Solar Pumping Inverter

Operation Manual

Preface

Thank you very much for using SGY series of solar pumping inverter from Assadaqah Althahabia for Trading and Importing.

Please make sure to read this manual carefully before installation and use in order to give full play to the performance of this product and ensure the safety of user and equipment.

Please keep this manual in order to subsequently facilitate the routine inspection and maintenance, and find out the cause of abnormity treatment countermeasure.

If there are any questions or specific requirement during using, please contact the distributors of our company or directly keep in touch with the technology service center of our company.

The manual will be subject to change without any further notification.

Contents

Safety Instruction

To ensure safety operation of solar pumping inverter, it must choose the right way of transportation, installation,operation and maintenance. Before operations, be aware of the safety notices as below:

 Warning: Misuse will result in fire, serious injury to person or even death.

 Caution: misuse will cause low or middle-grade injury to person or equipment damage.

 Prompt: Point out some useful information.

Purchase Inspection

 Caution
If the inverter is damaged or missing parts, it will not be allowed to install, otherwise may have accidents.

Installation

 Caution
1. To ensure good convection cooling effect, the inverter must be installed **vertically** .  2. Install it in the indoor condition which is possessed of ventilation opening or ventilating device. It is forbidden to install where exposes directly to the sunlight. 3. Do not let the drilling remains fall into the inverter cooling fins or fans during installation in case the dissipation is effected.

Connection

 Caution
1. Each wire connected to the inverter must be wrapped with electrical tape for safety.  2. Connection job must be carried out by qualified electrical professionals, or else it will cause electrocution or fire. 3. Please confirm that input power has already been cut off, or else it will cause electric shock or fire. 4. Earth terminal must be reliably ground, or else the inverter shell will have a danger of being electrified. 5. The type selection of PV array, motor load and inverter must be reasonable, or else the equipment will be damaged. 

Running

Caution
1. Please use the fasten terminal of the specified torque, or else it will cause fire. 2. Do not connect the output terminal of the inverter to the capacitor and phase-advanced LC/RC noise filter. It is recommend to use the output reactor when the distance between the inverter and the motor load more than exceeds100 m.

Caution ς
1. Adjust partial control parameters according to the steps indicated by the manual before its first running. Do not change the control parameters of the inverter randomly, or else it will cause damage to the equipment. 2. Because the heat sink's temperature is high during running, do not touch it for a long time, or else it will cause burn. 3. In the condition of altitude over 1000m, the inverter should be derated for use, that is, output current will be de-rated by 10% at every 1500 m increment of height.

Warning
1. Maintenance and inspection must be performed by the qualified electric professionals. 2. Do not dismantle the inverter during electrifying. Conduct maintenance and inspection at least 5 minutes after the power off. 3. It is absolutely forbidden to reconstruct the inverter by oneself, or else it will cause personnel injury or equipment damage. 4. Treat the inverter as industrial waste when processing the abandoned inverter. It is possible that the electrolytic capacitor will explode during incineration and that part of components will produce toxic and harmful gas.

Chapter 1 System Introduction

1.1 Introduction of Solar Pumping System

Solar pumping system becomes more and more popular, it can be applied to daily use (underground water), agriculture irrigation, forestry irrigation, desert control, pasture animal husbandry, water supply for islands, wastewater treatment engineering, and so on. In recent years, with the promotion of the utilization of new energy resources, solar pumping systems are more and more used in municipal engineering, city center squares, parks, tourist sites, resorts and hotels, the landscapes and fountain systems in the residential areas.

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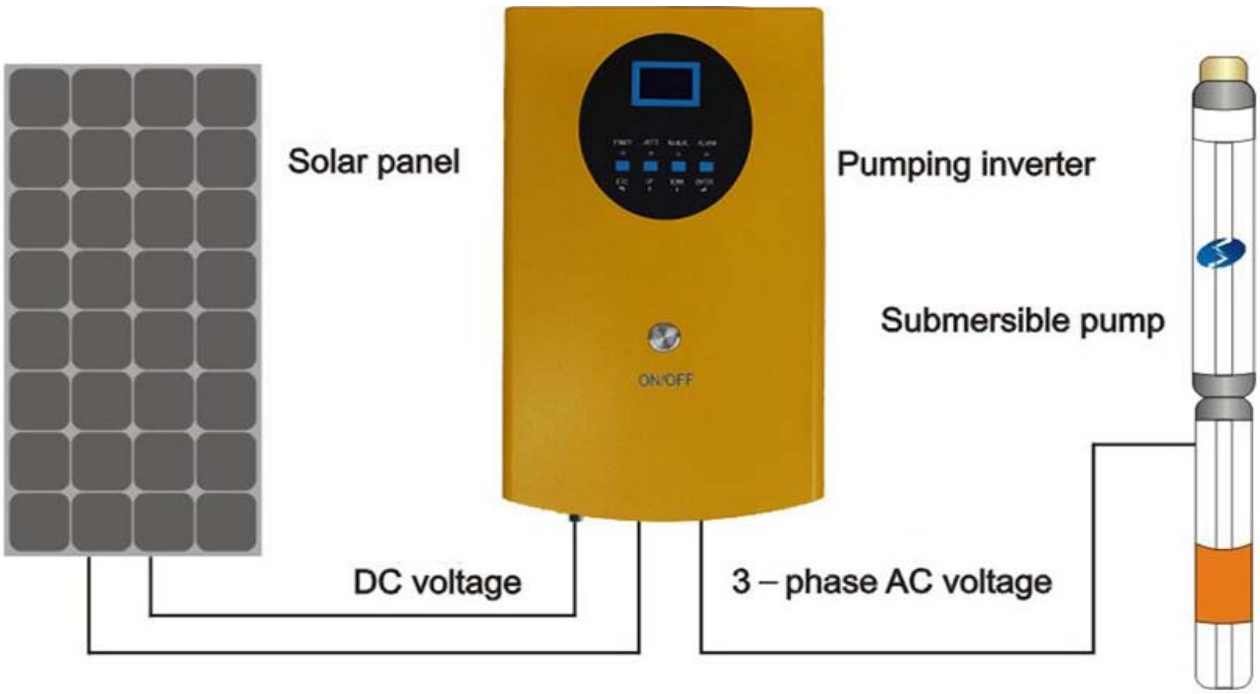
This system is composed of solar array, 3 phase AC pump and solar pumping inverter. Based on the design philosophy that it is better to store water than electricity, there is no energy storing device such as store battery in the system.



Structure of solar pumping system

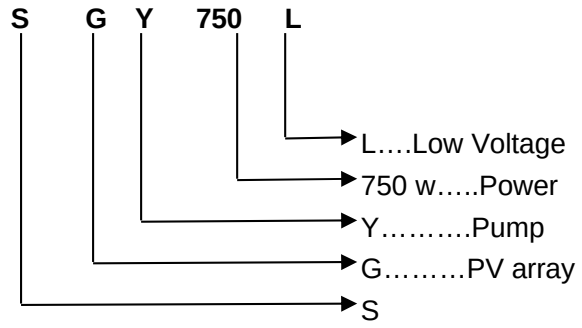
The solar array, an aggregation of many solar modules connected in series and parallel, absorbs sunlight radiation and converts it into electrical energy, providing dynamical water for the whole system. The pumping inverter controls and adjusts the system operation and converts the DC produced by solar array into AC to drive the pump, and adjust the output frequency in real-time according to the variation of sunlight intensity to realize the maximum power point tracking (MPPT). The pump, drive by 3-phase AC motor, can draw water from the deep wells or rivers and lakes to pour into the storage tank or reservoir, or directly connect to the irrigation system, fountain system, etc. According to the actual system demand and installation conditions, different types of pump such as centrifugal pump, axial flow pump, mixed-flow pump or deep-well pump can be used.

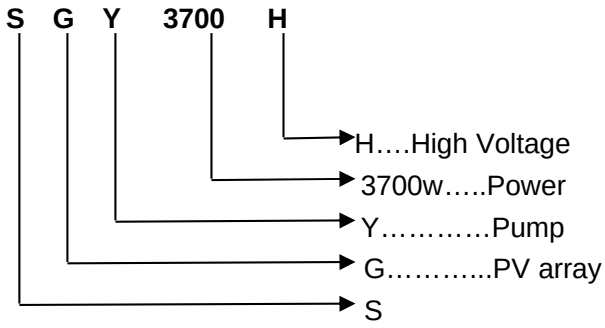
1.2 Inverter Features

·One power key to turn ON/OFF.
·Compatible with 3-phase induction motor.
·Adopting the proposed dynamic VI maximum power point tracking (MPPT) control method; Fast response speed and stable operation; Better than the conventional methods which may lead to the problems including poor tracking performance, unstable operation or even damaging water hammer effects when the irradiation on the array change rapidly.
·Digital control with full automatic running, data storage and complete protective functions (short-circuit, overload, over voltage, under voltage, over heat, reverse polarity, thunder, over flow and dry running).
·The main circuit adopts intelligent power module (IPM), with high reliability and high efficiency 98%.
·Unique design of cold rolling steel shell with good cooling and shielding, LCD display (43*29mm) and keys, easy operation, good view through LCD when setting parameter, feel comfortable.
·Protection degree IP55, working temperature: -10 ℃to 50℃
·Solar pump inverter can connects to city power when there is no sunshine to keep system pumping water (this function is optional).
·Solar pump inverter can be built-in GPRS receiving module(optional).You can operate this inverter remotely through your PC or mobile phone with our provided website, user name and password.
·Low voltage drive device is our patent right product, can be used in small solar pumping system to save the quantity of solar panels.
·Soft start and variable-frequency function.

1.3 Inverter specification

Model Description





Remark: “L” means low voltage: 3 phase 220V;
“H” means high voltage:3 phase 380V.

Caution: Do not tear off the product's name plate label.

Solar pumping system specification

Solar Pump Inverter						Solar Array	AC Pump	
Model	Rated Power (KW)	Input Voltage Range(VDC)	MPPT Voltage(V)	Rated output Voltage (VAC)	Output Frequency (Hz)	DC power (KW)	Rated Power (KW)	Input Voltage (VAC)
SGY750L	0.75	280-430	280-350	3PH 220	0-50/60	0.825	0.55	3PH 220
SGY750H	0.75	450-750	480-600	3PH 380	0-50/60	0.825	0.55	3PH 380
SGY1500L	1.5	280-430	280-350	3PH 220	0-50/60	1.65	1.1	3PH 220
SGY1500H	1.5	450-750	480-600	3PH 380	0-50/60	1.65	1.1	3PH 380
SGY2200L	2.2	280-430	280-350	3PH 220	0-50/60	2.25	1.5	3PH 220
SGY2200H	2.2	450-750	480-600	3PH 380	0-50/60	2.25	1.5	3PH 380
SGY3700L	3.7	280-430	280-350	3PH 220	0-50/60	4.5	3	3PH 220
SGY3700H	3.7	450-750	480-600	3PH 380	0-50/60	4.5	3	3PH 380
SGY5500L	5.5	280-430	280-350	3PH 220	0-50/60	6	4	3PH 220
SGY5500H	5.5	450-750	480-600	3PH 380	0-50/60	6	4	3PH 380
SGY7500H	7.5	450-750	480-600	3PH 380	0-50/60	8.25	5.5	3PH 380
SGY11KH	11	450-750	480-600	3PH 380	0-50/60	11.25	7.5	3PH 380
SGY15KH	15	450-750	480-600	3PH 380	0-50/60	16.5	11	3PH 380
SGY18KH	18	450-750	480-600	3PH 380	0-50/60	22.5	15	3PH 380
SGY22KH	22	450-750	480-600	3PH 380	0-50/60	27.8	18.5	3PH 380
SGY30KH	30	450-750	480-600	3PH 380	0-50/60	39	26	3PH 380
SGY37KH	37	450-750	480-600	3PH 380	0-50/60	45	30	3PH 380
SGY45KH	45	450-750	480-600	3PH 380	0-50/60	56	37	3PH 380
SGY55KH	55	450-750	480-600	3PH 380	0-50/60	68	45	3PH 380
SGY75KH	75	450-750	480-600	3PH 380	0-50/60	98	65	3PH 380

Caution: Please be sure to select the appropriate model according to the PV array and motor load.

Caution: High-power machine model uses multiple-channel DC input structure. The input power in the above table indicates total multi-channel input power.

Chapter 2 Installation and wiring

2.1 Purchase Inspection

Our company has rigid quality assurance system in product manufacturing, package, etc. If any abnormity is found, please immediately contact the distributors of our company or directly keep in touch with the technology service center of our company. We will solve the problems for you immediately. Once you get the product, please confirm the following items:

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Inspection item	Inspection method
Consistency with ordered product	Inspect the product's nameplate label
Damage or exfoliation phenomenon	Inspect whole appearance
Completeness of main machine and accessories	Check carefully according to the product list
Looseness of fastening parts such as screw	If necessary, inspect with screwdriver

2.2 Shape

5.5KW,7.5KW,11KW,15KW,18kw 0.75W,1.5KW,2.2KW,3.7KW

22KW,30KW

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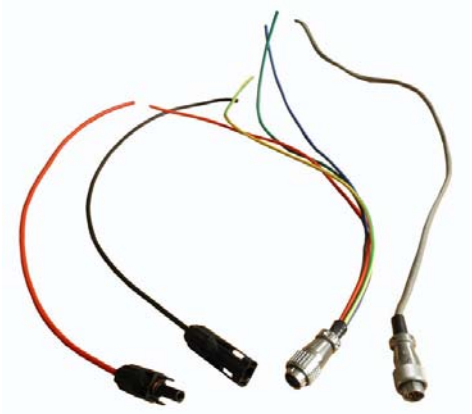
2.3 Output wiring



Warning: In order to ensure system work normally and properly, please use recommended wires with different size as below.

Model No.	Solar panel wire	Ground wire	Motor wire	Sensor wire
SGY750L	2.5mm^2	2.5 mm^2	2.5 mm^2	0.5-1.0 mm^2
SGY1500L	2.5 mm^2	2.5 mm^2	2.5 mm^2	0.5-1.0 mm^2
SGY2200L	2.5 mm^2	2.5 mm^2	2.5 mm^2	0.5-1.0 mm^2
SGY3700L	4 mm^2	4 mm^2	4 mm^2	0.5-1.0 mm^2
SGY3700H	4 mm^2 Rated voltage 750V	4 mm^2	4 mm^2	0.5-1.0 mm^2
SGY5500H	4 mm^2 Rated voltage 750V	4 mm^2	4 mm^2	0.5-1.0 mm^2
SGY7500H	4 mm^2 Rated voltage 750V	4 mm^2	4 mm^2	0.5-1.0 mm^2
SGY11KH	8 mm^2 Rated voltage 750V	4 mm^2	6 mm^2	0.5-1.0 mm^2
SGY15KH	10 mm^2 Rated voltage 750V	4 mm^2	6 mm^2	0.5-1.0 mm^2
SGY18KH	12 mm^2 Rated voltage 750V	4 mm^2	10 mm^2	0.5-1.0 mm^2
SGY22KH	15 mm^2 Rated voltage 750V	4 mm^2	12 mm^2	0.5-1.0 mm^2
SGY30KH	20 mm^2 Rated voltage 750V	4 mm^2	15 mm^2	0.5-1.0 mm^2

2.4 Outer plug instruction:

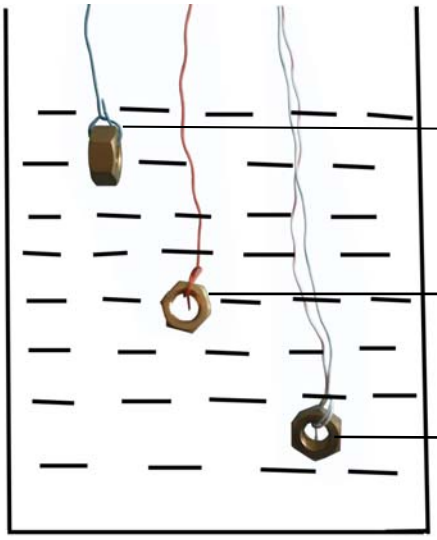
Socket	Wire description		Connection description
	Red wire single strand		connected positive pole of PV array
	Black wire single strand		connected negative pole of PV array ƨı
	4 Core wire	Red wire	A phase
		Green wire	B phase
		Blue wire	C phase
		Yellow-green wire	Ground wire
	9 Core wire （network cable	Blue wire	Tank sensor high
		Red wire	Tank sensor middle
		White-blue wire White-red wire	Tank sensor ground wire
		Green wire	Well sensor high
		Brown wire	Well sensor middle
		White-green wire White-brown wire	Well sensor ground wire

2.5 Sensor (Optional)

Our solar pumping inverter has sensor interface and along with sensor contactor with short lead network cable. Then you can use anti-interface network cable to prolong this line. This network cable is a sensor for tank full and well dry. It has 9 core wires: 4 wires used as tank sensor; 4 wires used as well sensor. 1 wire connected with ground. Sensor cable as below:

How does sensor work?

A) 4 wires used as well sensor. **Blue, red, white-blue and white-red**. Each wire's terminal should be removed the cover, leave core outside. Blue used as high sensor. Red used as middle sensor. White-blue and white-red together used as lowest sensor.



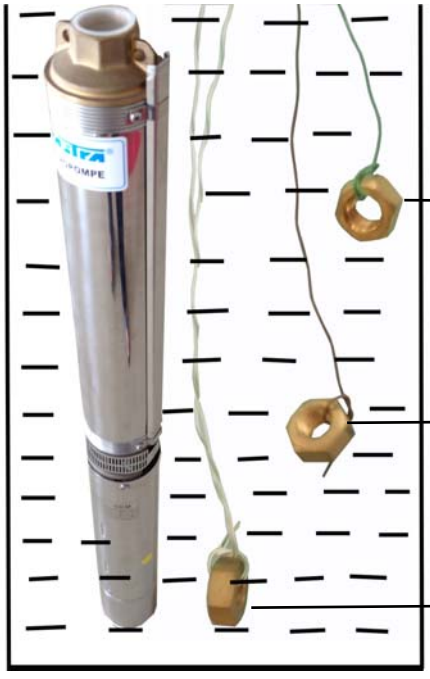
If water level reaches high sensor, means tank is full. Inverter will drive pump to stop pumping water.

If water level reaches middle sensor, means tank water is much. Inverter continues to drive pump to pump water.

If water level reaches the lowest sensor, means water is very little, inverter starts to drive pump to pump water.

Remark: You can set the sensor place as you like.

B) 4 wires used as well sensor. **Green, brown, white-green and white-brown.** Each wire's terminal should be removed the cover, leave core outside. When core touch the water, it is sensor. Green used as high sensor. Brown used as middle sensor. White-green and white-brown together used as lowest sensor.



This high sensor should be fixed above middle sensor, you can fix it at any place as you like, but it should be under water. When water covers three sensors, inverter starts to drive pump to pump water.

This middle sensor should be fixed a bit far above pump's water incoming hole. If water level meets this middle sensor, means well water is little, inverter should stop to drive pump, otherwise pump will damage without water.

This lowest sensor should be under pump's water incoming hole. You can make it long or short as you like.

Remark: The sensor part is optional according to your application. But if you want to use the sensor function, it must set as below: (this part is in sensor setting)

1. Tank sensor

18. Sensor Setting:

Sensor setting, press "UP", "DOWN" to select "OK" or "NO", press "ENTER" to confirm modification. If you set "OK", means sensor is available. Tank sensor can detect tank is full or not, well sensor can detect well is dry or not. When tank is full or well is dry, inverter stop output, pump does not run. If you set "NO", means sensor is unavailable.

When it just used Tank sensor, Tank sensor should be Yes, and well sensor be No.

2. Well sensor

18. Sensor Setting:

Sensor setting, press "UP", "DOWN" to select "OK" or "NO", press "ENTER" to confirm modification. If you set "OK", means sensor is available. Tank sensor can detect tank is full or not, well sensor can detect well is dry or not. When tank is full or well is dry, inverter stop output, pump does not run. If you set "NO", means sensor is unavailable.

Only Well sensor, Tank sensor sets No and well sensor be Yes.

3. Tank sensor & Well sensor

18. Sensor Setting:

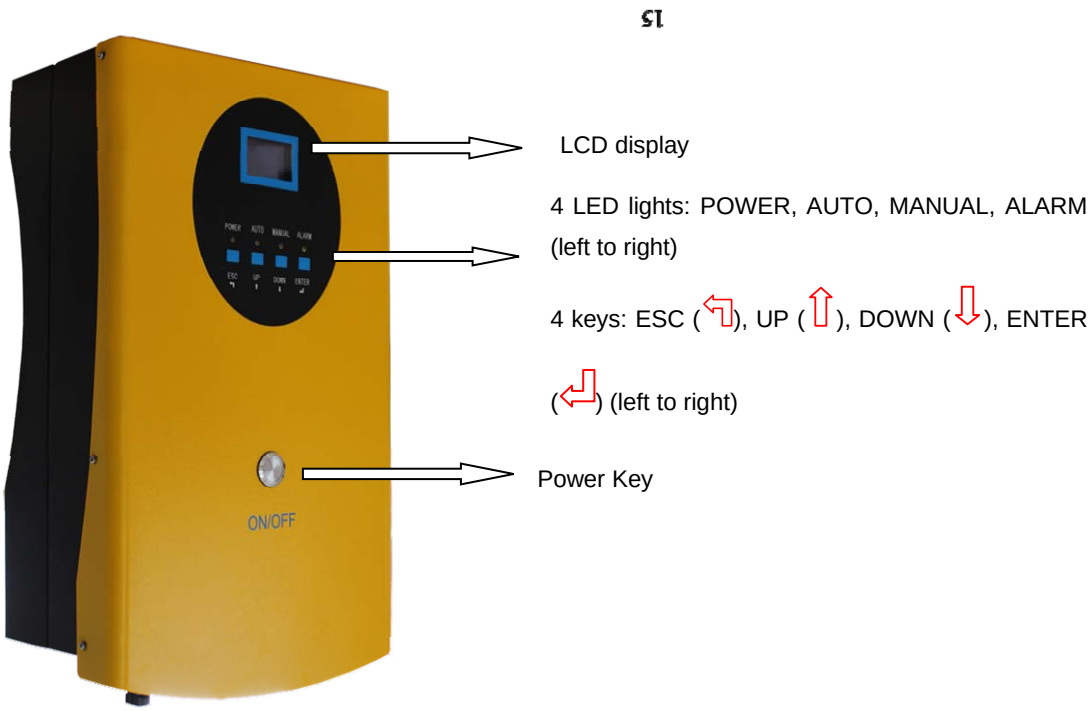
Sensor setting, press "UP", "DOWN" to select "OK" or "NO", press "ENTER" to confirm modification. If you set "OK", means sensor is available. Tank sensor can detect tank is full or not, well sensor can detect well is dry or not. When tank is full or well is dry, inverter stop output, pump does not run. If you set "NO", means sensor is unavailable.

When Tank sensor & Well sensor are used, both set **Yes.**
Instead, when sensor function is no need, please set both are **NO**, otherwise it can not work.

Chapter 3 Operation Control

3.1 Panel Layout and Instruction

Solar pumping inverter is LCD displayed, see as below diagram, including 4 LED lights, 1 LCD panel and 4 keys and ON/OFF power key. Simple operation, easy understanding.



3.2 Operation Method of Panel

Setting of all parameters, work state, alarms etc. are explained as below.

Key Explanation: there are 4 keys: “ESC’’, “UP’’, “DOWN’’, “ENTER’’. Change parameter by pressing “ENTER’’ key. Press “UP’’, “DOWN’’ to change value, then press “ENTER’’ key to save. “ESC’’ means returns.

ON/OFF: Press this Key to turn ON/OFF.

3.3 Function Parameter Description

1. Power On, first Interface:

Display company name, product name and model. Press “DOWN” key to second interface.

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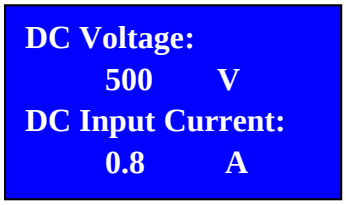
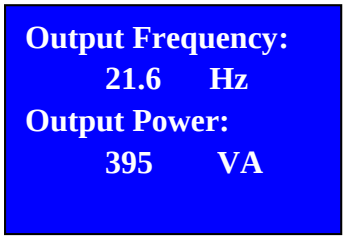
2. Press “DOWN” key to this interface:



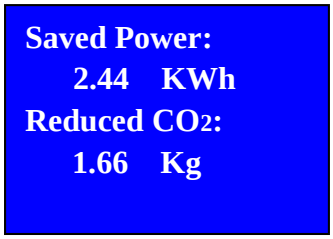
Display current DC input voltage, DC input current.

3. Press “DOWN” key to this interface:



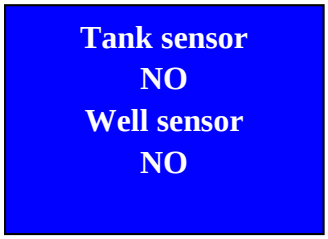
Display current output frequency and output power.

4. Press “DOWN” key this interface:



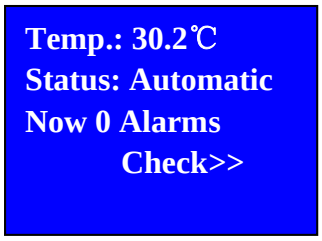
Display saved power value, reduced CO_2 value.

5. Press “DOWN” key this interface:



Display tank sensor state and well sensor state, you can choose “NO” or “OK” by press “UP” and “DOWN” keys, if you choose “OK”, the tank sensor and well sensor can work, default “NO”. When you set well sensor “OK”, but you don’t put well sensor into water. Then inverter does not has output.

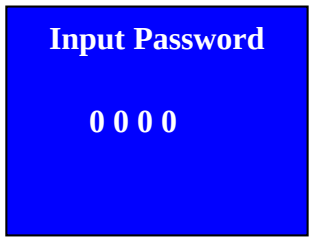
6. Press “DOWN” key this interface:



Display inverter inner temperature, working state and how many alarms currently.

No matter which panel you are operating now, press “ENTER” key to enter into “Input Password” (refer to below interface 6).

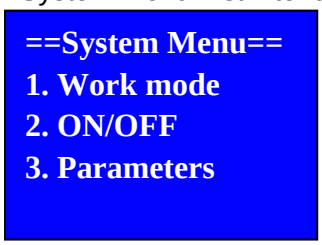
7. Password:



Showing password, default 4 zero. For user, no need to change password.

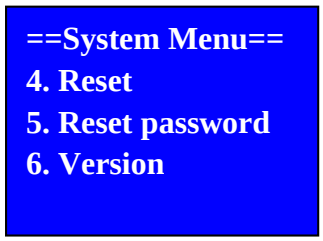
Press “ENTER” key 4 times, enter into system menu, there are 9 contents, each interface shows 3 contents.

8. System menu first interface:



Under System Menu, press “UP’’, “DOWN’’ to select your wanted content, press “ENTER’’ key to enter into corresponding menu.

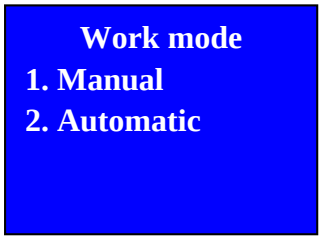
9. Press “DOWN” key to enter into system menu second interface:



Under System Menu, press “UP’’, “DOWN’’ to select your wanted content, press “ENTER’’ key to enter into corresponding menu.

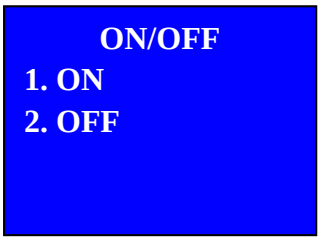
Press “ESC” 2 times to System menu interfaces, press “UP” or “DOWN” to select your wanted content, then press “ENTER” key to enter into corresponding parameter setting.

10. Select work mode



Setting system work mode, press “UP’’, “DOWN’’ to select mode, press “ENTER’’ key to confirm modification. Our default is automatic. When set automatic, inverter can power on when there is enough sunshine, it can power off when there is no sunshine. You don’t need to power on and power off every day. When you set manual, you need to power on and power off by hand.

11. Select power On/Off to control the output of inverter. When select “OFF”, no power for pump, pump does not work.



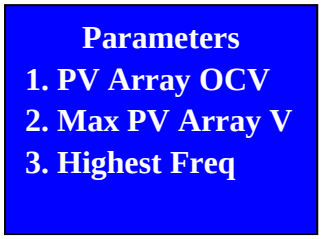
Power On/Off setting, press “UP’’, “DOWN’’ to select mode, press “ENTER’’ to confirm modification. If you want to power off this inverter, you can set “OFF” and confirm. Then inverter will power off.

Pls noted that there are 2 ways to control the inverter.

1. You can select ON/OFF from the system menu.
2. Press ON/OFF Key in the front cover.

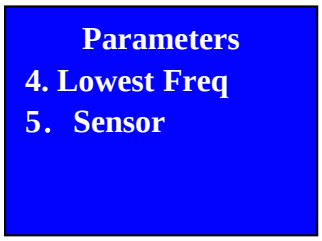
Select parameters and setting them, there are 4 parameters shows in two interfaces.

12. Parameters setting first interface:



Parameter setting, press “UP’’, “DOWN’’ to select your wanted content, press “ENTER’’ key to enter into corresponding menu.

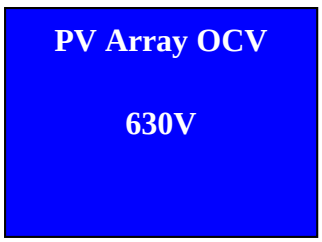
13. Parameters setting second interface:



Parameter setting, press “UP’’, “DOWN’’ to select your wanted content, press “ENTER’’ key to enter into corresponding menu.

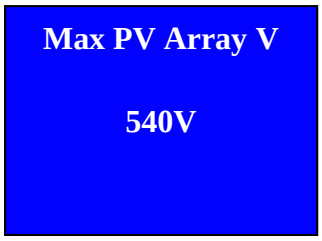
Press “ESC” key return to Parameters, press “UP” and “DOWN” keys to select your wanted content, press “ENTER” key to enter your wanted content and setting your needed valued.

14. Setting PV array open circuit voltage:



PV array open circuit voltage setting, press “UP’’, “DOWN’’ to increase or decrease voltage value, press “ENTER’’ to confirm modification. Please set this voltage according to your solar panel’s total voc, not exceed our max rated voltage 750V.

15. Setting Maximum power point tracking (MPPT) voltage:



MPPT voltage setting, press “UP’’, “DOWN’’ to increase or decrease voltage value, press “ENTER’’ to confirm modification.
Our inverter’s MPPT voltage is 480V-600VDC, please set this voltage according to your solar panel’s total vmp.

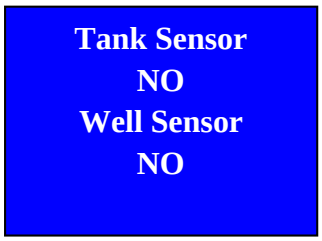
16. Highest Frequency Setting:

Highest frequency setting, press “UP’’, “DOWN’’ to increase or decrease frequency value, press “ENTER’’ to confirm modification.
You can set highest frequency as you like. For example, if you set highest frequency is 30HZ, inverter’s highest frequency is 30HZ, thought good sunshine, this frequency is still 30HZ, can’t goes up to 50HZ.

17. Lowest Frequency Setting:

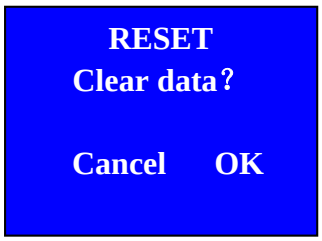
You can set lowest frequency as you like. Below this lowest frequency, the inverter has no output. For example, if you set lowest frequency 5HZ, when the current frequency is 4HZ and shutdown time is 1min. Inverter has no output for 1 min. Inverter start again. If current frequency is still 4HZ, inverter shut down again. 1 min later, inverter starts again.

18. Sensor Setting:



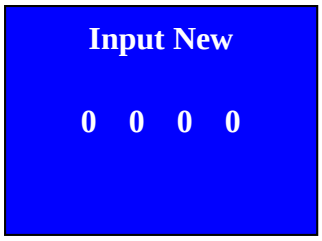
Sensor setting, press “UP’’, “DOWN’’ to select “OK” or “NO”, press “ENTER’’ to confirm modification. If you set “OK”, means sensor is available. Tank sensor can detect tank is full or not, well sensor can detect well is dry or not. When tank is full or well is dry, inverter stop output, pump does not run. If you set “NO”, means sensor is unavailable.

19. Reset Setting:



Reset setting, press “UP’’, “DOWN’’ to select, press “ENTER’’ to confirm modification.

20. Password Revise Setting:



Password revised setting, press “UP’’, “DOWN’’ to add or minus value to set your wanted password, press “ENTER’’ to confirm modification.
Normally, user does not need to use this setting.

21. Version Info:

Version
REV 2013.07.001

Caution: According to real PV array, the PV array open circuit voltage (interface 14) and MPPT voltage (interface 15) can be changed according to real PV array.

Chapter 4 Installation instruction

In order to let you know how to make configuration of the whole system, now we assume 2 projects for your reference.

Ⅰ. 3.7kw solar pump system configuration

1: AC pump: 2200W, 3phase, 380v, 50Hz

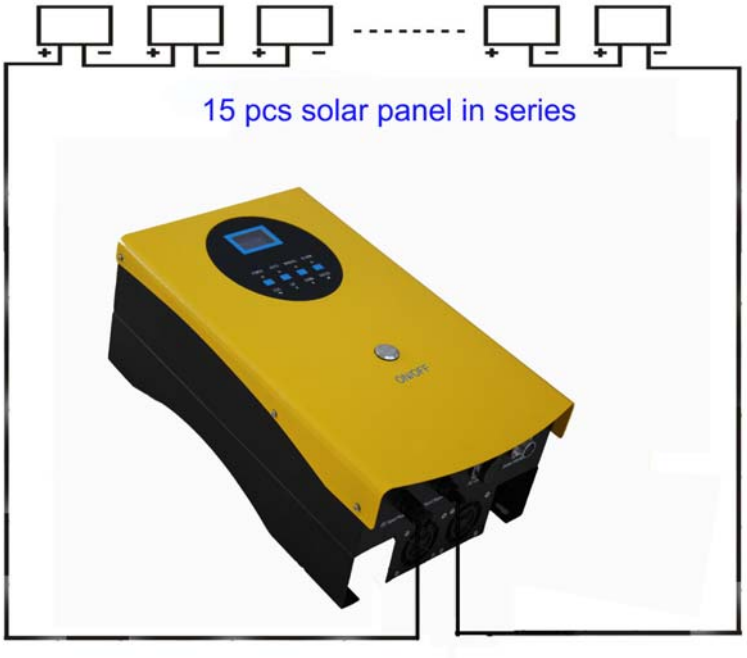
2: Solar pump inverter: 3700W Input voltage: 450V-750V.
MPPT voltage: 480V-600V (Model: SGY3700H)

3: Solar panel array power: total 3.3Kw, each solar panel 220w,
vmp: 35V, voc: 39V, total 15pcs.

Please note that different solar panel from different supplier, though the power is same, the vmp and voc will be different, please choose suitable solar panel according to your pump and matching solar pump inverter.

Remark: solar panel array power should be 1.5 times of pump's power.

Solar panel array connected with solar pump inverter as below:



Solar panel array's positive and negative should be connected with solar pump inverter's positive and negative accordingly.

All the interface cables should be securely connected avoid high voltage risk.

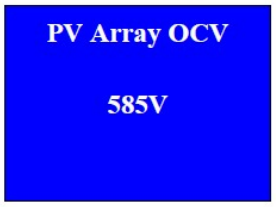
SGY3700H solar pump inverter minimum DC input voltage is 450V, and maximum DC input voltage is 750V. MPPT voltage range is 480V-600V.

★ Let's configure the solar panel (Successful configuration for the solar pumping system must satisfy at least three basic requirements as below.)

Total Vmp: 35V*15pcs=525V Meet MPPT voltage (480V-600V)
Total Voc: 39V*15pcs =585V Meet inverter's input voltage 450V-750V
Total power: 220w*15pcs=3300w

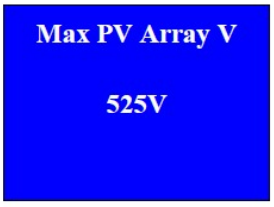
According to 525V(Vmp) and 585V(Voc), we can set Maximum power point tracking (MPPT)(screen shows "Max PV Array V") voltage as 525V and set PV array open circuit voltage (screen shows " PV Array OCV'') as 585V. Our inverter with LCD screen, it is easy to operate and set these parameters through screen. You can refer to below screens (screen 14 and screen 15 from our user manual).

14. Setting PV array open circuit voltage:



PV array open circuit voltage setting, press "UP", "DOWN" to increase or decrease voltage value, press "ENTER" to confirm modification. Please set this voltage according to your solar panel's total voc, not exceed our max rated voltage 750V.

15. Setting Maximum power point tracking (MPPT) voltage:



MPPT voltage setting, press "UP", "DOWN" to increase or decrease voltage value, press "ENTER" to confirm modification.
Our inverter's MPPT voltage is 480V-600VDC,please set this voltage according to your solar panel's total vmp.

Ⅱ. 11KW solar pump system configuration

1: AC pump: 9.2kw, 3phase 380v, 50Hz.

2: Solar pump inverter: 11kw Input voltage: 450V-750V.
MPPT voltage: 480V-600V (Model: SGY11KH)

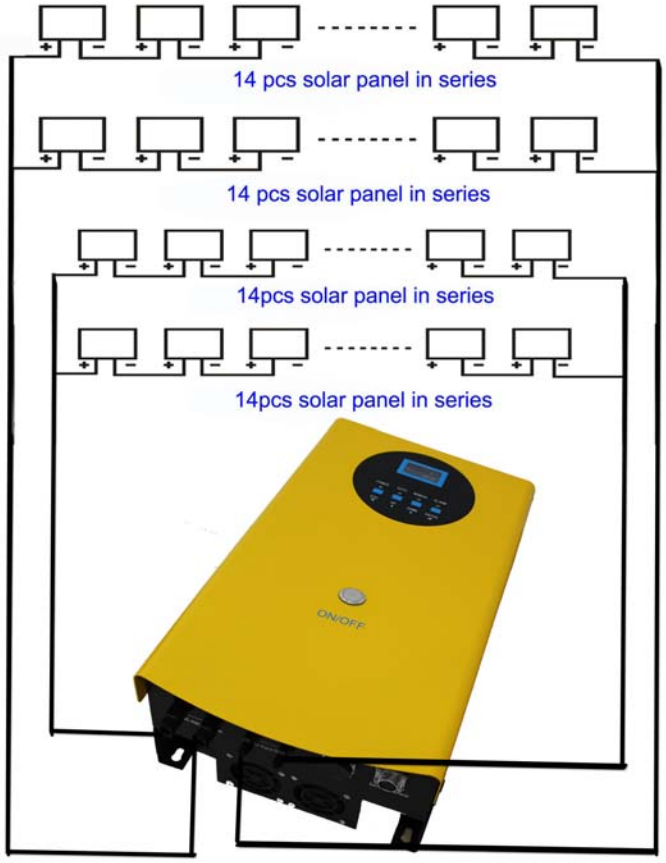
3: Solar panel array power: total 14kw, each solar panel 250w,
vmp: 36V, voc : 44V, total 56pcs.

Please note that different solar panel from different supplier, though the power the same, the vmp and voc will be different, please choose the suitable solar panel according to your pump and matching solar pump inverter.

Remark: solar panel array power should be 1.5 times of pump's power.

Remark: 5.5kw-15kw solar pump inverter has two input positive interface and two input negative interface. In order to share high voltage from solar panel array, normally we use up two groups positive and negative.

Solar panel array connected with solar pump inverter as below:



Solar panel array's positive and negative should be connected with solar pump inverter's positive and negative accordingly.

All the interface cables should be securely connected avoid high voltage risk.

14pcs of 250w solar panels should be connected in series.

Total Vmp: 36V*14pcs=504V Meet inverter' MPPT voltage 480V-600V
Total Voc: 44V*14pcs=616V Meet inverter's input voltage 450V-750V
Total power: 250w*56pcs=14000w

According to 504V(Vmp) and 616V(Voc), we can set Maximum power point tracking (MPPT)(screen shows "Max PV Array V") voltage as 504V and set PV array open circuit voltage (screen shows " PV Array OCV'') as 616V. Our inverter with LCD screen, it is easy to operate and set these parameters through screen. You can refer to below screens (screen 14 and screen 15 from our user manual).

14. Setting PV array open circuit voltage:

PV Array OCV 616V

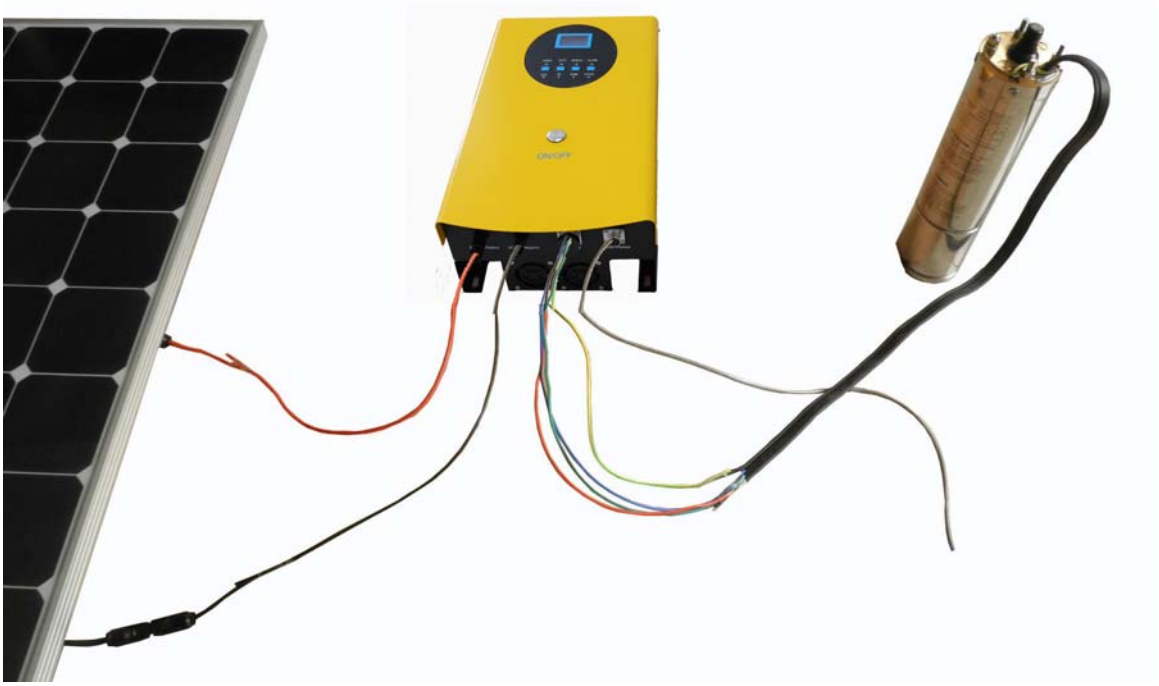
PV array open circuit voltage setting, press "UP", "DOWN" to increase or decrease voltage value, press "ENTER" to confirm modification. Please set this voltage according to your solar panel's total voc, not exceed our max rated voltage 750V.

15. Setting Maximum power point tracking (MPPT) voltage:

Max PV Array V 504V

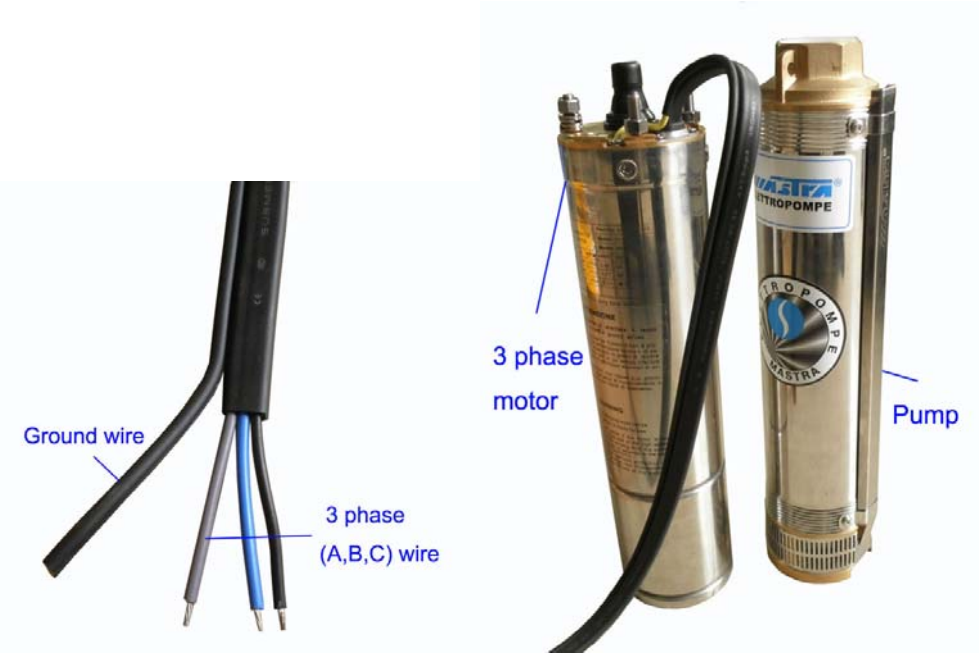
MPPT voltage setting, press "UP", "DOWN" to increase or decrease voltage value, press "ENTER" to confirm modification.
Our inverter's MPPT voltage is 480V-600VDC,please set this voltage according to your solar panel's total vmp.

III. How to connect the motor's wires:

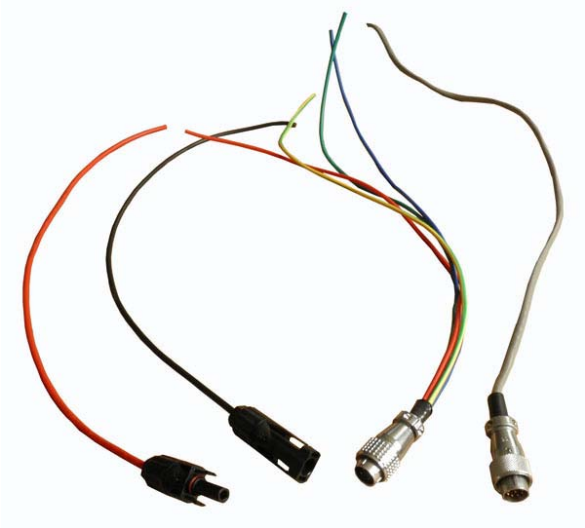


★ Note: Inverter's output 3 phase (A, B, C) are connected with AC pump's 3 phase (A, B, C).
You can try to connect any 3 wires and twisted together. Then, power on inverter and check output water flow. If water flow is not very good, please try to exchange any 2 wires to twist to check which connection water flow is the biggest. Then mean these 2 wires is correct phase connection. Then twist the wires tightly and wrap it well.

IV. Motor's wire:



VI. Accessory:



Chapter 5 Storage & Warranty

5.1 Storage

If the storage is not used temporarily or stored for long time after purchasing, the following notice should be paid attention to.

1. Avoid placing the inverter in high temperature or humid place or where there is vibration and metal dust, and excellent ventilation should be ensured.
2. Inside filter capacitor performance of the inverter will decline for long–time disuse. It is necessary to energize one time every 2 years to restore the performance of the filter capacitor and inspect the inverter function at the same time. It is necessary to increase the voltage through a DC power supply during energizing with power-on time not less than 5 hours.

5.2 Warranty

The warranty of this inverter is two years. When any fault or damage occurs on the product, within the warranty period, our company will provide free maintenance. After the warranty time, we can provide lifetime paid warranty service.

5.3 Extended Warranty

We will extend 1 year warranty, if you provide below information to us.

Provide below information when inquiry, we will make good configuration for you.		
1	Pump	Power, Voltage, Phase
2	Solar Panel	Each panel power, voc voltage, vmp voltage
Provide below photos and information after installation.		
1	Pump	Photos show pump, pump specification, pump and inverter connection
2	Inverter	Photos show inverter installation environment, inverter connection and switch, LCD screen parameter setting.
3	Solar Panel	Photos show solar panel and inverter connection, solar panel specification, solar panel array and quantity.

Prompt: Warranty only covers the body of the inverter

Warranty Agreement

1. The warranty of this inverter is two years. When any fault or damage occurs on the product, within the warranty period, our company will provide free maintenance. After the warranty time, we can provide lifetime paid warranty service.
2. The warranty time starts from the date when the product is leaving the factory, and the machine frame code is the only proof to determine the warranty period.
3. Certain maintenance charge should be considered during warranty period if the fault is caused by the following reason:

- Fault caused by operating against the manual or surpass the standard specification
- Fault caused by self fix and modification without permission.
- Fault caused by poor preservation
- Fault by using the inverter in abnormal function
- Machine damage caused by fire, salt corrosion, gas corrosion, earthquake, storm, flood, lightning, abnormal voltage or other force majeure.

4. Please be sure to retain this card and show it to the maintenance service.

User's Information

User Company:_____ **Contact person:**_____
Address:_____ **Phone:**_____
Dealer company: _____ **Post code:**_____
Model:_____ **Serial number:**_____
Purchase date:_____ **Handling person:**_____

Repair Record

Date	Record	Abstract	Technician	Signature