2 Safety Measures & Warning

This manual contains important instructions for SDT series of inverter which must be followed during installation.

The SDT series inverter of Jiangsu GOODWE Power Technology Co., Ltd. (hereinafter referred to as GOODWE) strictly conforms to related safety rules in design and test. Safety regulation relevant to the location shall be followed during installation, commissioning, operation and maintenance. Improper operation may have a risk of electric shock or damage to equipment and property. (SDT: Dual-MPPT, Three-Phase). Improper operation will cause serious harm to:

1. The life and well-being of the operators or a third party.
2. The inverter and other properties that belong to the operator or a third party.

Therefore the following safety instructions must be read and be always kept in mind prior to any work. All detailed work-related safety warnings and notes will be specified at the critical points in corresponding chapter. All installation and electrical work must only be performed by qualified personnel. They need to meet the standards as stated below:

- Been trained specially;
- Already completely read through and understood all related documents.
- Been familiar with safety requirements of electrical systems.

The inverter must be installed and maintained by professionals in compliance with local electrical standards, regulations and the requirements of local power authorities or companies.

- Improper handling of the device will pose a risk of injury.
- Always follow the instructions contained in the manual when moving or positioning the inverter.
- The weight of the equipment can cause injuries, serious wounds or bruise if improperly handled.
- Please install it where it is out of reach of children.
- Before installing and maintaining the inverter, it is crucial to make certain that the inverter is not electrically connected.
- Before maintaining the inverter, disconnect the connection between the AC grid and the inverter first, then disconnect the connection between the DC input and the inverter, the operator should wait at least 5 minutes after the disconnection in case of electric shock.
- All cables must be firmly attached, undamaged, properly insulated, and adequately dimensioned.
- The temperature of some parts of the inverter may exceed 60℃ during operation. To avoid being burnt, do not touch the inverter during operation. Let it cool down before touching it.
- Without permission, opening of the inverter’s front cover is not allowed. Users should not touch/replace any components of the inverter except the DC/AC connectors. Manufacturer assumes no responsibility for any damage to inverter or person caused by improper operation.

1 Symbols

- ! Failure to observe a warning indicated in this manual may result in injury.
- Recyclable materials
- ! Danger of high voltage & electric shock
- ! This side up - The package must always have the arrows point up
- ! Don't touch, hot surface!
- ! No more than six (6) identical packages be stacked on each other.
- ! Special disposal instructions
- ! Fragile
- ! Keep Dry
- Refer to operation instructions
- ! Wait at least 5 minutes after disconnecting the inverter before touching internal parts
- CE mark.
• The PV is not grounded under default configuration.
• Static electricity may damage electronic components. Appropriate measures must be adopted to prevent such damage to the inverter; otherwise the inverter may be damaged and the warranty will be annulled.
• Ensure that the output voltage of the proposed PV array is lower than the maximum rated input voltage of the inverter; otherwise the inverter may be damaged and the warranty will be annulled.
• If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
• When exposed to sunlight, the PV array will generate very high voltage which can cause electrical shock hazard. Please strictly follow the instruction we provided.
• PV modules should have an IEC61730 class A rating.
• Prohibit inserting or pulling the AC or DC terminals when the inverter is working. Otherwise the inverter will be destroyed.
• Only DC connectors provided by manufacturer are permitted for use, otherwise the inverter may be damaged and the warranty will be annulled.
• The inverter can exclude the possibility of DC residual currents to 6mA in the system, where an external RCD is required in addition to the built-in RCMU, and a type A RCD must be used to avoid tripping.
• The default photovoltaic module is not grounded.
• If there are more than 3 PV strings on input side, an additional fuse installation will be suggested.

The IP65 premise is that the machine is completely sealed. Please install it within one day after unpacking, otherwise please block the unconnected port and do not open it to ensure that the machine is not exposed to water and dust.

To our inverter product, Goodwe provides standard manufacture warranty which comes with the product and prepaid warranty extension solution to our customer. You can find the details about the terms and solution from below linkage.


3 Product Introduction

3.1 Inverter Overview

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PV Input Terminal</td>
<td>For PV string connection</td>
</tr>
<tr>
<td>2</td>
<td>DC Switch (Optional)</td>
<td>During normal operation it is in “on” state, it can shut down the inverter after it is disconnected from the grid by the AC breaker.</td>
</tr>
<tr>
<td>3</td>
<td>Waterproof Vent</td>
<td>Waterproof air permeable valve</td>
</tr>
<tr>
<td>4</td>
<td>Com module</td>
<td>For WiFi or LAN communication</td>
</tr>
<tr>
<td>5</td>
<td>Meter &amp; DRED/Remote Shutdown Communication Port</td>
<td>For Meter and DRED communication, For remote shutdown device connection</td>
</tr>
<tr>
<td>6</td>
<td>AC Output Terminal</td>
<td>For AC cable connection</td>
</tr>
<tr>
<td>7</td>
<td>Fans</td>
<td>There are two Fans to perform controlled force-air cooling</td>
</tr>
<tr>
<td>8</td>
<td>Indicator light</td>
<td>Display the state of the inverter</td>
</tr>
<tr>
<td>9</td>
<td>LCD</td>
<td>Inverter operation data viewing and parameter configuration.</td>
</tr>
<tr>
<td>10</td>
<td>Buttons</td>
<td>For configuration and viewing parameters.</td>
</tr>
</tbody>
</table>
4 Installation

4.1 Mounting Instructions
1. In order to achieve optimal performance, the ambient temperature should be lower than 45°C.
2. For easy maintenance, we suggest to install the inverter at eye level.
3. Inverters should not be installed near flammable and explosive items. Strong electro-magnetic charges should be kept away from installation site.
4. Product label and warning symbols should be placed at a location that is easy to read by the users.
5. Make sure to install the inverter at a place where it is protected from direct sunlight, rain and snow.

4.2 Equipment Installation

4.2.1 Select The Installation Location
1. Take the bearing capacity of the wall into account. The wall (such as concrete walls and metal structures) should be strong enough to hold the weight of the inverter over a long period of time.
2. Install the unit where it is accessible to service or do the electrical connection.
3. Do not install the unit on the wall of flammable material.
4. Make sure the installation location is well ventilated.
5. Inverters should not be installed near flammable or explosive items. Any strong electro-magnetic equipment should be kept away from installation site.
6. Install the unit at eye level to for convenient operation and maintenance.
7. Install the unit vertically or tilted backwards of no more than 15 degrees, no lateral tilt is allowed. And wiring area should be facing downwards. Horizontal installation requires more than 250mm off the ground.
For dissipation of heat and convenience of dismantling, clearances around the inverter must meet the standard as shown below:
The installation position should not prevent access to the disconnection means.

### 4.3 Electrical Connection

#### 4.3.1 Connection To Grid (AC Side Connection)

1. Measure the voltage and frequency of grid-connected access point, and make sure it is in accordance with the grid-connected standard of inverter.
2. It is recommended to add breaker or fuse to AC side. The specification should be more than 1.25 times of rated of AC output current.
3. The PE line of inverter should be connected to the earth, make sure that the impedance between the neutral wire and earth wire is less than 10 ohm.
4. Disconnect the breaker or fuse between the inverter and the utility.
5. Connect the inverter to the grid as follows:
   - The wiring installation method on the AC output side is shown as below.
6. The AC line construction shall be such that if the cord should slip from its anchorage, placing a strain on conductors, the protective earthing conductor will be the last to take the strain, such as the PE line is longer than L and N.

### 4.2.2 Mounting Procedure

1. Use the wall-mounted bracket as a template and drill holes in the wall, 10 mm in diameter and 80 mm deep.
2. Fix the wall-mounted bracket on the wall by using the expansion bolts in the accessories bag.
3. Hold the inverter by the side groove.
4. Install the inverter on the wall-mounted bracket.

---

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Installation instruction of Exceedconn series.

When unplugging the AC terminals, press the button and hold it to unlock

Make sure the terminal is rotated to the lock position before the inverter is started

4.3.2 AC circuit breaker and leakage current protection device
In order to ensure that the inverter can be safely and reliably disconnected from the power grid, please install an independent two pole circuit breaker to protect the inverter.

<table>
<thead>
<tr>
<th>Inverter model</th>
<th>Recommended circuit breaker specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>GW4K-DT / GW5K-DT / GW6K-DT</td>
<td>16A</td>
</tr>
<tr>
<td>GW8K-DT / GW10KT-DT</td>
<td>25A</td>
</tr>
<tr>
<td>GW12KT-DT / GW15KT-DT</td>
<td>32A</td>
</tr>
</tbody>
</table>

Note: Multiple inverters are not allowed to share a circuit breaker.

The integrated leakage current detection device of the inverter can detect external leakage current in real time. When the detected leakage current exceeds the limit value, inverter will quickly disconnect from the grid, if the leakage current protection device is installed externally, the action current should be 300mA or higher.

4.3.3 DC Side Connection
1. Before connecting the PV strings, please ensure that the plug connectors have the correct polarity. Incorrect polarity could permanently damage the unit.
2. The open circuit voltage of the PV strings cannot exceed the maximum input voltage of the inverter.
3. Only DC connectors provided by manufacturer are permitted for use.
4. The positive and negative pole are not allowed to connect to the PE wire (Ground wire). Otherwise, it will damage the unit.
5. Do not connect positive or negative pole of PV string to PE wire. Otherwise, it will cause damage to inverter.
6. Positive cable shall be red, negative cable shall be black.
7. The minimum insulation resistance to ground of the PV panels for SDT series must exceed 33.4K \(\Omega\) (R=1000/30mA). There is a risk of shock hazard if the requirements of minimum resistance are not met.

There are four types of DC connectors, DEVALAN, SUNCLIX/MC4, AMPHENOL H4 and QC4.10 series.

DC Cable specification.

DC Cable should use dedicated PV cable (Suggest using 4mm PV1-F wire).
The installation method of DC connector.

4.3.3 Earth Terminal Connection
The inverter is equipped with earth terminal according to the requirement of EN 50178.
All non-current carrying exposed metal parts of the equipment and other enclosures in the PV power system must be grounded.

Please follow the steps below to connect "PE" cable to ground.

**Step 1**
Strip the wire insulation sheet of a suitable length with a wire stripper.

**Step 2**
Insert the stripped wire into the terminal and compress it tightly by crimping pliers.

**Step 3**
Fix the earth wire on the machine.
In order to improve the corrosion resistance of the terminal, it is recommended to apply silica gel on the earth terminal for corrosion protection after the grounding cable assembly is completed.

---

4.4 Communication Connection

4.4.1 Wi-Fi Communication

The Wi-Fi communication function is only applicable if the inverter has a WiFi module. The detailed configuration instruction please refer to "Wi-Fi Configuration Instruction" in the accessory box.

After configuration, please browse http://www.goodwe-power.com to create PV station.

The WiFi module installation of SDT series are shown as below.
4.3.6 Export Power Limit Connection Diagram
The methods of connecting the Power Limiting device is shown below.

Step 1:
Plug out the terminal and dismantle the resistor / short wire on it, if you want use the DRED and Remote shutdown function.

Note: DRED should be connected through "6-Pin COM port". Remote Shutdown device should be connected through "2-Pin COM port".

4.3.7 DRED / Remote shutdown / Smart Meter (Power Limit Device) connection
DRED (Demand response enabling device) is only for Australian and New Zealand installations, in compliance with Australian and New Zealand safety requirements. And DRED is not provided by manufacturer.

Remote shutdown is only for Europe installations, in compliance with European safety requirements. And Remote shutdown device is not provided by manufacturer.

Please follow the steps below to complete the connection.

Step 2-1 For DRED:
Put the cable through the plate.

Step 2-2 For Remote shutdown:
Put the cable through the plate.

Step 2-3 For Meter:
Put the cable through the plate.

Step 3:
Connect the terminal to the right position onto the inverter.
5 System Operation

5.1 LCD Panel And LED

As a human-computer interaction interface, LCD display panel comprises of LED indicators, buttons and LCD display on the front panel of the inverter. LED indicates the working status of the inverter. Buttons and LCD are used for configuration and viewing parameters.

Inverter with LCD, indicator lights in Yellow/Green/Red correspondently refer to:

- Yellow: ON = Equipment power-on
- Green: ON = Inverter feeding power
- Red: ON = Fault occurred

For inverters without LCD, indicator lights in Green/Green/Green/Red correspondently refer to:

- Green: ON = Equipment power-on
- Green: ON = Inverter is feeding power
- Green: ON = Inverter is not feeding power
- Red: OFF= Equipment power-off

Note:
1. Meter is a non-standard accessory, please contact sales manager if you need.
2. Supported DRM command: DRM0, DRM5, DRM6, DRM7, DRM8.
3. Please refer to meter instruction guide.
4. DRED connection is only available for Australia and New Zealand.
5. Meter is required for the implementation of export power limiting function. After installation, you need to enable “Power Limit” function and set export power limiting value on the LCD via buttons according to “4.2 User Interface And System Operation”.

4.4.6 Earth Fault Alarm

In compliance with the section 13.9 of IEC62109-2, the SDT series inverter is equipped with an earth fault alarm. When earth fault occurs, the fault indicator at the front LED screen will light up. On inverters with Wi-Fi communication, the system sends an email with the fault notification to the customer. For inverters without Wi-Fi, the buzzer of the inverter will keep ringing for one minute and ring again after half an hour until the fault is resolved. (This function is only available in Australia and New Zealand).

4.4.7 SEMS Portal

SEMS Portal is an online monitoring system. After completing the installation of communication connection, you can access www.semsportal.com or download the App by scanning the QR code to monitor your PV plant and device.

Please contact the after-sales for more operation of SEMS Portal.
5.2 User Interface And System Configuration

5.2.1 Operation Method

There are two modes of button operation: Short press the button and long press the button.

In all levels of menu, if no action is taken, the backlight of the LCD display will switch off, the display will automatically revert to the first item of the first level menu, and any modifications made to the data will be stored into internal memory.

5.2.2 Set Safety Country

If display shows "GW6K-DT Pac=6000.0W", then long press the button to enter the second level menu. Short press to browse the countries available. Please wait after choosing the suitable country's safety setting, the display will show "setting..." and skip to "Set OK" or "Set Fail".

5.2.3 Display

A schematic of the display screen is shown as below:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Status</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run</td>
<td></td>
<td>SINGLE SLOW FLASH = Self check before grid connect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SINGLE FAST = Will connect with grid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON = WiFi connected / active</td>
</tr>
<tr>
<td>SEMS</td>
<td></td>
<td>BLINK 1 = Wireless system resetting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BLINK 2 = Wireless route problem</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BLINK 4 = Wireless server problem</td>
</tr>
<tr>
<td>Fault</td>
<td></td>
<td>OFF = Wireless not active</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON = Fault occurred</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF = No fault</td>
</tr>
</tbody>
</table>

NOTE:
Download SolarGo App from Google Play Store or Apple App Store to complete the system operation if the inverter has no LCD. You can also scan the QR code to download it.

5.2.4 Display Area

Line 1—Working status information

This area displays the status information. "Waiting Pac=0.0W" indicates the inverter is standing by for power generation; "Checking**S Pac=0.0W" (checking time is based on safety, and varies from country to country) indicates the inverter is self-checking, counting down and preparing for power generation. "Normal Pac=6000.0W" indicates the inverter is generating power. If any condition of the system is abnormal, the screen will display an error message.

Through Button operation, the screen can display different information such as operation parameters and power generation status in this area. There are two levels of menus, and the flow chart of first level menu is shown as the diagram.

5.2.5 Use Of LCD

The display allows accessing the configuration of the basic parameters. All the language, time and country settings can be configured by buttons. The menu, shown in the LCD displays area has two levels of menu. Short or long press the button will take you between menus and through each menu. Items in the first level menu that have no second level are locked. For these items, when the button is pressed for two seconds, the LCD will display the word "Lock" followed by data relating to the first level menu item. The locked menu can only be unlocked under system mode switching, fault occurrence or button operation.

5.2.6 Menu Introduction

- When the PV panel is feeding power to the inverter, the screen will show the first-level menu.
- The initial display is the the first item of the first level menu, and the interface displays the current status of the system, it shows "Waiting Pac=0.0W" in the initial state; it shows "Normal Pac=6000.0W" during power generation mode; if there is something wrong with the system, an error message is shown.

The way to view PV voltage, PV current, grid voltage, current and frequency:

- Short press the button to enter the E-Today menu which displays the total power generation for today.
- Short press the button to enter the E-Total menu which displays the total power generation up to today.
- Short press the button to enter the Vpv menu which displays the PV voltage in "V".
- Short press the button to enter theIpv menu which displays the PV current in "A".
- Short press the button to enter the Vac menu which displays the grid voltage in "V".
- Short press the button to enter the Iav menu which displays the grid current in "A".
- Short press the button to enter the Frequency menu which displays the grid frequency in HZ.
- View error message.

Short press the button once more to enter the "Error Message History" menu.
Long press the button to enter the second level menu of error detection. The newest three inverter error message will be shown by short pressing the button in this second level menu. The records include error message and error times (190520 15:30).

- The way to view model name and reconfigure safety country:
From the error message history item in the first level menu, short press the button to check the model name.

If you want to change the safety country setting, please long press the button to enter the second level menu.

In the second level menu, you can change the safety country with short pressing the button. If you change the safety country, the display will show: "Setting...". Then the display will show: "Set Fail" or "Set OK" 10 seconds later. If you do nothing in second level menu and without pressing button, the backlight of display will power off and return to the first level menu.

- View software version:
From the model name item in the first level menu, short press the button once to see software version.

The current software version can be shown in this menu.

### 5.2.7 Basic Setting

- Set language:
Short press the button to enter the “Set Language” menu. Long press the button to enter the second level menu. Short press the button to browse the languages available.

- Set time:
From the first level “Set Language” menu, short press the button to enter the “Set Time” menu. Long press the button to enter the second level menu. You can enter the protocol display menu and choose the protocol. The default password is "1111".

- Set protocol:
This function is only opened for service personnel, setting a wrong protocol could lead to communication failure.

From the first level Set Time menu, short press the button once to enter protocol display menu. Press the Button for 2s to enter submenu. The circulatory submenu includes two protocols can be found. The protocol can be chosen by short pressing the button in this second level menu. The inverter will store the chosen protocol if there is no input for 10 seconds and LCD display will automatically return to main menu and the backlight will be turned off.
• MPPT function for Shadow:

The default setting for shadow optimizer is disabled.

Please do not enable the function when there is no shadow on panel. Otherwise it could lead to generating less power.

Press the Button to enter Shadow Optimize menu. When it shows "Shadow MPPT OFF", it means the shadow optimizer is off. Press the button for 2s to disable the function.

5.2.8 Power Limiting Function Setting

The Operations of the ON/OFF power limiting function (the default is OFF) and the power limiting settings (the default is 2% rated) are shown as below.

such as a CT/Meter or the power limiting device is not working.

You need to enter a password before being able to set the power limit. The default password is "1111". (only for Australian security regulations)

5.2.9 Operation Of Display When Commissioning.

When the input voltage reaches the inverter's turn-on voltage, the LCD starts to work, the yellow light is turned on and the LCD displays "Waiting". More information will be displayed within a few second. If the inverter is connected to the grid, "Checking XXs" will be displayed and a countdown will commence from 30 seconds. When it shows "00S", you will hear the relay be triggered 4 times. Then the LCD will display "Normal". The instant power output will be shown at the bottom left of the LCD.

5.3 Wi-Fi Reset & Wi-Fi Reload

These functions are only available for Wi-Fi model inverters.

Wi-Fi reload function is used to change the Wi-Fi configuration to default value. Please configure the Wi-Fi again after using the function.

Short press the button until the LCD displays "Wi-Fi Reset", then long press the button until the LCD displays "Wi-Fi Resetting...". Stop pressing and wait for the screen to display "Wi-Fi Reset OK" or "Wi-Fi Reset Failed".

Press the Button until the LCD displays "Wi-Fi Reload", then long press until the LCD displays "Wi-Fi Reloading...". Stop pressing and wait for the screen showing "Wi-Fi Reloading OK" or "Wi-Fi Reloading Failed".

5.4 Error Message

An error message will be displayed on the LCD if a fault occurs.

<table>
<thead>
<tr>
<th>Error message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fac Fail</td>
<td>Grid frequency out of permissible range.</td>
</tr>
<tr>
<td>Isolation Fail</td>
<td>Ground insulation impedance is too low.</td>
</tr>
<tr>
<td>Vac Fail</td>
<td>Grid voltage out of permissible range.</td>
</tr>
<tr>
<td>PV Over Voltage</td>
<td>Overvoltage at DC input.</td>
</tr>
<tr>
<td>Over Temperature</td>
<td>Over temperature on the case.</td>
</tr>
<tr>
<td>Utility Loss</td>
<td>Utility is unavailable.</td>
</tr>
</tbody>
</table>

5.5 Precaution For Initial Startup

1. Make sure the AC circuit is connected and AC breaker is turned off.
2. Make sure the DC cable between inverter and PV string is connected, and the PV voltage is normal.
3. Turn on the DC switch, and set safety according to the local regulation.
4. Turn on the AC breaker. Check the inverter work normal.

5.6 Special Adjustable Setpoints

The inverter has a field where the user could set functions, such as trip point, trip time, time of reconnection, active and inactive of QU curve and PU curve. Fuctions can be adjusted through special software. If interested, please contact After-Sales. The software instructions are available on the official website. Alternatively, please contact after-sales for more information.
## Troubleshooting

In most situations, the inverter requires few maintenance. However, if the inverter is not working properly, please try the following troubleshooting solutions:

- When a problem occurs, the red (fault) LED indicator on the front panel will light up and the LCD screen will display the type of the fault. The following table lists error messages and the solutions for associated faults.

<table>
<thead>
<tr>
<th>Type of fault</th>
<th>Troubleshooting</th>
</tr>
</thead>
</table>
| **Isolation Failure** | 1. Check the impedance between Ground and PV (+) & PV (-). The impedance value must be greater than 100kΩ. Make sure the inverter is earthed.  
2. Contact local service office for help if the problem still persist. |
| **Ground Fault**  | 1. The ground current is too high.  
2. Unplug the inputs from the PV generator and check the peripheral AC system.  
3. When the problem is cleared, reconnect the PV panel and check the Inverter status.  
4. Contact local service office for help if the problem still persist. |
| **Vac Failure**   | 1. The PV Inverter will automatically restart within 5 minutes if the grid returns to normal.  
2. Make sure grid voltage conforms with the specification.  
3. Make sure neutral (N) wire and PE wire are connected well.  
4. Contact local service office for help if the problem still persist. |
| **Fac Failure**   | 1. Grid is not connected.  
2. Check grid connection cables.  
3. Check availability of grid. |
| **Utility Loss**  | 1. Not connect to the grid.  
2. Check if the power grid is connected to cable.  
3. Check the availability of power grid. |
| **PV Over Voltage** | 1. Check if the PV open circuit voltage is higher or too close to the maximum input voltage or not.  
2. If the problem still persist when PV voltage is less than the maximum input voltage, contact local service office for help. |
| **Over Temperature** | 1. The internal temperature is higher than normal value specified.  
2. Reduce ambient temperature.  
3. Move the inverter to a cool place.  
4. If the problem still exists, contact local service office for help. |
| **System Failure** | 1. Turn off DC switch of the inverter.  
2. Wait till the inverter’s LCD is off.  
3. Turn on DC switch and make sure it is connected.  
4. If the problem still exists, contact local service office for help. |

### Note:

When sunlight is insufficient, the PV inverter may continuously start up and shut down automatically due to insufficient power generation by the PV panels, which would not lead to inverter damage. If the problem still exists, please call the local service office.

<table>
<thead>
<tr>
<th>Type of fault</th>
<th>Troubleshooting</th>
</tr>
</thead>
</table>
| **Inverter Failure** | 1. Turn off DC switch, take off DC connector, measure the voltage of PV array.  
2. Plug in DC connector, and turn on DC switch.  
3. If PV array voltage is lower than 250V, please check configuration of inverter module.  
4. If voltage is higher than 250V, please contact local office. |
| **Others**        | No display      |

## Type of fault Troubleshooting

<table>
<thead>
<tr>
<th>Type of fault</th>
<th>Troubleshooting</th>
</tr>
</thead>
</table>
| **Relay-Check Failure** | 1. Turn off DC switch of the inverter.  
2. Wait till the inverter’s LCD is off.  
3. Turn on DC switch and make sure it is connected.  
4. If the problem still exists, contact local service office for help. |
| **DCI Injection High** | 1. Turn off DC switch, take off DC connector, measure the voltage of PV array.  
2. Plug in DC connector, and turn on DC switch.  
3. If PV array voltage is lower than 250V, please check configuration of inverter module.  
4. If voltage is higher than 250V, please contact local office. |
| **EEPROM R/W Failure** | 1. Turn off DC switch of the inverter.  
2. Wait till the inverter’s LCD is off.  
3. Turn on DC switch and make sure it is connected.  
4. If the problem still exists, contact local service office for help. |
| **SPI Failure**    | 1. Turn off DC switch of the inverter.  
2. Wait till the inverter’s LCD is off.  
3. Turn on DC switch and make sure it is connected.  
4. If the problem still exists, contact local service office for help. |
| **DC BUS High**    | 1. Turn off DC switch of the inverter.  
2. Wait till the inverter’s LCD is off.  
3. Turn on DC switch and make sure it is connected.  
4. If the problem still exists, contact local service office for help. |
| **GFCI Failure**   | 1. Turn off DC switch of the inverter.  
2. Wait till the inverter’s LCD is off.  
3. Turn on DC switch and make sure it is connected.  
4. If the problem still exists, contact local service office for help. |

### Others:

- No display

Note:

When sunlight is insufficient, the PV inverter may continuously start up and shut down automatically due to insufficient power generation by the PV panels, which would not lead to inverter damage. If the problem still exists, please call the local service office.
### 7 Technical Parameters

<table>
<thead>
<tr>
<th>Technical Data</th>
<th>GW4K-DT</th>
<th>GW4KL-DT</th>
<th>GW5K-DT</th>
<th>GW5KL-DT</th>
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<tbody>
<tr>
<td><strong>PV Input Data</strong></td>
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<tr>
<td>Max. DC Power (W)</td>
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<td>180–550</td>
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<tr>
<td>Start-up Voltage (V)</td>
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<td>Min. Feed-in Voltage(V)</td>
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<td>12.5/12.5</td>
<td>12.5/12.5</td>
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<td>15.6/15.6</td>
<td>15.6/15.6</td>
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<td><strong>AC Output Data</strong></td>
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<td>400, 3L/N/PE</td>
<td>400, 3L/N/PE</td>
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<tr>
<td>Nominal Frequency (Hz)</td>
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<td>50/60</td>
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<td>&lt;1 (Adjustable from 0.8 leading to 0.8 lagging)</td>
<td>&lt;1 (Adjustable from 0.8 leading to 0.8 lagging)</td>
<td>&lt;1 (Adjustable from 0.8 leading to 0.8 lagging)</td>
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<td>&lt;3%</td>
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<td>Europe Efficiency</td>
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<td>97.5%</td>
<td>97.6%</td>
<td>97.5%</td>
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<tr>
<td><strong>Protection</strong></td>
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<tr>
<td>Anti-islanding Protection</td>
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<td>Integrated</td>
<td>Integrated</td>
<td>Integrated</td>
</tr>
<tr>
<td>Input Reverse Polarity Protection</td>
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<td>Integrated</td>
<td>Integrated</td>
<td>Integrated</td>
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<td>Integrated</td>
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<td>DC Surge Protection</td>
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<td>Integrated (Type III)</td>
<td>Integrated (Type III)</td>
<td>Integrated (Type III)</td>
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<tr>
<td>Output Over Current Protection</td>
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<tr>
<td>Output Short Protection</td>
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<td>Output Over Voltage Protection</td>
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<tr>
<td>Operating Temperature Range (℃)</td>
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<td>≤30–60</td>
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<td>≤30–60</td>
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<tr>
<td>Relative Humidity</td>
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<td>0–100%</td>
<td>0–100%</td>
<td>0–100%</td>
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<tr>
<td>Operating Altitude (m)</td>
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<td>≤4000</td>
<td>≤4000</td>
<td>≤4000</td>
</tr>
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<td>WIFI or LAN</td>
<td>WIFI or LAN</td>
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<td>LED or LCD</td>
<td>LED or LCD</td>
<td>LED or LCD</td>
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<td>Size (Width<em>Height</em>Depth mm)</td>
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<td>354<em>433</em>147</td>
<td>354<em>433</em>147</td>
<td>354<em>433</em>147</td>
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<td>Protection Degree</td>
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<td>IP65</td>
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<tr>
<td>Night Self Consumption (W)</td>
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<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
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<td>Topology</td>
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<tr>
<td><strong>Certifications &amp; Standards</strong></td>
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<td>Grid Regulation</td>
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<td>Visit homepage to achieve information.</td>
<td>Visit homepage to achieve information.</td>
<td>Visit homepage to achieve information.</td>
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<tr>
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<tr>
<td>EMC</td>
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</tbody>
</table>
Please make sure the voltage of PV string does not exceed the Max DC voltage.

### Technical Data

<table>
<thead>
<tr>
<th>PV Input Data</th>
<th>GW12K-DT</th>
<th>GW15KT-DT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. DC Power (W)</td>
<td>18000</td>
<td>22500</td>
</tr>
<tr>
<td>Max. DC Input Voltage (V) [1]</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>MPPT Range (V)</td>
<td>180~850</td>
<td>180~850</td>
</tr>
<tr>
<td>Start-up Voltage (V)</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>Min. Feed-in Voltage (V)</td>
<td>210</td>
<td>210</td>
</tr>
<tr>
<td>Nominal DC Input Voltage (V)</td>
<td>620</td>
<td>620</td>
</tr>
<tr>
<td>Max. Input Current (A)</td>
<td>12.5/12.5</td>
<td>12.5/25</td>
</tr>
<tr>
<td>Max. Short Current (A)</td>
<td>15.6/31.2</td>
<td>15.6/31.2</td>
</tr>
<tr>
<td>No. of MPP Trackers</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No. of Input Strings Per MPP Tracker</td>
<td>1/2</td>
<td>1/2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AC Output Data</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Nominal Output Power (W)</td>
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<td>15000</td>
</tr>
<tr>
<td>Max. Output Apparent Power (VA)</td>
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<td>16500</td>
</tr>
<tr>
<td>Nominal Output Voltage (V)</td>
<td>400, 3L/N/PE</td>
<td>400, 3L/N/PE</td>
</tr>
<tr>
<td>Nominal Output Frequency (Hz)</td>
<td>50/60</td>
<td>50/60</td>
</tr>
<tr>
<td>Max. Output Current (A)</td>
<td>20.3</td>
<td>24</td>
</tr>
<tr>
<td>Output Power Factor</td>
<td>&lt;3%</td>
<td>&lt;3%</td>
</tr>
<tr>
<td>Output THDi (Adjust. from 0.8 leading to 0.8 lagging)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Efficiency

| Max. Efficiency | 98.3% |
| Europe Efficiency | 97.7% |

### Protection

| Anti-islanding Protection | Integrated |
| Input Reverse Polarity Protection | Integrated |
| Insulation Resistor Detection | Integrated |
| DC Surge Protection | Integrated (Type III) |
| AC Surge Protection | Integrated (Type III) |
| Residual Current Monitoring Unit | Integrated |
| Output Over Current Protection | Integrated |
| Output Short Protection | Integrated |
| Output Over Voltage Protection | Integrated |

### General Data

| Operating Temperature Range (℃) | -30~60 |
| Relative Humidity | 0~100% |
| Operating Altitude (m) | <4000 |
| Cooling | WiFi or LAN |
| Communication | LED or LCD |
| Weight (kg) | 15 |
| Size (Width*Height*Depth mm) | 454*433*147 |
| Protection Degree | IP65 |
| Night Self Consumption (W) | <1 |
| Topology | Transformerless |

### Certifications & Standards

- Grid Regulation
- Safety Regulation
- EMC

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**Note:**

**Overvoltage Category Definition**

Category I: applies to equipment connected to a circuit where measures have been taken to reduce transient overvoltage to a low level.

Category II: applies to equipment not permanently connected to the installation. For example, appliances, portable tools and other plug-connected equipment;

Category III: applies to fixed downstream equipment, including the main distribution board. For example, switchgear and other equipment in an industrial installation;

Category IV: applies to equipment permanently connected at the origin of an installation (upstream of the main distribution board). For example, electricity meters, primary overcurrent protection equipment and other equipment connected directly to outdoor open lines.

**Moisture Location Category Definition**

<table>
<thead>
<tr>
<th>Moisture parameters</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>3K3</td>
</tr>
<tr>
<td>Humidity Range</td>
<td>4K2</td>
</tr>
<tr>
<td></td>
<td>4K4H</td>
</tr>
<tr>
<td>0~+40℃</td>
<td>5%~100%</td>
</tr>
</tbody>
</table>

**Environment Category Definition**

Outdoor: the ambient air temperature is -20~50℃. Relative humidity range is from 4% to 100%, applied to PD3.

Indoor unconditioned: the ambient air temperature is -20~50℃. Relative humidity range is from 5% to 95%, applied to PD3.

Indoor conditioned: the ambient air temperature is 0~40℃. Relative humidity range is from 5% to 85%, applied to PD2.

**Pollution Degree Definition**

Pollution degree 1: No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.

Pollution degree 2: Normally only non-conductive pollution occurs. However, a temporary conductivity occasionally caused by condensation must be expected.

Pollution degree 3: Conductive pollution occurs. Or dry, non-conductive pollution becomes conductive due to condensation, which is expected.

Pollution degree 4: Persistent conductive pollution occurs. For example, the pollution cause by conductive dust, rain and snow.

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[1] Please make sure the voltage of PV string does not exceed the Max DC voltage.