Brand: Growatt
Type: Solar On Grid String Inverter
Models: All Growatt Inverters with Modbus RS485 Port

CONNECTION DIAGRAM

The communication terminals (RS485) are located at the bottom of the inverter. And there are two connection terminals on the configuration circuit board: RS485 A/B terminal blocks.
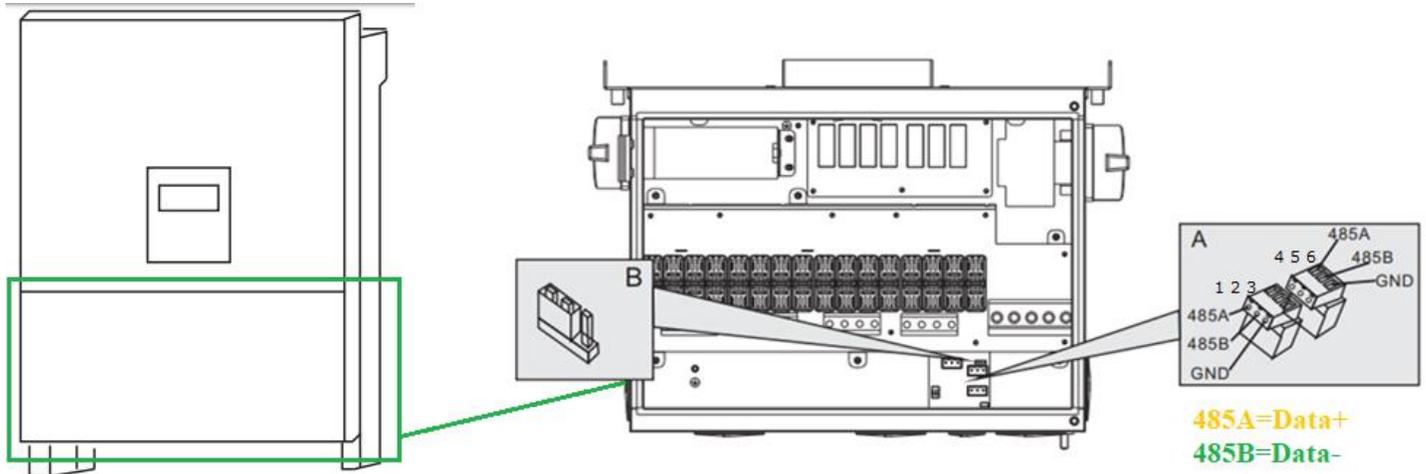

Figure G1 – Growatt Sring Inverter Connections

Connection Steps

1. Please unscrew the RS485 terminal as shown in A part of *Figure G1*.
2. Connect the cables to the RS485 bus terminal blocks.
3. Please make the connections from the Terminal Block chip to TrackSo IoT Gateway as mentioned in the Table – G*T1.*

Growatt Assignment	TrackSo Pin No. & Assignment	
485A	3	D+
485B	4	D-
GND		
485A	Used for Daisy Chain Connections	
485B		
GND		

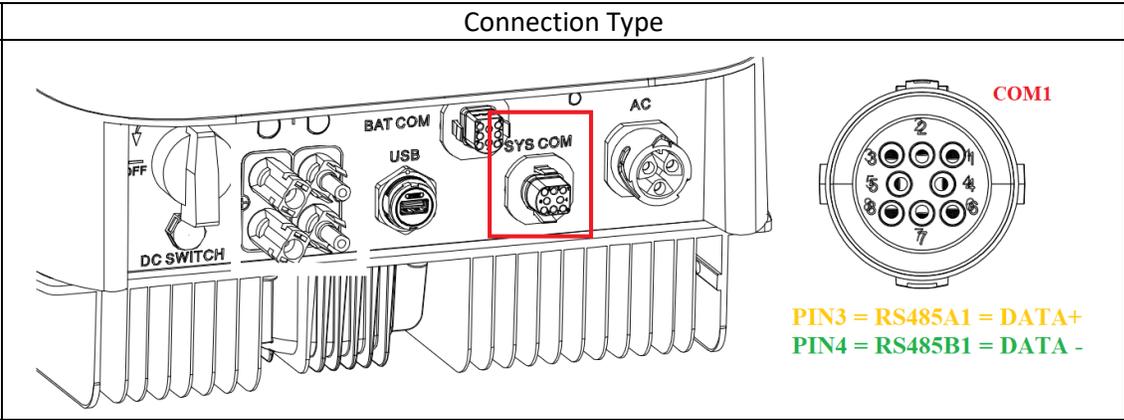*Table GT1 –Growatt RS485 chip connections with TrackSo IoT Gateway*
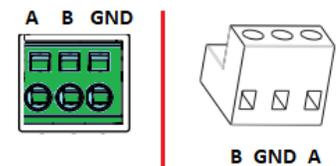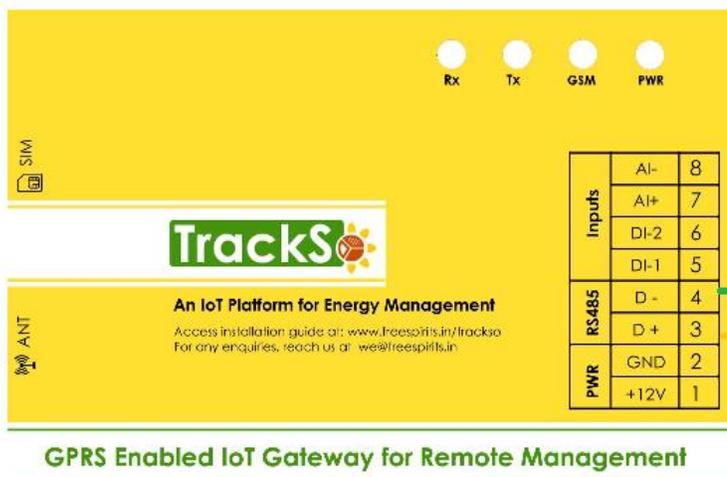
Multiple Configurations exist in Growatt Inverter. Please check your Growatt Inverter user manual to check the required configuration.

(Detailed Connection Diagram also available on Next Page)

Inverter Model No.	Connection Type
MIN 2500TL-X MIN 3000 TL-X MIN 3600 TL-X MIN 4200 TL-X MIN 4600 TL-X MIN 5000 TL-X MIN 6000 TL-X	 **COM1** PIN3 = RS485A1 = DATA+ PIN4 = RS485B1 = DATA -
MID 6KTL3-X MID 10KTL3-X MID 12KTL3-X MID 17KTL3-X MID 22KTL3-X	 **COM1** PIN3 = RS485A1 = DATA+ PIN4 = RS485B1 = DATA -
MAX 50000TL3-L MAX 60000TL3-L MAX 70000TL3-L MAX 80000TL3-L	
MAC 30KTL3-X MAC 40KTL3-X MAC 50KTL3-X MAC 60KTL3-X MAC 70KTL3-X	 **RS485 Communication Port** | No.	Definition
4/7	RS485B1=Data-
5/8	GND
6/9	RS485A1=Data+	
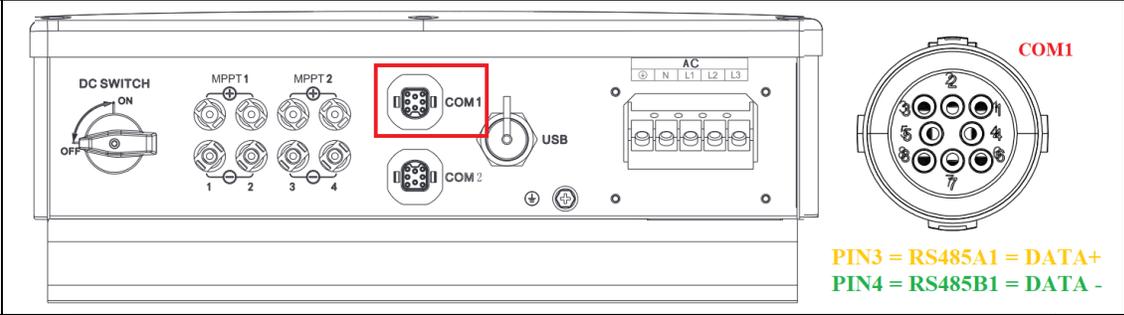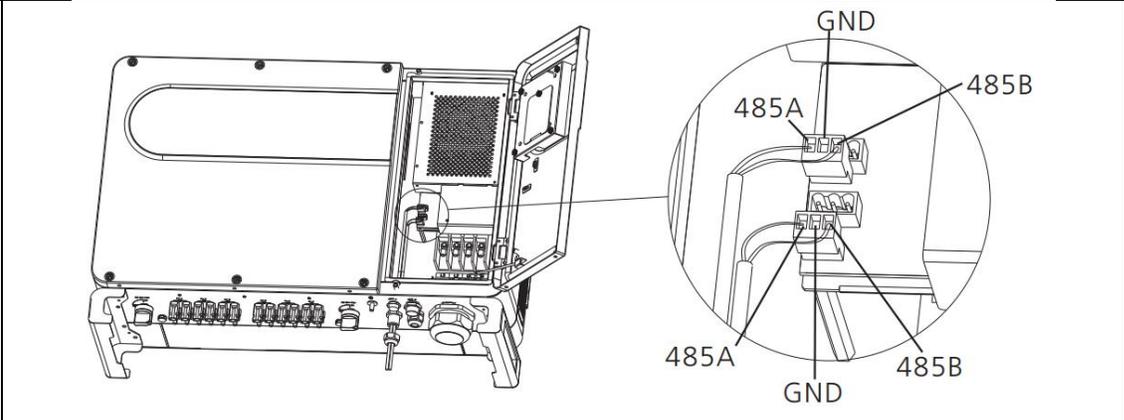
Growatt 7000UE Growatt 8000UE Growatt 9000UE Growatt 10000UE Growatt 12000UE Growatt 18000UE Growatt 20000UE	 Yellow- RS485A (Data +) Green- RS485B (Data -)
Growatt 8000TL3-S Growatt 9000TL3-S Growatt 10000TL Growatt 11000TL3-S	Pin1 ------- TR-(B) Pin2 ------- Shielding layer or no connection Pin3 ------- TR+(A) 1 2 3 485B 485A
Growatt 17000TL3-S Growatt 20000TL3-S Growatt 25000TL3-S Growatt 30000TL3-S Growatt 33000TL3-S Growatt 40000TL3-NS Growatt 50000TL3-S	
Growatt 30000TL3-SE Growatt 33000TL3-SE Growatt 40000TL3-SE	
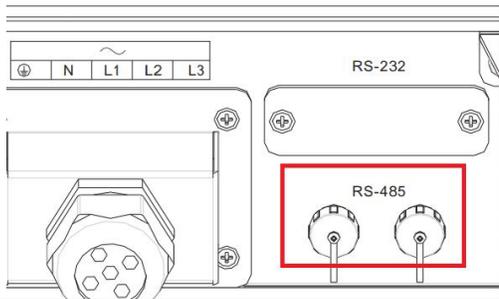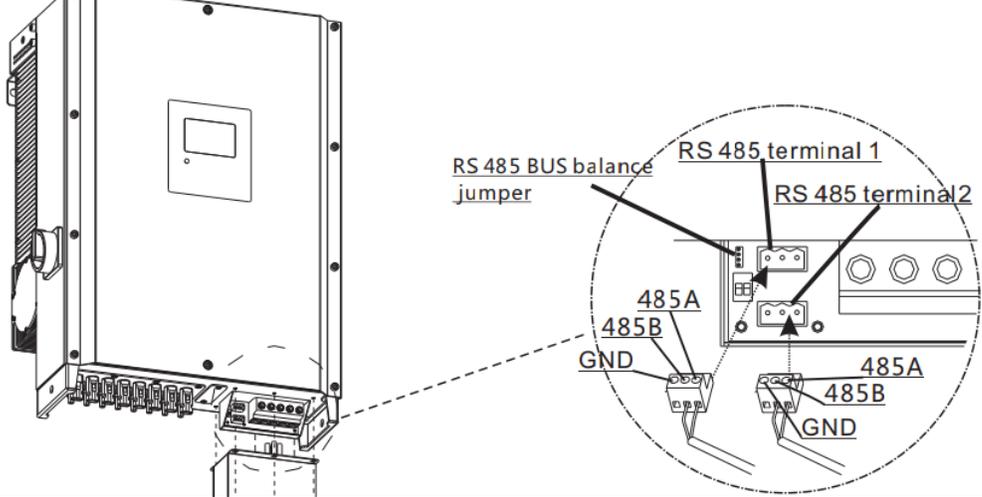
All Growatt Manuals- https://www.dropbox.com/sh/0qgayflef0z8u31/AADCUAUB-6O23Tc1hh-8E43Ra?dl=0

Inverter ID: **1, 2, 3, 4 ….** Continuous numbering starting with 1, **(Range:** 1 to 247)
Baud Rate: **9600**
Data Bits: 8 , Stop Bit: 1 , Parity: None

CONFIGURATION AT THE INVERTER END (FOR INVERTER WITH SCREEN)

The inverter can support three kinds of knock: single knock, double knock and thrice knock. Each kind of knock has different function. Refer to specified definition in Table below:

Knock type	Definition
Single knock	Next Page / Down
Double knock	Enter / Set
Thrice knock	Enter & ESC

NOTE: The below details are mentioned in the ***Installation & Operation Manual*** for Growatt Inverter*.*
The admin password for entering the Install Settings is 1234.

SETTING THE INVERTER ID

The inverter ID is used to identify the inverter in a RS485 connection

- Set a different inverter ID for each inverter in the PV plant. Otherwise, the inverters cannot be correctly identified.
- On the last inverter in the RS485 connection, switch on the RS485 termination resistor.

Setting COM address: *Input password->Setting language->Set COM addr-> is the current address of inverter."*
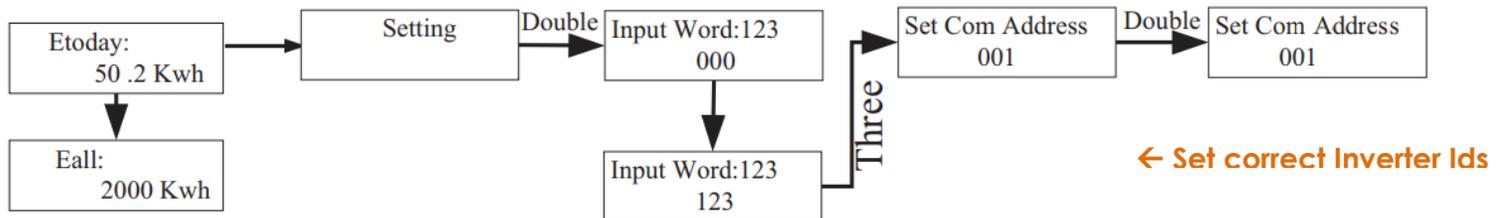
Before entering the 'COM Address: xxx' setting interface, you need to enter a password as below:

According to the LCD display, you need to input three numbers: 123.You should finish several steps as below:

1. when the LCD stays bright, single knock to 'Setting…',and then double knock to enter 'INPUT 123:xxx'interface.
2. Double knock to make the first number flash, single knock to change the number, and the first number you need to input is '1'. Double knock to enter the second number while the first number was '1'.
3. When the second number is flashing ,single knock to change the number, and the second number you need to input is '2'. Double knock to enter the last number while the first number was '2'.
4. When LCD displays 'INPUT 123:123', triple knock to enter the setting interface.
5. Single knock to 'COM Address: xxx', and then double knock to enter the setting status, single knock to change the COM Address. When setting finishes, wait for 30s or triple knock to save your setting.
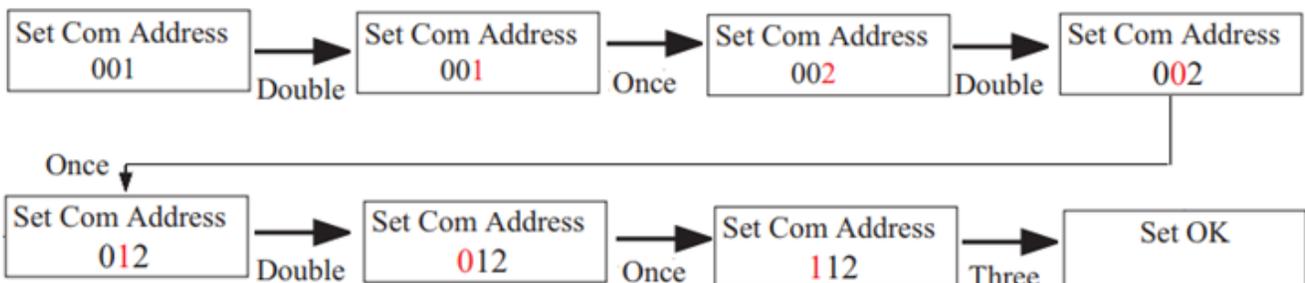
For a precise calculation of the statistics in the inverter itself and in a monitoring system, date and time have to be correct.

- If you want to set inverter time, repeat the steps as described in above section to set Com Address.
- When LCD displays 'INPUT 123:123', triple knock to enter the setting interface.
- Single knock until LCD displaying 'xxxx/xx/xx xx:xx', and then double knock to enter the setting status, the numbers begin to flash. Single knock to change the number, each knock makes the flashing number add '1', and double knock to shift to next number setting. When setting finishes, wait for 30s or triple knock to save your setting.

← Set the Correct Date & Time

```
Etoday:
  50 .2 Kwh
       │
       ▼                      Double  ┌──────────────┐         ┌──────────────┐
Eall:          ┌──────────┐  ──────→  │Input Word:123│    T    │Set Com Address│
  2000 Kwh     │ Setting  │──────────→│     000      │    h    │     003       │
               └──────────┘           └──────────────┘    r       │ Once
                                             │           e e      ▼
                                             ▼                 ┌──────────────┐
                                      ┌──────────────┐         │ Set Language │
                                      │Input Word:123│         └──────────────┘
                                      │     123      │              │ Once
                                      └──────────────┘              ▼
                                                           ┌──────────────┐
                                                           │AC V Control : │
                                                           │Disable/Enable │
                                                           └──────────────┘
                                                                │ Once
                                                                ▼
                                                           ┌──────────────┐ Double ┌────────────────────┐
                                                           │Set Date/Time │──────→ │Date：2012/04/05     │
                                                           └──────────────┘        │Time：14:20:38       │
                                                                                   └────────────────────┘
```
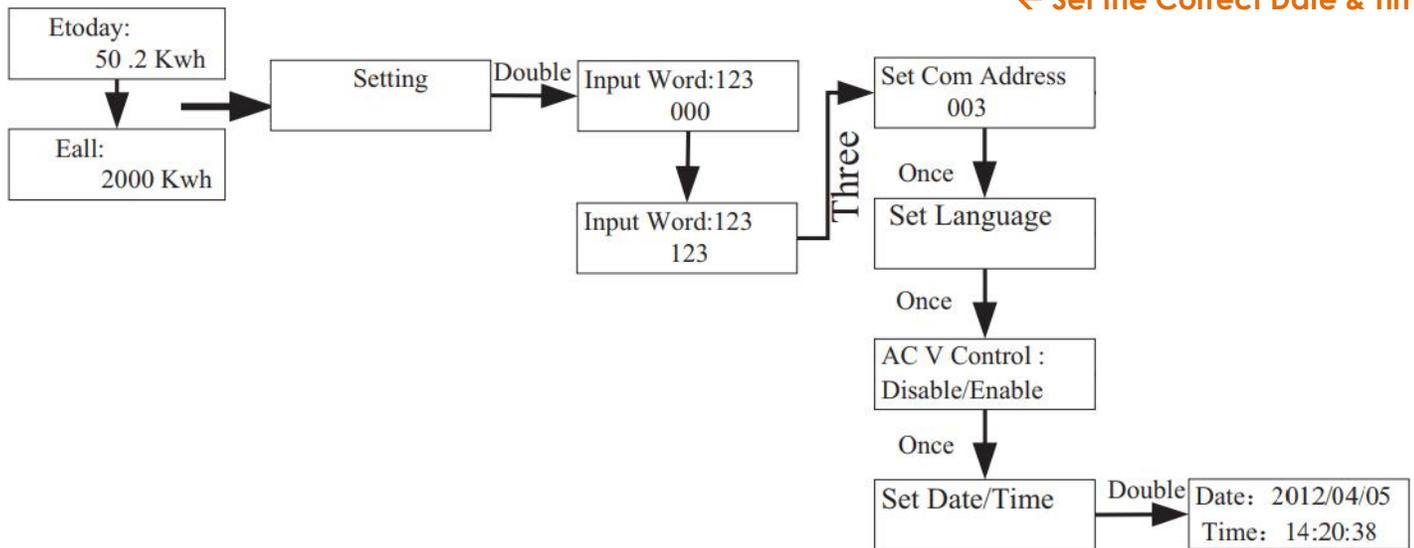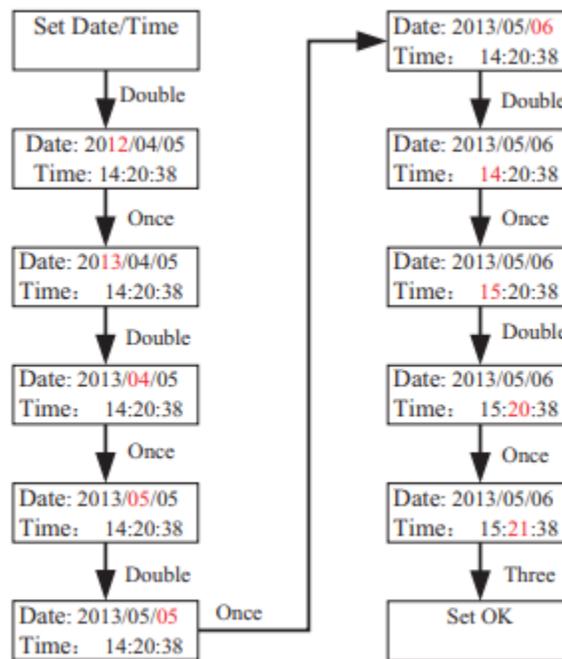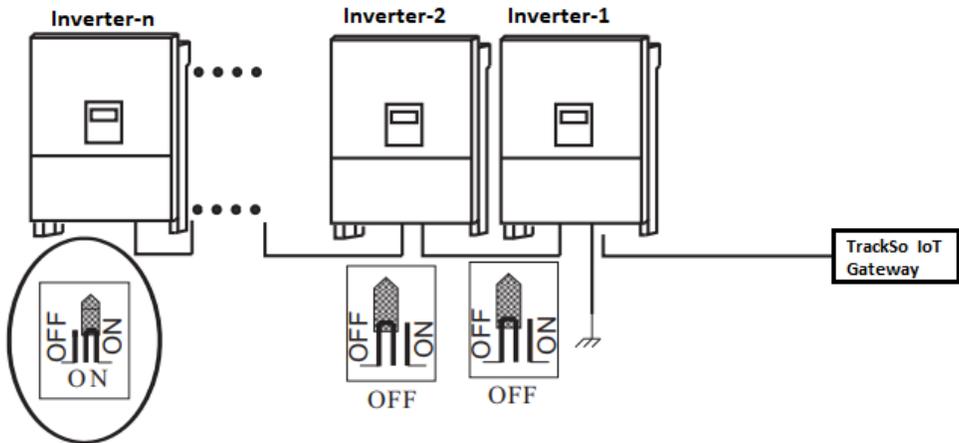
Example Flow

```
┌──────────────┐                        ┌────────────────────┐
│Set Date/Time │              ┌────────→│Date: 2013/05/06    │
└──────────────┘              │         │Time：   14:20:38    │
      │ Double                │         └────────────────────┘
      ▼                       │               │ Double
┌────────────────────┐        │         ┌────────────────────┐
│Date: 2012/04/05    │        │         │Date: 2013/05/06    │
│Time: 14:20:38      │        │         │Time：   14:20:38    │
└────────────────────┘        │         └────────────────────┘
      │ Once                  │               │ Once
      ▼                       │         ┌────────────────────┐
┌────────────────────┐        │         │Date: 2013/05/06    │
│Date: 2013/04/05    │        │         │Time：   15:20:38    │
│Time：   14:20:38    │        │         └────────────────────┘
└────────────────────┘        │               │ Double
      │ Double                │         ┌────────────────────┐
      ▼                       │         │Date: 2013/05/06    │
┌────────────────────┐        │         │Time：   15:20:38    │
│Date: 2013/04/05    │        │         └────────────────────┘
│Time：   14:20:38    │        │               │ Once
└────────────────────┘        │         ┌────────────────────┐
      │ Once                  │         │Date: 2013/05/06    │
      ▼                       │         │Time：   15:21:38    │
┌────────────────────┐        │         └────────────────────┘
│Date: 2013/05/05    │        │               │ Three
│Time：   14:20:38    │        │         ┌────────────────────┐
└────────────────────┘        │         │     Set OK         │
      │ Double                │         └────────────────────┘
      ▼               Once    │
┌────────────────────┐ ───────┘
│Date: 2013/05/05    │
│Time：   14:20:38    │
└────────────────────┘
```

Multiple Inverters

Terminate the Daisy Chain by Switching ON DIP Switch

In RS485 communication circuit, when the T/R+ and T/R- lines reach a certain length (>100m), the line itself has impedance, in order to balance the impedance of the RS485 bus line, you'd better get the jumper to the state "ON" in RS485 BUS balance jumper of the remote inverter that the last one connects to the RS485 bus line while others keep "OFF" state.

code	Details
A	RS485 stander connector
B	RS485 Bus Connection via RJ45 connector
J	RS485 BUS balance jumper