GOODWE
YOUR SOLAR ENGINE

GOODWE

Solar Communication Box
SCB2000

User Manual
Solar Communication Box
SCB2000

V3.0-2022-01-25

1 Symbols

|			
⚠	Caution! - Failure to observe a warning indicated in this manual may result in minor or moderate injury.	♻	Components of the product can be recycled.
⚡	Danger of high voltage and electric shock!	↑↑	This side up - The package must always be transported, handled and stored in such a way that the arrows always point upwards.
🗑	Product should not be disposed as normal household waste.	**6**	No more than six (6) identical packages be stacked on each other.
CE	CE Mark	🍷	The package/product should be handled carefully and never be tipped over or slung.
☂	Keep Dry - The package/product must be protected from excessive humidity andmust accordingly be stored under cover.		

⚠ 2 Safety and Warning

SCB2000 of GoodWe Technologies Co., Ltd. (hereinafter referred to as GoodWe) has been designed and tested strictly according to the international safety regulation.As electrical and electric equipment,Safety Regulation shall be followed during installation and maintenance.Improper operation may bring severe damage to the operator，the third party and other properties.

- Installation.maintenance of SCB2000 must be performed by qualified personnel.in compliance with local electrical standards.regulations and the requirements of local power authorities.
- To avoid electric shock,make sure the connection between SCB2000 and AC output of inverter.SCB2000 and Grid, is disconnected before performing any installation or maintenance.
- When in operation,users should not touch any of the electrical parts of SCB2000,like internal components. cables, to avoid electic shock.
- All electrical installations must comply with local electrical standards and obtain permission from local power authorities before SCB2000 can be connected to the grid by professionals.
- Before replacing any internal components of SCB2000, the connection between the inverter and SCB2000,the power grid and SCB2000 must be disconnected, and the newly replaced components must meet the require-ments of SCB2000.Otherwise,GoodWe will not assume the responsibility and quality assurance for the personal harm.
- Make sure that the AC input voltage and input current match the rated voltage and current of SCB2000, otherwise the components will be damaged or cannot work properly.and GoodWe will not assume the responsi-bility and quality assurance for this case.
- There are lightning protection modules inside.Make sure to connect the internal PE with the ground when intlling SCB2000.
- When in operation, do not plug or unplug cables of SCB2000.
- SCB2000 must be Installed out of reach of children.
- Appropriate antistatic measures should be taken.

3 Mounting

3.1 Mounting Instruction

- SCB2000 must be installed where there is no significant shaking, shock vibration and no rain or snow.
- SCB2000 shall be installed at eye level for easy operation and maintenance.
- SCB2000 shoud not be installed near inflammable and explosive items.Any strong electro-magnetic equipment should bekept away from installation site.
- SCB2000 shall be installed at a location free from explosive hazardous media and free from gas and dust sufficient to corrode metals and destroy insulation.
- SCB2000 parameters and warning signs must be clearly visible after installation.
- SCB2000 should be installed without sunshine, rain and snow.

| No Sunlight ✓ | No Rain ✓ | No Snow ✓ | Sunlight ✗ | Rain ✗ | Snow ✗ |
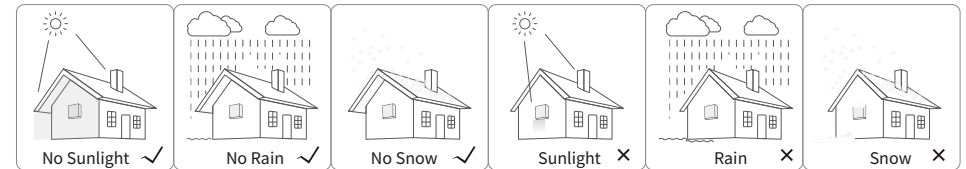
3.2 Overview and Packaging

After opening the package,confirm if it is consitent with specification of SCB2000 you purchased.
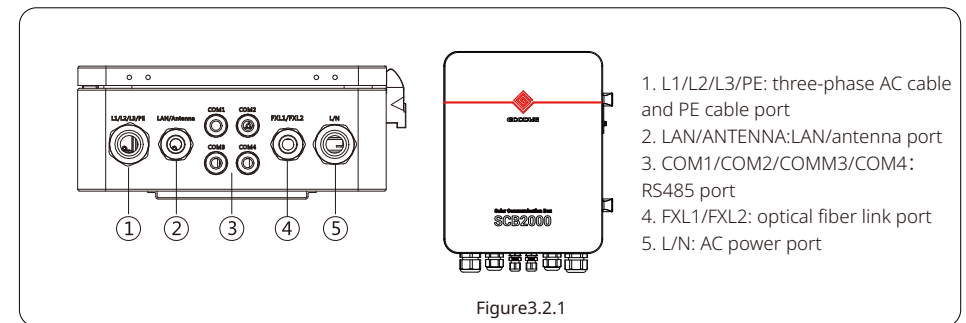
3.2.1 SCB2000 Overview

1. L1/L2/L3/PE: three-phase AC cable and PE cable port
2. LAN/ANTENNA:LAN/antenna port
3. COM1/COM2/COMM3/COM4： RS485 port
4. FXL1/FXL2: optical fiber link port
5. L/N: AC power port

Figure3.2.1

3.2.2 Package

SCB2000 ×1   User manual ×1   Expansion Screw × 3   2 PIN terminal × 1   Key × 4

Tubular terminal × 2	O type terminal × 3	Amphenol connector ×2	Screw × 1	Back hang × 1

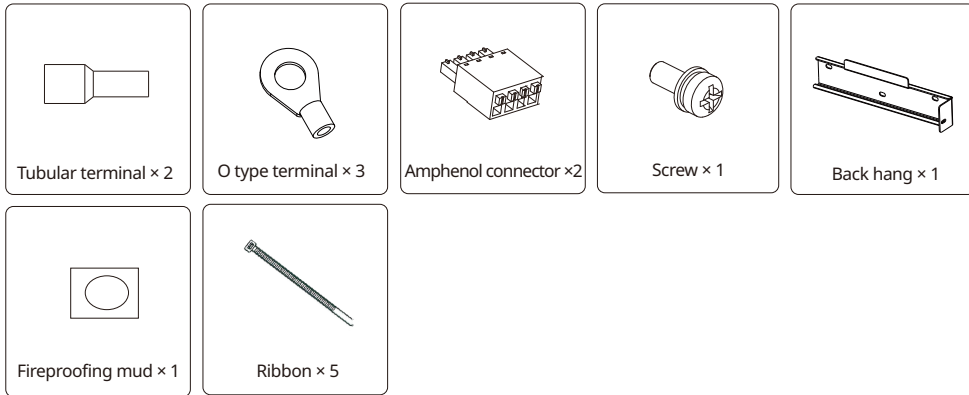|	
Fireproofing mud × 1	Ribbon × 5
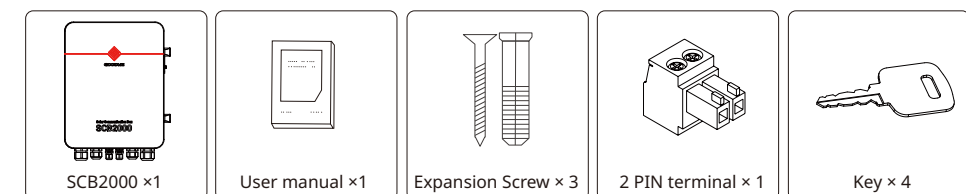
3.3 SCB2000 lnstallation

3.3.1 Selecting the installation location

The following must be considered when selecting the best location for an SCB2000.
· The mount and installation method must be appropriate for the SCB2000's weight and dimensions.
· Install on a sturdy surface.
· The installation location must be well ventilated.
· SCB2000 can be placed horizontally or installed vertically.
· The SCB2000 must be installed vertical or with a backward tilt less 15°.No sidwways tilt is allowed.The connection area must point downwards.Refer to Figure 3.3.1-1.
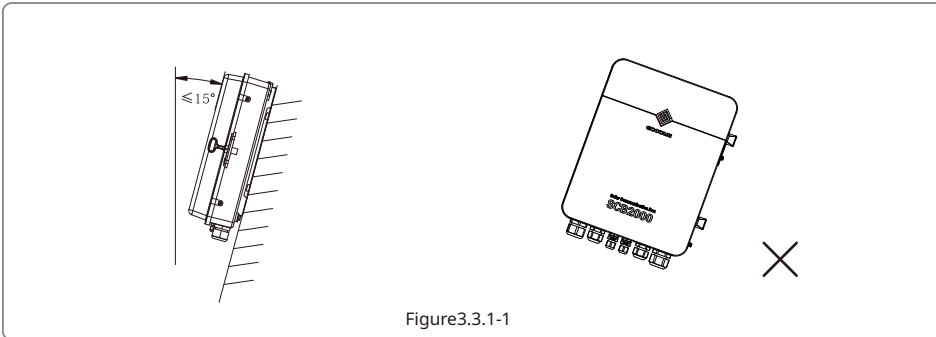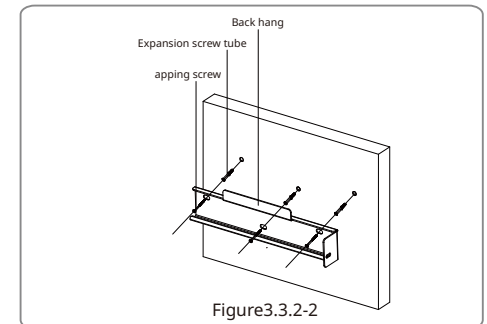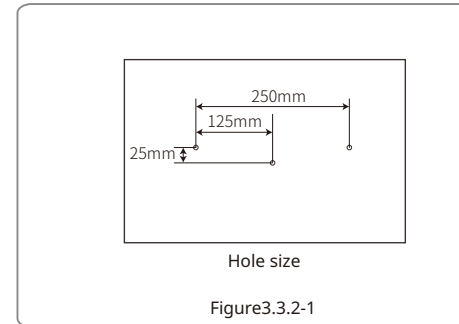

Figure3.3.1-1

· To allow dissipation of heat,and for convenience of dismantling,clearances around the SCB2000 must be no less than the values,refer to figure3.3.1-2

|	
Upward	200mm
Downward	500mm
Front	500mm
Both sides	200mm
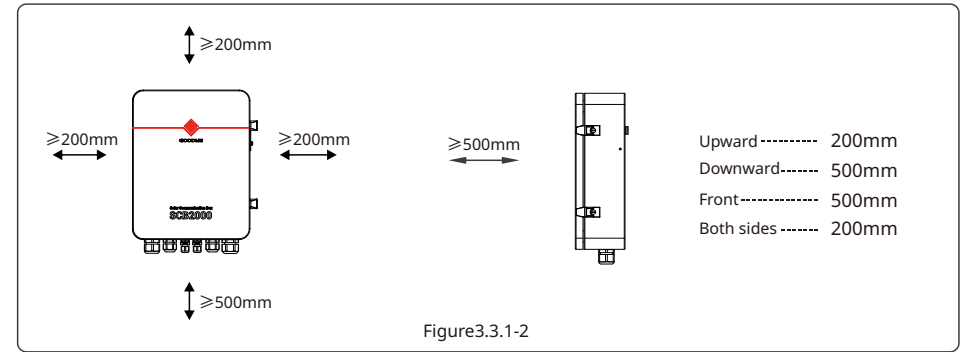
Figure3.3.1-2

3.3.2 Mounting Procedure

(1)Drill holes on the wall,8mm in diameter and 45mm deep;Refer to Figure 3.3.2-1
(2)Fix the wall mounting bracket on the wall with expansion bolts in accessory bag,refer to Figure 3.3.3-2

Hole size

Figure3.3.2-1

Figure3.3.2-2

(3)Place SCB2000 on the wall-mounted bracket as illustrated in figure 3.3.2-3
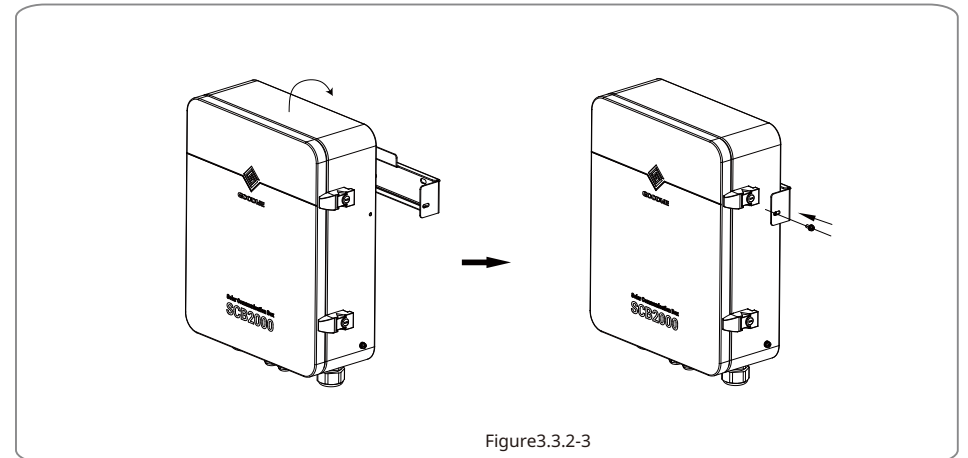
Figure3.3.2-3

Horizontal Placement:

1. The SCB2000 can be placed horizontally, as shown in Figure 3.3.2-4.

2. The SCB2000 needs to be placed indoors at a location where it can be fixed, as shown in Figure 3.3.2-5.
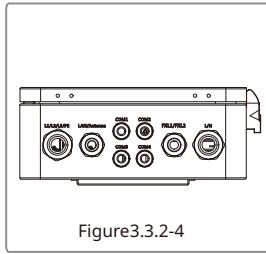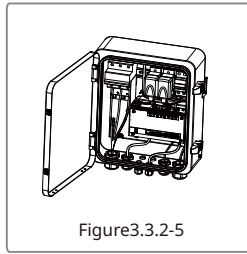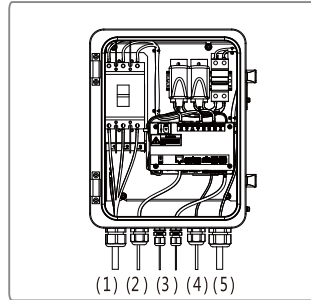

Figure3.3.2-4

Figure3.3.2-5

3.3.3 Port and wiring instructions

(1)Voltage Input Port(L1\L2\L3\PE)

Input line voltage range:AC342-690V ; AC frequency:50/60HZ

(1) (2) (3) (4) (5)

6~8mm

No.	Description	Content
A	Wire Diameter	No more than 25 mm
B	Cross Sectional Area of Copper Wire	Recommend:2.5-4mm^2
C	Wire Length	About 130mm(PE line about 50mm)
D	Length of Bare Copper Wire	About 6~8mm(5~6mm for PE)

Use wire crimper to press

(2)LAN port

LAN version SCB2000 uses this port when using network cable.

(3)RS485 port

Use this port when connecting ring tester and other third-party devices to RS485 line.

(4)fiber port

Fiber optic version SCB2000 USES this port when using fiber optic cable connection.

(5)LN power port

Connect LN single-phase power supply, 110-240vac, 50/60hz to supply SCB2000.

Specification and crimping of Single - phase power cord

10~12mm

No.	Description	Content
A	Wire diameter	No longer than 25 mm
B	Cross sectional area of copper wire	2.5-4mm^2(Recommended)
C	Wire length	45mm(more or less)
D	Length of bare copper wire	12mm(more or less)

Use wire crimper to press

LAN Network port
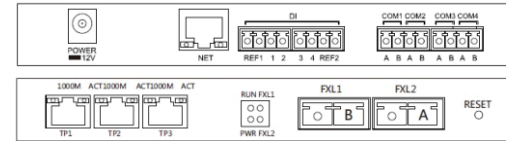
LAN SCB2000 uses this port when accessing a network cable;The access point is as shown in the "NET" position in the figure above.

The description of bottom label inside SCB2000 is as follows

No.	Port	Description
1	POWER	DC Power Input (Occupied)
2	NET	Ethernet Interface
3	DI	DRED or RCR functional interface
4	NC	reserve
5	COM1	This port is not used
6	COM2	This port is not used
7	COM3	This port is not used
8	COM4	Connect with third party equipment such as environmental detector
9	TP1,TP2	Ethernet Interface
10	TP3	Ethernet Interface(Occupied)
11	FXL1,FXL2	SC fiber optic interface

Wire specification and installation: It is recommended to use shielded twisted pair cables with conductor area 1mm^2 for 485 communication cables.

Line	Function
1	RS485-A
2	RS485-B

6.5mm

25mm

Screw   Nut   The insulator   Screw cap
Box   Single hole seal ring   Cables

It is recommended to use Super Five Type of network cables. After wiring, use the fire-proof mud to seal the port, to ensure its protective performance.

3.3.4 Application scene
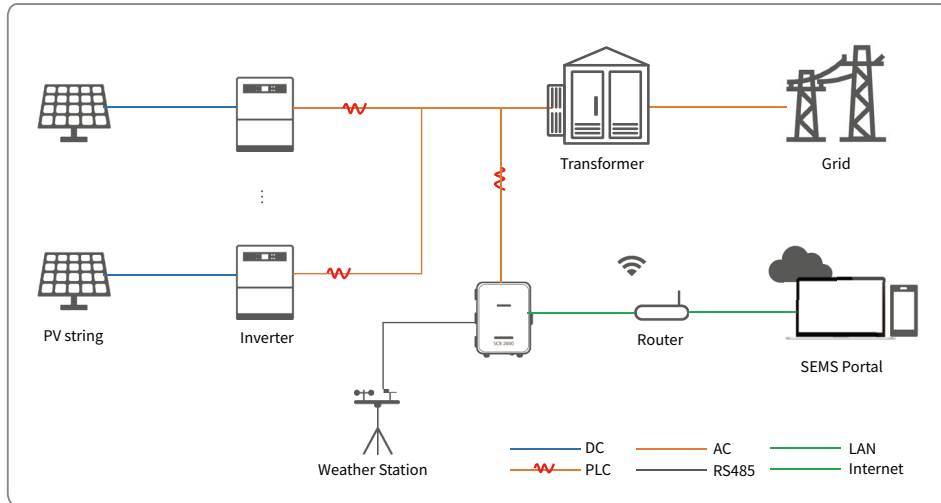
LAN or optical fiber can be used to communicate with the server, and an RS485 port can be reserved to connect with environmental monitor or other equipment.

Multi-machine fiber ring network:
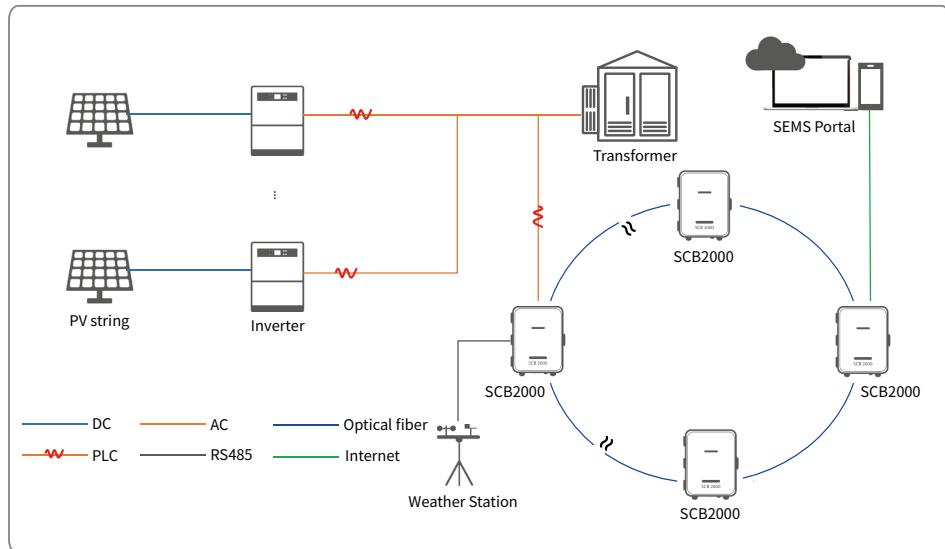
If the choice of optical fiber version can be composed of fiber ring network.

One SCB2000 should be set as the host (root node), and the other SCB2000 should be set as the slave (slave node).

Please refer to 4.3 fiber switch configuration instructions for details.

Contact after-sale service for this specific function Contact after-sale service to connect the environmental monitor.

4 System is running

4.1 Ezlogger pro indicator light description
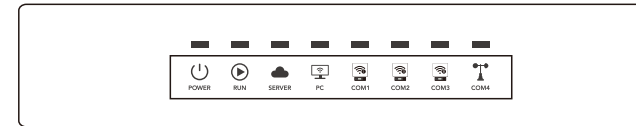
The LED indicator light is as follows:

| port	State	Statements
POWER	The blue lights	Normal power supply
	The blue lights went out	The power supply is abnormal
RUN	Blue lights flashing(One second on, one second off)	Ezlogger pro works properly
	The blue light is always on or off	Ezlogger pro is not working properly
SERVER	Blue light normally on	Ezlogger pro connects to the server normally
	Blue lights flashing (One second on,one second off)	Ezlogger pro connects to the router but not to the server
	The blue lights went out	Ezlogger pro network notconnected
PC	The blue lights	Ezlogger pro connects to your computer and Promate software
	The blue lights went out	Ezlogger pro is not connected to the computer and Promate software
COM1	The blue lights	The number of inverters actually collected by Ezlogger pro is the same as that set by Promate
	Blue lights flashing (One second on, one second off)	Ezlogger pro actually collects fewer inverters than Promate
	Blue lights flashing(One second on, three seconds off)	The Promate software does not set the number of inverters
	The blue lights went out	Ezlogger pro does not collect inverter data
COM4	The blue lights	The external equipment is normal
	The blue lights went out	No external equipment

4.2 System Settings

SCB2000 and inverter network, through the installation of Pormate monitoring software on the computer side of the SCB2000 monitoring and configuration.

ProMate is a kind of software that can configure EzLoggerPro, SCB2000 etc. It can modify the network IP address of EzLoggerPro and SCB2000, configure the number of connected inverters, time setting,RCR, DRED function, configuration and on-site debugging.

Please download the ProMate app at https://en.goodwe.com/.

If the user needs to use ProMate software to configure SCB2000, it needs to be set in dynamic IP(DHCP) or static IP according to the network connection mode.

(1)If the user is in the dynamic IP mode, he/she only needs to connect the SCB2000 NET port to the Router LAN port with the network cable to connect to the network, namely plug and play.

(2)If the user has a static IP, it is necessary to switch SCB2000 to the static IP mode. That is, press the Reload key for about 10 seconds to reset and restart SCB2000,About 10 seconds after pressing the Reload button, the LED lights on the SCB2000 internal EzLogger Pro Panel will blink from rightto left and reset and restart.

After restart, SCB2000 will be switched to static IP mode(default IP:192.168.1.200).

Then use cables to connect SCB2000"NET" port(If the optional fiber version is connected to the SCB2000 TP1 or TP2 port) to the Ethernet port of the computer.at the same time, the IP address of the computer needs to be modified.
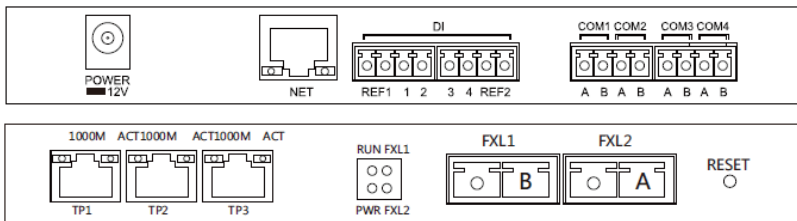
The IP address and the default gateway should be set at 192.168.1.xxx segment(1≤XXX≤250 and XXX ≠200).For example, the IP address can be set as 192.168.1.100 and the default gateway as 192.168.1.254.
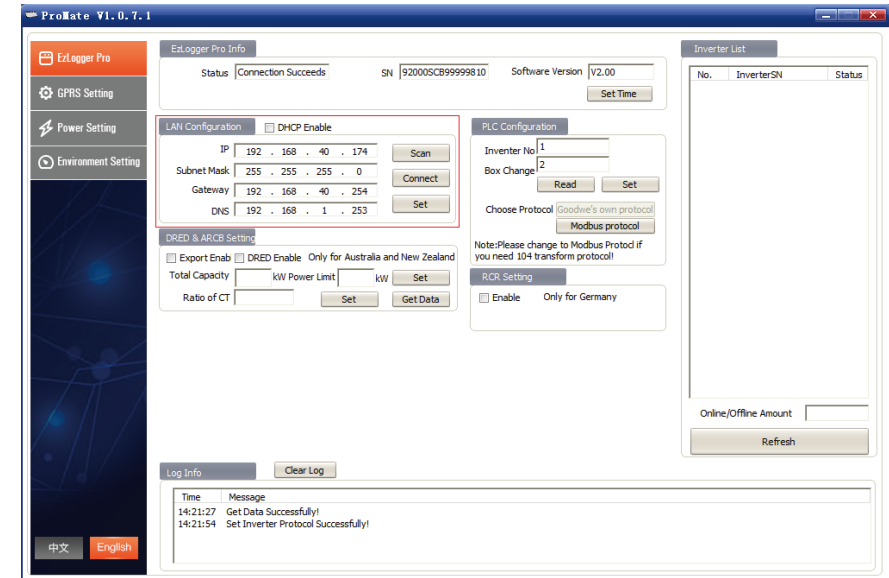
1. When the configuration is complete,unplug the network cable to the Ethernet port of the computer and plug it into the router.At the same time can restore the computer's IP address and other parameters to the default Settings. If the user wants to restore to dynamic IP mode, please press the RELOAD button for about 4 seconds. EzLogger Pro's LED lights will flash from left to right and reset to restart. EzLogger Pro will be switched to dynamic IP mode after restart.

2.Protocol selection

Users can choose the protocol according to their needs. The gray one is the current protocol.After the protocol is switched,promate waits about one minute before proceeding.

Note: if the protocol is switched, the inverter device should be restarted.
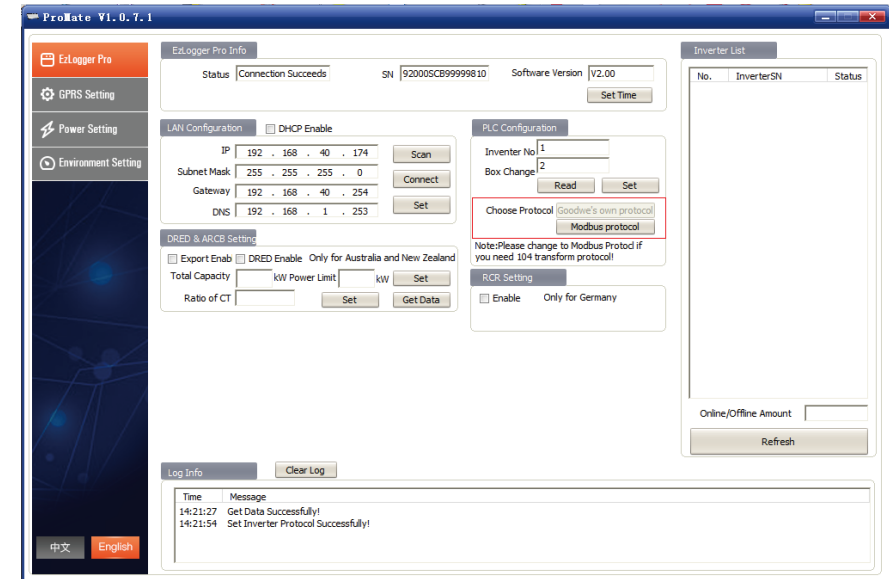
4.3 Optical fiber switch configuration instructions

If the choice of fiber version please refer to this description

Some parameters of fiber optic switch: fiber optic switch is single-mode single-fiber,fiber interface SC, central wavelength 1310/1550nm;The transmission distance is 20KM

4.3.1 Use steps of optical fiber switch

Connect the fiber jumper or tail fiber from the end boxes at both ends of the fiber to the ports of the gigabit fiber switches (or the gigabit fiber interfaces of the transceiver or router at one end), Note that both ends of the same optical fiber must be connected to the TX and RX ports of the optical fiber interfaces at both ends, otherwise the optical fiber cannot be connected, and the single fiber module only needs one core optical fiber jumper.

Note:when optical fiber group ring network, there must be only one root node in one ring network, and the others are slave node devices.

4.3.2 The gigabit network switch indicator lights are all defined as follows

PWR	Power indicator	The lights indicate the power supply is normal
RUN	System operation indicator	Slow Flash:The system is running well, flash, and the loop function is enabled
FXL1	FXL1 Light mouth indicator light	Light: light port connection normal light Flash: light port has data communication
FXL2	FXL2 Light mouth indicator light	Light: light port connection normal light Flash: light port has data communication
1000M	Network light	Lights: expressed as a rate of 1000M
ACT	Network light	Flashlight: data transmission

4.3.3 Reset and restore factory equipment

Long press RESET, RUN light Long bright, and then flash, quick. Grow after flashing, open RESET key, wait for RUN indicatorRestore to factory default when flashing slowly
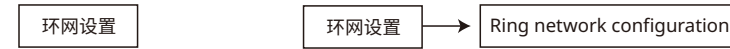
4.3.4 Introduction to the use of the Ring Network

(1) Login system default IP: 11.11.11.254 User name: root password: admin
Connmect th opicalfiher to the computer through the network cable. Set the lPaddress of the computer to 11.11.11.xxx and enterthe URL 11.11.11.254 in the browser.
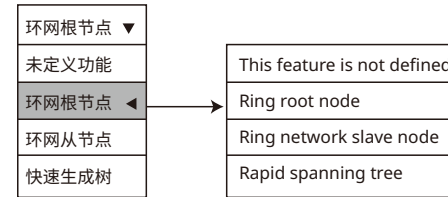Login screen appears.

账户 (User name) root   密码 (password) admin
Click the " OK" button 确定 when the input is complete.

环网设置   环网设置 → Ring network configuration

(3) Pop up the following interface. Select second root nodes of ring network

环网根节点 ▼	
未定义功能	This feature is not defined
环网根节点 ◄	Ring root node
环网从节点	Ring network slave node
快速生成树	Rapid spanning tree

Select the second"Ring root node"
Please click "OK" button 确定 to complete the last step

(4) In the ring network configuration ring network, only one of them needs to be configured as a ring root node.Others do not need to be configured.Other defaults are that the ring network is from the node.

(5) IP Configuration To faclitate management, IP addresses can be modified, and each device must be within the same IP address segment.

(6) If one or more devices in the ring network can not work properly, please insert one set of optical fibers after replacement, and then insert another set of optical fibers after the equipment system is activated.

5 Maintenance and troubleshooting

Note:
During system maintenance, please power off the system.Please ensure that all power supply has been disconnected before the operation.

5.1 Maintenance

Maintenance contents:

Please ensure that there is no strong EMI equipment around SCB2000.

Please ensure that no heat source is placed around SCB2000.

Check the SCB2000 wiring cable regularly for signs of looseness.Make sure the cables are firmly connected.

5.2 fault handling

Typical fault :

The serial number	System failure	possible cause	proposal
1	The system is not powered on	The socket is not powered.	Check that the LN power input is normal
		The adapter ac input is not plugged in	Check the adapter to ensure that the ac input is fully plugged into the socket
		The adapter dc output is not plugged in	Check the adapter to ensure that the dc output is plugged into POWER==12V
		Power adapter failure	Replace the power adapter
		SCB2000 system failure	Please contact the supplier or goodwe after sale
2	The inverter device is not available on ProMate software	The three-phase ac power line is not connected	Check whether the three -phase ac power line is not connected and reconnect it
		The number of devices is not set	Set according to the actual number of inverters connected
		PLC communication board fault	Please contact the supplier or goodwe after sale

SCB2000 for the maintenance of the whole machine, such as internal failure, please replace the whole machine.

Note: when replacing 5CB2000, please power off the system

6 Technical Data

Model / Name		SCB2000(Solar Communication Box)
Power adapter voltage input	Power supply Input Voltage Range	AC110V~240V
	frequency range	50Hz/60Hz
Voltage Range of lnput AC line		AC342V ~690v
Rated Power Consumption		≤18w
communication	with the inverter	power line
	with the server	LAN/GPRS/ optical fiber
Max quality of lnverter connected		30
Max Length to Server/Cloud		LAN :100m optical fiber : 20km
RS485		lt can be connected to third-party devices such as environmental monitors
other interface		USB,SD
Fiber Parameters	Centre wavelength	1310/1550nm
	transmission distance	20KM
	optical port	A port:1550(Transmission)1310(Reception)
		B port:1310(Transmission) 1550(Reception)
Mechanical Specifications	Size(Width*Height* Depthmm)	460×350×143mm
	Weight(KG)	with optical fiber 10.5kg; without optical fiber9.9kg
	Protection Degree	IP65
	lnstallation	Wall mounting, bracket mounting, pole mounting
Operating Temperature Range(°C)		-20 ~+60°C
storage temperature(°C)		- 30 ~+70°C
Relative Humidity		0-100%
Altitude		<4000m

7 Relevant Certification

C E