



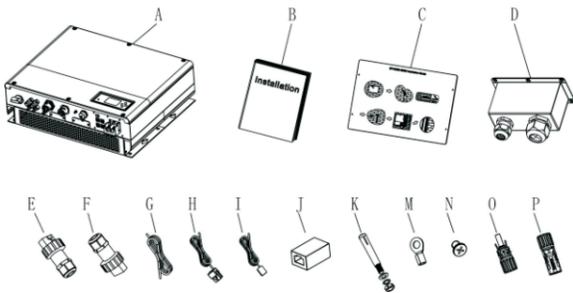
Quick Installation guide for Growatt SPH series

### Step1 General information-Specification

the type of product	Growatt SPH
PV input data	
PV input range	120-550Vdc
Number of input strings	2/1
Max input current per string	12A
AC output data	
AC nominal voltage	230V/50Hz
power factor	0.8 leading~0.8 lagging
Stand alone	
Rated AC output power	3000W
Rated output voltage	230V/50Hz
Battery data	

Battery voltage range	42-59Vdc
Max charge and discharge current of battery	66A
type of battery	Lead battery and lithium battery
Environment	
Operating temperature range	-25~+60°C
Degree of protection	IP 65
Certificate and approvals	G83,G59,AS4777,CEI0-21, CE,IEC62109,AS/NZS3100, VDE0126-1-1,VDE-AR-N4105, IEC62040,IEC61727,IEC62116

### Step2 General information-Parts List



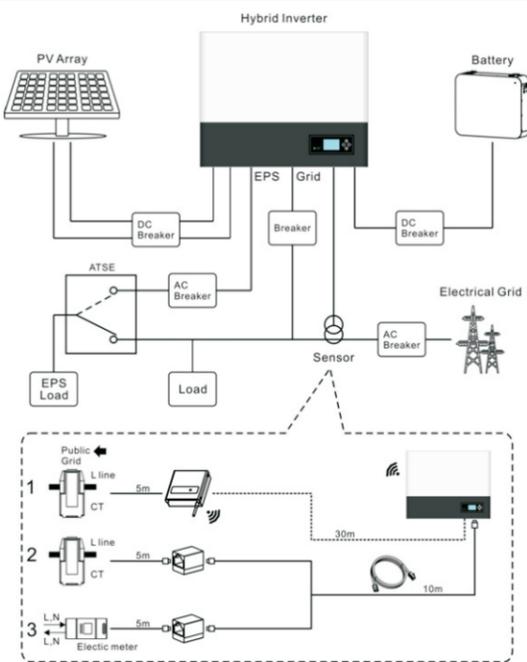
Item	Number	Description
A	1	SPH inverter
B	1	User Manual
C	1	Paper board(installation guide)
D	1	Waterproof cover
E	1	AC Grid connector
F	1	EPS output connector
G	1	Communication cable
H	1	Current sensor
I	1	Lead-acid battery temperature sensor
J	1	RJ45 connector
K	4	M6 setscrew
M	2	Battery power terminal
N	6	Screw
O/P	2/2	MC4 connector

### Step3 Key Features

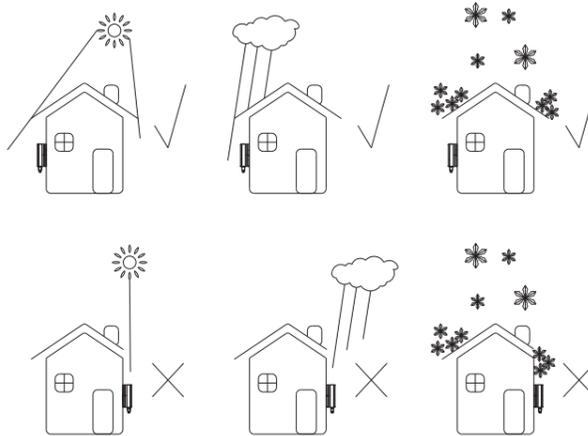
Mark	Description	Explanation	
	Push-button	Operation of display screen and set system	
	Status symbol of SPH	Green light on	SPH run normally
		Red light on	fault state
		Red light blinking	1.Alarm state 2.Software updating

### Step4 Installation

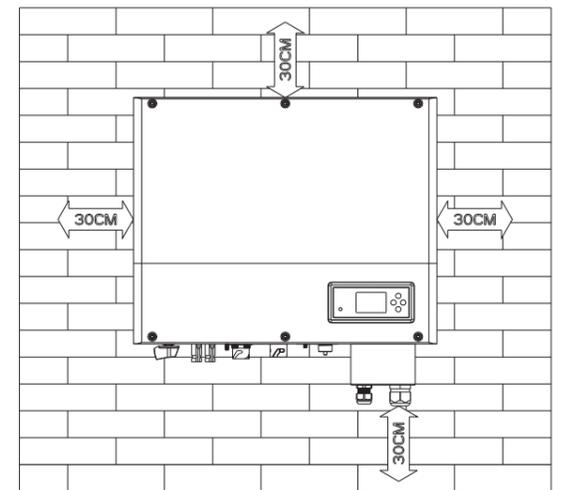
#### 1. System overview



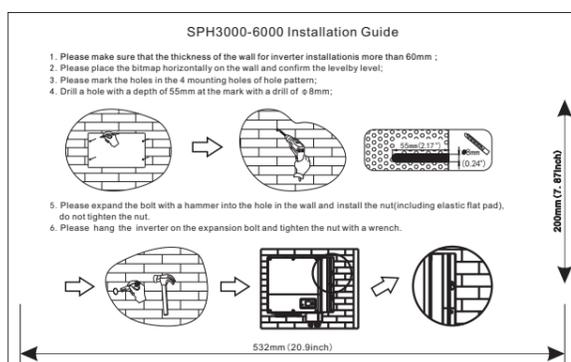
2. The Ingress Protection rate is IP65 and the pollution degree is PD2. Please refer to the below:



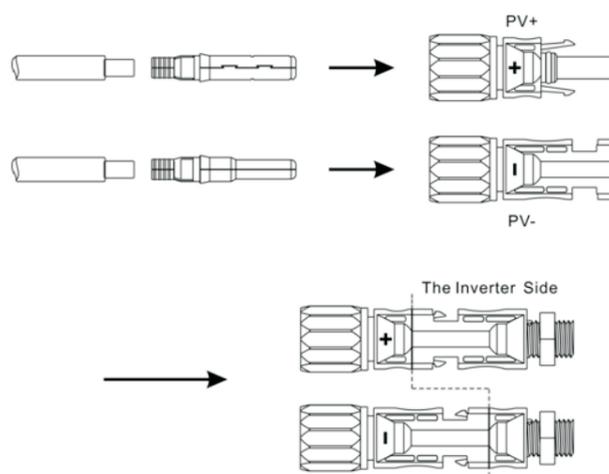
3. Installation space for SPH, Please refer to below:



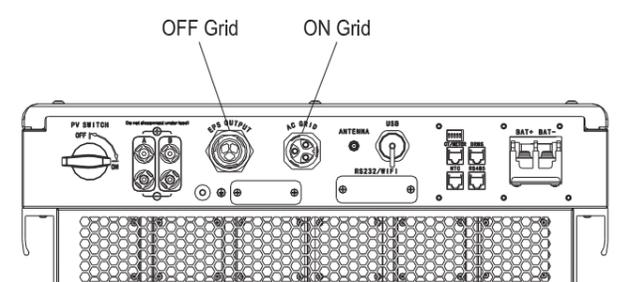
#### 4. Follow installation guide to install SPH



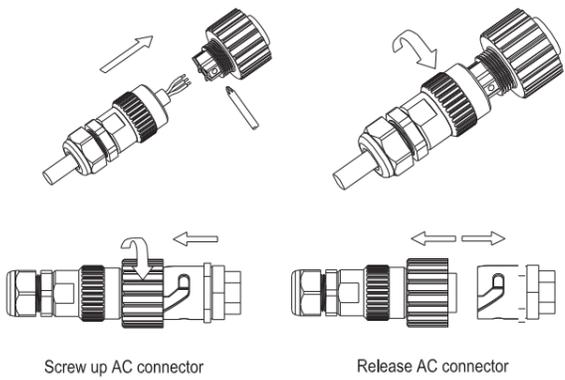
#### 5. Connection of PV terminal



6. Connection of AC terminal and off grid terminal, SPH have two terminal of AC, one is for on grid connect, and the other one is used for off grid (back up power supply):



Both on grid and off grid terminal tied like follow:



Screw up AC connector

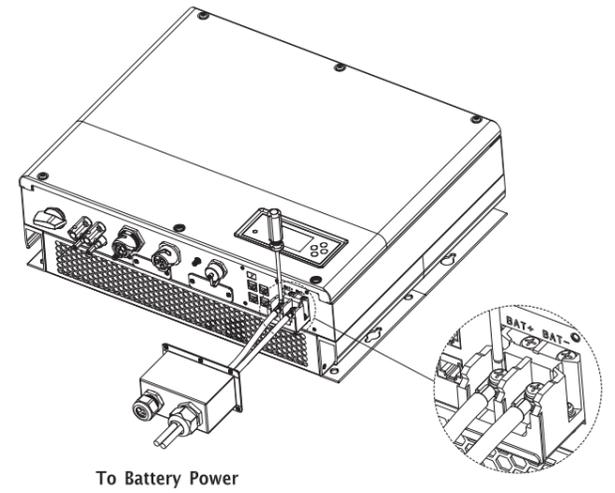
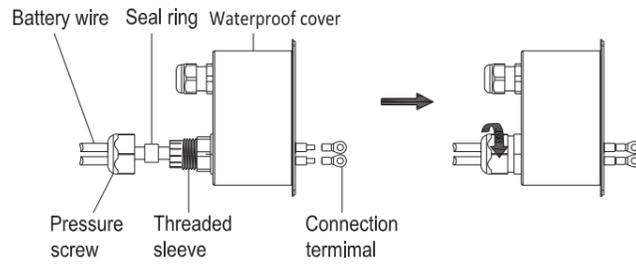
Release AC connector



**Notice:**

1. On grid terminal and off grid terminal can't directly connect together.
2. Off Grid terminal can't connect to grid.
3. Please turn to user manual for detail connection of on grid and off grid terminal connection.

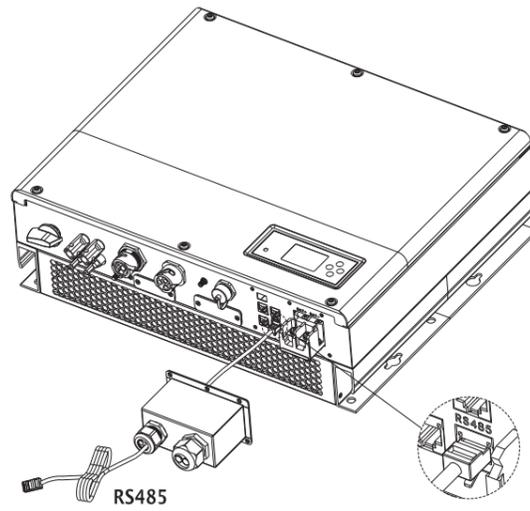
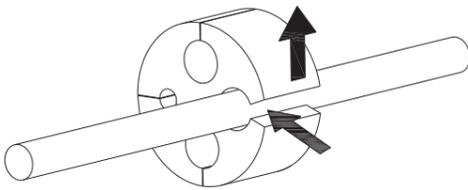
**7. Connection of battery terminal:**



To Battery Power

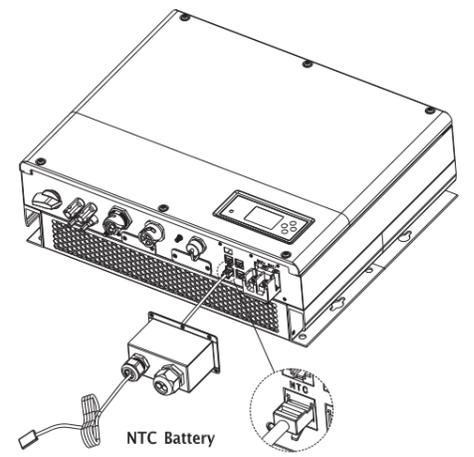
**8. Connection of communication terminal for lithium battery:**

- 8.1. Unscrew the swivel nut from the cable gland for the "RS485" (lithium battery communication) cable and "NTC" (lead-acid battery temperature sensor) cable and "DRMs" (only used in Australia) cable and the "CT/Meter" (connection of sensor or meter communication) cable at the connection cap.
- 8.2. Thread the swivel nut over the "RS485" cable.
- 8.3. Press the cable support sleeve out of the cable gland.
- 8.4. Remove the filler plug from the cable support sleeve.
- 8.5. Route the "RS485" cable through an opening in the cable support sleeve.
- 8.6. Thread the "RS485" cable through the cable gland.
- 8.7. Insert the RJ45 plug of the network cable into the "RS485" pin connector on the inverter until it snaps into place.



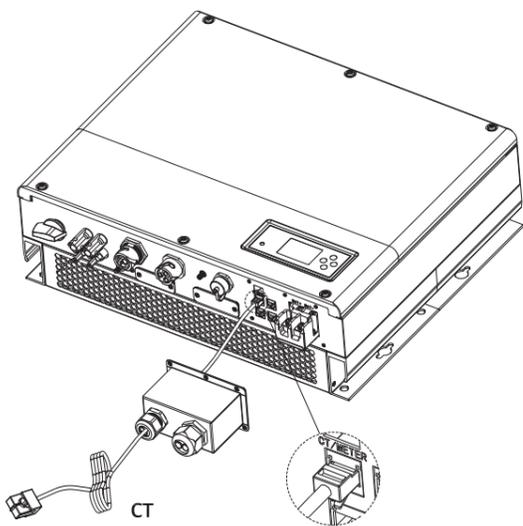
RS485

9. Connection of temperature probe for lead-acid battery if you try a lead-acid battery instead of a lithium battery, you should connect the temperature sensor of lead-acid battery like follow, the length of this cable is 1.5m, so please pay attention to the distance of battery and SPH.



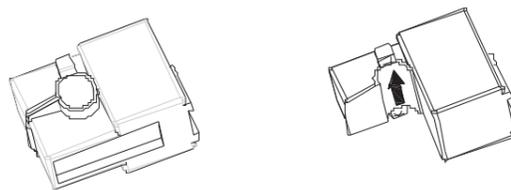
NTC Battery

**10. Connection of CT terminal**



CT

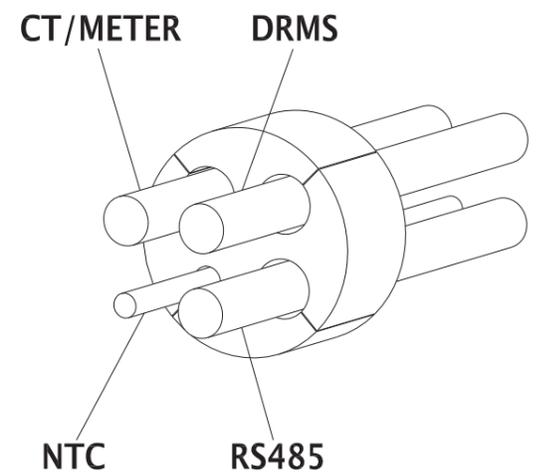
Pay attention of the direction of sensor, As illustrated below, open the current transformer and you can see an arrow labeled on it indicating the direction of current, the direction of arrow means from user load to public grid:



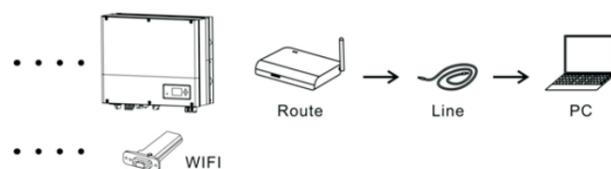
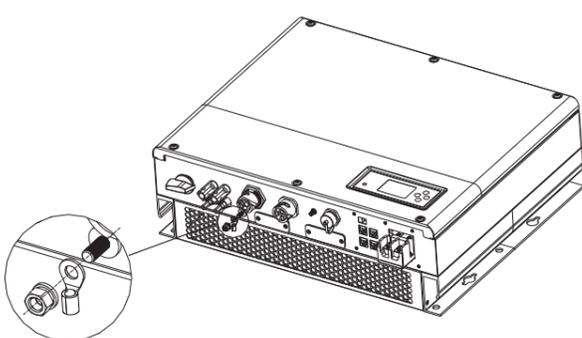
**Notice:**

1. We can change meter which provided by Growatt to monitor the system energy.
2. If you change meter, please plug in RJ45 of meter into "CT/meter", and set sensor as "Meter".

All the cable ok are like following:

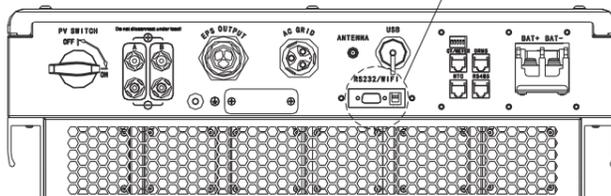


**11. Grounding connection**



WiFi

RS232/WIFI



**The SPH's monitoring**

The SPH provide RS232 interface. Users can through the following communication solution to monitor the SPH (please make sure PIN1 and PIN2 are ON). NOTE: this kind of monitoring, Can only be used by the monitor of Growatt's Shine server software provided by the company.

**Step5. Trouble shooting**

Please turn to "Installation manual of SPH series" section nine.

**Step6. Special function settings**

Growatt can provide various regulations of the machine, after customers receive the machine, according to their country, by dialing DIP switch to set the corresponding regulations. How to set up DIP switch, please refer to 6.3 of "Installation manual of SPH series". We have the default work mode of SPH, if you want to change the work mode you can set up the SPH inverter by pushing bottom or using shineserver. How to setup? Please turn to "Installation manual of SPH series" section 6.4.4. We can set up the work mode of SPH and provide you with the best experience!