Growatt
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Growatt ShineLimit

User manual

For more info, please download from http://server.growatt.com

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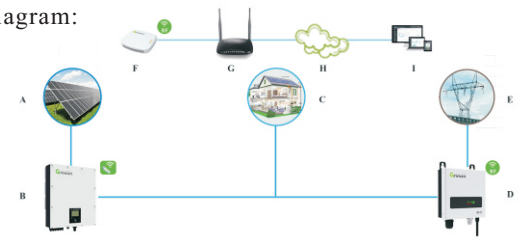
• Safety precaution

1) Before using the unit, please read this manual carefully. Otherwise, if you don't follow the steps described of the instruction to use and cause any damaged,Growatt has the right not to service you.
2) All the tasks described in this manual should be performed by qualified personnel.
3) During installation, please don't touch any inside part of this unit besides terminals.
4) All wires connection of unit should be abided by the local electric safety criterions.
5) If necessary, please contact specified installer

• Product Description

Growatt ShineLimit0 is the zero output control system for pv plant. It use RF wireless devices to communicate, like ShineRFStick and SP-CT, control the pv inverter active power by the power of loads to enable zero output to Grid, and can be monitored from the net server by RJ45. The System Diagram as bellow:

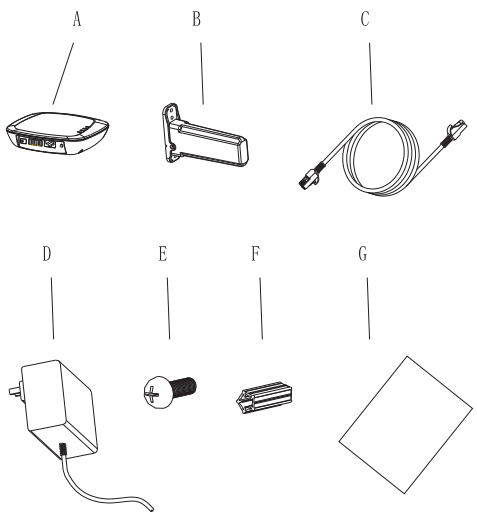
System Diagram:



Item	Name	Description
A	PV panel	Inverter PV panel
B	Inverter	PV Inverter with ShineRFStick
C	Loads	User loads
D	SP-CT	ShineLimit detecting meter
E	Grid	220V public grid
F	ShineLanBox	ShineLimit controller
G	Router	

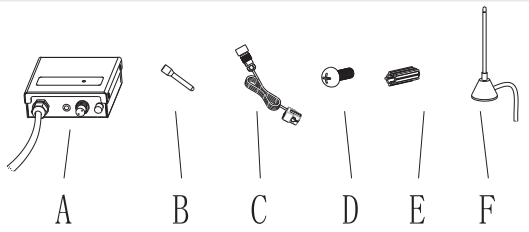
Step1. Unpacking

1.1 Unpacking ShineLink, and check the package device list:



Item	Name	Quantity
A	ShineLanBox	1
B	ShineRFStick	1
C	Network	1
D	Power adapter	1
E	Fixing screws	4
F	Wall plastic posts	2
G	User manual	1

1.2 Unpacking SP-CT, and check the package device list:



Item	Quantity	Description
A	1	Growatt SP-CT
B	1	Antenna
C	1	Sensor (water-proof terminal)
D	2	M5*30 pan head screw
E	2	Expansion screw
F	1	Sucker antenna this is for SP (Storage machine)
--	1	Warranty card
--	1	Manual

1.3 SP-CT SE

Green indicator solid on	Working normal
Green indicator flash	In pair status
Red indicator solid on	Fault e.g L and N connected reversely or GND wire unconnected

1.3.1 Nameplate description

There is some essential information such as product model, specifications and approva l on the Nameplate in the rear of SP-CT:

GROWATT	
Model Name	Growatt SP-CT
AC supply voltage range	196-250Vac
AC Frequency range	50Hz/60Hz
Max. input power	5W
Max. input current	30mA
Sampling precision	≤3%
Operating temperature range	-25°C~+60°C
Noise emission (typical)	≤25dB
Relative humidity	0~95%
Protection Degree	IP65
Display	LED
Interface: RF/WIFI/LAN	RF 433
The RF transmission recommend distance	≤30m
Safety & EMC standard	
CE	

Step2. Installation

2.1 General precautions

A. Safety measures

SP-CT High voltage danger!

DANGER

• Qualified personnel can operate only

• The kids, the disable, non-professional are not allowed to close.

SP-CT Ground wire connection

Ensure the SP-CT ground wire is properly earthed

B. Symbol used of SP-CT

Symbol	Description
	Risk of electric shock!
	Ground point
~	Alternating current
CE	CE Mark, which means it satisfies CE criterion
	RCM Mark, which means it satisfies RCM criterion.

C. Device install place please refer to the system Diagram above.About the distance between the ShineLanBox with the ShineRFStick and SP-CT, the maximum linear distance is 200m if there is no obstructions between then; the maximum distance is 50m if there is one wall between then;
the maximum distance is 20m if there are two walls between then.

2.2 Install SP-CT

2.2.1 Basic requirements of mounting

A Mount on solid surface and can accommodate weight of SP-CT long time. (refer to the chapter 3.3 to know the precise weight) .

B Mount on where has enough space for SP-CT (refer to the chapter 3.3).

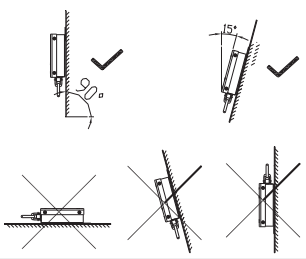
C Do not mount on flammable construction materials .

D Designed with IP65 degree for indoor or outdoor applications .

E Ambient humidity range: 0~95%.

F Ambient temperature range: -25℃~60 ℃.

G Vertically installation or tilt angle 15-dgress installation is ok, as the chart 5.1 .



H To make sure operate and maintain available the unit, please leave enough space for SP-CT.

I Do not install where is near to Radio or machine which has wireless function .

J Do not install the place where the children can reach.

2.3 Installation guide

2.3.1 Installation layout

Installation layout of storage energy system with SP-CT should be as following feature shows .

Note: The recommend distance between stored-energy machine and SP-CT is less than 50 m.

2.3.2 Mounting

1). Mark locations of the hole of SP-CT.
2). Insert 2 expansion screws in the holes.
3). Screw 2 screws(M5) firmly.
4). Place the SP-CT on the 2 screws .

2.4 Wires connection

2.4.1 AC auxiliary power wires connection

Preparation:

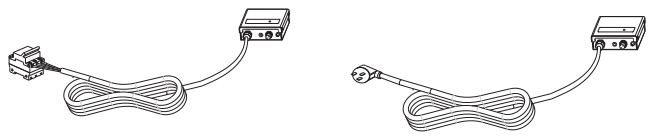
(1) Ensure the grid voltage is 230VAC or 240VAC, frequency is 50/60Hz single phase.

(2) Connection mode:

a) Type I:Connect the AC terminal of SP-CT to the AC breaker of power distribution cabinet.

b) Type II:Press the AC terminal (British standard) of SP-CT on the nearby socket. Because of installation outside, the socket should be water-proof.

Caution:Ensure the utility phase of SP-CT position is same with stored-energy machine and PV inverter phase position.

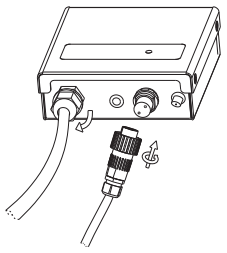


Type I Typ II

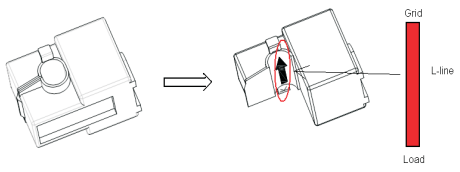
Note: Type II installation is mainly suitable for British standard area.

2.4.2 Installation of sensor

1) Press one side of sensor terminal on the “Sensor input terminal” and make sure fixed firmly.
Refer to Chart 5.6



2) Please strictly follow the instruction steps to install the other side of sensor, Refer to below chart.

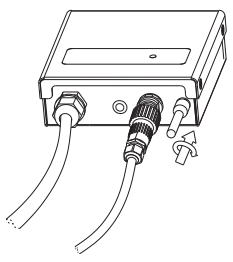


As pictured above, uncover the sensor. Please place the L line on the position with arrow and then fasten it.

Note:
a This arrow indicates direction of sensor.
b The direction of the arrow (from K to L) denotes to the direction from the Load to the grid.

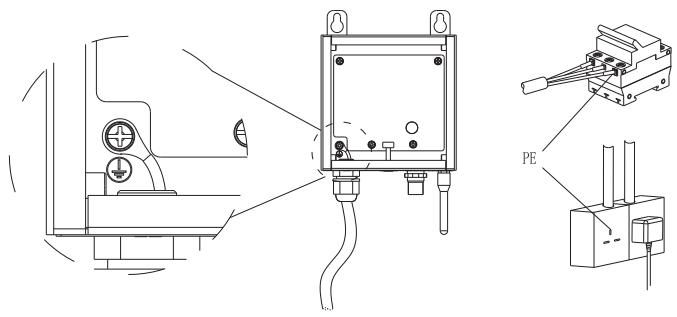
2.4.3 Install antenna of SP-CT

Screw the Antenna tightly to antenna terminal of SP-CT as shown below.



2.4.4 Ground

SP-CT should be grounded reliably. The ground wire of SP-CT is connected to its shell so make sure the AC terminal (L /N /GND) connected firmly (L/N/GND).
Refer to chart 5.9.



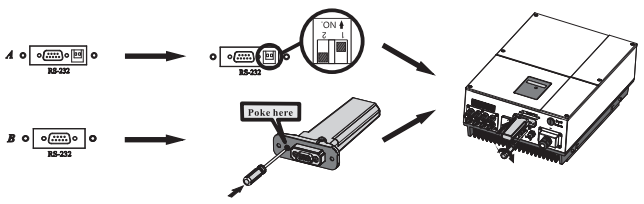
2.5 Install ShineRFStick

ShineRFStick Electrical Connection

Take the waterproof plate down from RS-232 port of the inverter

A If the RS-232 port of the inverter likes the specification A as below, please turn on pin 1 of the DIP switch, then plug the Growatt ShineRFStick to the inverter directly via the RS-232 port and lock the screws;

B If the RS-232 port of the inverter likes the specification B as below, please poke the rubber plug in the waterproof cushion of the Growatt ShineRFStick, then plug the ShineRFStick to the inverter via the RS-232 port and lock the screws.



C Power on the inverter, observe the blue led in the ShineRFStick, if the led on and then turn to flash, it means ok, otherwise means you should check the installation.
Blue LED status:
Solid on: device is initializing
Solid off: no device found on RS232 port
Flashing fast (change every 0.2s): Found device on RS232 port
Flashing slow (change every 1s): network communication normally

2.6 Install ShineLanBox

Item	Name	Description
A	Power input	Connect to the power adapter
B	RS 485	Reserved
C	RJ 45	Connect to the network
D	Key	Function key
E	Configuration LED	Configuration the device
F	Device LED	Device number connected
G	Network LED	Connecting the network
H	Power LED	Connecting the power

Connect the RJ45 interface of the ShineLanBox to the router ,then plug in the power adapter to power on the ShineLanBox,please open the DHCP of Youter.

After power on, the Power LED on, Network LED flashing, then the ShineLanBox start to search the RF device and connect to the server. Network LED on means connect to the server ok, device LED flashing means devices connect ok. If there are more than one RF device, please note the device LED continuous flashing times, it means the connected devices number.

Note:
1.Power LED : connecting the power
2.Network LED : connecting the network
3.Device LED: the number of the LED continuous flashing means the device number connected to the ShineLanBox
4.Configuration LED: flashing when configuration , if successful , the LED will be off.

Step3. Use ShineLimit

3.1 Use the zero export function

After install and power on the ShineLimit, it will start system zero export function. If want to test the function, please increase or decrease you home loads power, check the inverter output power and the grid power on the server web or phone app.

3.2 Use ShineLink monitoring

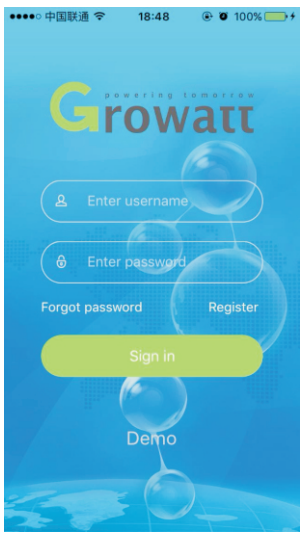
Search “ShinePhone” in google play or app store, or scan the picture below, download and install the app.

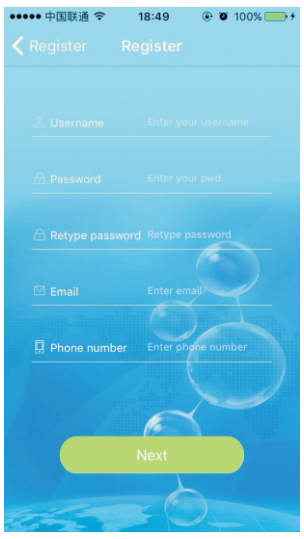
【Android&iOS】

NOTE: 1.Be sure to install the latest version of the software;
2.For more details, please refer to the content on http://server.growatt.com .

1.Run ShinePhone, please register a new user if is the first time. When entering SN ,Please enter the ShineLanBox SN , not the ShineRFStick SN.

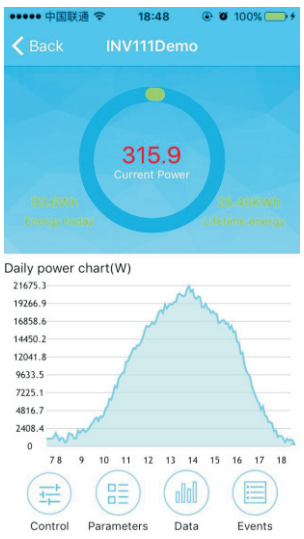
2.Input the user name and password to log in.





3.Into the device page, check the device number configured and the status.

4.Put the device list to the detail page, check the device parameters.



Append information

A.Pressing the button of the ShineLanBox for more than 6 seconds until the four LED flash will clear the configuration information .

B.if clear the configuration information or change the device, should add and configure the device, short press the button of and ShineLanBox, then short press the button of the the ShineRFStick or SP-CT , the devices entering the configuration mode, if successful, the configuration LED of the ShineLanBox will be off ,and the blue LED of the ShineRFStick will flash slowly.