TRACKSO INSTALLATION GUIDE FOR ABB 50-60KW

Brand: ABB
Type: Solar On Grid String Inverter
Models: TRIO-50.0/60.0-TL-OUTD, TRIO-TM-50.0-400, TRIO-TM-60.0-480
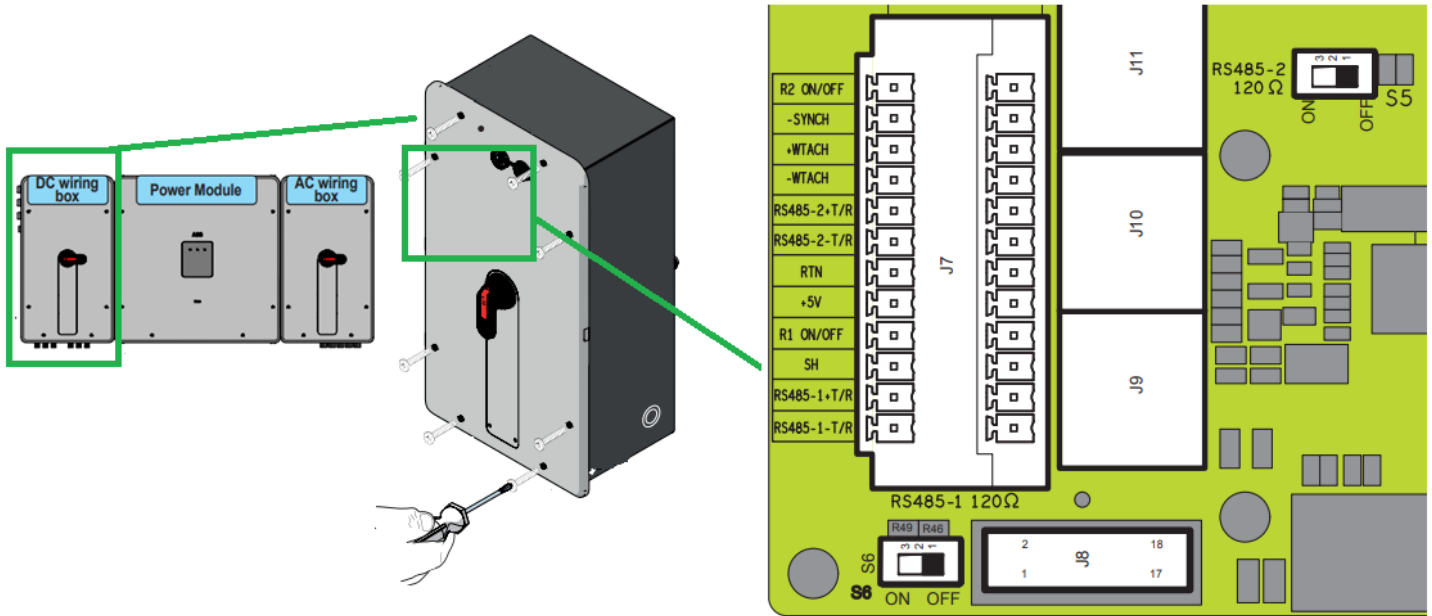
CONNECTION DIAGRAM

Figure A1 – ABB Inverter Communication Card

Connection Steps:

1. Open the DC Wiring Box as shown in Figure A1 using Star Key.
2. Locate the Communication Board inside the DC Wiring Box as shown in Figure A2.
3. Both, RS-485 1 and RS-485 2 connections are same and can be used for MODBUS communication. The other port is used when we connect multiple inverters on MODBUS line.
4. Please ensure you have female 12 pin connector to connect wires & plug in to the board.
5. Connect the TrackSo IoT gateway to any one of the RS-485 ports as shown in Table AT1.
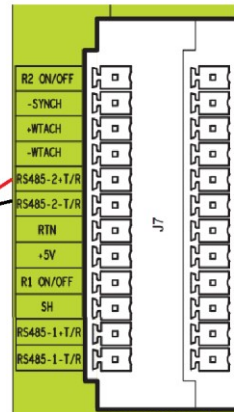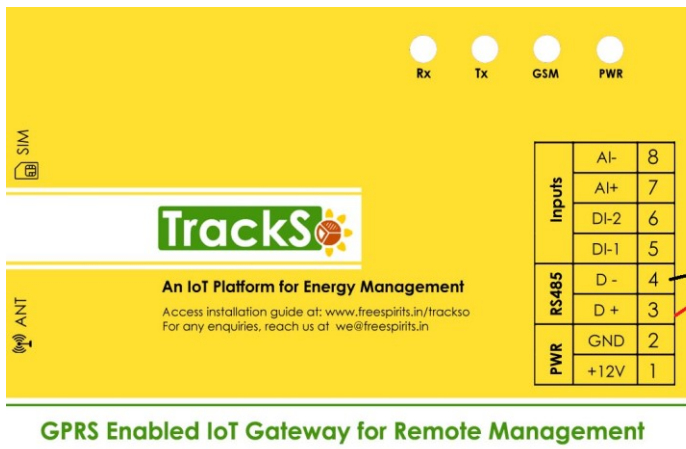

Figure A2 – ABB connection with TrackSo IoT Gateway

ABB Pin No. & Assignment			TrackSo Pin No. & Assignment	
5	RS-485	Data +	3	RS485+
6	Port 2	Data -	4	RS485-
11	RS-485	Data +		
12	Port 1	Data -		

Table AT1 – ABB RS485 chip connections with TrackSo IoT Gateway

Interface: RS-485 (half duplex)
ID: 1 to 63 (default value: 5)
Baud Rate: 2400, 4800, 9600, **19200** (default value), 38400, 57600 or 115200bps
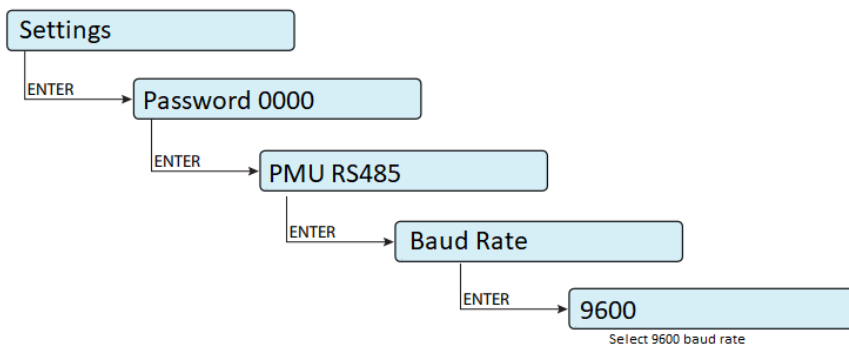Stop bit: 1
Parity: **No parity** (default value), even parity or odd parity
Data bits: 8

CONFIGURATION AT THE INVERTER END

SETTING THE BAUD RATE

If you connect multiple inverters via RS485, set the same baud rate on each inverter.
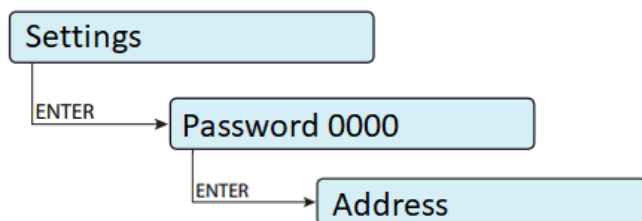
Settings
ENTER → Password 0000
ENTER → PMU RS485
ENTER → Baud Rate
ENTER → 9600
Select 9600 baud rate

← Set the Inverter baud rate to 9600

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.
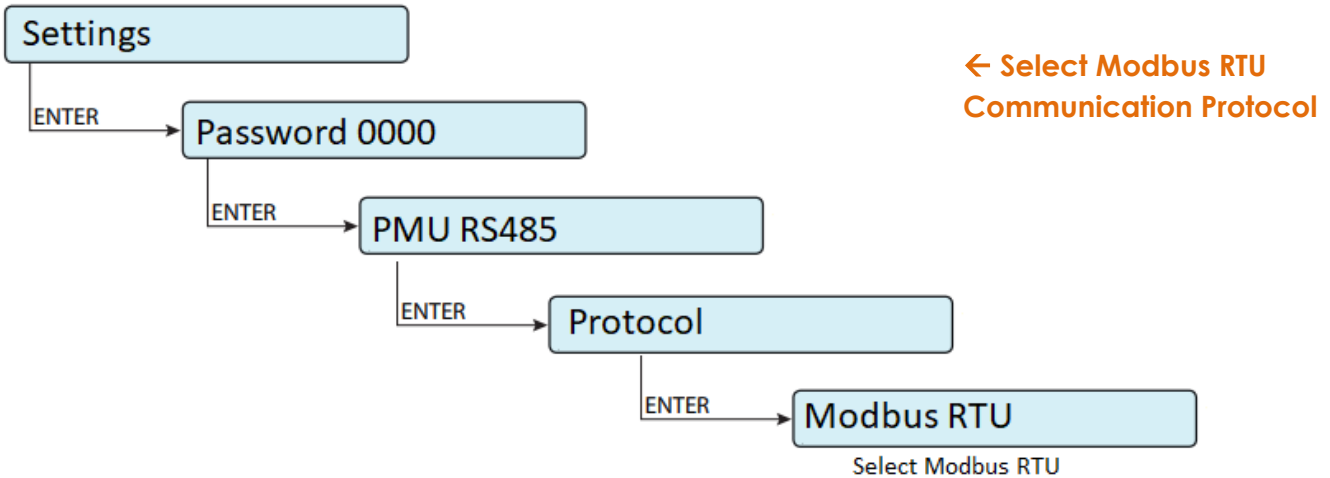
Settings
ENTER → Password 0000
ENTER → Address

← Set correct Inverter Ids

SET DATE & TIME OF INVERTER

For a precise calculation of the statistics in the inverter itself and in a monitoring system, date and time have to be correct.

Settings
ENTER → Password 0000
ENTER → Date/Time
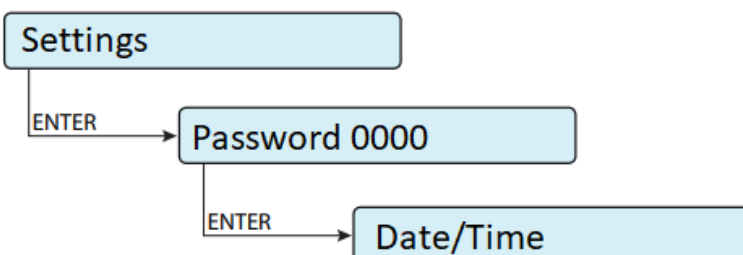
← Set the Correct Date & Time

← **Select Modbus RTU Communication Protocol**

Communication Card Settings

Set the RS-485 termination resistance based on where the inverter is located in a daisy chain

Switch S6 (a12) is for RS-485(1). It's on the lower, left edge of the PCB.
Switch S5 (a13) for RS-485(2). It's towards the middle of the PCB

Single Inverters

If there is only one inverter on a given RS-485 bus, set the RS-485 termination resistor switch ON. Repeat for the 2nd RS-485 bus if both are being used.

Multiple Inverters

For multiple inverters with daisy-chained RS-485 communication signals, set the RS-485 termination resistors OFF on all but not on the last inverter in the series
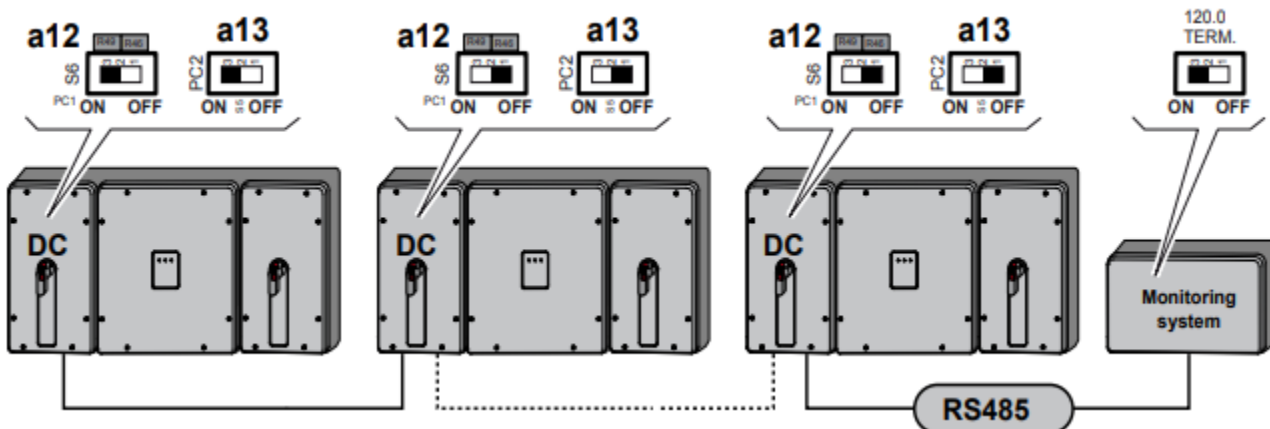
The above details are also mentioned in the *Installation & Operation Manual* for ABB Inverters

1. Insure correct connections as detailed in the installation guide.
2. Insert the SIM card.

Push Yellow Nob

Pull the SIM Tray

Place the SIM card In tray Inside

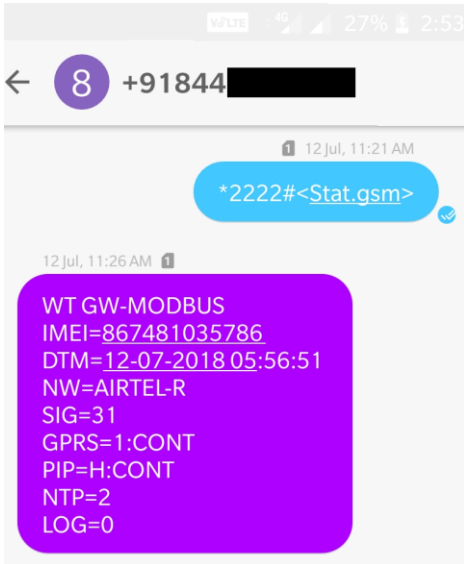Place the SIM Tray in SLOT and Push the Tray

3. Switch on the power to the TrackSo device. (Minimum 12V/1A input is required)
4. Power LED (Red) of TrackSo IoT gateway glows and stays ON.

    NOTE: TrackSo IoT Gateway will only be able to send data if the GPRS network is available at the installed location.

LED	NAME	DESCRIPTION	
GREEN	POWER	Light when Power on the device	
RED	GSM	**LED Status**	**Connection State**
		Flashing (ON for 100ms and OFF for 100ms)	SIM Card not found
		Flashing (ON for 500ms and OFF for 500ms)	Searching for GSM Network
		Flashing (ON for 0.1s and OFF for 2.9s) Once at every 3sec	GSM Network Registered
		Flashing twice at every 3sec	GPRS IP Connected
		Flashing 5times	GPRS IP Sending data
		LED OFF	GSM Fault
GREEN	COM TX	Blink on data transmission in RS485 port	
YELLOW	COM RX	Blink on data reception in RS485 port	

5. To check the exact network status send the following message to mobile number of the device

SMS Command= *2222#<Stat.gsm>	
IMEI	IMEI No. of the data logger (Device Key)
NW	Network
SIGN	Signal Strength out of 31
GPRS	CONT- connected , NC- not connected
PIP	Connected to TrackSo Server or not CONT- connected, NC- not connected
LOG	no. of data points stored in devices incase of no interet

6. If the GSM light starts flashing 5 times then Login to www.trackso.in with your Username/Password.
7. Click on 'Units' from the menu bar. You will be able to view your installed unit in the table as shown below.
8. Check if the **Status** becomes Receiveing for the relevant Unit.

Unit Name ⬍	Site	Unit Key ⬍	Category	Data Status	Last Event Timestamp	Device Key	Device Phone	Actions		
1-Schnieder		▮▮▮cc	Inverter	Receiving	2018-07-16 02:24:04	▮1034235444/1	▮9	View Data	✎	🗑
2-Schneider		▮7799	Inverter	Receiving	2018-07-16 02:24:05	▮034235444/2	▮	View Data	✎	🗑
▮	▮School	▮5	Inverter	Not Receiving			▮B	View Data	✎	🗑
▮	▮chool	▮5	Inverter	Not Receiving				View Data	✎	🗑

9. If the state remains Not receiveing for more than 10 minutes, click on your email ID at the top right of the screen and click on 'Event Ingestion Logs' in the dropdown.

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- 👤 Users
- 👤 Roles
- Ᵽ Derived Parameters
- ☰ **Event Ingestion Logs**
- 🔍 API keys
- ➡ Logout

Home / Event Ingestion Logs

☰ Event Ingestion Logs

| Show 10 ▼ |

Timestamp	Message	code
2018-07-16 02:42:16	Invalid request. Event should contain data. { "events": [{ "timestamp": 1531689133, "unit_key": "84f8b12c", "data": { } }] }	not_acceptable
2018-07-16 02:41:13	Invalid request. Event should contain data. { "events": [{ "timestamp": 1531689070, "unit_key": "84f8b12c", "data": { } }] }	not_acceptable
2018-07-16 02:40:10	Invalid request. Event should contain data. { "events": [{ "timestamp": 1531689007, "unit_key": "84f8b12c", "data": { } }] }	not_acceptable

10. Check if there is some log generated at the time of installation of the TrackSo IoT Gateway device.
    a. If **NO,** please restart the device and try the same flow again.
    b. If **YES,** email us at we@freespirits.in to consult the same.