

SOLAR PUMPING INVERTER

USER MANUAL



VERSION - 2015

VERSION	V3.0
DATE	JUN / 18 / 2014
PRODUCER	LEO

To ensure of your health, equipment and property, please read this chapter carefully before use the solar pumping inverter and act in compliance with the instructions.

1 . SAFETY DEFINITION:

Danger: It will cause serious injuries and even death while operating against the rules

Storage Condition:

NOTE	
Temperature	Humidity
Temperature -40 °C to +65 °C.	5% to 90%, no condensation
Storage in dry, dust-free Do not store in the environment containing corrosive gas, liquid	

Installation:

Danger
Ac output of pumping inverter to the pump forbid to connect the switcher
Wire is connected by professional person only.
Each wire connect to the device must be wrapped with electrical tape for safety
Prohibiting the installation location: direct sunlight, thick dust, corrosive gas or oil mist, flammable gas, liquid.

Attention
To ensure good convection cooling effect, the device must be installed Vertically
The height of the device installation should be over 1.1m or more, and please establish the risk identified beside the device.
The ambient temperature -20 °C -+50 °C, If Over 40 °C, Please make sure well ventilated.
Relative humidity 15%-+95%RH
The device ONLY can be used to control the three-phase AC asynchronous Pump and Resistor Heater.

Attention
If the output flow is small, please exchange the two line of U.V.W
The equipment of the environmental temperature will directly influence the durability and reliability, make sure the environment to meet the above requirements for prolong the service life of the machine

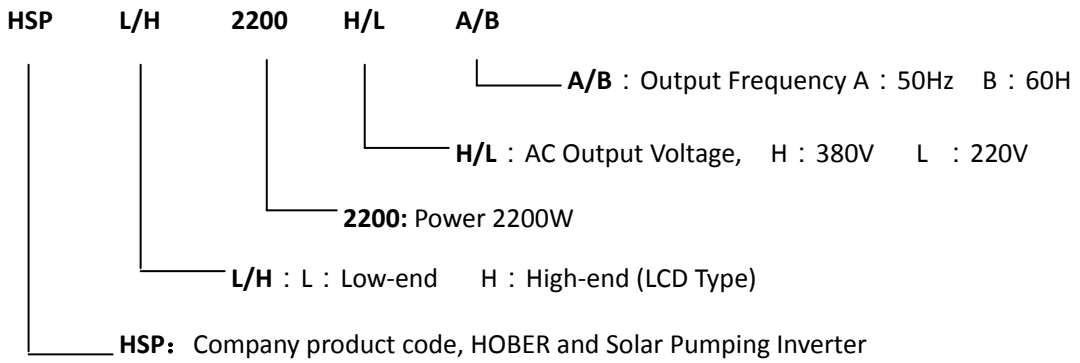
Maintance:

Danger
Under any circumstances, without professional guidance, do not disassemble the machine or touch the

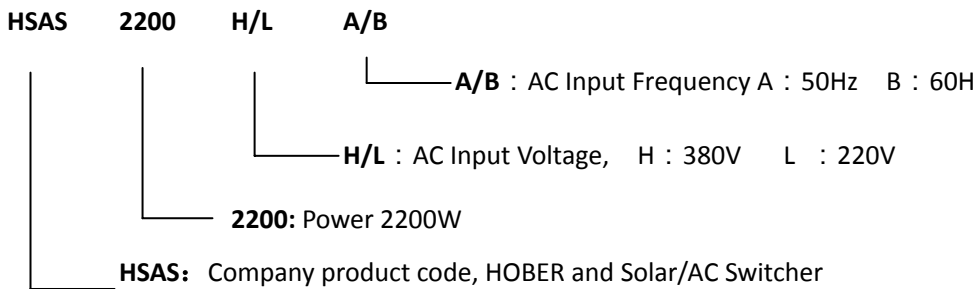
internal parts
Forbid to maintain the equipment when device is Power-on

2. NAMING RULE

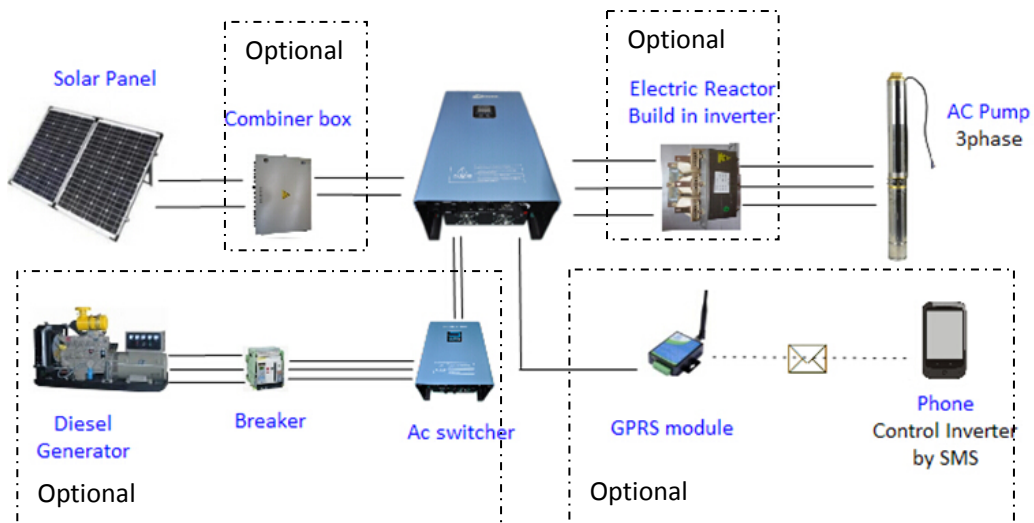
Solar Pumping Inverter:



Solar /AC/Diesel Switcher



Solar Pumping System Construction:



PARAMETERS

Model	Rated power (KW)	DC Input Voltage Voc (V)	Min DC Input Voltage Min Vmp (V)	AC Output 3Phase	Output Freq (Hz)	Support 3PH AC Pump	
HSPL750L	0.75	250 - 450	290	220V	0-50/60	≤0.75KW	≤ 1HP
HSPL750H	0.75	55 - 95	62.5	380V	0-50/60	≤0.75KW	≤ 1HP
HSPL1500L	1.5	250 - 450	290	220V	0-50/60	≤1.5KW	≤ 2HP
HSPL1500H	1.5	55 - 95	62.5	380V	0-50/60	≤1.5KW	≤ 2HP
HSPL2200L	2.2	250 - 450	290	220V	0-50/60	< 2.2KW	< 3HP
HSPL2200H	2.2	460 - 750	500	380V	0-50/60	< 2.2KW	< 3HP
HSPL3700H	3.7	460 - 750	500	380V	0-50/60	< 3.7KW	< 5HP
HSPL5500H	5.5	460 - 750	500	380V	0-50/60	< 5.5KW	< 7HP
HSPL7500H	7.5	460 - 750	500	380V	0-50/60	< 7.5KW	< 10HP
HSPL11KH	11	460 - 750	500	380V	0-50/60	< 11KW	< 15HP
HSPL15KH	15	460 - 750	500	380V	0-50/60	< 15KW	< 20HP
HSPL18KH	18	460 - 750	500	380V	0-50/60	< 18KW	< 24HP
HSPL22KH	22	460 - 750	500	380V	0-50/60	< 22KW	< 29HP
HSPL30KH	30	460 - 750	500	380V	0-50/60	< 30KW	< 40HP
HSPL37KH	37	460 - 750	500	380V	0-50/60	< 37KW	< 49HP
HSPL45KH	45	460 - 750	500	380V	0-50/60	< 45KW	< 60HP
HSPL55KH	55	460 - 750	500	380V	0-50/60	< 55KW	< 73HP
HSPL75KH	75	460 - 750	500	380V	0-50/60	< 75KW	< 100HP
HSPL100KH	100	460 - 750	500	380V	0-50/60	< 100KW	< 133HP
HSPL150KH	150	460 - 750	500	380V	0-50/60	< 150KW	< 200HP
HSPL200KH	200	460 - 750	500	380V	0-50/60	< 200KW	< 267HP

Table 1

WIRING.

Model	Max Input Current	Preesure Voltage of input wire	Input wire diameter	Output Current	Pressure Voltage of output wire	Output wire diameter
HSPL/H750L	4A	600V	2 x 2.5mm ²	4.8A	500V	2.5mm ²
HSPL/H750H	16A	600V	2 x 2.5mm ²	4.8A	500V	2.5mm ²
HSPL/H1500L	6.5A	600V	2 x 2.5mm ²	9.2A	500V	2.5mm ²
HSPL/H1500H	35A	600V	2 x 2.5mm ²	9.2A	500V	2.5mm ²
HSPL/H2200L	10A	600V	2 x 2.5mm ²	11A	500V	2.5mm ²
HSPL/H2200H	8A	1KV	2 x 2.5mm ²	7.2A	500V	2.5mm ²
HSPL/H3700H	11A	1KV	2 x 4mm ²	10A	500V	2.5mm ²
HSPL/H5500H	17.5A	1KV	4 x 4mm ²	13A	500V	2.5mm ²
HSPL/H7500H	22A	1KV	4 x 4mm ²	18A	500V	2.5mm ²
HSPL/H11KH	31A	1KV	4 x 4mm ²	24A	500V	4mm ²
HSPL/H15KH	40A	1KV	4 x 4mm ²	30A	500V	4mm ²
HSPL/H18KH	48A	1KV	6 x 4mm ²	39A	500V	6mm ²
HSPL/H22KH	58A	1KV	6 x 4mm ²	45A	500V	6mm ²
HSPL/H30KH	79A	1KV	6 x 4mm ²	60A	500V	10mm ²
HSPL/H37KH	96A	1KV	12x 4mm ²	75A	500V	15mm ²
HSPL/H45KH	117A	1KV	12 x 4mm ²	91A	500V	20mm ²
HSPL/H55KH	137A	1KV	12 x 4mm ²	112A	500V	25mm ²
HSPL/H75KH	187A	1KV	50mm ²	150A	500V	30mm ²
HSPL/H100KH	240A	1KV	65mm ²	200A	500V	40mm ²

Table-2

3. INSTRUCTIONS.

3.1 Socket



1 : LED /LCD Display

2 : System status display : Include Power, running, stop, well, tank, fault

3 : Keyboard

4 : Ac output: four lines (3phase and ground line)

5 : Dc input: Negative and Positive

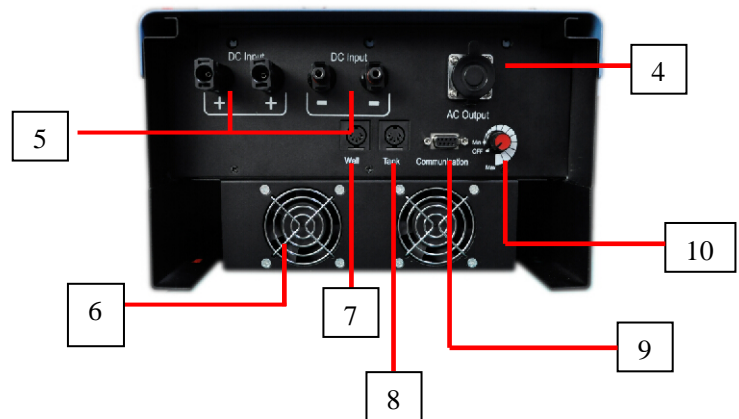
6 : Fan: According to the temperature, wind cooling

7 : Well sensor

8 : Tank sensor

9 : RS485 Communication

10 : Stop /Boot control and output flow size control



3.2 DC Input

- Please refer to the Table-1 and check the input voltage whether within the standard or not... Then input voltage can be measured by multi meter. For example:220V AC output ,so the DC input voltage range is: 250V~450V
- To PV Panel to Input of pumping inverter can connect the switcher if needs.
- Please make sure the input negative and positive line wiring correcting

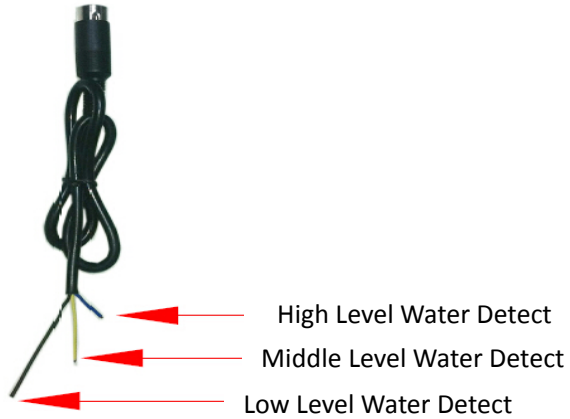
3.3 AC Output

forbid to connect the switcher between the Ac output and pump

Red Color-1	Red Color-2	Red Color-3	Yellow_Green
U	V	W	Ground



3.4 WELL and TANK SENSOR

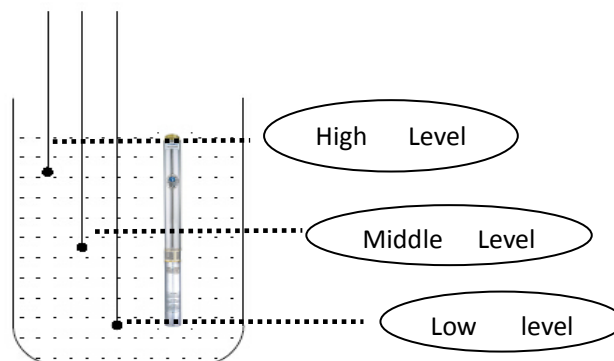


Picture - 3

Length wire of well and tank is 0.5M, each sensor have three wire, include High level of water detect, middle level of water detect, low level of water detect. For example of Well Connecting Method (Tank connect wire is the same) :

- 1) The longest length of reserved wire is for well low level of water detect
- 2) The middle length of reserved wire is for well middle level of water detect
- 3) The shortest length of reserved wire is for well high level of water detect



Remarks: The connection is not on basis of line color difference, according to the length of reserved line



Well/Tank wiring method

Picture - 4

3.5 POWER ON/OFF AND FLOW CONTROL

<p>Startup: Clockwise Output Freq: Min to Max</p>	
<p>Shut Down : Anticlockwise Output Freq: Max to Min</p>	

3.6 LED STATUS




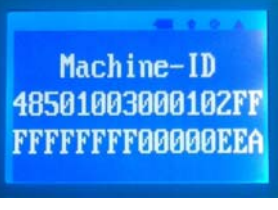
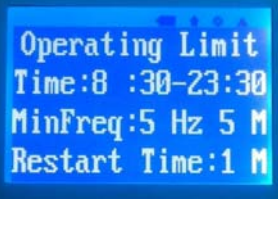

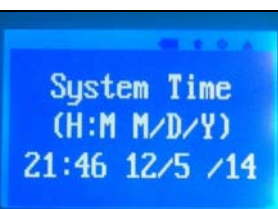
Power Led	Running Led	Stop Led	Well Led	Tank Led	Fault Led	Status
ON	Ignore	Ignore	Ignore	Ignore	Ignore	Power ON
OFF	Ignore	Ignore	Ignore	Ignore	Ignore	Power OFF
ON	ON	OFF	OFF	OFF	OFF	Running
ON	OFF	ON	Ignore	Ignore	Ignore	STOP
ON	ON	OFF	ON	OFF	OFF	Water of Well is Empty
ON	ON	OFF	OFF	ON	OFF	Water of Tank is Full
ON	ON	OFF	OFF	OFF	ON	System Error
ON	ON	OFF	Flicker	OFF	OFF	Wiring of Well sensor is wrong
ON	ON	OFF	OFF	Flicker	OFF	Wiring of Tank sensor is wrong

Table – 3

Remarks :

- 1) System Stop by well empty : system will pumping until high level of water detect success
- 2) System Stop by Tank Full : system will pumping until low level of water detect success

3.7 LCD Type

	<p style="text-align: center;">Main Menu</p> <p>“ESC” key for return to Main Menu, “UP”, “Down” Key for Change Menu , “Enter” Key for enter Setting Menu</p> <p>Line 1: Device Name Line2: Model Line 3: On/Off , Error status Display</p> <p>Line 4: System Time</p>
	<p style="text-align: center;">Operating Status</p> <p>Show the Voltage and Freq</p>
	<p style="text-align: center;">Tank /Well's water status Display</p> <p>Show the water of Tank and Well status.</p>
	<p style="text-align: center;">Machine ID</p> <p>Unique Serial Number of Machine</p>
	<p style="text-align: center;">Operating Limit Setting Menu</p> <p>Time: can set the inverter Running Time AM-PM</p> <p>MinFreq/ Restart Time: If the inverter output lower than Min Freq at fix minutes, then stop output, After Setting Time, the inverter will start output again</p>
	<p style="text-align: center;">GPRS Setting Menu</p> <p>Line 2: the phone number of control the inverter last time</p> <p>Line 3: Password for SMS Control , Initial is 0000</p>
	<p style="text-align: center;">System Time Setting Menu</p> <p>Can setting the System time of Inverter</p>

3.8 GPRS Control

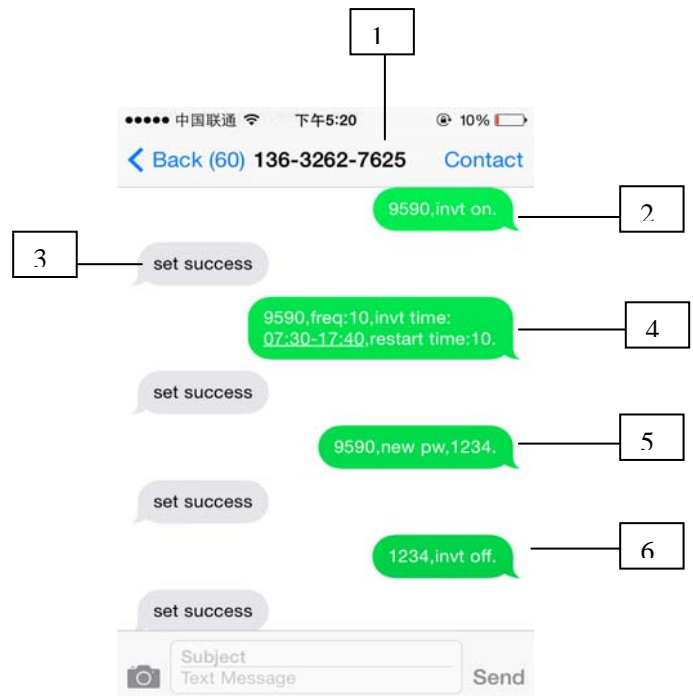
Remote Control the Inverter By SMS.

Inverter Control	Enable output	xxxx,invt on.
	Disable output	xxxx,invt off.
Note: xxx is means the password that your setting, the super pw is:9590		

Setting	Password update	xxxx,new pw,****. Note: xxx is old password,****is new one
	Min Freq, output time,Restart Time	xxxx,freq:xx,invt time:hh:mm-hh:mm,restart time:mm. Note: xxx is password xx is minmum freq, 5-15Hz, when system running lower than this threshold value, inverter will stop output automatic and start output after restart time arrived. hh is hour,mm is minute restart time: 1- 60minute

SMS Sample:

1	The SIM Car Number/ 2G
2	SMS to Control the Inverter On(Start output)
3	Feed back by Inverter
4	Set the Inverter's Min Freq, Running Time and restart time.
5	Update the Password for SMS control
6	SMS to Control the Inverter Off(Stop output)



Attention
The password in the SMS command is the one that your setting.
The character “,”and “.”is necessary.

4. CASE

3Phase 380V 2HP AC pump solar pumping system:

AC Pump			Solar Panel			Solar Pumping Inverter	
2HP	1500W	3phase-380V	Voc 46V	Vmp 39V	310W/pcs	HSPL1500HA	Input Voltage 55~95V

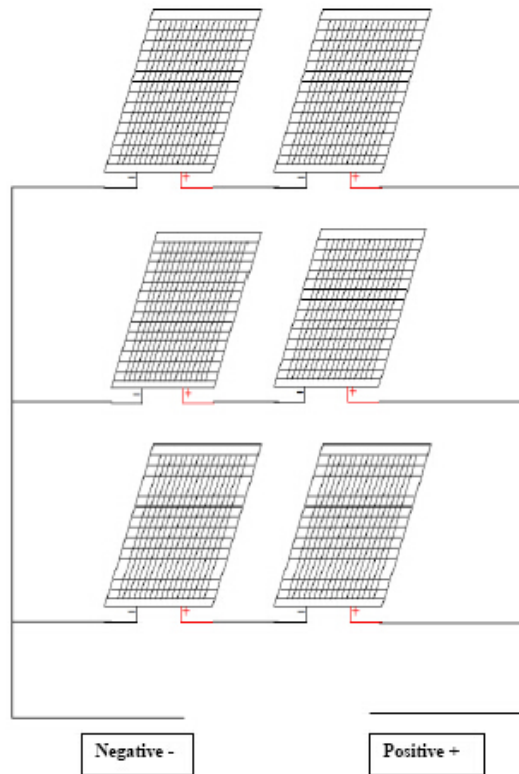
PV Connection:

Total 6pcs

use 2pcs in series to a group

Three Group in Parallel

Total Voc is 92V, Vmp 78V. Total Watt is 1860W



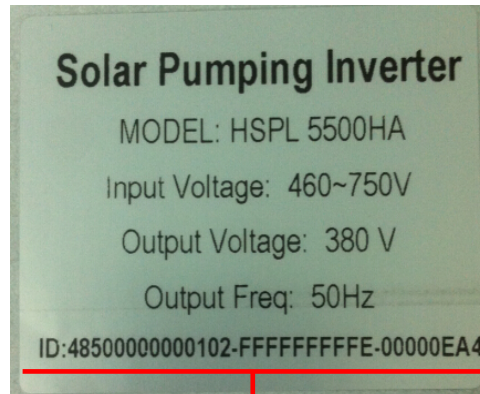
5. PACKAGING

- Inverter: 1pcs
- DC Input Connector: 2-12pcs according to the Table-2
- Tank Sensor: 1pcs
- Well Sensor: 1pcs
- AC Output Connector: 1pcs
- User Manual: 1pcs

6. QUALITY WARRANTY

In order to protect your interests, to solve your any menace from the "rear" except! The company provides 2 YEAR of warranty of quality service for you.

- Please provide machine failure photos or video and the ID of machine, then send to our technical department to analysis, we will reply within 24 hours.



ID

- The following situation does not belong to the quality warranty: the user to alter the serial number and machine; quality warranty label tag; use environment does not meet the conditions of using. Product be repaired or disassembled without our authorization.
- The following situation not free fee, the specific charging standard according the device (material cost extra): both in or out of the warranty period: irresistible natural forces such as earthquake, fire damage caused by improper use; fault; machine water damage.

7. CANTACT US

R&D Address : Room 411, A18 building ,XinGao Road, Xili Street, NanShan District, Shenzhen City , China

Telephone : 0086-755-86559590

Tech support : support@hobertech.com

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