



GOODWE
your solar engine

NS & DNS Series INTRODUCTION



Contents



01

- Product Introduction
- Development Background
- New Product Feature

02

- Installation Guide
- Booting-Up Process
- Internal Structure
- Trouble Shooting

03

- Technical Data
- Certifications
- Warranty & Service



1.1 Product Introduction

- GoodWe NS & DNS series inverter adopts cutting-edge technology in photovoltaic fields, designed under modern industrial concept. Inheriting all the excellent traits from SS and DS series, NS & DNS series are much smarter in size and weight. Excellent cooling design, comprehensive software and hardware technology is guaranteed to maximize its life-span.





1.2 Development Background

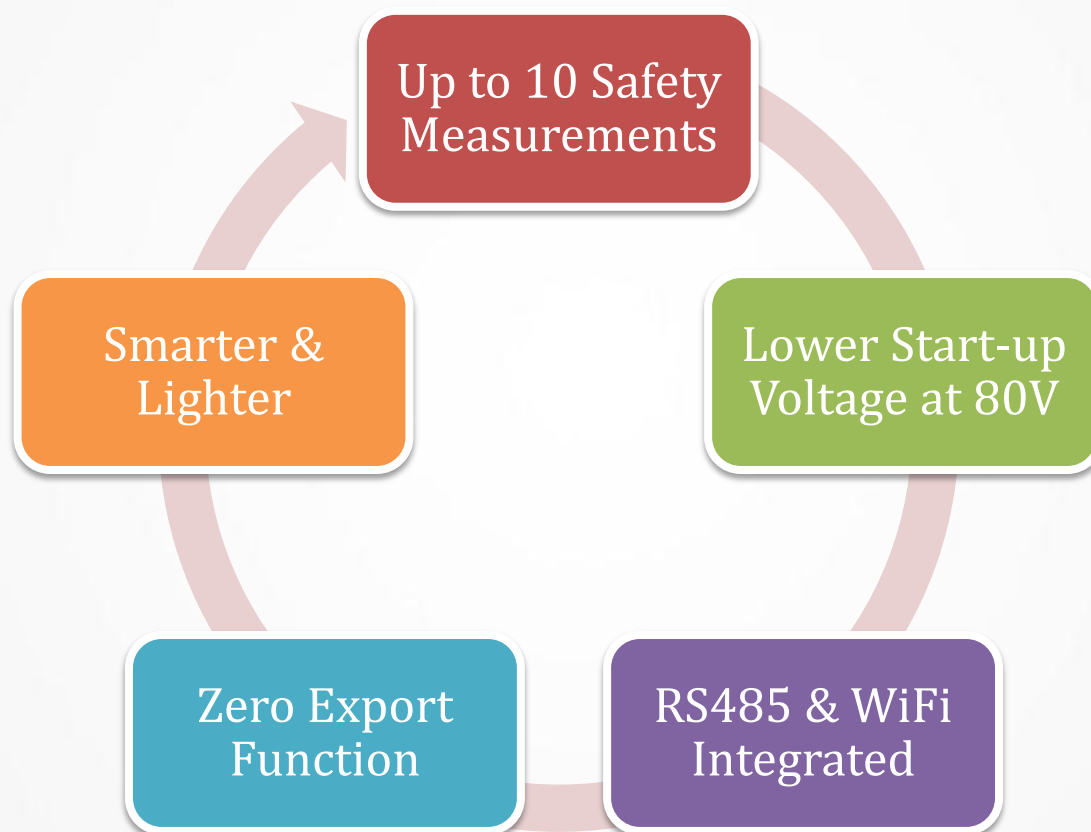
➤ With the solar industry grows, more and more functions are required for photovoltaic inverter, online monitoring、better performance、anti-reverse current function and etc.

GoodWe brings up second generation of single phase inverter. Below is the comparison between SS/DS and NS/DNS series.

Comparison Between SS/DS and NS/DNS		
Parameters	SS/DS	NS/DNS
Mini. Start-Up Voltage (V)	125	80
Mini. Size (W*H*D)	390*417*142	344*274.5*128
Mini. Weight (Kg)	12	7.5
Monitoring	WiFi or RS485 (Optional)	RS485 & WiFi Integrated
Zero Export Function	ARCB	CT+Meter (Designed for AU)



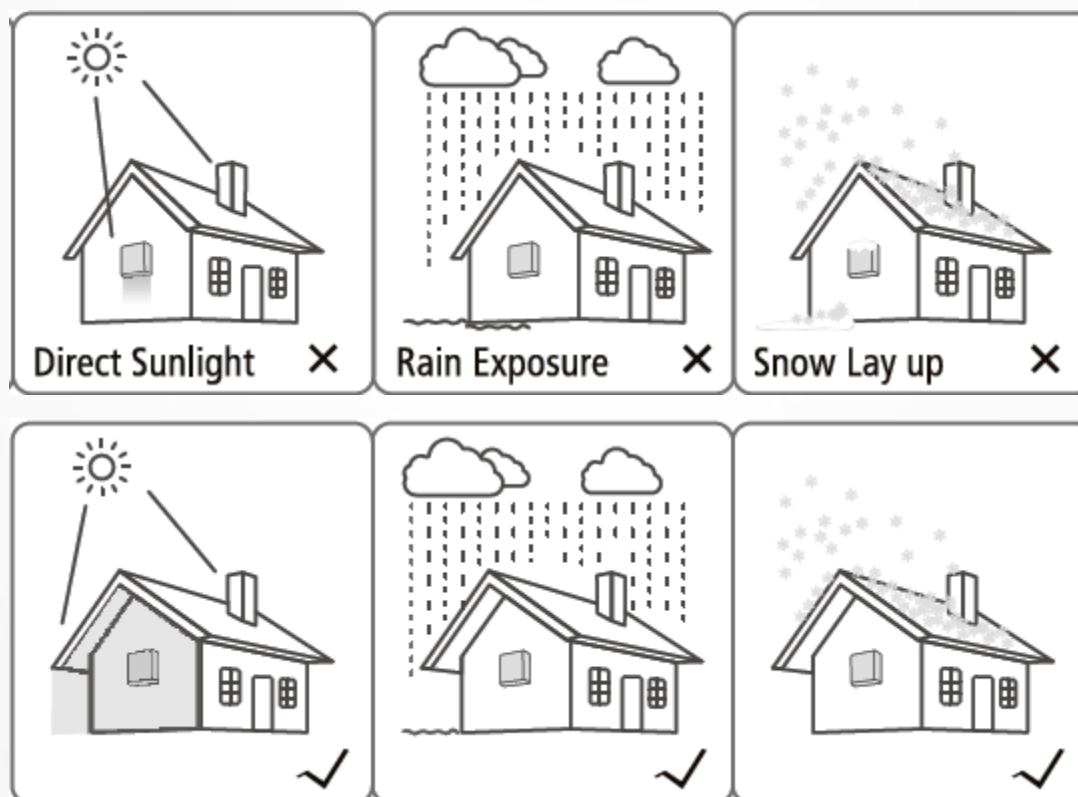
1.3 New Product Feature



2.1 Installation Guide

- Mounting Instruction

Note: Every GoodWe inverter has IP65 protection, the mounting instruction is for better performance and longer lifetime.

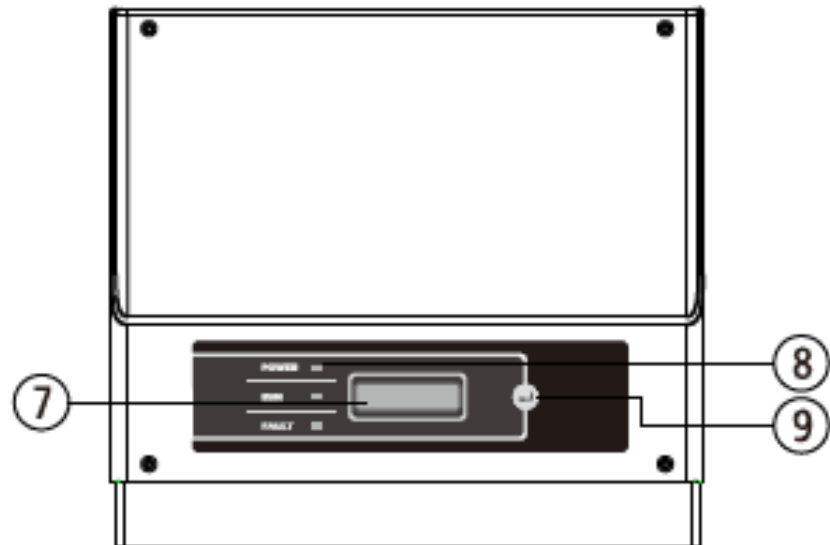
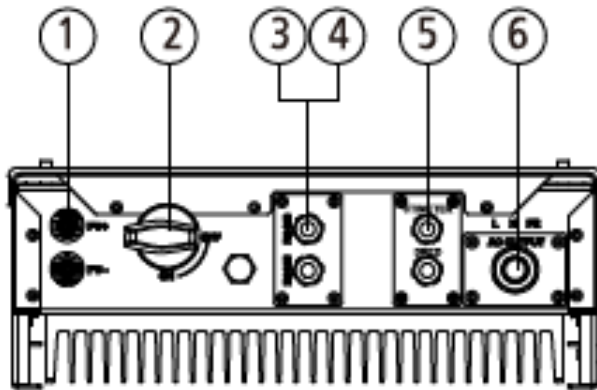




2.1 Installation Guide

• NS Series 1~3kW Inverter Overview

1. PV Input Terminals
2. DC Switch (Optional)
3. USB Port & RS485 Port
4. WiFi BOX (Optional)
5. CT and DRED function(Optional)
6. AC Output Terminals
7. LCD Display
8. Indicator Lights
9. Button

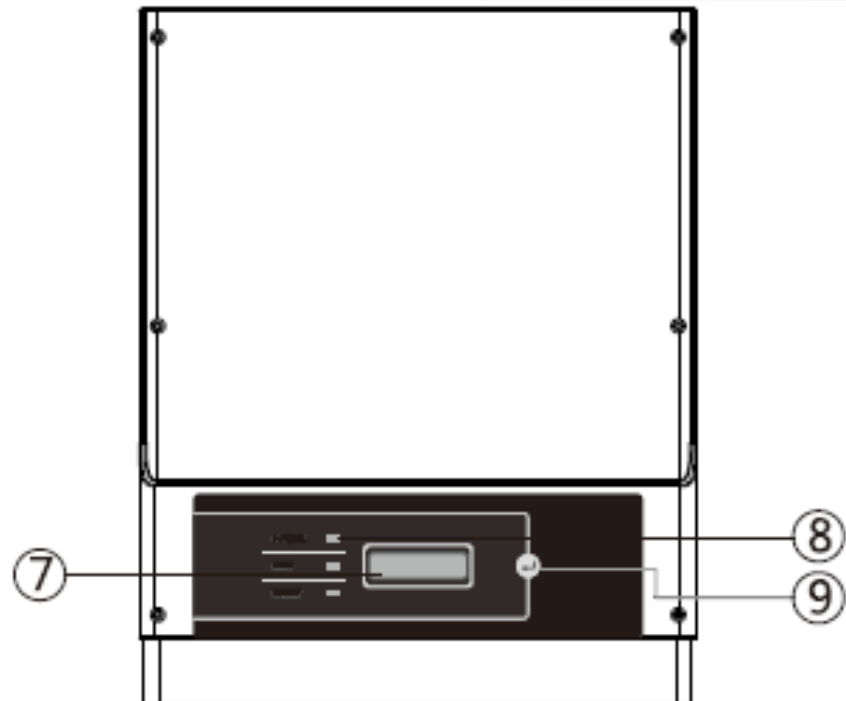
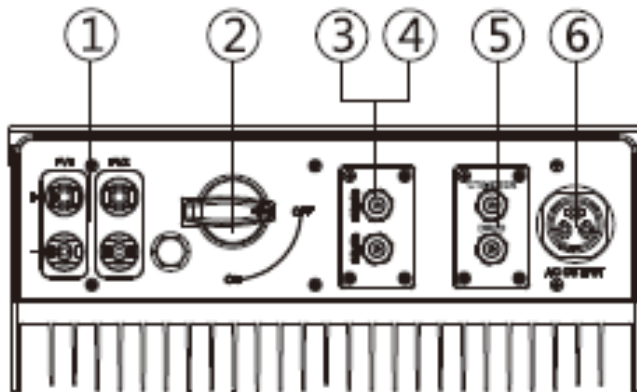




2.1 Installation Guide

• NS Series 3.6~5kW and DNS Series 3~5kW Inverter Overview

1. PV Input Terminals
2. DC Switch (Optional)
3. USB Port & RS485 Port
4. WiFi BOX (Optional)
5. CT and DRED function(Optional)
6. AC Output Terminals
7. LCD Display
8. Indicator Lights
9. Button



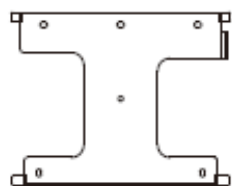


2.1 Installation Guide

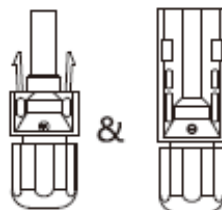
• Package



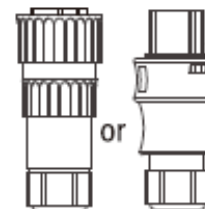
Inverter×1



Wall-mounted
Bracket×1



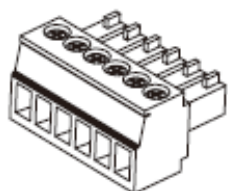
DC PlugX2pair^①



AC PlugX1^②



AC Terminal×4^③



6Pin Terminal×2^④
2Pin Terminal×1



Screw×4



Expansion Bolts×5

User
manual

Quick
Installation
Guide

User Manual×1
Quick Installation
Guide×1

Wi-Fi
Connection
Guide

Wi-Fi Connection
Guide×1
(WiFi BOX only)

① There is 1 pair of DC connectors in NS Series 1-3KW. and 2 pairs of DC connectors in NS Series 3.6-5KW and DNS Series 3-5KW ;

② AC Plug is applied to both NS Series 3.6-5KW and DNS Series 3-5KW;

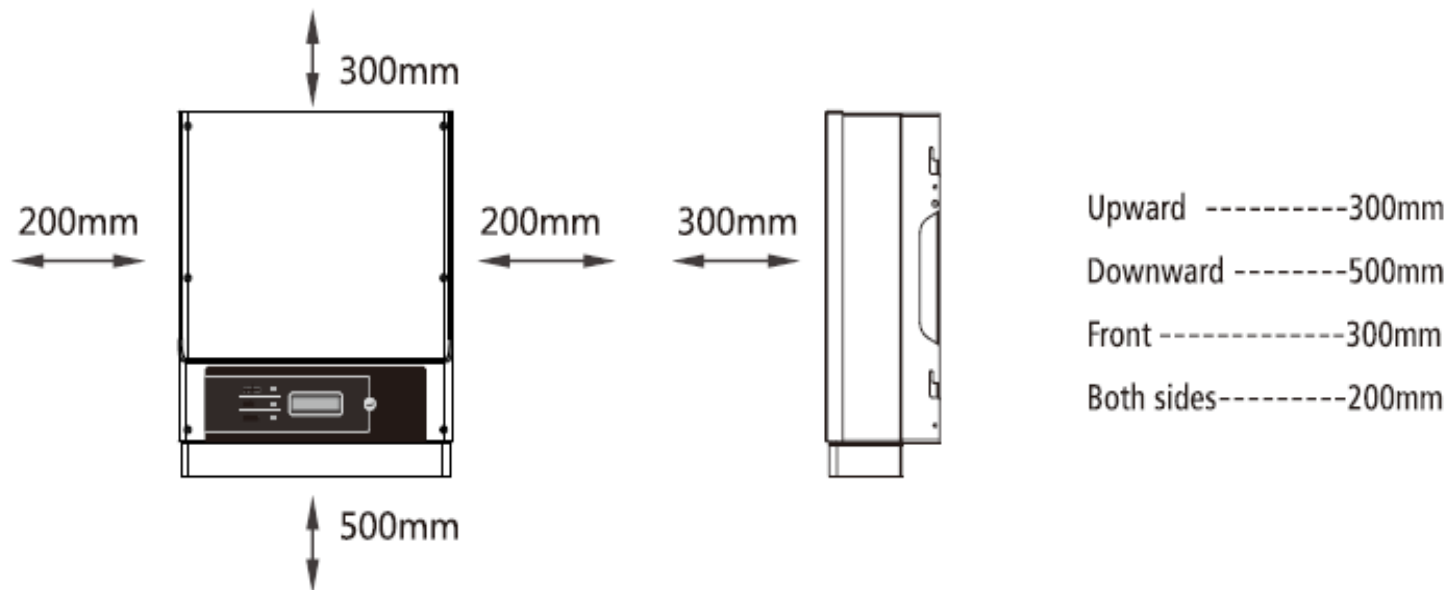
③ AC terminal is applied to NS Series 1-3KW;

④ There are 6 Pin terminal for DRED function , 6Pin terminal for RS485 function, 2Pin terminal for CT function.



2.1 Installation Guide

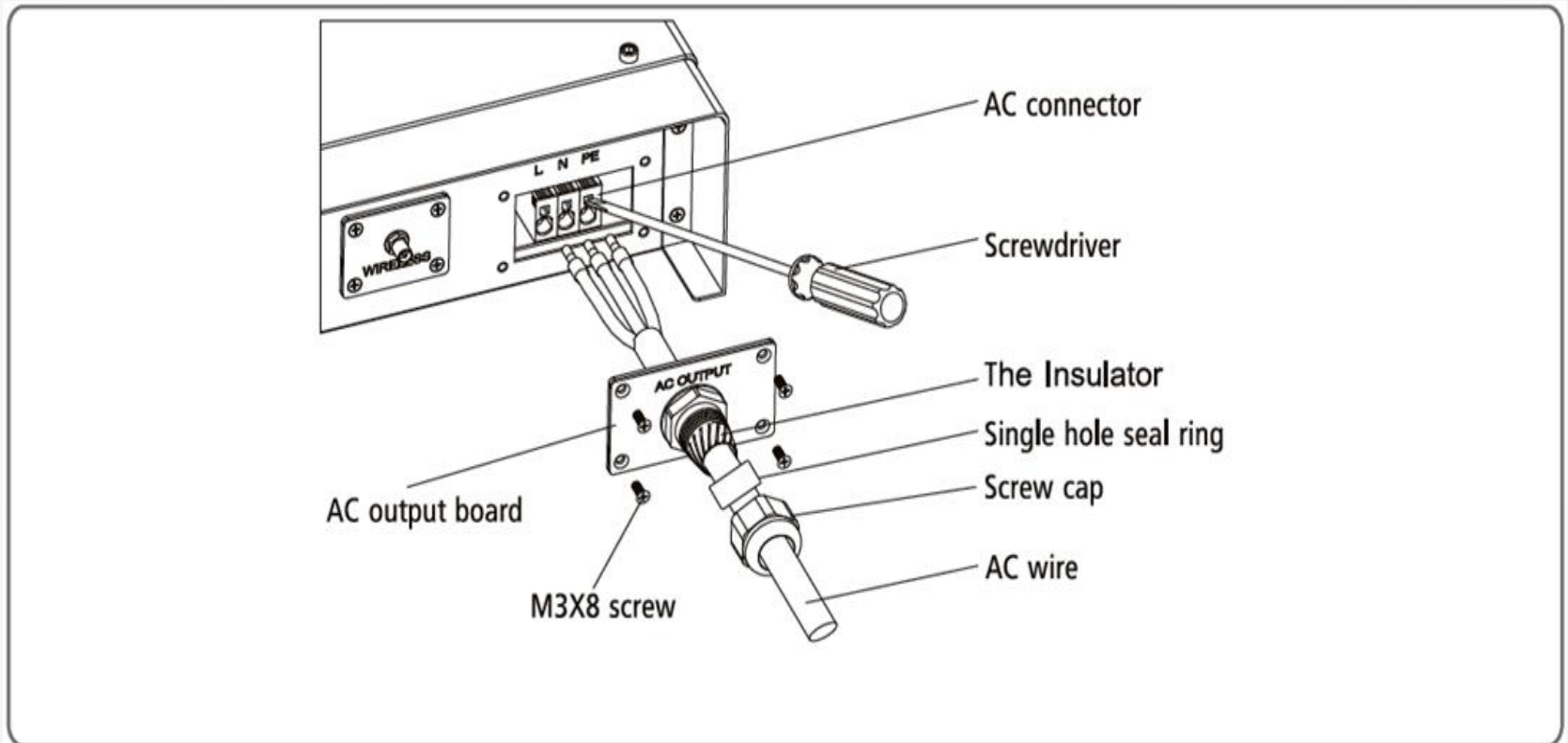
- Selecting the installation location





2.1 Installation Guide

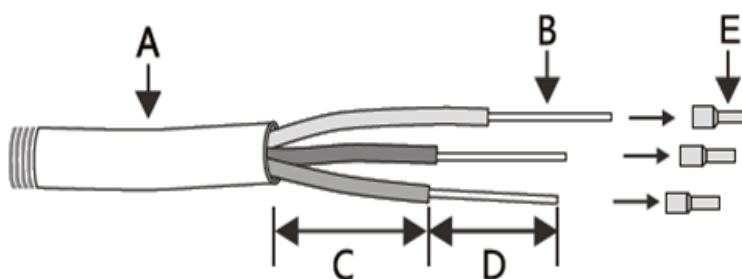
- AC Terminals Connection
 - Make sure the cable is connected well and **can't be plugged out after connecting with AC terminals.**



2.1 Installation Guide

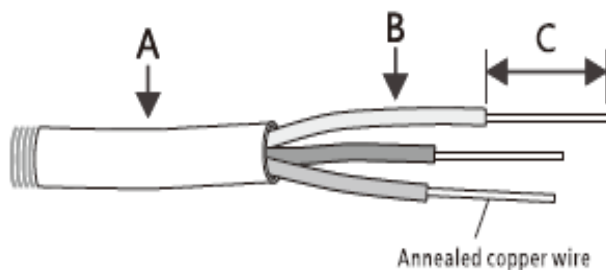
- AC Terminals Connection

- Cable specification of NS 1~3kW AC side:



Grade	Description	Value
A	O.D	Max 12mm
B	Conductor Material O.D	2.2~2.7mm
C	Wire Length	25mm
D	Bare Wire Length	12mm
E	Terminal	

- Cable specification of NS 3.6~5kW and DNS 3~5kW AC side:



Grade	Description	Value
A	O.D.	10~12mm
B	Conductor Material Sectional Area	2.5~4mm ²
C	Bare Wire Length	10mm around



2.1 Installation Guide

- AC Terminals Connection

- There are two AC connector brands for NS 3.6kW~5kW and DNS 3~5kW inverter which showed as below:

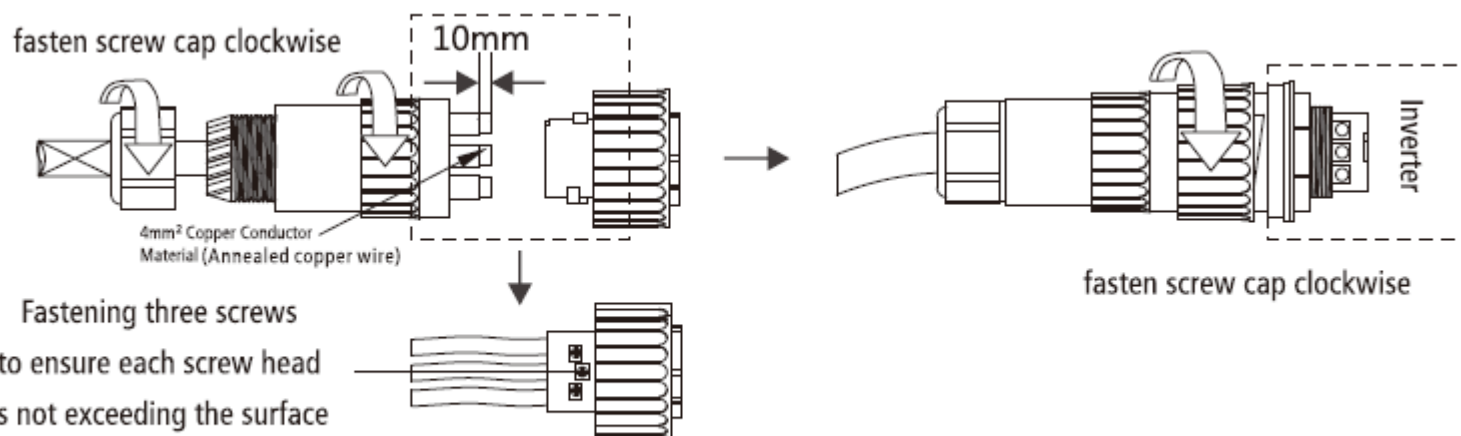


VACONN Series



WIELAND Series

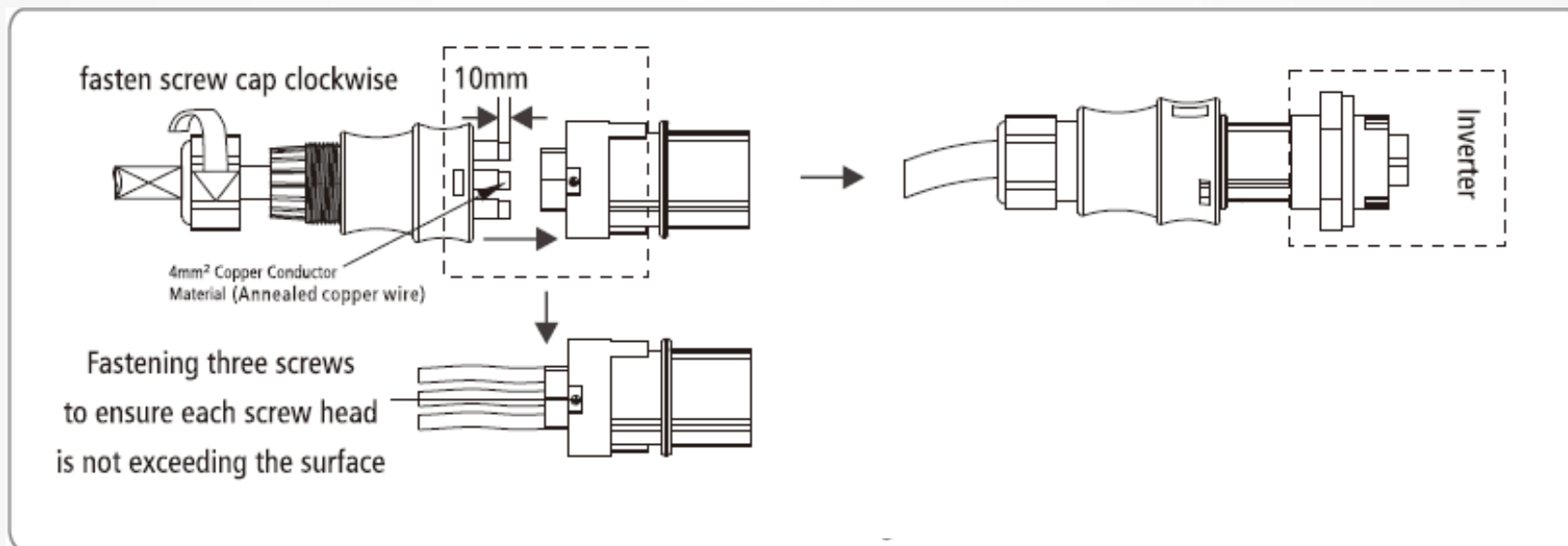
- Installation instruction of VACONN series :





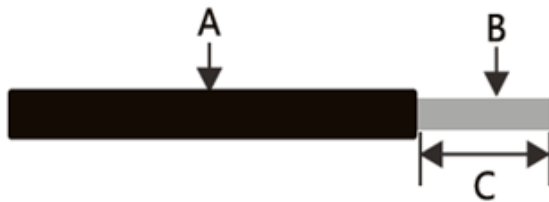
2.1 Installation Guide

- AC Terminals Connection
 - Installation instruction of WIELAND series :



2.1 Installation Guide

- DC Terminals Connection
 - DC cable specification:

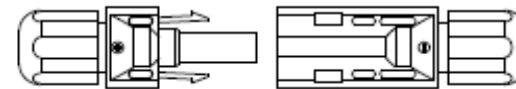


Grade	Description	Value
A	O.D.	4~5mm
B	Conductor Material Sectional Area	2.5~4mm ²
C	Bare Wire Length	7mm around

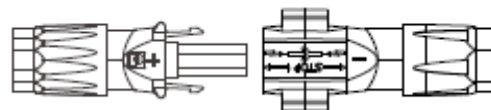
- There are three types of DC connectors , SUNCLIX/MC4 and AMPHENOL H4 series:



H4 SERIES



MC4 SERIES



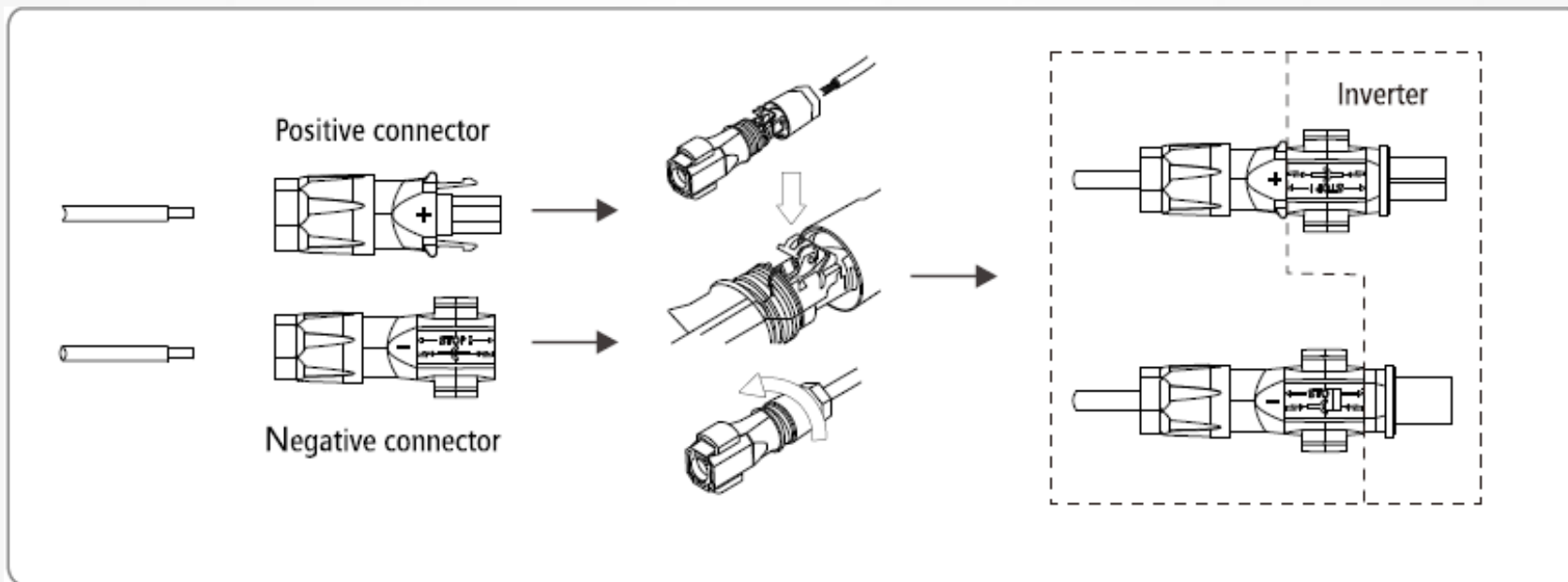
SUNCLIX SERIES



2.1 Installation Guide

- DC Terminals Connection

- Installation instruction of SUNCLIX:

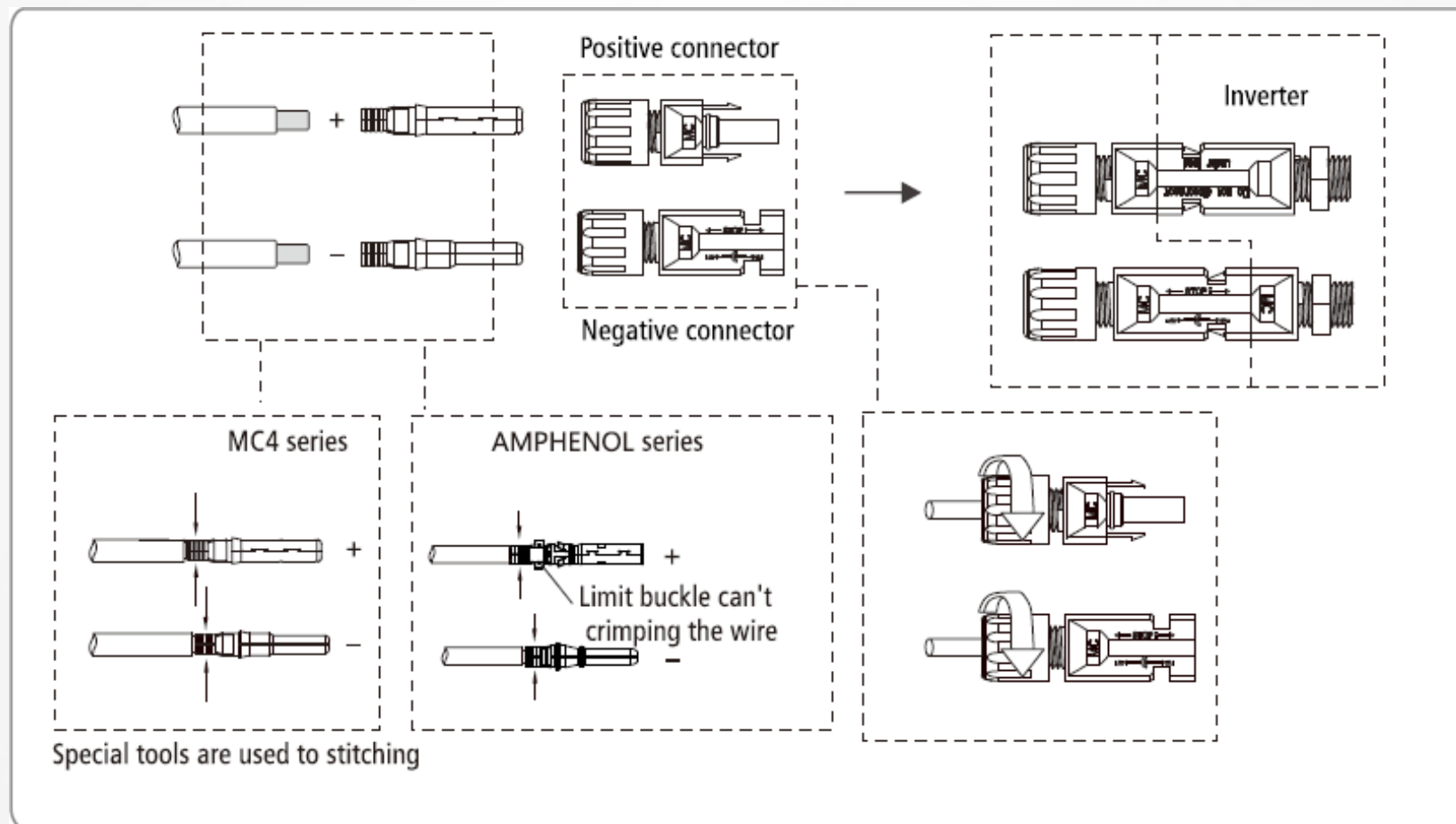




2.1 Installation Guide

- DC Terminals Connection

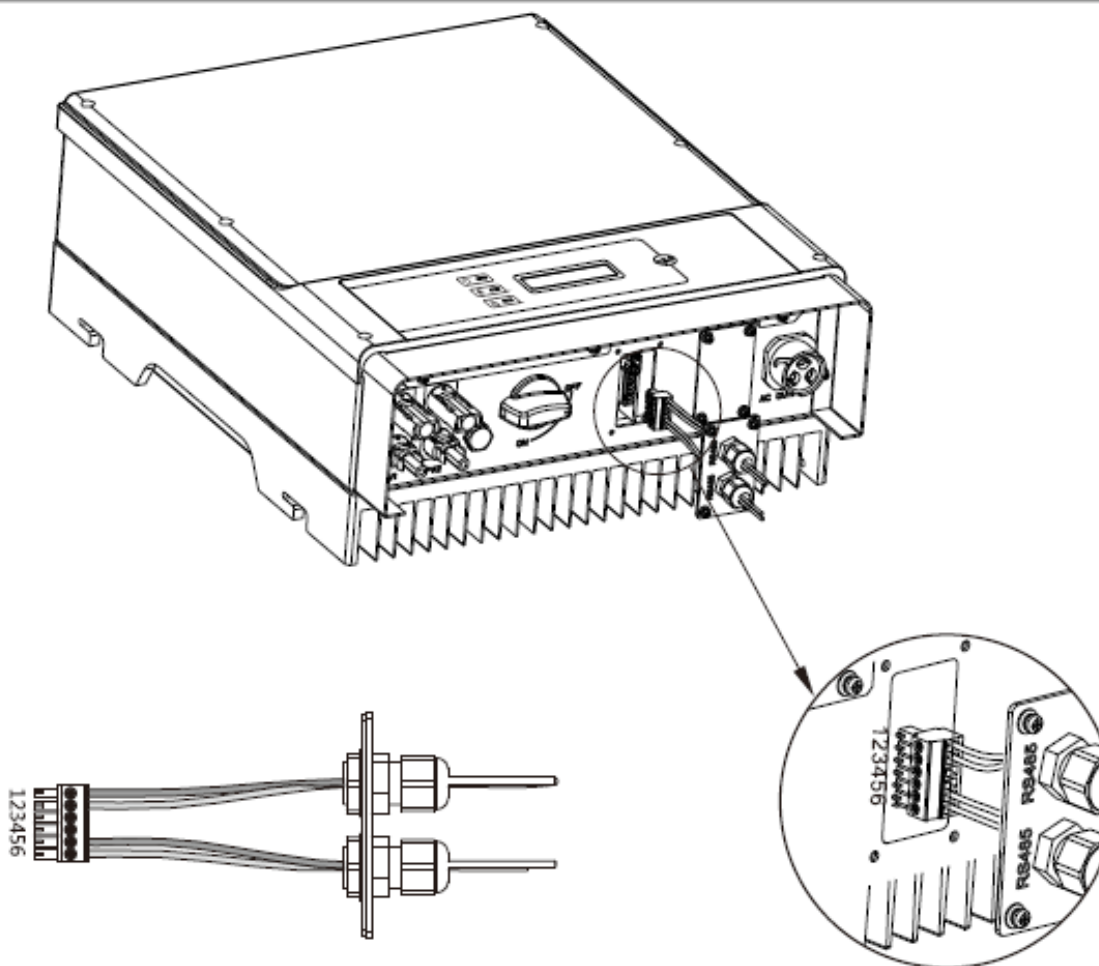
- Installation instruction of MC4 and H4 series:





2.1 Installation Guide

- RS485 Connection

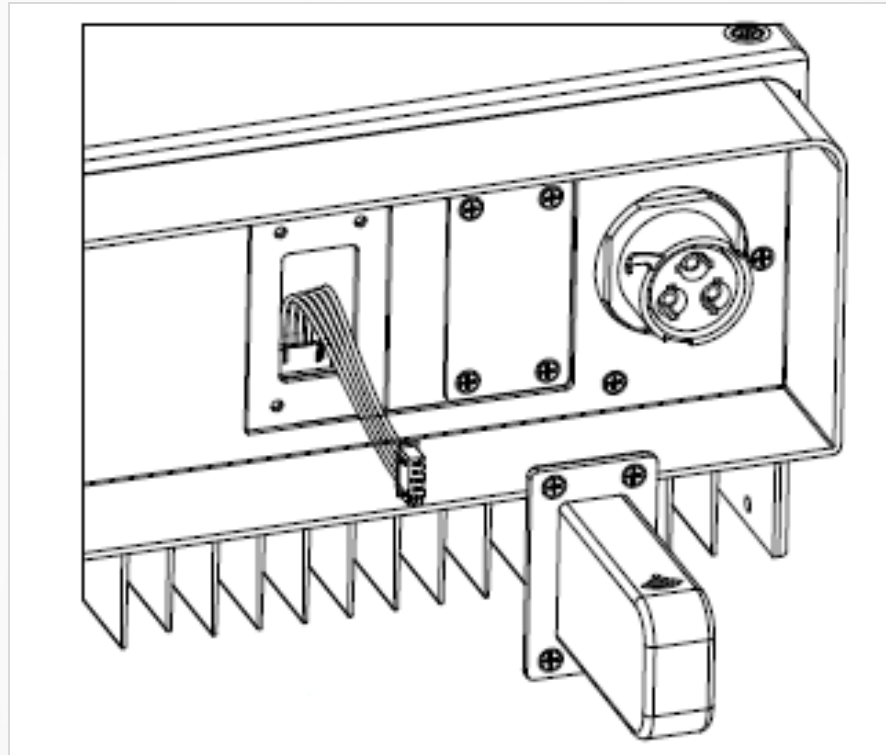


Line	Function
1	RS485+
2	RS485-
3	Reserved
4	Reserved
5	RS485+
6	RS485-



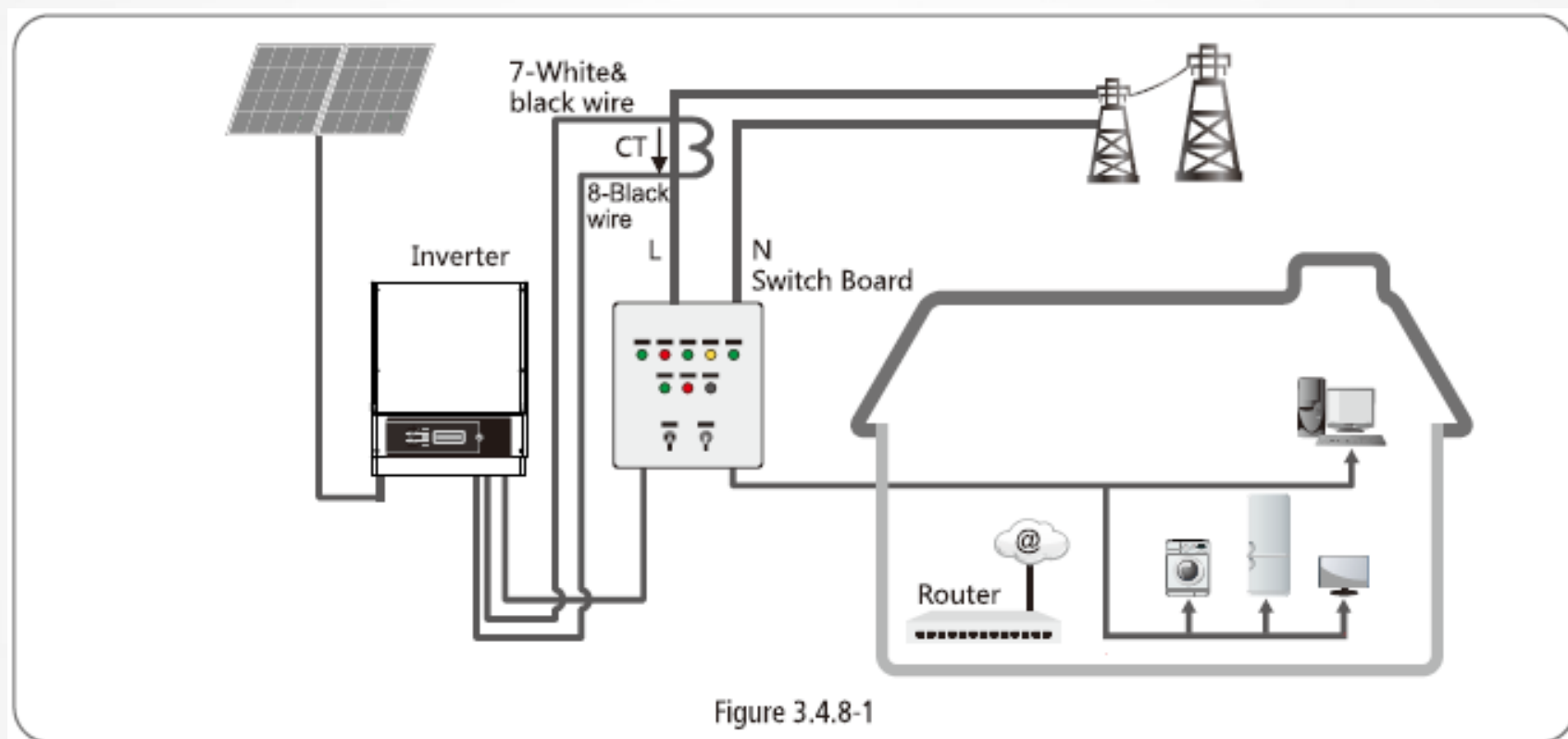
2.1 Installation Guide

- WiFi BOX Connection:



2.1 Installation Guide

- Connection method of power limiting device CT please refer to below:



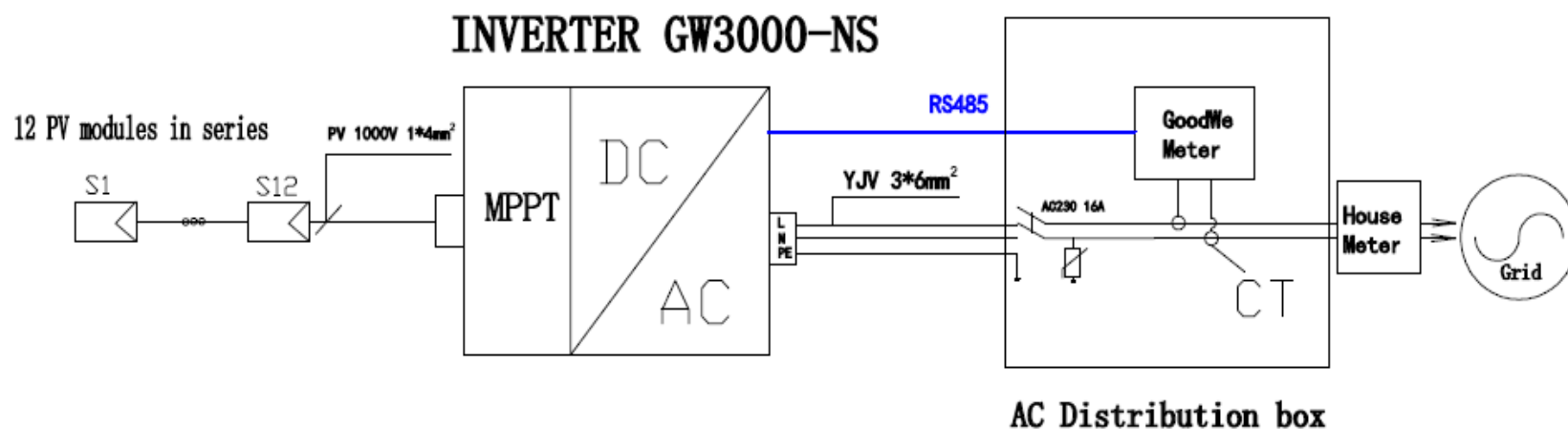
- For CT quick install please refer to attached file:





2.1 Installation Guide

- GW3000-NS Sample System Schematic



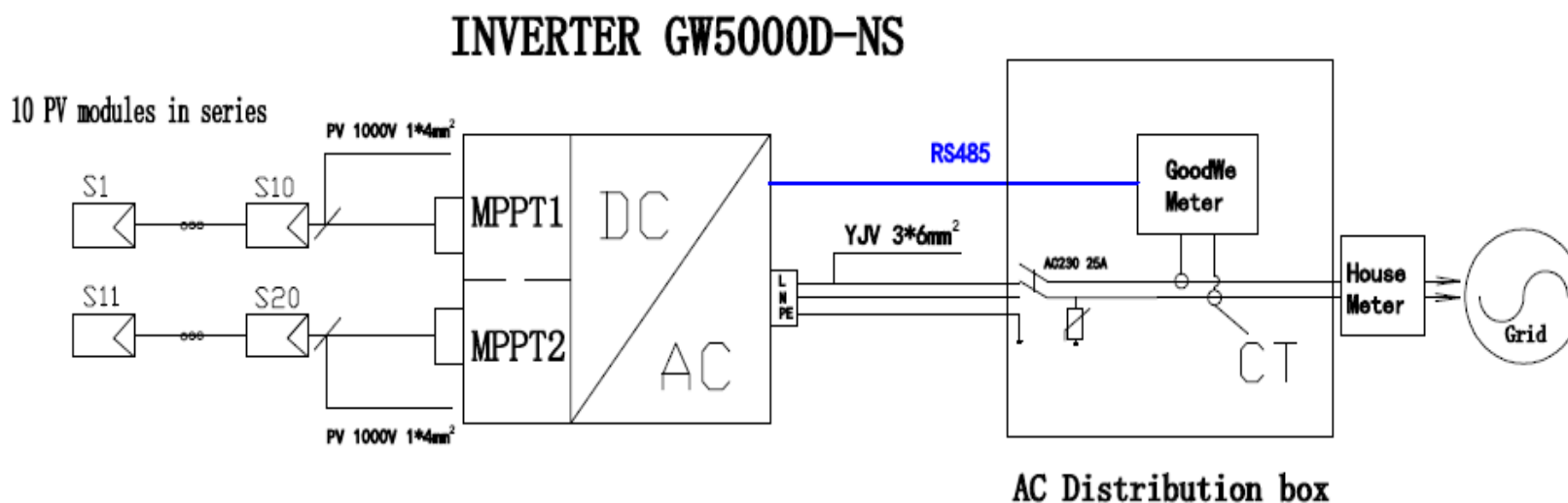
Explanation:

1. PV modules using polysilicon component, $P_m=250W_p$, 12pcs;
2. The grid-connected inverter using GW3000-NS inverter*1;
3. GoodWe Meter using CT to sample the current, in order to realize anti-reverse current function.



2.1 Installation Guide

- GW5000D-NS Sample System Schematic

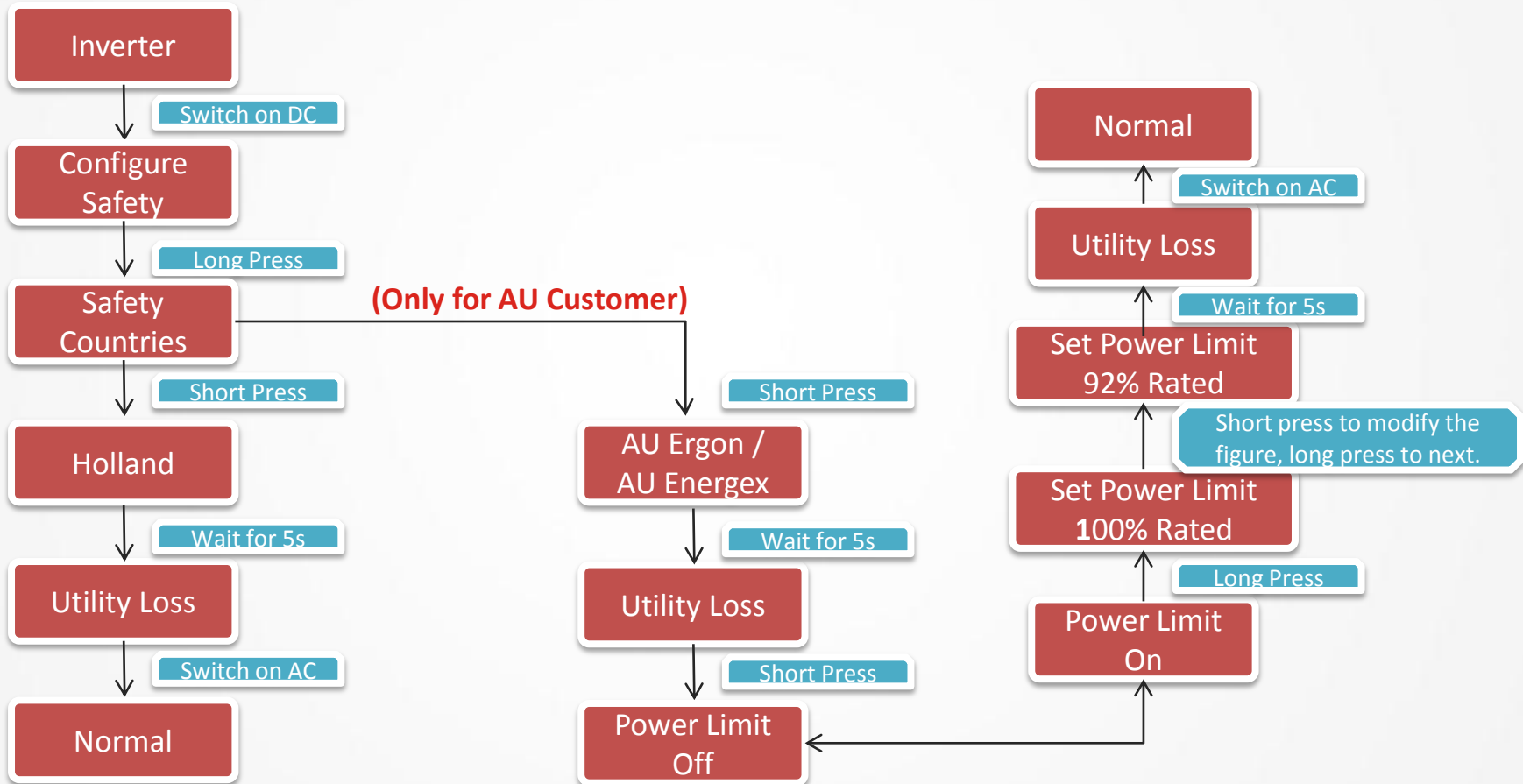


Explanation:

1. PV modules using polysilicon component, P_m=250Wp, 20pcs;
2. The grid-connected inverter using GW5000D-NS inverter*1;
3. GoodWe Meter using CT to sample the current, in order to realize anti-reverse current function.

2.2 Booting-Up Process

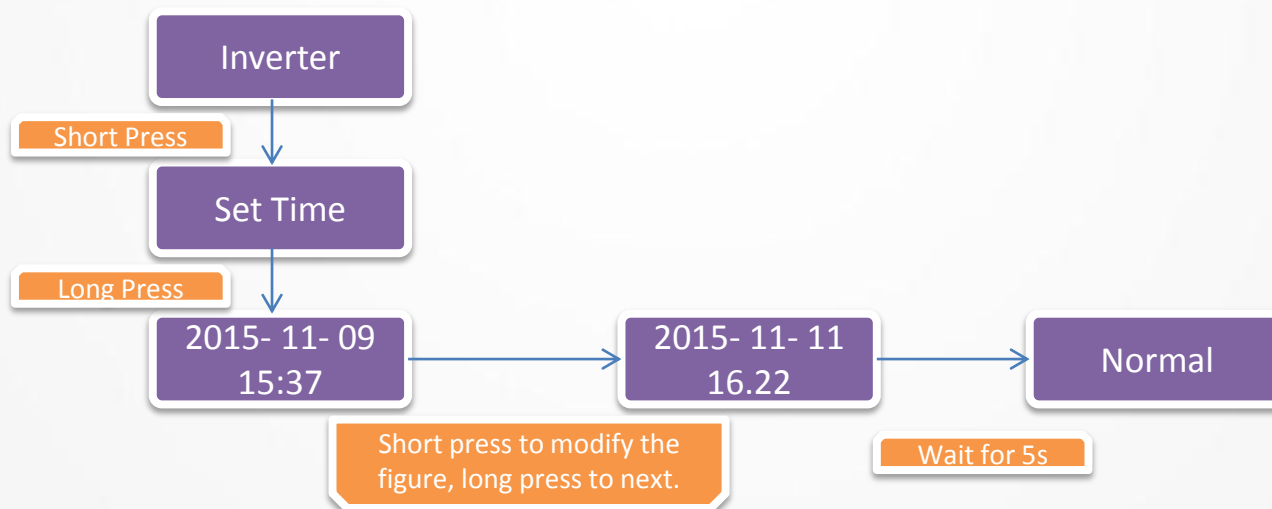
➤ Please refer to dictionary to boot up the inverter.



2.2 Booting-Up Process

Note:

1. If the inverter is a WiFi inverter, please also configure the WiFi module to local router after the inverter is at “Normal” state. (Refer to page 20~26)
2. Please also make sure the time setting of the inverter is correct. If the time setting of the inverter is incorrect, the monitoring data will be incorrect either. Please refer to steps below to set/modify the time setting after WiFi configuration.





2.2 Booting-Up Process

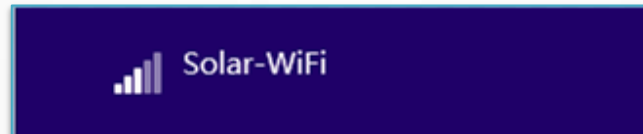
◆ Monitoring Configuration – WiFi Inverter

1. Preparation

- 1.1 Power WiFi inverter (or EzLogger Pro WiFi) on.
- 1.2 If you are configuring WiFi inverter, make sure the yellow LED on front cover is blinking. Otherwise please set WiFi reload through inverter.
- 1.3 Power WiFi router on.
- 1.4 Switch on the WiFi of laptop.

2. Connect laptop to “Solar-WiFi”

- 2.1 Search WiFi network and connect to “Solar-WiFi” (Password: 12345678).



2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

2.2 Browse website: <http://10.10.100.253>



2.3 Enter User Name: "admin", Password: "admin".





2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

3. Click 'Start Setup'

Device information	
Firmware version	4.02.11.gdw04
Wireless AP mode	Enable
SSID	Solar-WiFi
IP address	10.10.100.254
MAC address	AC:CF:23:11:40:C0
Wireless STA mode	Enable
Router SSID	WiFi_Burn-in
Signal Quality	0%
IP address	0.0.0.0
MAC address	AC:CF:23:11:40:C1
Remote server information 	
Remote server	Unpingable
Start Setup	

The Wi-Fi module parameters please refer to 'Device information' column above. Clicking refresh icon  can update the connection status with portal.

2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

4. Select WiFi router's SSID and click 'Next'

Please select your current wireless network:

Site Survey

SSID	RSSI	Channel	Encryption algorithm	Encryption method
☒ WiFi-Test	100%	6	AES	WPA2PSK

★Note: When RSSI of the selected WiFi network is lower than 15%, the connection may be unstable, please select other available network or shorten the distance between the device and router.

If the router is not in the site list, please click 'Refresh', or you can click 'Next' and add it manually.

2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

5. Type in password and click 'Next'

Add wireless network manually:

Network name (SSID) (Note: case sensitive)	WiFi-Test
Encryption method	WPA2PSK ▼
Encryption algorithm	AES ▼

Please enter the wireless network password:

Password (8-64 bytes) (Note: case sensitive)	WiFi-Test
	☒ Show Password

Connecting ...

Wi-Fi module will try connecting Wi-Fi router.
Please make sure all parameters of wireless network are matched with the router, including password.



10.10.100.253:

Connection to WiFi network failed, invalid encryption method or wrong passwords.

If it fails, there will be a notice. Click 'OK', and confirm all parameters are matched with the router, then try again.

Note: If it fails, there will be a notice.



2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

6. Click 'OK' and configuration process completes.

Setting complete!

Click OK, the settings will take effect and the system will restart immediately.

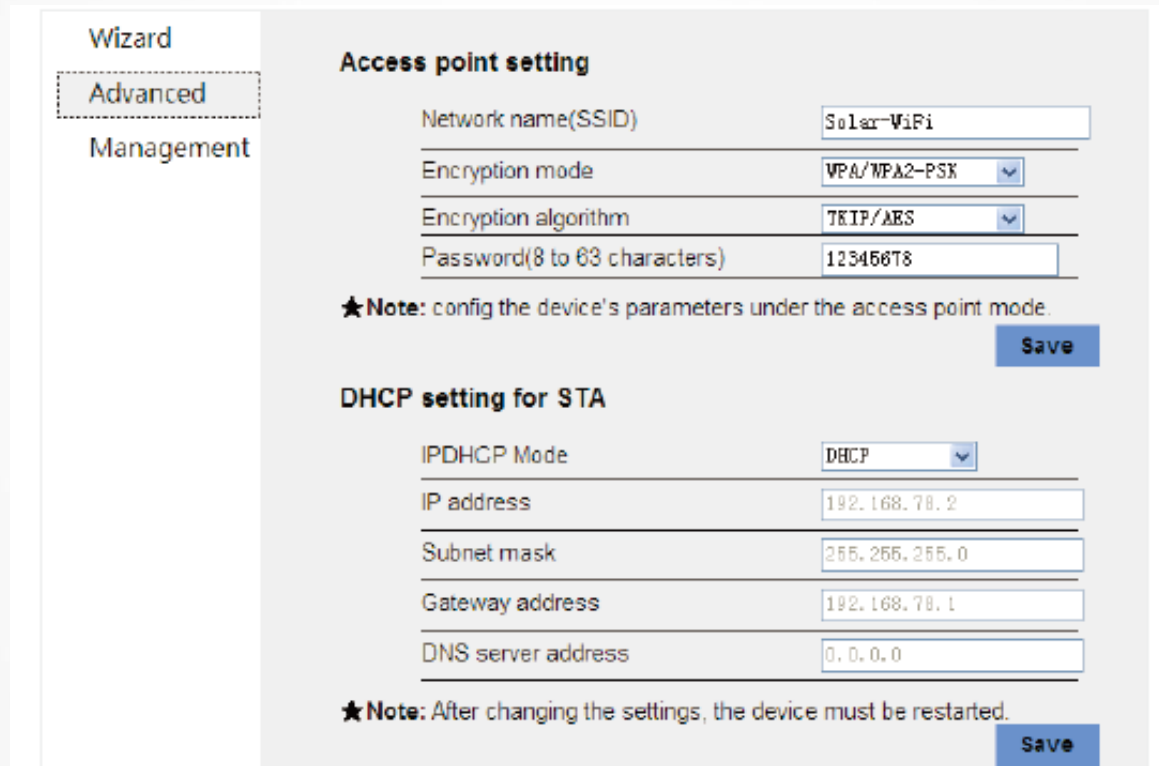
If you leave this interface without clicking OK, the settings will be ineffective.

If you want to re-login the configuration interface, please connect to the device again.

2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

Note: If you want to modify the SSID and password of the inverter's WiFi, please refer to picture below.



Access point setting

Network name(SSID)	Solar-WiFi
Encryption mode	WPA/WPA2-PSK
Encryption algorithm	TKIP/AES
Password(8 to 63 characters)	12345678

★**Note:** config the device's parameters under the access point mode.

DHCP setting for STA

IPDHCP Mode	DHCP
IP address	192.168.78.2
Subnet mask	255.255.255.0
Gateway address	192.168.78.1
DNS server address	0.0.0.0

★**Note:** After changing the settings, the device must be restarted.



SKIP THIS STEP UNLESS IT IS NECESSARY!

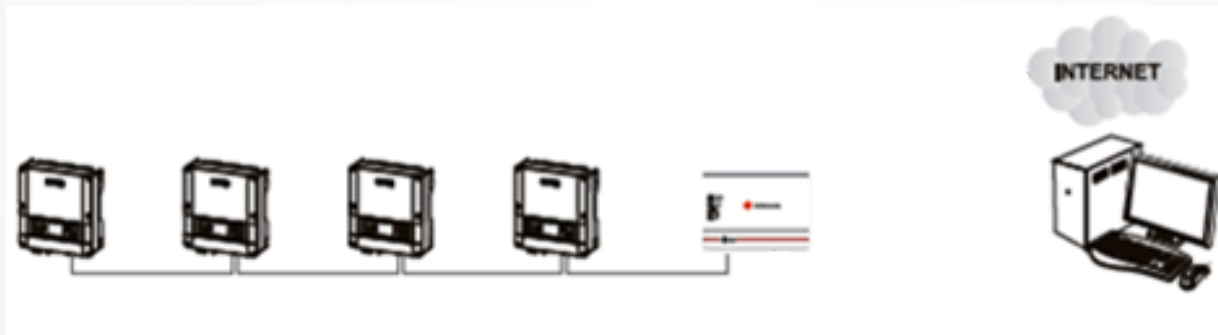
2.2 Booting-Up Process

◆ Monitoring Configuration – WiFi Inverter

8、 Disconnect the inverter WiFi, connect to the local WiFi, create a station in GoodWe portal with the SN and check code. System will be online in the portal.

Portal Website: www.goodwe-power.com.

(Refer to picture as below)





2.2 Booting-Up Process

◆ Monitoring Configuration– RS485 Inverter with Ezlogger Pro

1) There are three types of Ezlogger Pro, LAN、WiFi and GPRS.

1.1 If using the Ezlogger Pro-WiFi, please follow the page 20-26 to do the configuration. As the steps are completely the same as configuring a WiFi inverter.

1.2 If using Ezlogger Pro-LAN, follow the steps below to configure the monitoring.

2.2 Booting-Up Process

• EZLOGGER PRO-- LAN

1

- Unpack the Ezlogger Pro , check if any missing accessory;

2

- Install the Ezlogger Pro to the target position;

3

- Connect the adapter;

4

- Device Connection;
 - A: Connect the inverter to the Ezlogger Pro ;
 - B: Connect the COM port to PC.

5

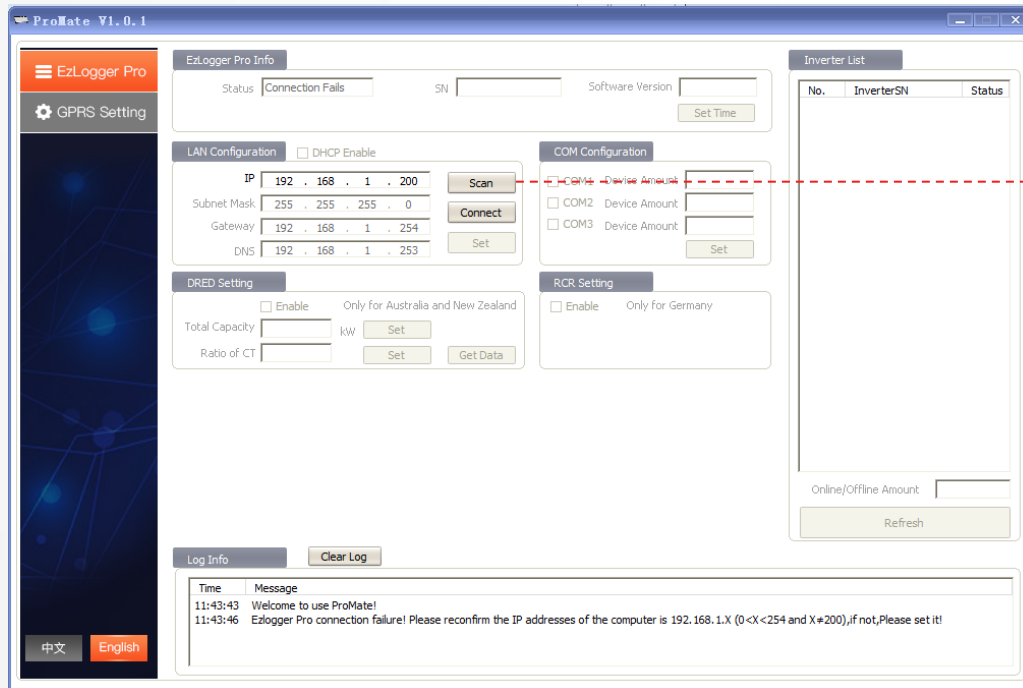
- Start to configure the Ezlogger Pro.

2.2 Booting-Up Process

EzLogger Pro connects to ProMate with dynamic IP and static IP

Dynamic IP mode

EzLogger Pro starts with dynamic IP as default , the user only needs to connect inverter , EzLogger Pro and router together with router DHCP function . Also can refer to below steps to operate with ProMate.



The user only needs to connect EzLogger Pro and computer to router and open DHCP function , click 'Scan' to connect in ProMate as picture showed.

2.2 Booting-Up Process

Static IP mode

If need to start EzLogger Pro with static IP mode , press Restore button with 10s then EzLogger Pro will change to static IP mode(default IP : 192.168.1.200) , then configure IP address for computer as the same with EzLogger Pro , the steps are as below:

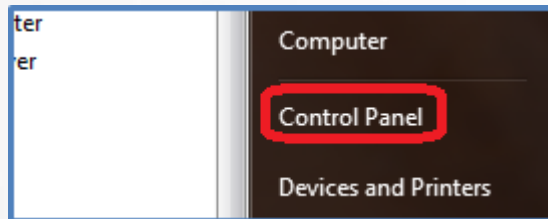


Fig 1. Click 'Start', and Click 'Control Panel'.

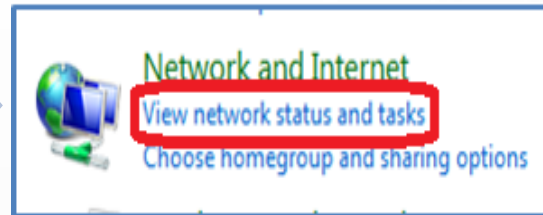


Fig 2. Click 'View network status and tasks.'

2.2 Booting-Up Process

- Local Area Connection

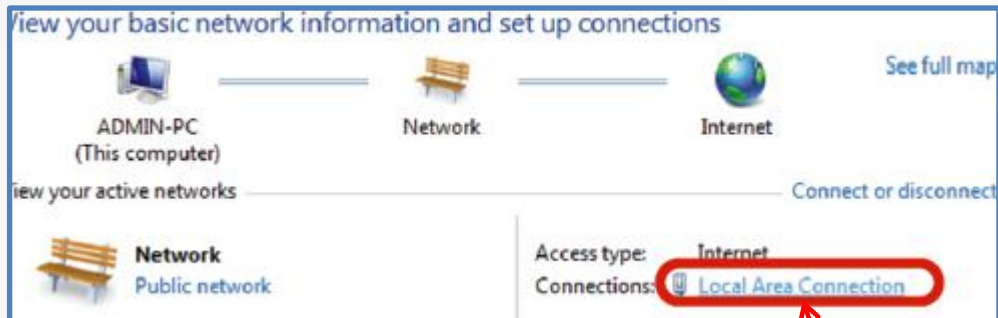
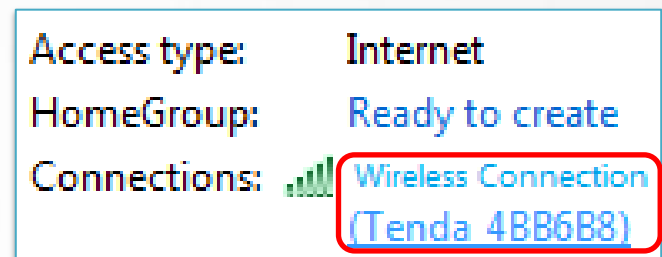


Fig 3. Click 'Local Area Connection'.

Note: The “Local Area Connection” option will only appear when the net port is connected.

- Wireless Connection





2.2 Booting-Up Process

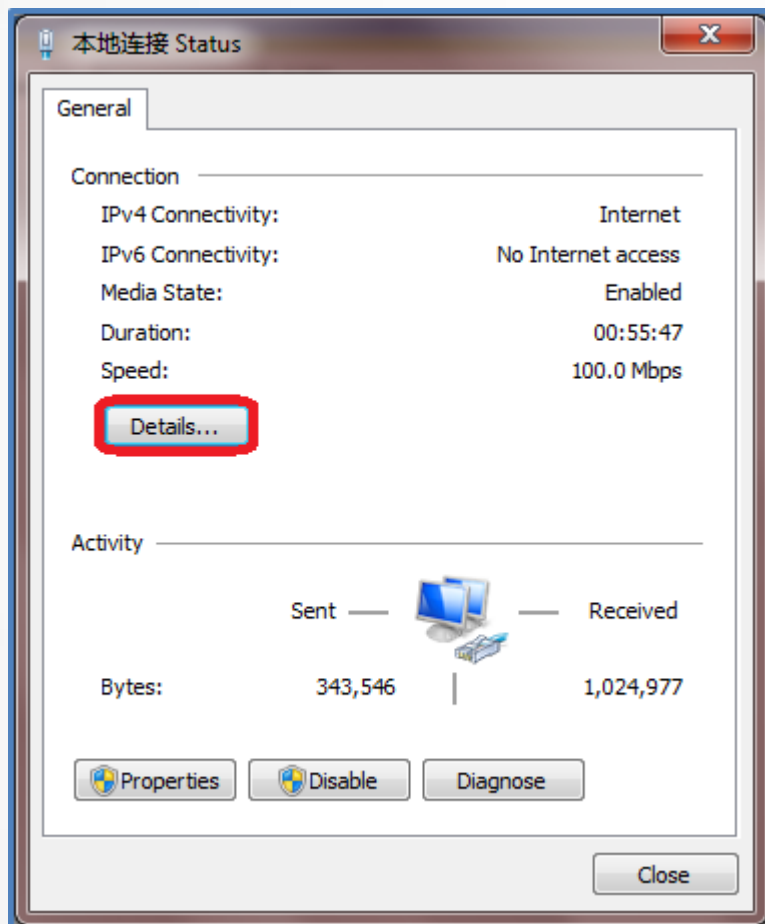


Fig 4. Click 'Details'

2.2 Booting-Up Process

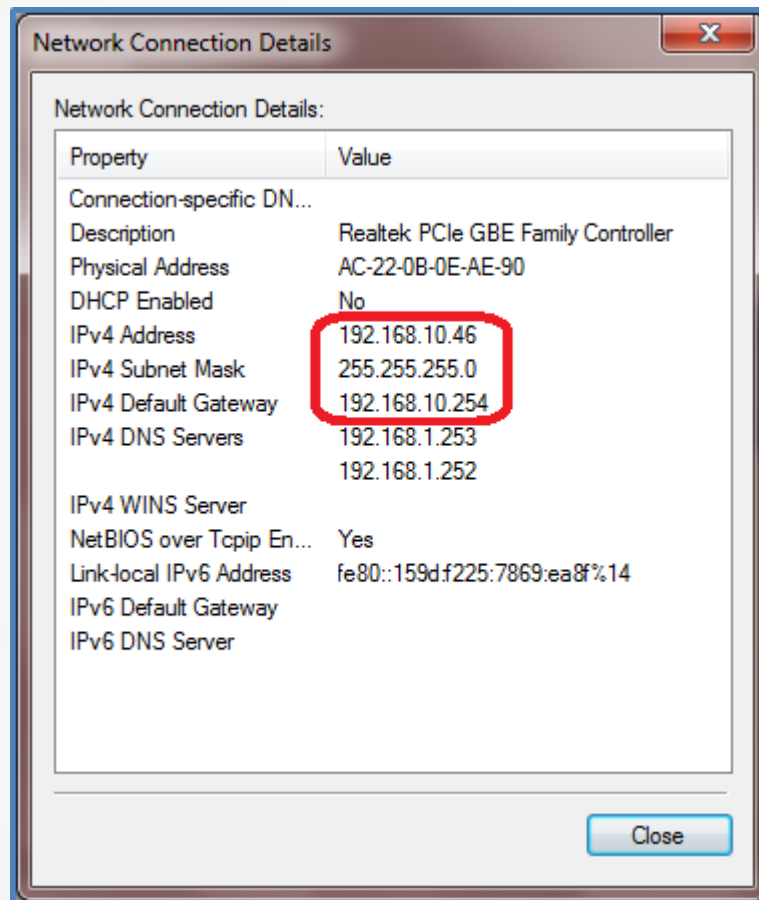


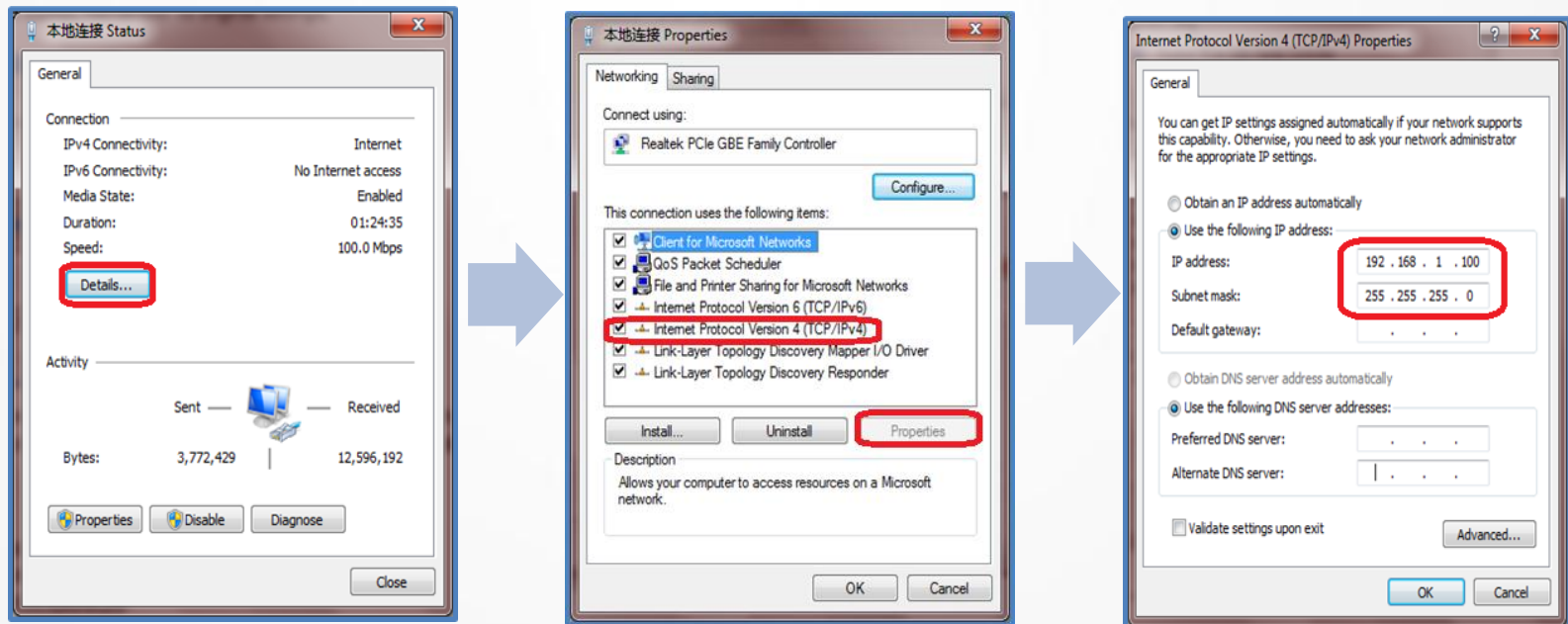
Fig 5. Record the 3 items in Fig 5, which will be useful later.



2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

- 2、Connect the Ezlogger with laptop via STP;
- 3、Set the local area IP Address to 192.168.1.100 on the laptop.;





2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

1、 Run program ProMate on the laptop;

1. The program is in the USB disk in Ezlogger box.
2. If the USB disk is missing, please download ProMate from GoodWe website and install the program on the laptop.

2、 The connection status display as 'Connection Succeeds', and EzLogger Pro SN and software version will come out soon;



The screenshot shows the EzLogger Pro software interface. On the left is a sidebar with an orange button labeled 'EzLogger Pro' and a grey button labeled 'GPRS Setting'. The main area has a tab labeled 'EzLogger Pro Info'. Below the tab, there are three fields: 'Status' with the value 'Connection Fails', 'SN' with an empty text box, and 'Software Version' with an empty text box. A 'Set Time' button is located at the bottom right of the main area.



2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

3、 Click the refresh button, then all inverter's SN will be listed;

If any inverter is missing, please check the cable connection off the inverter.



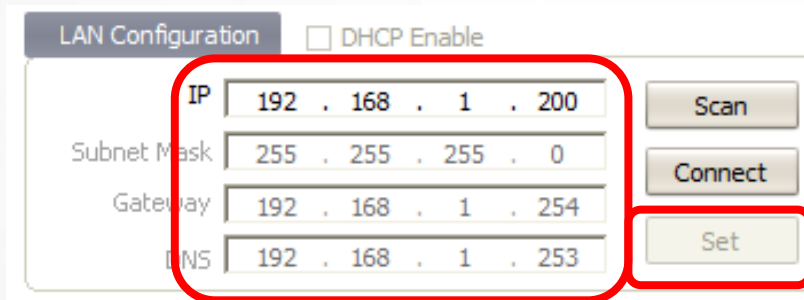
The screenshot shows a software window titled "Inverter List". It contains a table with two columns: "InverterSN" and "Status". The table lists two inverters: "14000SSU12300214" with status "OnLine" and "1006KDTU11700001" with status "OnLine". At the bottom of the window is a "Refresh" button.

InverterSN	Status
14000SSU12300214	OnLine
1006KDTU11700001	OnLine

2.2 Booting-Up Process

- **EZLOGGER PRO -- LAN**

4、 Modify the IP Address, Subnet Mask, Gateway to the one recorded (Refer to Page 12);

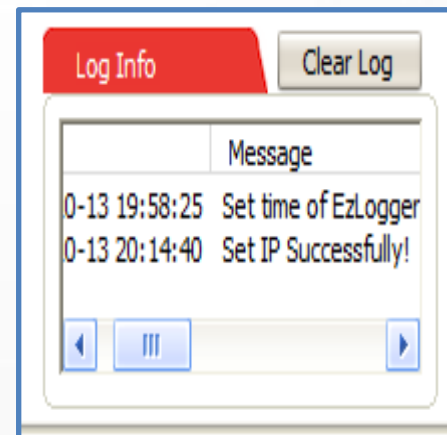


LAN Configuration ☐ DHCP Enable

IP	192 . 168 . 1 . 200
Subnet Mask	255 . 255 . 255 . 0
Gateway	192 . 168 . 1 . 254
DNS	192 . 168 . 1 . 253

Buttons: Scan, Connect, Set (highlighted with a red arrow)

5、 Press 'Set', find 'Set IP Successfully!' in 'Log Info';



Log Info

Message	
0-13 19:58:25	Set time of EzLogger
0-13 20:14:40	Set IP Successfully!

Navigation buttons: Previous, Stop, Next

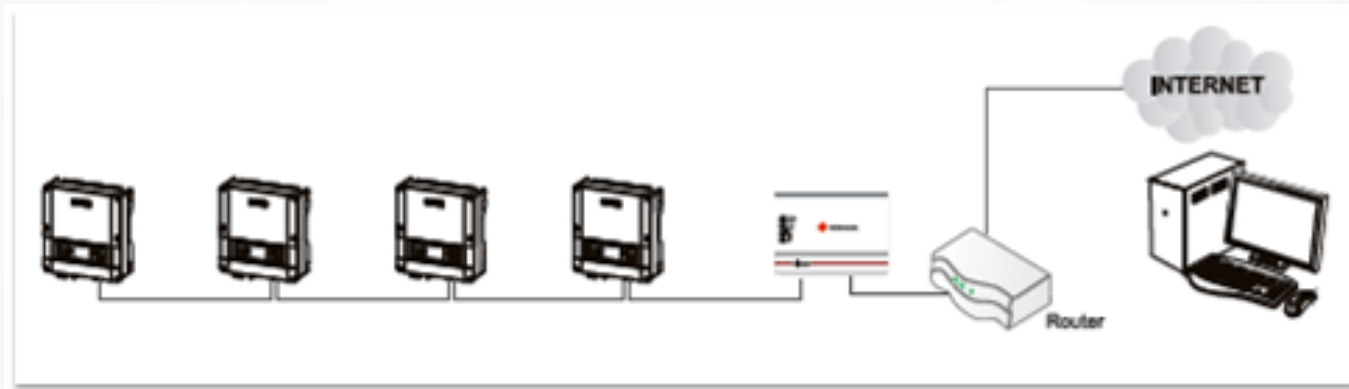
2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

6、 Then Disconnect the laptop, and connect the net port to the router, create a station in GoodWe portal with the SN and check code. System will be online in the portal.

Portal Website: www.goodwe-power.com.

(Refer to picture as below)





2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

Solution 2:

Please follow the steps below to configure the Ezlogger Pro to communicate the router with **dynamic IP address**.

1、Run program ProMate on the laptop;

1. The program is in the USB disk in Ezlogger Pro box.
2. If the USB disk is missing, please download EzConfig from GoodWe website and install the program on the laptop.

2、The connection status display as 'Connection Succeeds', and EzLogger Pro SN and software version will come out soon;



The screenshot shows the EzLogger Pro software interface. On the left is a sidebar with an orange button labeled 'EzLogger Pro' and a grey button labeled 'GPRS Setting'. The main area has a tab labeled 'EzLogger Pro Info'. Below the tab, there are three fields: 'Status' with the value 'Connection Fails', 'SN' with an empty text box, and 'Software Version' with an empty text box. A 'Set Time' button is located at the bottom right of the main area.



2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

3、 Click the refresh button, then all inverter's SN will be listed;

If any inverter is missing, please check the cable connection off the inverter.



The screenshot shows a software window titled "Inverter List". Inside, there is a table with two columns: "InverterSN" and "Status". The table contains two rows of data. Below the table, there is a "Refresh" button.

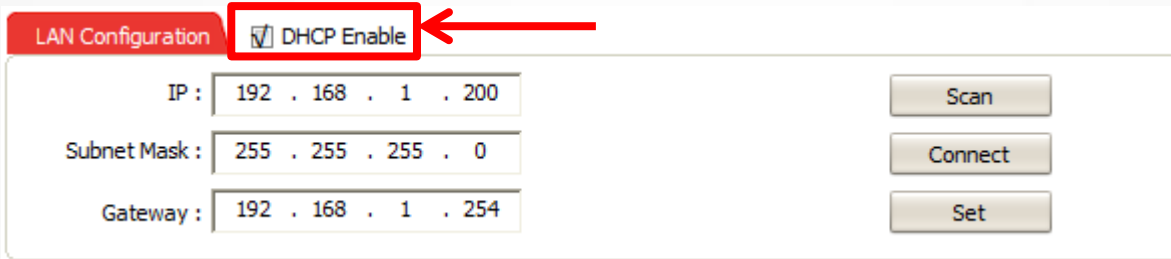
InverterSN	Status
14000SSU12300214	OnLine
1006KDTU11700001	OnLine

Refresh

2.2 Booting-Up Process

- **EZLOGGER PRO-- LAN**

4、 Find 'LAN Configuration' part in the window;



LAN Configuration

☒ DHCP Enable

IP : 192 . 168 . 1 . 200

Subnet Mask : 255 . 255 . 255 . 0

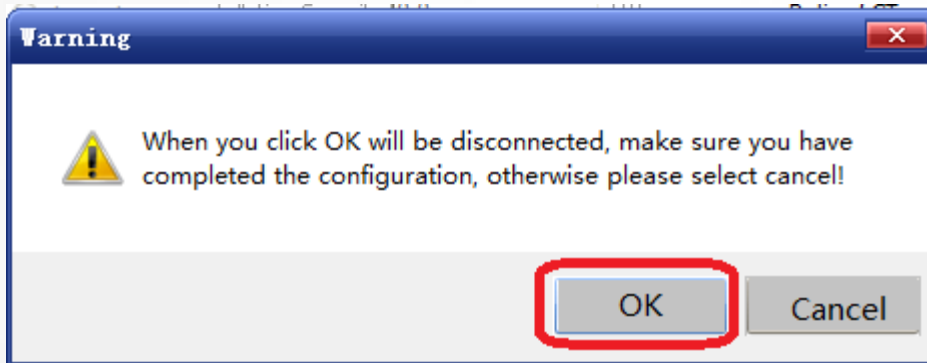
Gateway : 192 . 168 . 1 . 254

Scan

Connect

Set

5、 Click 'DHCP Enable', and there will be a warning displayed, click 'OK', find DHCP Enable successfully in Log Info.



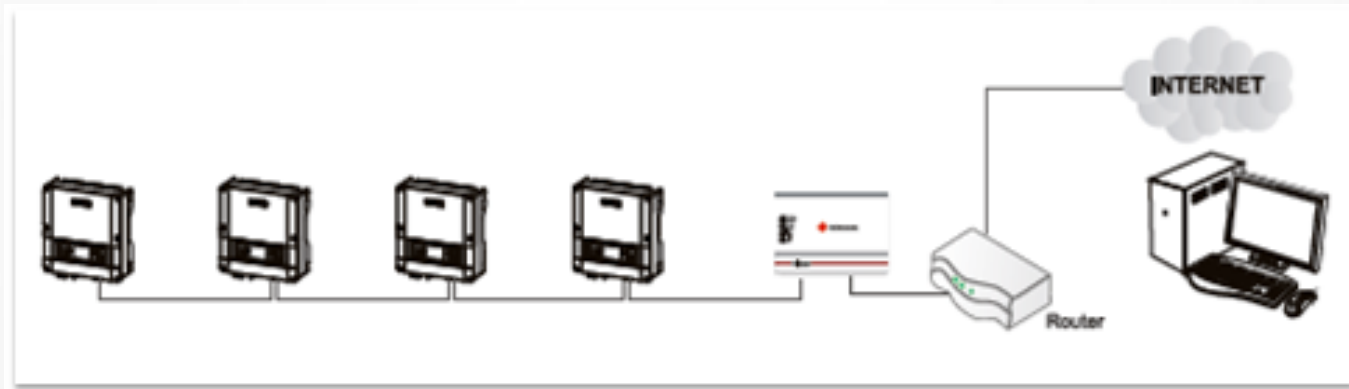
2.2 Booting-Up Process

- EZLOGGER PRO-- LAN

6、 Then Disconnect the laptop, and connect the net port to the router, create a station in GoodWe portal with the SN and check code. System will be online in the portal.

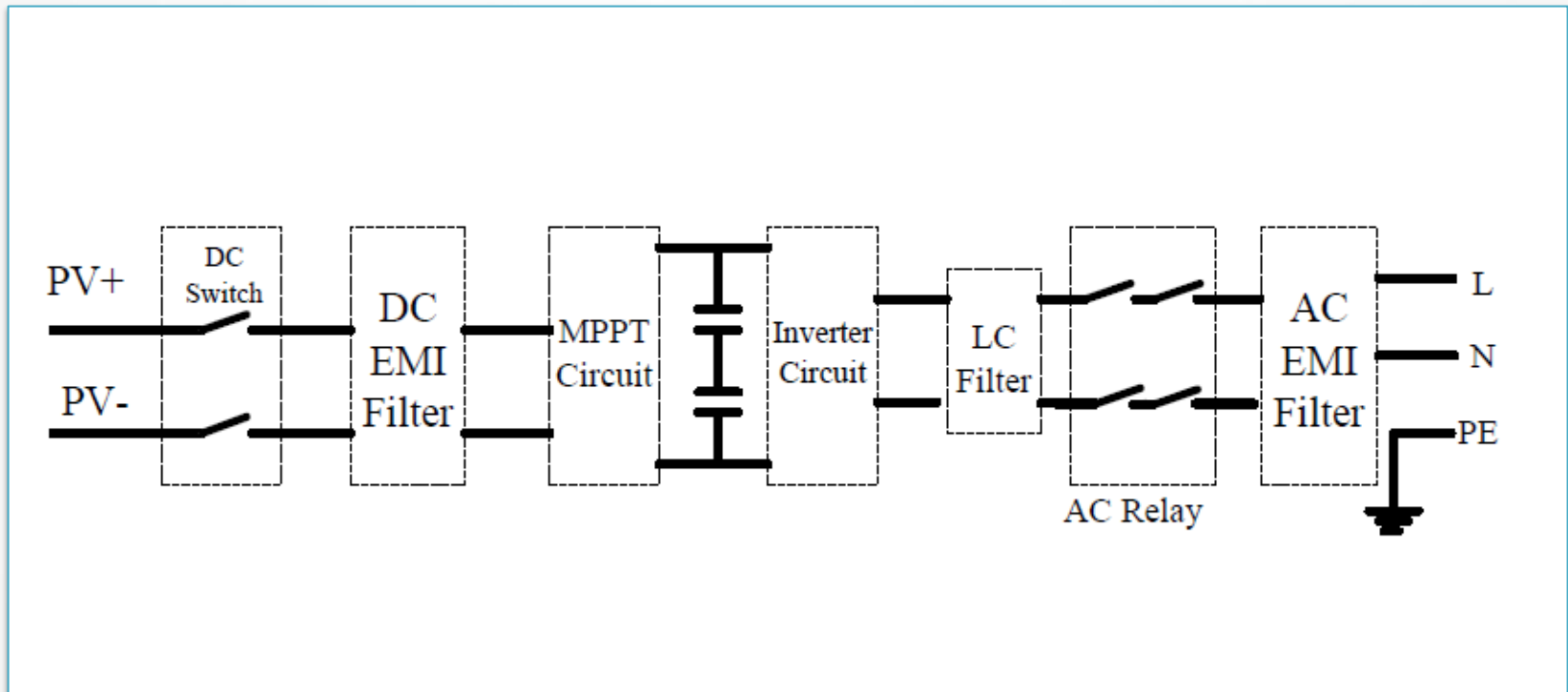
Portal Website: www.goodwe-power.com.

(Refer to picture as below)



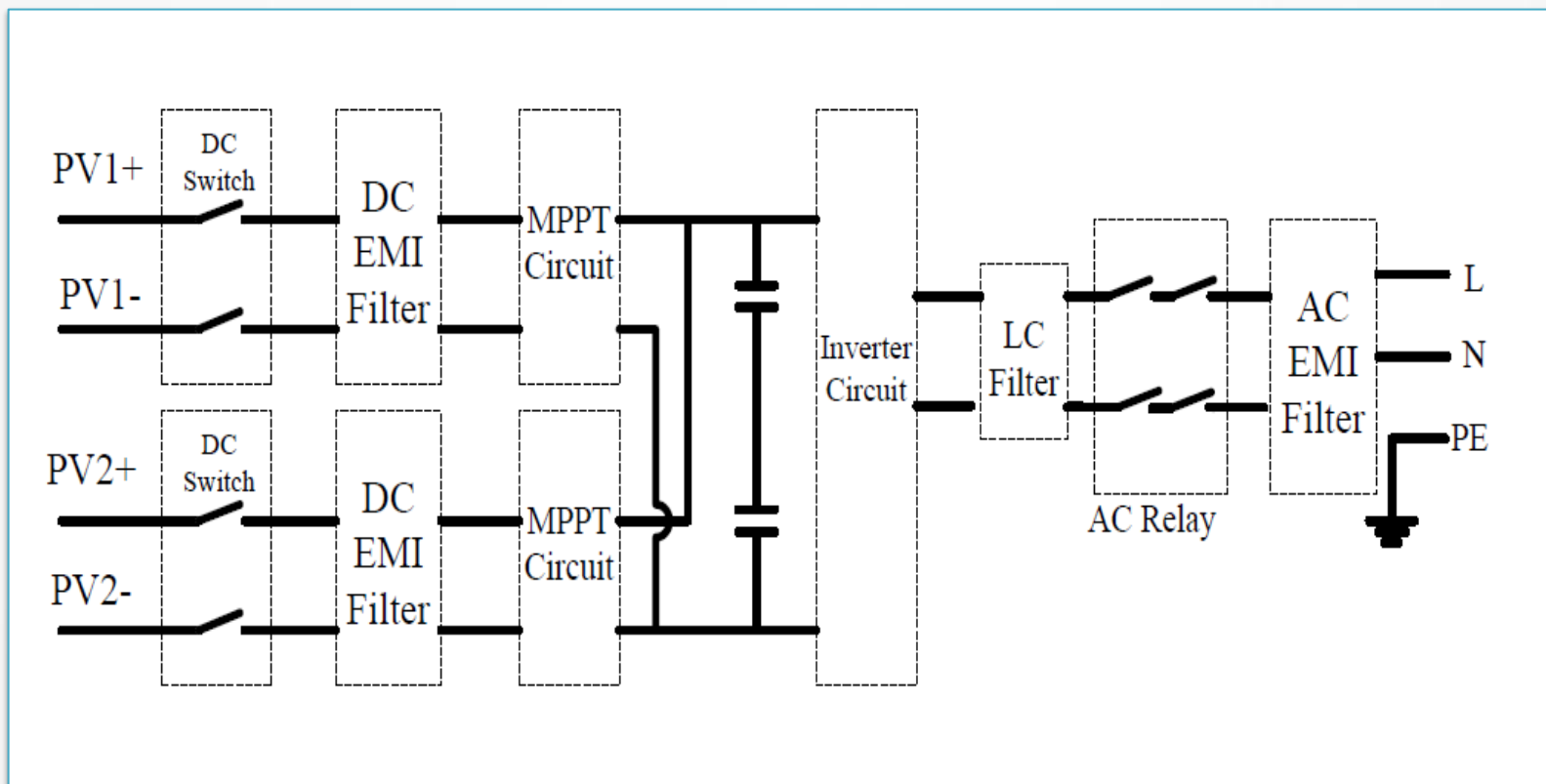
2.3 Internal Structure

■ Block Diagram of NS series inverter.



2.3 Internal Structure

■ Block Diagram of DNS series inverter.





2.4 Trouble Shooting

◆ Utility Loss

Error Code: 23

Cause: Inverter detects no grid connected

Measurement:



- A. Check if the AC switch is at 'ON' position, if not, please switch it on. If yes, please measure the voltage of the AC connector and wiring of main switch board. Make sure the grid is on;
- B. Check the L, N, PE are connecting to the right PIN. If not, please modify the wiring;
- C. Check the 'Vac' displayed in the screen and the grid voltage, make sure the values are within the limitation of the regulation. If not, please contact with your electrical company. If yes, please contact with GoodWe local service center;
- D. Switch of the AC & DC power of the inverter and wait for 5minutes. Measure the impedance of L & N to ground, if the values are smaller than 200KΩ, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ ISO Failure

Error Code: 14

Cause: Inverter detects ground insulation impedance is too low

Measurement:

- A. Check the time when inverter goes fault, if it is at dawn/ dusk or rainy days. Please ignore this fault. As the humidity goes high, the impedance will become low, which will lead to ISO failure;
- B. Measure the impedance of PV+ & PV- to ground, the values should be higher than $2M\Omega$. If the impedance is too low, please check the insulation, or rewiring the PV connection;
- C. Measure the impedance of N to ground, the value should close to zero. If not, please check the AC wiring.
- D. Check if the firmware version of the inverter is the latest. As with the time goes, threshold in the firmware are also changing. If not the latest, please update the firmware;
- E. If all above don't work, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ Relay Check Failure

Error Code: 07

Cause: Output relay fault

Measurement:

- A. Switch on AC & DC power of the inverter, listen to the inverter when inverter is checking. If there is no relay clicking sound, please contact with GoodWe local service center.





2.4 Trouble Shooting

◆ Ground I Failure

Error Code: 22/32

Cause: Inverter detects high current leakage



Measurement:

- A. Disconnect all PV strings to the inverter, connect each string to the inverter to power up the inverter, to find out the faulty string. Then check if there is any damage of the PV wiring;
- B. If the fault only displays when rainy or wet weather, please ignore the fault, when humidity turn lower, the inverter will be normal.



2.4 Trouble Shooting

◆ Vac Failure

Error Code: 09/10/12/15

Cause: Grid voltage is out of limitation

Measurement:

- A. Measure the voltage when the inverter display 'Vac Failure', if not within regulation, please contact with the electricity company;
- B. Measure the inner AC side of the inverter, the voltage of N to PE should be less than 1V. If not, please check the AC wiring (For inverter display 'Vac Failure' when counting down at 0s);
- C. Check if the 'Vac' displayed in the screen is the same as the value measure from the switch board. If not, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ Fac Failure

Error Code: 03/04/12

Cause: Grid frequency is out of limitation

Measurement:

- A. Check if the AC switch is at 'ON' position, make sure grid is connected to the inverter;
- B. Check the safety country in the inverter is correct. If not, please change to the correct one.
(Short press to model name, long press to enter the regulation list, short press to find the correct country, wait for 5s and the setting will be saved);
- C. Check the 'Fac' displayed in the screen, if the value is out of the limitation, please wider the frequency range via 'Calibrate Tool'.



2.4 Trouble Shooting

◆ PV Over Voltage Failure

Error Code: 17

Cause: DC input voltage is out of limitation

Measurement:

- A. Check how many panels for each string, measure the Voc of the panel. If the values are out of limitation, please modify the connection of PV string;
- B. If the PV string is OK, please check the 'Vpv' displayed in the screen. If the values are not the same, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ Over Temperature Failure

Error Code: 19

Cause: Inverter detects over temperature failure

Measurement:

- A. Check the installation position is under the requirement of usermanual;
- B. Try to decrease the temperature around the inverter, and shut down the inverter for 15 minutes, then restart it. If fault remains, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ AC HCT Failure

Error Code: 31

Cause: Output current sensor fault

Measurement:

- A. Switch off DC switch for 15 minutes, then switch it on.;
- B. If problem remains, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ GFCI Failure

Error Code: 28/32

Cause: Current leakage test equipment failure

Measurement:

- A. Update the firmware to latest;
- B. If problem remains, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ Waiting

Error Code: Null

Cause: Inverter stay at 'Waiting' mode

Measurement:

- A. When inverter first used, please switch on DC and keep AC off, or the inverter will always stay at 'Waiting';
- B. Measure the DC voltage of the inverter, make sure it is higher than the start-up voltage.



2.4 Trouble Shooting

◆ Blank Screen

Error Code: Null

Cause: Inverter displays nothing when DC is on

Measurement:



- A. First Installed
 - A.1 Measure the DC voltage, make sure it is higher than start-up voltage;
 - A.2 Check if the poles of PV string is opposite.
- B. Inverter has been working for a while
 - B.1 Check if there is any damage on the DC and AC connector;
 - B.2 Disconnect AC & DC of the inverter, and reconnect after 15 minutes.
- C. If all solutions above failed, please contact with GoodWe local service center.



2.4 Trouble Shooting

◆ Reconnecting

Error Code: Null

Cause: Inverter keep checking

Measurement:

- A. If condition happens at dawn or dusk, please ignore the problem, as the voltage is too low to keep the inverter constantly running;
- B. Check the AC wiring, especially for the line N, PE must be wired correctly;
- C. Check if the regulation is correct;
- D. Check if any fault display when inverter keep checking;
- E. Check the counting down time remains when the inverter reconnect, and feed back to GoodWe local service center.



2.4 Trouble Shooting

◆ Low Generation

Error Code: Null

Cause: E-day is very low

Measurement:

- A. If E-day in the screen is very low, please check if the time setting in the inverter is correct;
- B. If E-day in the portal is very low, please check the time zone set in the portal is correct;

2.4 Trouble Shooting

◆ Screen Fault

Error Code: Null

Cause: Information missing, mess display, no backlight, backlight is always on

Measurement:

- A. Remove the cover, and reconnect the ribbon between the screen and PCB.
- B. If problem remains, please contact with GoodWe local service center.





2.4 Trouble Shooting

◆ WiFi Monitoring Failure

Error Code: Null

Cause: No Solar-WiFi, Solar-WiFi is not stable

Measurement:

A. No Solar-WiFi

A.1 Make sure the inverter is a WiFi inverter;

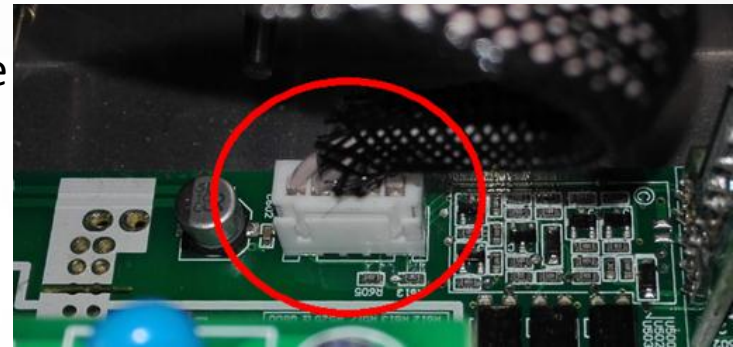
A.2 Check if the 'Power' light is solid or blinking. If solid, please modify the communication mode (Short press to find 'Set Protocol', long press to enter this page, short press to find 'WiFi', wait for 5s to go back to original page);

B. Solar-WiFi is unstable

B.1 Reload WiFi module to see if Solar-WiFi will be stable;

B.2 Remove the cover, reconnect the ribbon of WiFi module;

C. If problem remains, please contact with GoodWe local service center.





2.4 Trouble Shooting

◆ Button Fault

Error Code: Null

Cause: Button doesn't work

Measurement:

- A. Remove the cover, and reconnect the ribbon between the screen and PCB.
- B. If problem remains, please contact with GoodWe local service center.

Conclusion:

As above, we can see that when solar system goes fault, the problem could be of PV panels, DC wiring, AC wiring, inverter itself etc. Inverter is the only component which has alarm system. So when the inverter displays a fault, we should check the status of the whole solar system.



3.1 Technical Data — NS Series

Parameters	GW1000-NS	GW1500-NS	GW2000-NS	GW2500-NS	GW3000-NS
DC Input					
Max. DC power(W)	1200	1800	2300	2700	3200
Max. DC voltage (V)	500	500	500	500	500
MPPT voltage range (V)	80-450	80-450	80-450	80-450	80-450
Starting voltage (V)	80	80	80	80	80
Max. DC current (A)	10	10	10	18	18
No. of DC connectors	1	1	1	1	1
No. of MPPTs	1	1	1	1	1
DC connector	AMPHENOL/MC4/SUNCLIX				
AC Output					
Max. AC power(W)	1000	1500	2000	2500	3000
Max. AC current(A)	5	7.5	10	12.5	13.5
AC output range	50/60Hz; 220/230Vac				
Power factor	0.8Lagging~0.8Leading				
THDi	<3%				
Grid connection	Single phase				
Max. efficiency	96.20%	96.20%	96.20%	97.20%	97.20%
Euro efficiency	>96%	96%	>96%	>97%	>97%
MPPT adaptation efficiency	>99.90%	>99.90%	>99.90%	>99.90%	>99.90%



3.1 Technical Data — NS Series

Certifications & Standards		
Residual current monitoring unit	Integrated	
Anti-islanding protection	Integrated	
DC switch	Integrated (Optional)	
AC over current protection	Integrated	
Insulation monitoring	Integrated	
Grid regulation	G83/2, VDE0126-1-1,AS4777.2&.3, EN50438, ERDF-NOL-RES_13E;	
Safety	IEC62109-1&-2, AS3100	
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3 EN61000-6-4, EN61000-3-2, EN61000-3-3	
General Data		
Dimensions (WxHxD)	344*274.5*128	
Weight (kg)	7.5	8.5
Mounting	Wall Bracket	
Ambient temperature range	-25~60℃ (Over 45℃ Derating)	
Relative humidity	0~95%	
Max. operating altitude	4000m (Over 2000m Derating)	
Protection degree	IP65	
Topology	Transformerless	
Night power consumption(W)	<1	
Cooling	Natural Convection	
Noise emission(dB)	<25	
Display	LCD	
Communication	RS485/WiFi	
Standard warranty(years)	5/10/15/20/25 (Optional)	



3.1 Technical Data — NS Series

Parameters	GW3600-NS	GW4200-NS	GW5000-NS
DC Input			
Max. DC power(W)	4680	5460	6500
Max. DC voltage (V)	580	580	580
MPPT voltage range (V)	80-550	80-550	80-550
Starting voltage (V)	120	120	120
Max. DC current (A)	22	22	22
No. of DC connectors	2	2	2
No. of MPPTs	1		
DC connector	AMPHENOL/ MC4 /SUNCLIX		
AC Output			
Max. AC power(W)	3680	4200	5000*
Max. AC current(A)	16	19	22.8
AC output range	45~55Hz/55~65Hz; 180~270Vac		
Power factor	0.8 leading ~ 0.8 lagging		
THDi	<3%		
Grid connection	Single Phase		
Max. efficiency	97.8%	97.8%	97.8%
Euro efficiency	97.5%	97.5%	97.5%
MPPT adaptation efficiency	99.9%	99.9%	99.9%



3.1 Technical Data — NS Series

Protection			
Residual current monitoring unit	Integrated		
Anti-islanding protection	Integrated		
DC switch	Integrated (Optional)		
AC over current protection	Integrated		
Insulation monitoring	Integrated		
Grid regulation	VDE-AR-N 4105, G59/3, AS4777.2&.3, VDE0126-1-1, EN50438, ERDF-NOL-RES_13E	VDE-AR-N 4105, G59/3, AS4777.2&.3, VDE0126-1-1, EN50438, ERDF-NOL-RES_13E	VDE-AR-N 4105, G59/3, AS4777.2&.3, VDE0126-1-1, EN50438, ERDF-NOL-RES_13E, MEA, PEA
Safety	IEC62109-1&-2, AS3100		
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-3-11, EN61000-3-12		
General Data			
Dimensions (WxHxD)	347*432*145mm		
Weight (kg)	14		
Mounting	Wall Bracket		
Ambient temperature range	-25~60℃ (Over 45℃ Derating)		
Relative humidity	0~95%		
Max. operating altitude	4000m (Over 3000m Derating)		
Protection degree	IP65		
Topology	Transformerless		
Night power consumption(W)	<1		
Cooling	Natural Convection		
Noise emission(dB)	<25		
Display	LCD		
Communication	RS485/WiFi		
Standard warranty(years)	5/10/15/20/25 (Optional)		



3.1 Technical Data — DNS Series

Parameters	GW3000D-NS	GW3600D-NS	GW4200D-NS	GW5000D-NS
DC Input				
Max. DC power(W)	3900	4680	5460	6500
Max. DC voltage (V)	580	580	580	580
MPPT voltage range (V)	80~550	80~550	80~550	80~550
Starting voltage (V)	120	120	120	120
Max. DC current (A)	11/11	11/11	11/11	11/11
No. of DC connectors	2	2	2	2
No. of MPPTs	2 (can parallel)			
DC connector	AMPHENOL/ MC4 /SUNCLIX			
AC Output				
Max. AC power(W)	3000	3680	4200	5000
Max. AC current(A)	13.6	16	19	22.8
AC output range	50/60Hz; 230Vac			
Power factor	0.8Lagging~0.8Leading			
THDi	<3%			
Grid connection	Single phase			
Max. efficiency	97.80%	97.80%	97.80%	97.80%
Euro efficiency	97.50%	97.50%	97.50%	97.50%
MPPT adaptation efficiency	99.90%	99.90%	99.90%	99.90%



3.1 Technical Data — DNS Series

Protection	
Residual current monitoring unit	Integrated
Anti-islanding protection	Integrated
DC switch	Integrated (Optional)
AC over current protection	Integrated
Insulation monitoring	Integrated
Grid regulation	VDE-AR-N 4105, AS4777.2&.3, RD1699, VDE0126-1-1, EN50438 G83/G59, PEA, MEA, NRS
Safety	IEC62109-1&-2, AS3100
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-3-11, EN61000-3-12
General Data	
Dimensions (WxHxD)	347*432*145mm
Weight (kg)	14
Mounting	Wall Bracket
Ambient temperature range	-25~60°C (Over 45°C Derating)
Relative humidity	0~95%
Max. operating altitude	4000m (Over 3000m Derating)
Protection degree	IP65
Topology	Transformerless
Night power consumption(W)	<1
Cooling	Natural Convection
Noise emission(dB)	<25
Display	LCD
Communication	RS485/WiFi
Standard warranty(years)	5/10/15/20/25 (Optional)

3.2 Certifications

Series	Model	VDE0126-1-1 (Europe)	VDE-AR-N 4105 (Germany)	EN62109-1 & 2 (Europe)	SAA (Australia)	G83/2 (England)	G59/3 (England)	NB-T 32004 (China)	EN50438+ VDE0126-1- 1/A1 (Poland)	MEA+PEA (Thailand)	ERDF-NOL- RES_13E (France)
NS	GW1000-NS	◆		◆	◆	◆		◆	◆		◆
	GW1500-NS	◆		◆	◆	◆		◆	◆		◆
	GW2000-NS	◆		◆	◆	◆		◆	◆		◆
	GW2500-NS	◆		◆	◆	◆		◆	◆		◆
	GW3000-NS	◆		◆	◆	◆		◆	◆		◆
	GW3600-NS	◆	◆	◆	◆	◆		◆	◆		
	GW4200-NS	◆	◆	◆	◆		◆	◆	◆		
	GW5000-NS	◆	◆	◆	◆		◆	◆	◆		
D-NS	GW3000D-NS	◆	◆	◆	◆	◆		◆	◆		
	GW3600D-NS	◆	◆	◆	◆	◆		◆	◆	◆	
	GW4200D-NS	◆	◆	◆	◆		◆	◆	◆		
	GW5000D-NS	◆	◆	◆	◆		◆	◆	◆	◆	
		◆ Approved		◆ Processing							
		◆ Planning		◇ Updated to 21/09/2015							



3.3 Warranty & Service

STANDARD WARRANTY (exclude China domestic market)

GOODWE NS SS DS DT ES series inverters come standard with a manufacturer's warranty of 66 months (5.5 years) from the date of production from JIANGSU GOODWE POWER SUPPLY TECHNOLOGY Co., Ltd (hereinafter referred to as GOODWE).

The accessory products include Antenna, EzConverter, EzMeter and EzLogger come standard with a manufacturer's warranty of 30 months (2.5 years) from the date of manufacture from GOODWE.

For inverters (GOODWE NS SS DS DT ES series), and the accessory products, the warranty can be extended within 24months (2 years) term of the GOODWE warranty from the date of manufacturing. Please obtain the warranty extension price list form GOODWE Sales for further information.



3.3 Warranty & Service

WARRANTY CONDITIONS

If the inverter malfunctions or becomes inoperative due to a defect in workmanship or material under normal operation as specified in product instruction within warranty period, please report defective inverters with a brief error description to service hotline for logging and send your warranty card to our service department by fax/email to process the warranty claim. If you are a private end-user, please contact your installer, or any GOODWE authorized Dealer or Distributor.

You will need to provide us with the following information or documentation regarding defective inverter to help us to proceed your claim under warranty terms of GOODWE:

Product Model No. and serial number

Error message on LCD screen (if available) and additional information regarding the fault/error.



3.3 Warranty & Service

If the inverter malfunctions or becomes inoperative due to a defect in workmanship or material under normal operation as specified in product instruction within warranty period, please report defective inverters with a brief error description to service hotline for logging and send your warranty card to our service department by fax/email to process the warranty claim. If you are a private end-user, please contact your installer, or any GOODWE authorized Dealer or Distributor.

You will need to provide us with the following information or documentation regarding defective inverter to help us to proceed your claim under warranty terms of GOODWE:

- ☐ Product Model No. and serial number
- ☐ Error message on LCD screen (if available) and additional information regarding the fault/error.
- ☐ Detailed information regarding the entire system (modules, circuits, etc.)
- ☐ Detailed information of previous claims (if applicable).



3.3 Warranty & Service

While an inverter fails under GOODWE standard warranty period, it will be

- A. returned to GOODWE and repaired;
- B. Onsite repaired;
- C. Replaced with a refurbished inverter that includes the latest firmware (if original model has been stopped in production, GOODWE will provide an equivalent value replacement).

If the inverter is replaced within the warranty period, the remaining warranty period will be automatically transferred to the replacement unit. In this event, you will not receive a new certificate, as this replacement will be registered by GOODWE. In any event, we provide a full one-year warranty on all replacement devices regardless of whether the original warranty is still valid.



3.3 Warranty & Service

Warranty card and purchase invoices should be properly kept for further warranty claim. For return transportation of inverters or components, it must be packed in their original or equivalent packaging. GOODWE keeps the right to arrange the warranty service by using third parties for performing warranty works.

GOODWE standard warranty includes the cost to GOODWE for work and material to regain inverter functioning. All other cost that includes transportation, travelling and accommodation cost of GOODWE personnel as well as costs of your own staff is not covered in the standard warranty. Furthermore, claims for compensation for direct or indirect damages arising from the defective inverter are not covered by standard warranty.



3.3 Warranty & Service

Warranty Exception

The following circumstances may cause inverters be defective, it will not be covered by GOODWE's standard warranty:

- ❑ Product warranty period is expired (excluding additional agreements of warranty extension).
- ❑ Faults or damages due to operations against GOODWE instructions, installation and maintenance requirement. Such as mounting distance, air, waterproof plug.
- ❑ Disassembly, repair or modification by non GoodWe authorized person.
- ❑ Faults or damages due to unpredictability factors, man-made factors, or force majeure. Such as stormy weather, flood, lightning, overvoltage, pests and fire etc.



3.3 Warranty & Service

- ❑ Product modified, design changed or parts replaced not approved by GOODWE.
- ❑ Vandalism, engraving, labels, irreversible marking or contamination or theft.
- ❑ Normal wear and tear.
- ❑ Failure to comply with the safety regulations (VDE standards, etc.).
- ❑ Faults or damages caused by other reasons not related to product quality problem.
- ❑ The defect is caused during transportation.
- ❑ The rust appeared on inverter's enclosure caused by harsh environment.



3.3 Warranty & Service

SERVICE AFTER WARRANTY EXPIRATION

For products which are out of warranty, GOODWE charges an on-site service fee, parts, labor cost and logistic fee to end-user which can be any/all of:

- >On-site attendance fee: Cost of travel and time for the technician in attending on-site.
- >Parts: Cost of replacement parts (including any shipping/admin fee that may apply).
- >Labor: Labor time fee charged for the technician, who is repairing, maintaining, installing (hardware or software) and debugging the faulty product.
- >Logistic fee: Cost of delivery and other derived expense when defective products are sent from user to GOODWE or/and repaired products are sent from GOODWE to user.

THANKS



GOODWE
your solar engine

WHERE THE SUN SHINES, THERE IS GOODWE.

