

TRACKSO INSTALLATION GUIDE FOR ABB TRIO-20.0-27.6-TL-OUTD

Brand: ABB
Type: Solar On Grid String Inverter
Models: TRIO-20.0-27.6-TL-OUTD

CONNECTION DIAGRAM

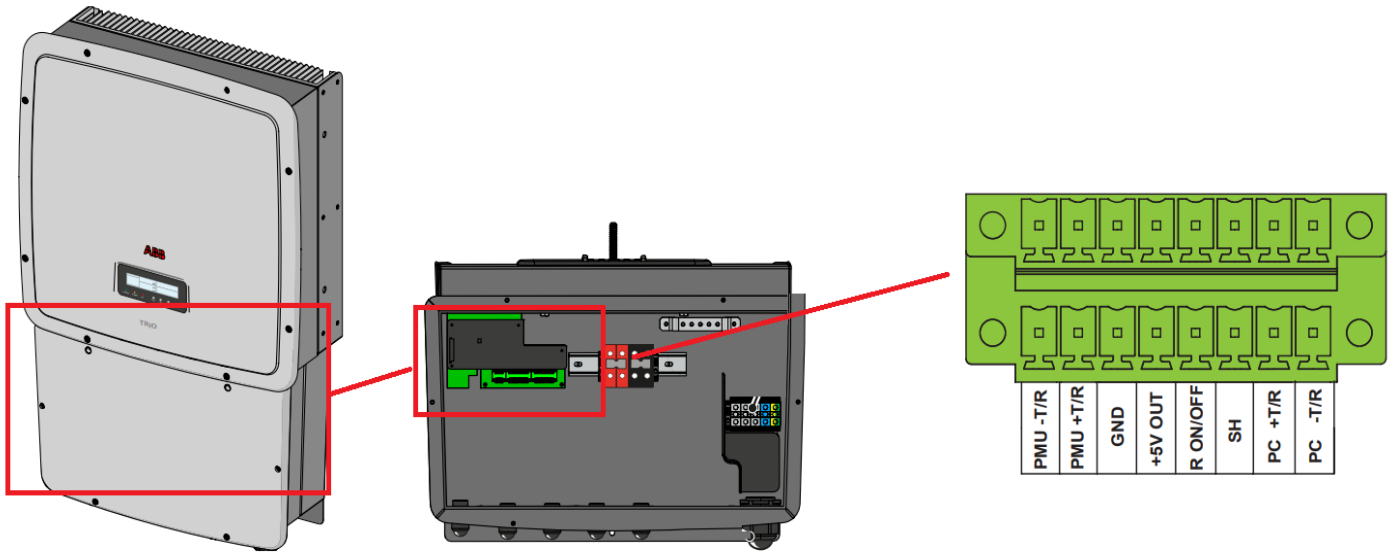


Figure A1 – ABB Inverter Communication Card

Connection Steps:

1. Open the bottom of the Inverter as shown in Figure A1 using Star Key.
2. Locate the Communication Board inside the DC Wiring Box as shown in Figure A2.
3. Please ensure you have female 12 pin connector to connect wires & plug in to the board.
4. 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

Inputs	Pin No.
AI-	8
AI+	7
DI-2	6
DI-1	5
RS485 D-	4
RS485 D+	3
PWR GND	2
PWR +12V	1

ABB Pin No. & Assignment			TrackSo Pin No. & Assignment	
1	RS-485 Port 1	PMU – T/R	4	RS485-
2		PMU + T/R	3	RS485+
7	RS-485 Port 2	PMU – T/R		
8		PMU + T/R		

Table AT1 – ABB RS485 chip connections with TrackSo IoT Gateway

DEFAULT CONFIGURATION IN TRACKSO IOT GATEWAY

Interface: RS-485 (half duplex)

ID: 2,3,4..... 63

Baud Rate: 9600 (default value) ,2400, 4800, 19200,38400, 57600 or 115200bps

Stop bit: 1

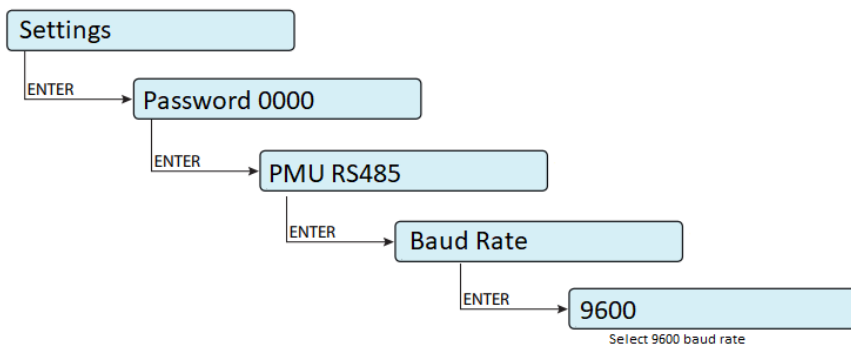
Parity: **No parity** (default value), even parity or odd parity

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.

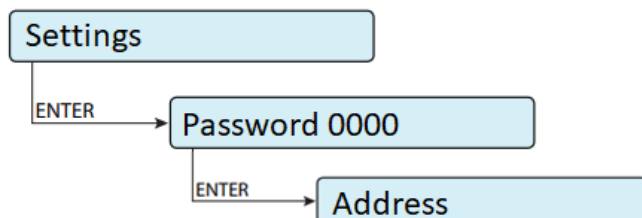


← Set the Inverter baud rate to 9600

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.
- No inverter should have "Auto" as its address. An address can be chosen freely from out of 2 to 63.
- On the last inverter in the RS485 connection, switch on the RS485 termination resistor.



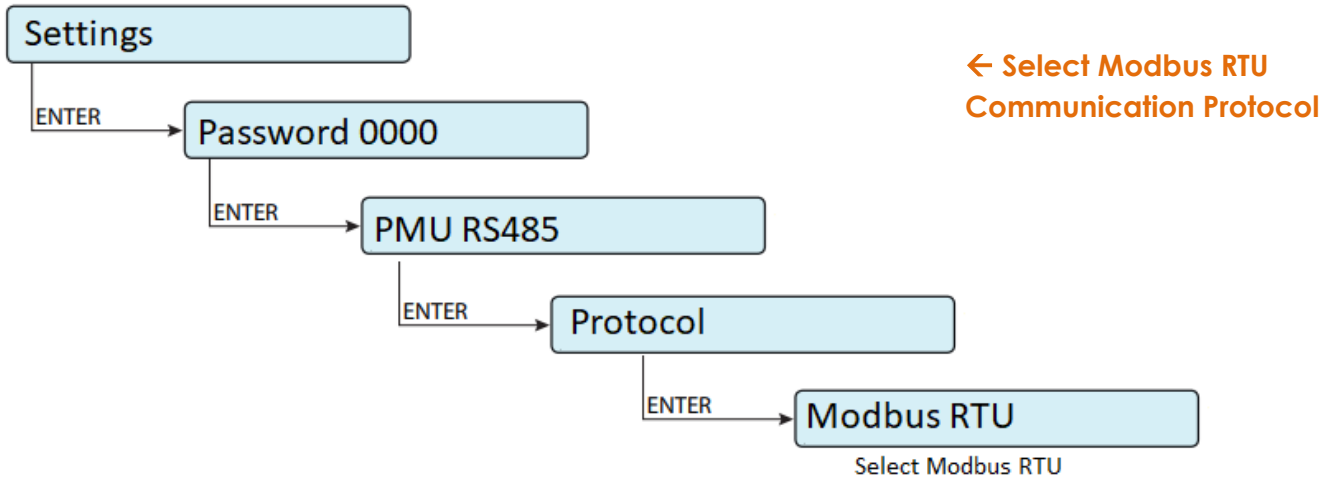
← Set correct Inverter Ids

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.



SET COMMUNICATION PROTOCOL

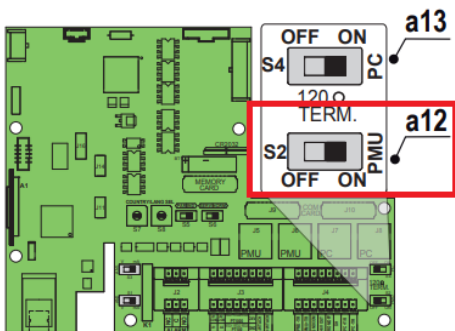


Communication Card Settings

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

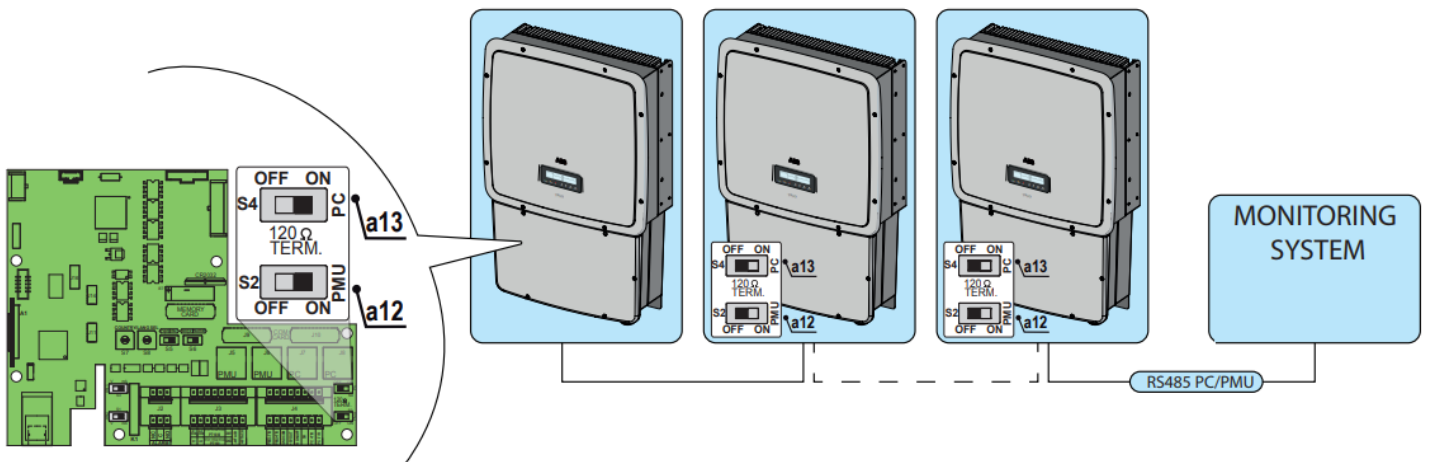
Single Inverters

If a single inverter is connected to the monitoring system, activate the termination resistance of the communication line by switching switch a12 or a13 (to ON position).



Multiple Inverters

Connect all the units of the RS485 chain in accordance with the “daisy chain” arrangement (“in-out”) observing the correspondence between signals, and activate the termination resistance of the communication line in the last element of the chain by switching switch a12 or a13 (to ON position) being careful to switch the switch of the serial line used (PC or PMU).



The above details are also mentioned in the [Installation & Operation Manual](#) for ABB Inverters

TRACKSO WORKING

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

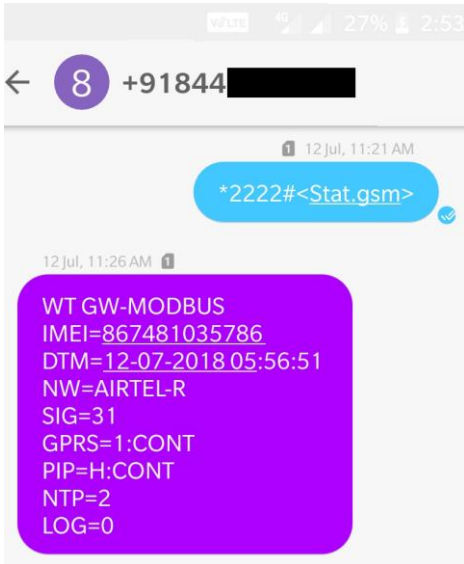


3. Switch on the power to the TrackSo device. (Minimum 12V/1A input is required)
4. Power LED (Red) of TrackSo IoT gateway glows and stays ON.

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	<table border="1"> <thead> <tr> <th>LED Status</th> <th>Connection State</th> </tr> </thead> <tbody> <tr> <td>Flashing (ON for 100ms and OFF for 100ms)</td> <td>SIM Card not found</td> </tr> <tr> <td>Flashing (ON for 500ms and OFF for 500ms)</td> <td>Searching for GSM Network</td> </tr> <tr> <td>Flashing (ON for 0.1s and OFF for 2.9s) Once at every 3sec</td> <td>GSM Network Registered</td> </tr> <tr> <td>Flashing twice at every 3sec</td> <td>GPRS IP Connected</td> </tr> <tr> <td>Flashing 5times</td> <td>GPRS IP Sending data</td> </tr> <tr> <td>LED OFF</td> <td>GSM Fault</td> </tr> </tbody> </table>	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
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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

- If the GSM light starts flashing 5 times then Login to www.trackso.in with your Username/Password.
- Click on 'Units' from the menu bar. You will be able to view your installed unit in the table as shown below.
- Check if the **Status** becomes **Receiving** 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	31034235444/1	9	View Data
2-Schneider		7799	Inverter	Receiving	2018-07-16 02:24:05	034235444/2		View Data
	School	5	Inverter	Not Receiving			8	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.

TrackSo Mashups Sites Units Rules Notifications

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": "84f8b2c", "data": { } }] }	not_acceptable
2018-07-16 02:41:13	Invalid request. Event should contain data. { "events": [{ "timestamp": 1531689070, "unit_key": "84f8b2c", "data": { } }] }	not_acceptable
2018-07-16 02:40:10	Invalid request. Event should contain data. { "events": [{ "timestamp": 1531689007, "unit_key": "84f8b2c", "data": { } }] }	not_acceptable

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