power consumption exceeds the peak shaving limit. Page 19 03 Product Introduction User Manual V1.0-2024-04-08 Delayed Charging Mode NOTICE Delayed charging mode can avoid full charge of the battery early, which is a waste of energy when the PV Power generated is greater than the grid power export limit. Page 20 03 Product Introduction User Manual V1.0-2024-04-08 3.3.2 Inverter operation mode Waiting mode Off-grid mode Self-check mode Grid-Tied mode Fault mode Parts Description Waiting Waiting stage after the inverter is powered on or when the grid is normal mode and the off grid output function is turned on, and the off grid output terminal is powered by the power grid. Page 21 03 Product Introduction User Manual V1.0-2024-04-08 Parts Description Off-grid When the grid is powered off, the inverter switches to the off-grid mode and mode continues to supply power to the load via BACK-UP port. If a fault is detected, it enters the fault mode. Page 22 03 Product Introduction User Manual V1.0-2024-04-08 3.4 Features Power derating For a safe operation or the compliance with local laws and regulation, the inverter will automatically reduce the output power when the operating environment is not ideal. The following are the factors that may occur power derating. Please try to avoid them when the inverter is working. Page 23 03 Product Introduction User Manual V1.0-2024-04-08 Model Label Description F: Full coverage I: Integrated AFPE: Detection and interruption capability provided GW40K-ET-10 F-I-AFPE-1-4/2-2 1: 1 monitored string per input port 4/2: 4/2 input ports per channel 2: 2 monitored channels F: Full coverage I: Integrated AFPE: Detection and interruption capability provided GW50K-ET-10 Page 24 03 Product Introduction User Manual V1.0-2024-04-08 Unbalanced Three-phase Output The inverter AC side supports unbalanced three-phase output, and the maximum output power per phase for different models is shown in the table below: Model Maximum output power per phase GW40K-ET-10 14.66kW GW50K-ET-10 18.33kW. Page 25 03 Product Introduction User Manual V1.0-2024-04-08 Time mode: in standard time mode, you can set the time for the load to be enabled or disabled and the load will automatically be enabled or disabled within the set time period; in intelligent time mode, when the remaining PV energy exceeds the nominal power of the load within the set time period, the load will be enabled. Page 26 03 Product Introduction User Manual V1.0-2024-04-08 3.5 Appearance 3.5.1 Parts 10 11 12 13 14 15 Parts Description Indicator Indicates working status of the inverter. Battery SOC indicator Indicates the SOC status of the battery Handles Used to move the Inverter Handle installation Used to install handles to move the Inverter holes. Page 27 03 Product Introduction User Manual V1.0-2024-04-08 Parts Description AC output port Used to connect the AC Cable Battery communication Used to connect the BMS communication cable. port (BMS) Meter communication Used to connect the meter communication cable. port (METER) Page 28 03 Product Introduction User Manual V1.0-2024-04-08 3.5.2 Dimension 521mm 259mm 200mm 510mm 661mm 200mm 3.5.3 Indicator Description 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 mode. Page 29 03 Product Introduction User Manual V1.0-2024-04-08 Battery SOC indicator Indicator Description SOC=100% SOC=75% SOC=50% SOC=25% No battery connected Indicator light blinking: for example, when the battery SOC is between 25% and 50%, the light at the 50% position blinks. 3.5.4 Nameplate The nameplate is for reference only. Page 30 04 Check and Storage User Manual V1.0-2024-04-08 4 Check and Storage 4.1 Check Before Receiving Check the following items before receiving the product. 1. Check the outer packing box for damage, such as holes, cracks, deformation, and other signs of equipment damage. Do not unpack the contents from the box and contact the supplier as soon as possible if any damage is found. Page 31 04 Check and Storage User Manual V1.0-2024-04-08 4.3 Deliverables WARNING Connect the DC cables with the delivered terminals. The manufacturer shall not be liable for the damage if other terminals are used. N:GW40K-ET-10 x 6; GW50K-ET-10 x 8. Inverter x 1 Mounting plate x 1 Expansion bolt x 6. Page 32 05 Installation User Manual V1.0-2024-04-08 5 Installation 5.1 Installation Requirements Installation Environment Requirements 1. Do not install the equipment in a place near flammable, explosive, or corrosive materials. 2. Do not install the equipment in a place that is easy to touch, especially within children's reach. High temperature exists when the equipment is working. Page 33 User Manual V1.0-2024-04-08 05 Installation ≥200mm ≥200mm ≥1000mm ≥500mm ≥300mm ALT: 4000m IP66 0%–95%RH Mounting Support Requirements The mounting support shall be nonflammable and fireproof. Install the equipment on a surface that is solid enough to bear the inverter weight. Page 34 05 Installation User Manual V1.0-2024-04-08 Installation Tool Requirements The following tools are recommended when installing the equipment. Use other auxiliary tools on site if necessary. Crimping pliers Goggles Safety shoes Safety gloves Dust mask Diagonal pliers Wire stripper Hammer drill Heat gun Vacuum cleaner M4/M5. Page 35 User Manual V1.0-2024-04-08 05 Installation 5.2 Inverter Installation 5.2.1 Moving the Inverter CAUTION Operations such as transportation, shipment, installation and so on shall in compliance with the laws and regulations of the country or region where the inverter is located. Page 36 05 Installation User Manual V1.0-2024-04-08 φ: 8mm D: 80mm 1.5-2N·m 1.2-2N·m Contact the after-sales service center to obtain handles. For Australia only. Page 37 User Manual V1.0-2024-04-08 06 Electrical Connection 6.1 Safety Precaution DANGER Perform electrical connections in compliance with local laws and regulations. Including operations, cables, and component specifications. Disconnect the DC switch and the AC output switch of the inverter to power off the inverter before any electrical connections. Page 38 06 Electrical Connection User Manual V1.0-2024-04-08 6.2 Cable Requirements Cable Cable Requirements Protective earthing Conductor cross-sectional area: cable 10mm -16mm Cable outer diameter: 4-5 mm PV string DC cable Conductor cross-sectional area: -6mm Cable outer diameter: 6.5-8.5mm Page 39 User Manual V1.0-2024-04-08 06 Electrical Connection Cable Cable Requirements Cable Specifications DRED/RCR communication cable (Reserved) DO signal Cable outer diameter: 5.5 mm cable Outdoor copper core cable Conductor cross-sectional area: 0.75 mm -1.5 mm Remote Shutdown Load Control Generator Control 6.3 Wiring Diagram NOTICE. Page 40 06 Electrical Connection User Manual V1.0-2024-04-08 The N and PE cables of the BACK-UP load end shall be wired separately in the distribution box. This wiring method is applicable in many countries except Australia and New Zealand. NOTICE If the inverter switches to off grid mode and no need to connect N and PE cables, the "Backup N and PE relay switch"... Page 41 User Manual V1.0-2024-04-08 06 Electrical Connection 6.4 Connecting the PE cable WARNING The PE cable connected to the enclosure of the inverter cannot replace the PE cable connected to the AC output port. Make sure that both of the two PE cables are securely connected. Page 42 06 Electrical Connection User Manual V1.0-2024-04-08 WARNING Ensure the DC cables are connected tightly, securely and correctly. Measure the DC cables using a multimeter to avoid reverse polarity connection. Also, the voltage should be under the permissible range. Page 43 User Manual V1.0-2024-04-08 06 Electrical Connection Click PV-CZM-61100 Click 6.6 Connecting the battery cable DANGER The battery used with the inverter shall be approved by the inverter manufacturer. The approved battery list can be obtained through the official website. Page 44 06 Electrical Connection User Manual V1.0-2024-04-08 WARNING Connect the battery cables to the corresponding terminals such BAT+, BAT- and grounding ports correctly. Otherwise it will cause damage to the inverter. Ensures the DC cables are connected tightly, securely and correctly. Page 45 User Manual V1.0-2024-04-08 06 Electrical Connection Please refer to the following steps to remove the battery connection terminals. 6.7 Connecting the AC Cable WARNING Do not connect loads between the inverter and the AC switch directly connected to the inverter. Page 46 06 Electrical Connection User Manual V1.0-2024-04-08 105mm φ:18-38mm 75mm Copper wire.20mm ≤S≤25mm 18-24mm 24-30mm 30-38mm 0.8N·m 1.2N·m 6-8N·m. Page 47 User Manual V1.0-2024-04-08 06 Electrical Connection 6.8 Communication NOTICE Make sure that the communication device is connected to the right COM port. Route the communication cable far away from any interference source or power cable to prevent the signal from being influenced. COM1 COM2 3 4 5 6 7 8. Page 48 06 Electrical Connection User Manual V1.0-2024-04-08 Function Port Definition Intended usage When an accident occurs, the equip- DGND S ment can be controlled to shut down. (Optional) Remote When using RCR or DRED functions Control port on the inverter, please short circuit DGND S and IO1. Page 49 User Manual V1.0-2024-04-08 06 Electrical Connection Function Port Definition Intended usage Communication Connect WiFi/LAN Kit-20 or 4G module module port for remote monitoring of equipment. (COM2) 1. Orange and White: +12V S 2. Orange: GND S 3. Green and white: GND S STS communica- 4. Page 50 06 Electrical Connection User Manual V1.0-2024-04-08 Load monitoring and output power limitation networking The inverter can monitor the load electricity consumption and control the inverter's real-time output power through the connection of GM3000 or GM330 smart meter. RS485 Inverter Circuit breaker Utility meter Utility grid Circuit breaker. Page 51 User Manual V1.0-2024-04-08 06 Electrical Connection 6.8.1 Connecting the Communication Cable NOTICE Enable the DRED, RCR function or remote shutdown function via SolarGo App after cable connections. The inverter paralleling function is reserved. Only in inverter paralleling scenarios, you need to connect the parallel communication cables between inverters. Page 52 06 Electrical Connection User Manual V1.0-2024-04-08 Parallel communication (Parallel) Parallel DRED/RCR Parallel LOAD CON (optional) (reserved) (optional) 8: DRMO or REF 1 1. Orange and White: Remote Control 9: RefGen or REF 2 16: DO+ 2. Orange: 10: DRM4/3 or DI 4 (optional) 17: NC (Optional) Page 53 User Manual V1.0-2024-04-08 06 Electrical Connection 6.8.2 (Optional) Connecting the STS/ BMS/ METER communication cable NOTICE Please use the communication cable shipped with the box. The STS communication cable is shipped with STS accessories. If the length of the communication cable shipped with the box cannot meet the actual needs, please prepare standard network cable and RJ45 connector. Page 54 NOTICE Refer to the delivered communication module user manual to get more introduction to the module. For more detailed information, visit www.goodwe.com. When replacing the communication module, the interval between reinstalling the module should be at least 5 seconds if the inverter is in operation. Page 55 User Manual V1.0-2024-04-08 07 Equipment Commissioning 7 Equipment Commissioning 7.1 Check Before Power ON Check Item The product is firmly installed at a clean place that is well-ventilated and easy-to operate. The PE, DC input, AC output, and communication cables are connected correctly and securely. Page 56 07 Equipment Commissioning User Manual V1.0-2024-04-08 Steps for starting the battery for the first time after it disconnected from grid. NOTICE Off-grid mode can be used with STS. Steps for starting the battery for the first time after it disconnected from grid are only applicable when there is no power on the grid side and PV side, and it is necessary to enable the off grid function. Page 57 08 System Commissioning User Manual V1.0-2024-04-08 8 System Commissioning 8.1 Inverter Indicators Indicator Description 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 mode. Page 58 1. Check the operating data, software version, alarms, etc. 2. Set grid parameters, communication parameters, etc. 3. Equipment maintenance. 4. Upgrade software version. For more details, refer to SolarGo User Manual. Scan the QR code or visit .com/Ftp/EN/Downloads/User%20Manual/GW_SolarGo_User%20Manual-EN.pdf to get the user manual. SolarGo App... Page 59 08 System Commissioning User Manual V1.0-2024-04-08 play SolarGo App Store