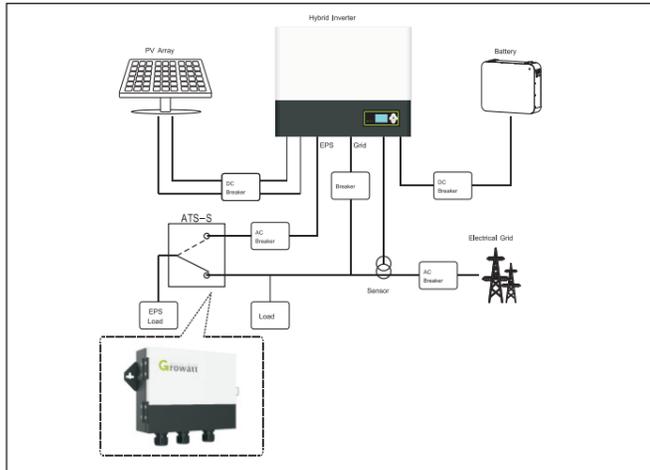


## 1. Introduction

The Auto-Transfer Switch Single Phase (ATS-S) controls the switching of the contactors to provide power to the EPS load in both grid-tied and off-grid conditions. The ATS-S integrates a contactor to provide users with a simple connection. It is used with Growatt Hybrid inverter and AC coupled inverter (single phase). Configured with ATS-S, when the power outage, ATS-S can automatically switch to Off-Grid state, it can continue to supply power to the EPS load, the load can continue to run.

## 2. The location of ATS-S in the system

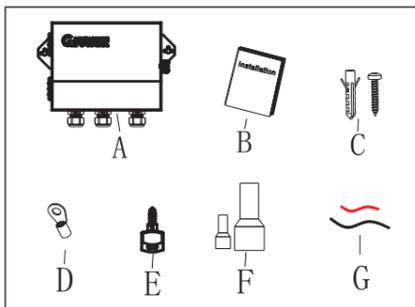
As shown in chart 2.1, the input side ATS-S is connected with EPS and GRID of SPH/SPA inverter, the output side is connected with EPS LOAD, and the position in the system is shown in the circle in the chart 2.1. EPS LOAD default connect with Grid power, if Grid is lost, EPS LOAD will turn to EPS output of hybrid inverter.



## 3. Configuration

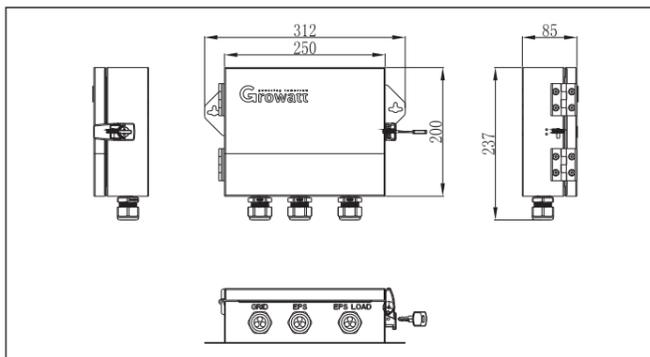
Model Name	Growatt ATS-S
Grid Normal Voltage	230V 50/60Hz
Grid Max Current	30A
EPS Normal Voltage	230V 50/60Hz
EPS Max Current	30A
Load Normal Voltage	230V 50/60Hz
Load Max Current	30A
Cooling Concept	Natural
Ingress Protection	IP65
Installation	Wall Mountable
Operation Ambient Temperature	-25°C ~ +50°C
Compatible Model	Growatt Hybrid inverter and AC coupled inverter (single phase)

## 4. General Information - Parts List



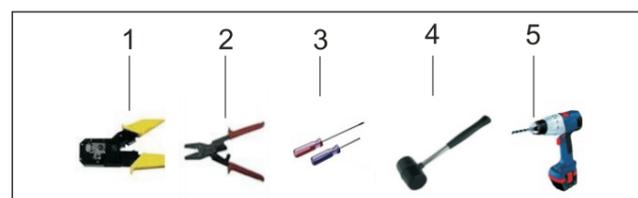
Part List			Part List		
Item	Item Name	Qty	Item	Item Name	Qty
A	ATS-S ( Auto-Transfer Switch Single Phase )	1	E	Key	2
B	User Manual	1	F	Cold pressed terminal(large /small)	10
C	Anchor Bolt	2	G	Contactor control line	2
D	O -type terminal	3			

## 5. Dimension & Weight



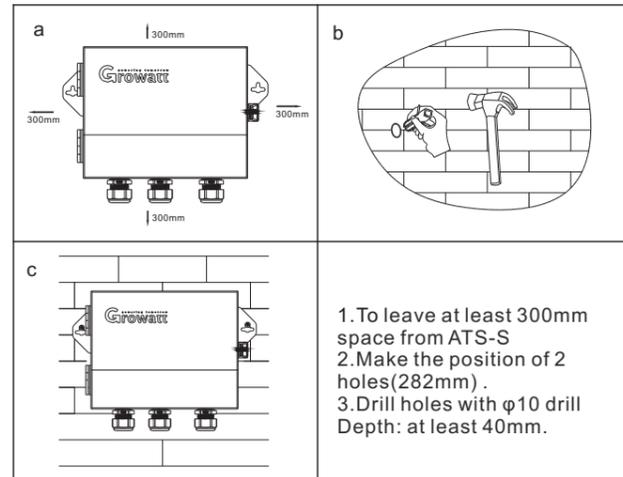
Dimension (L x W x H) : 312\*237\*85mm  
Weight : 2.38KG

## 6. Tool



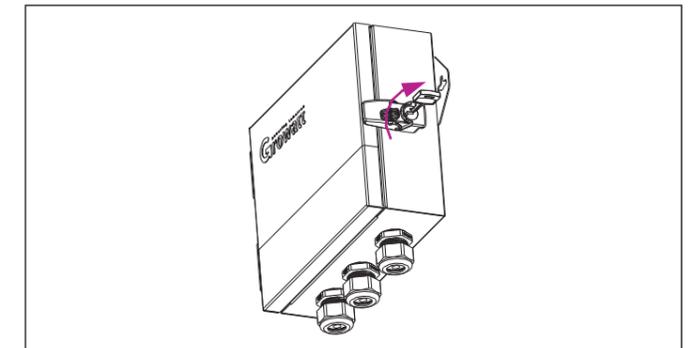
NO	Description	NO	Description
1	Pipe clamp	4	Rubber hammer
2	Diagonal plier	5	Driller
3	Screwdriver		

## 7. Opening step of ATS-S



1. To leave at least 300mm space from ATS-S
2. Make the position of 2 holes(282mm).
3. Drill holes with  $\phi 10$  drill Depth: at least 40mm.

## 8. Open the ATS-S

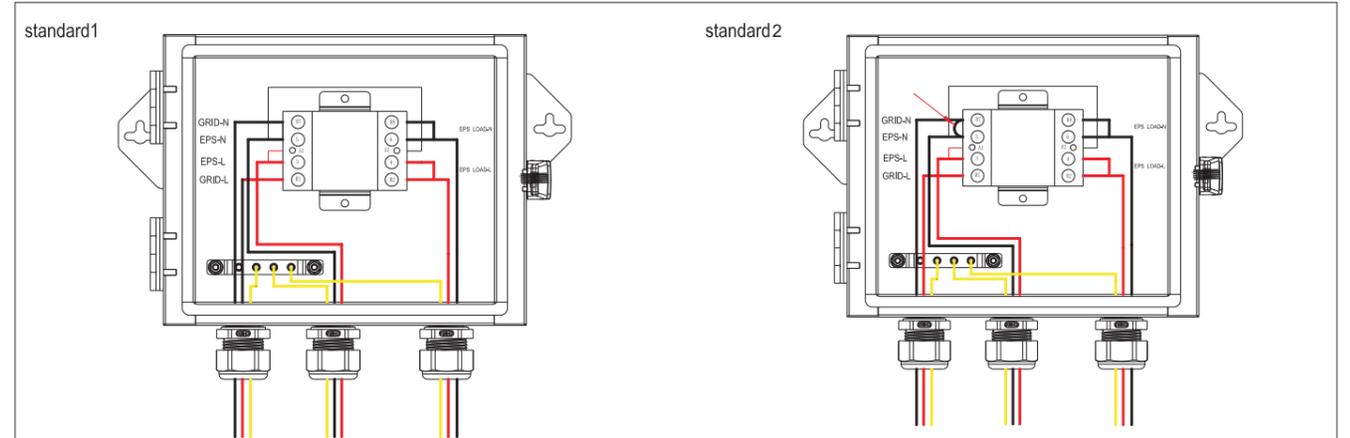


As shown above, please put the key into the Keyhole on the ATS-S right, clockwise rotation of 90°, the lower end of the first lock up gently move Open, remove the lock at the upper end of the buckle, then you can open the cover, Step of locking the cover opposite to the above.

## 9. Wiring Connection

### 9.1 total wire diagram

There are two type wire connection diagram of ATS-S, show as below:



Standard 1 is for general using, and standard 2 is for like Australia where Neutral line can't be switched. When connect with ATS-S, please check which standard is suit for you.

### 9.2 wires making

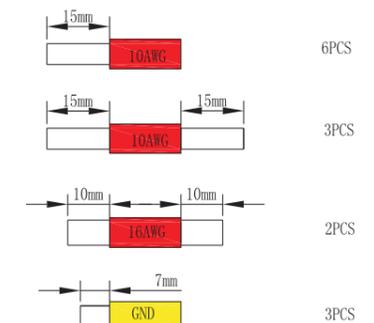
1. Wires below are needed before installation(16AWG wire has been configured in accessory bag).

- 10AWG wires\*8pcs
- 16AWG wires\*2pcs
- 10AWG N wire (for standard2) \*1pcs
- GND wires\*3

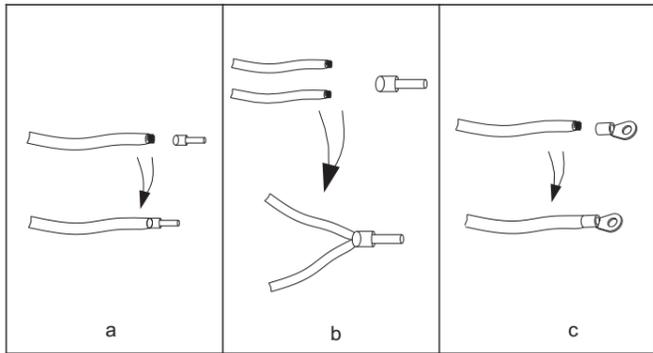
### Note:

1. These include 2pcs 10AWG wire (1pcs red, 1pcs black) for shorting contactor ports 2 and 4, 6 and 8, Its length is about 60cm, 10 AWG N wire (for standard2) length is about 50cm.

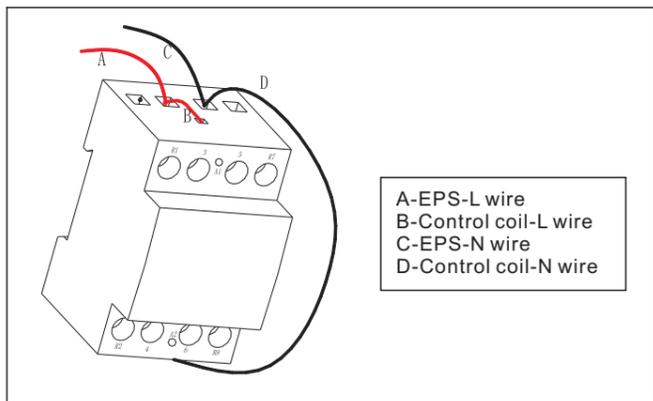
2. Use the diagonal plier to trip 15mm of insulation from one side of the 10AWG wires(6pcs);  
Use the diagonal plier to trip 15mm of insulation from two side of the 10AWG wires (2pcs, If it is standard 2, you need 3pcs);  
Use the diagonal plier to trip 10mm of insulation from two side of the 12AWG wires(2pcs);  
Use the diagonal plier to trip one side of GND wire about 7mm(3pcs).



3. There are three types wire need to be machining, please check ref to 9.1 wired diagram. The follow three type wire are show as below:

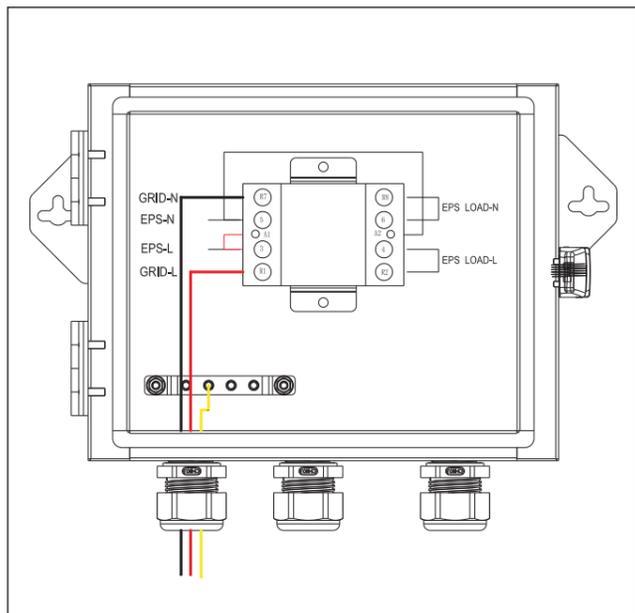


### 9.3 Control coil-wires Connection



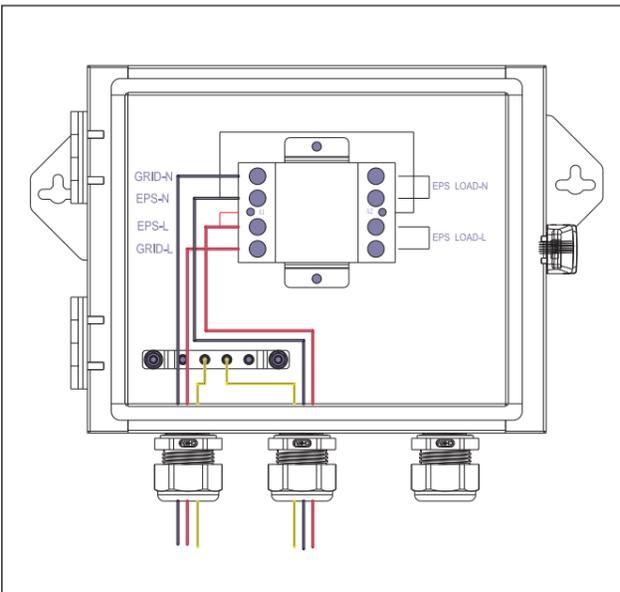
Use the screwdriver to unscrew the nut with position numbers A1, 3, A2 and 5 in the contactor, Then the red 12AWG wire ends are inserted into A1 and 3, both ends of the black 12AWG wire are inserted into A2 and 5, and tighten the corresponding nut with a screwdriver.

### 9.4 GRID-wires Connection



Use the screwdriver to unscrew the nut with position numbers R1 and R7 in the contactor, and then insert GRID-L wire and GRID-N wire into the port of contactor(R1&R7) through the cable nut and tighten them with screwdriver. Use a screwdriver to lock the ground wire on the E-wire copper bar.

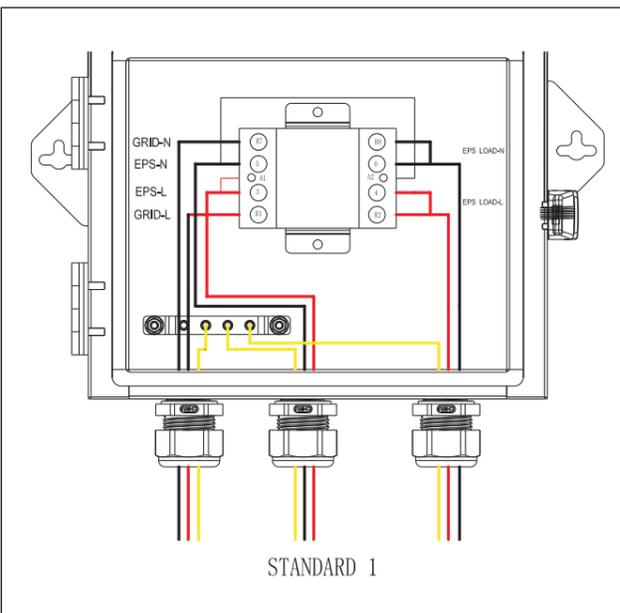
### 9.5 EPs-wires Connection



Use the screwdriver to unscrew the nut with position numbers 3 and 5 in the contactor, and then insert EPs-L wire and EPs-N wire into the port of contactor(3&5) through the cable nut and tighten them with screwdriver. Use a screwdriver to lock the ground wire on the E-wire copper bar.

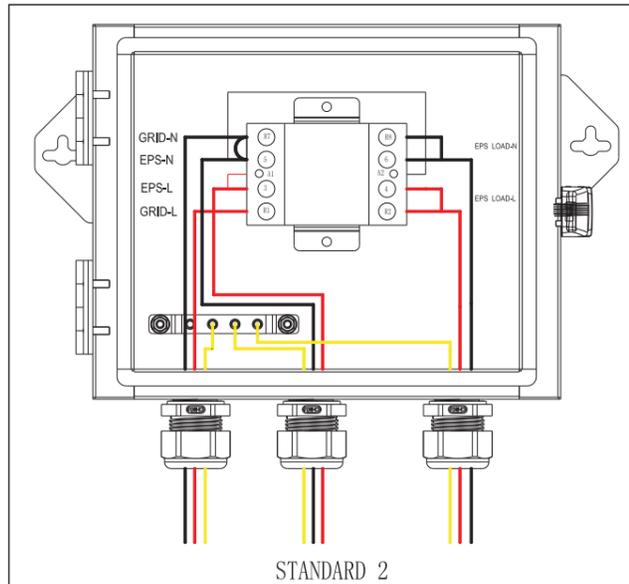
**Note:**  
Please prevent other wires from getting loose during operation.

### 9.6 EPs LOAD-wires Connection



Use the screwdriver to unscrew the nut with position numbers 2, 4, 6 and 8 in the contactor, and the red 10AWG short wire ends were inserted into the contactor port 2 and 4, The Black 10AWG short wire ends were inserted into the contactor port 6 and 8, then insert EPs load-L wire and EPs load-N wire into the port of contactor(2&6) through the cable nut and tighten them with screwdriver. Use a screwdriver to lock the ground wire on the E-wire copper bar.

**Note:**  
The following step is an example for Australian grid system where neutral line can't be switched. (If you do not have this requirement, ignore the following step)



Use the screwdriver to unscrew the nut with position numbers 5 and 7 in the contactor, and then insert EPs-L wire and EPs-N wire into the port of contactor(5&7) through the cable nut and tighten them with screwdriver.

### 9.7 Checking

Please make sure that all wiring in the ATS-S is tightened, check the connection diagram with section 9.1.

## 10. Trouble shooting

In the process of use, if the EPs load does not work when the on-grid, please turn off the Hybrid inverter, and then open the ATS-S cover, check the GRID and EPs LOAD line is connected properly.

If the load does not work when off-grid, please turn off the inverter, and then open the ATS-S cover, check the control line, the EPs wiring and the EPs LOAD wiring is normal.

## 11. ATS-S usage methods

After connecting the ATS-S internal wire, close the cover, the GRID and EPs end of the ATS-S are respectively connected with the AC GRID and EPs output of SPH/SPA inverter, EPs load end access load, run SPH / SPA inverter, load to normal operation.

## 12. Caution

Please use the equipment within the scope of specification. Excessive current or voltage may cause device damage. To avoid personal injury due to energy hazard, remove wristwatches and jewelry when repairing. Use tools with insulated handles. Repair are to be performed only by qualified technical personal authorized by Growatt.



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Growatt New Energy

Shenzhen Growatt New Energy Technology CO.,LTD  
No.28 Guangming Road, Shiyan Street, Bao'an District, Shenzhen, P.R.China  
T +86 0755 2747 1942  
E service@ginverter.com  
W www.ginverter.com  
GR-UM-146-A-01