

INSTALLATION GUIDE

Brand: Refusol
Type: Solar On Grid String Inverter
Models: REFUsol 08K , REFUsol 10K , REFUsol 13K , REFUsol 17K ,REFUsol 20K, REFUsol 23K-MV, REFUsol 40K, REFUsol 46K-MV

MANDATORY CHECKS

Firmware Version - 300-01-06-10-S or above

CONNECTION DIAGRAM

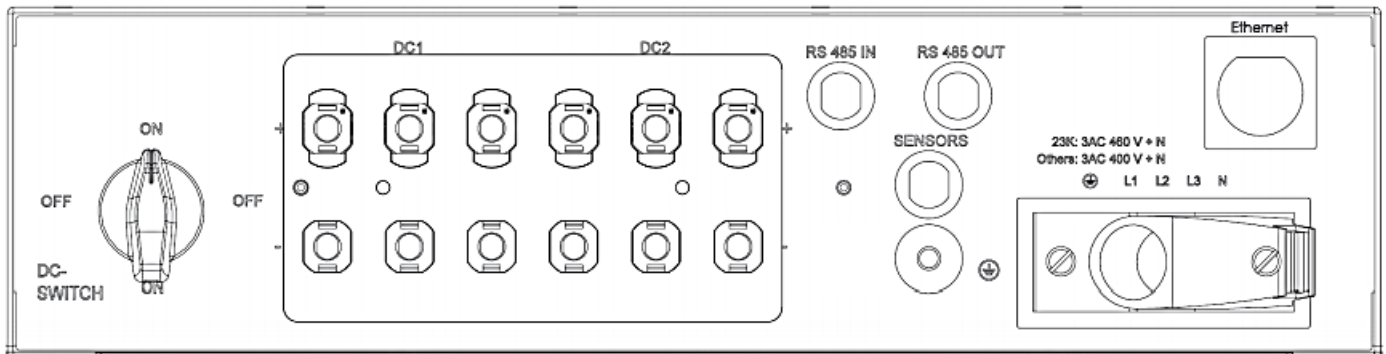


Figure R1 – Refusol String Inverter Connections

Connector Pins

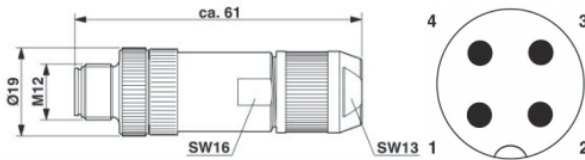


Figure R2- Connector Pins

Refusol Pin No.	Refusol Assignment	TrackSo Pin No.	TrackSo Assignment
1	(only used for termination)	1	Power+ (Via Adapter)
2	RS485 +	2	D +
3	RS485 -	3	D -
4	Reference	4	

Table RT1 – Refusol RS485 chip connections with TrackSo IoT Gateway

1. Please open RS485 terminal (communication port 1) as shown in *Figure R1*.
2. Please make the connections from the Terminal Block of RS485 chipset to TrackSo IoT Gateway as mentioned in the Table – RT1 and using the connector supplied with inverter as shown in R2
3. Connector Details - Phoenix Contact type M12MS SACC-4SC SH plug
4. Terminate the bus as required. The bus termination is made by means of wire jumpers on RS485 OUT to the last bus inverter. To make the termination take a short cable, remove the cable insulation, and connect the pin 1 to pin 2 as well as pin 3 to pin 4.

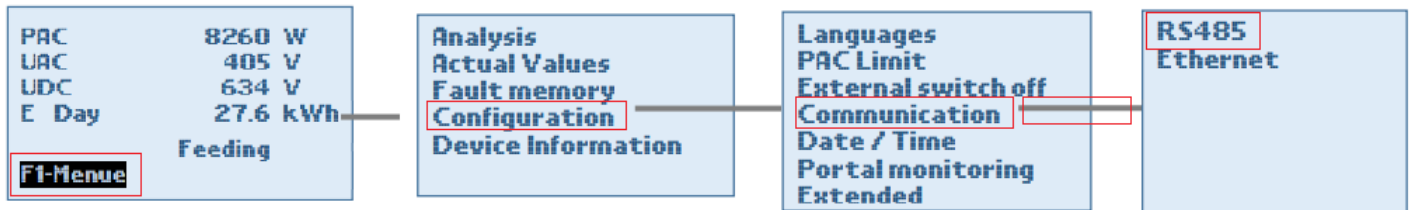
DEFAULT CONFIGURATION IN TRACKSO IOT GATEWAY

Protocol: 4 (Sunspec)
Inverter ID: **1** (Range: 1 to 247)
Baud Rate: 9600, (**57600.115200**)
Data Bits: 8
Stop Bit: 1
Parity: N/A (None)

If Entry of the password required for the modification of parameters. The customer password is 72555

CONFIGURATION AT THE INVERTER END

Enter into RS485 Config section in following way and check all the required settings



SETTING THE PROTOCOL

Set the protocol to 4 (Sunspec)

SETTING THE BAUD RATE

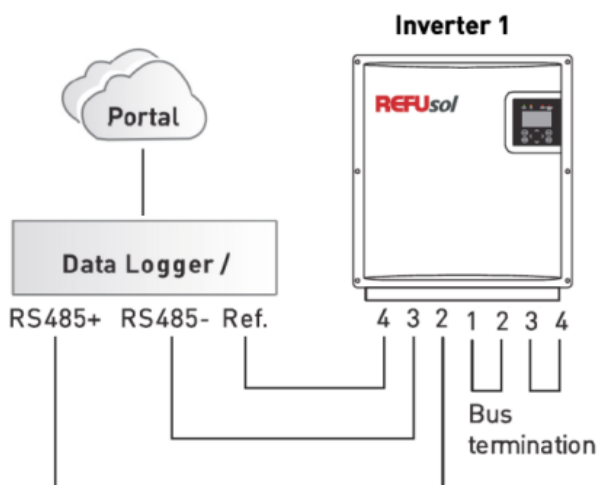
Set the baud rate to 9600

SETTING THE INVERTER ID

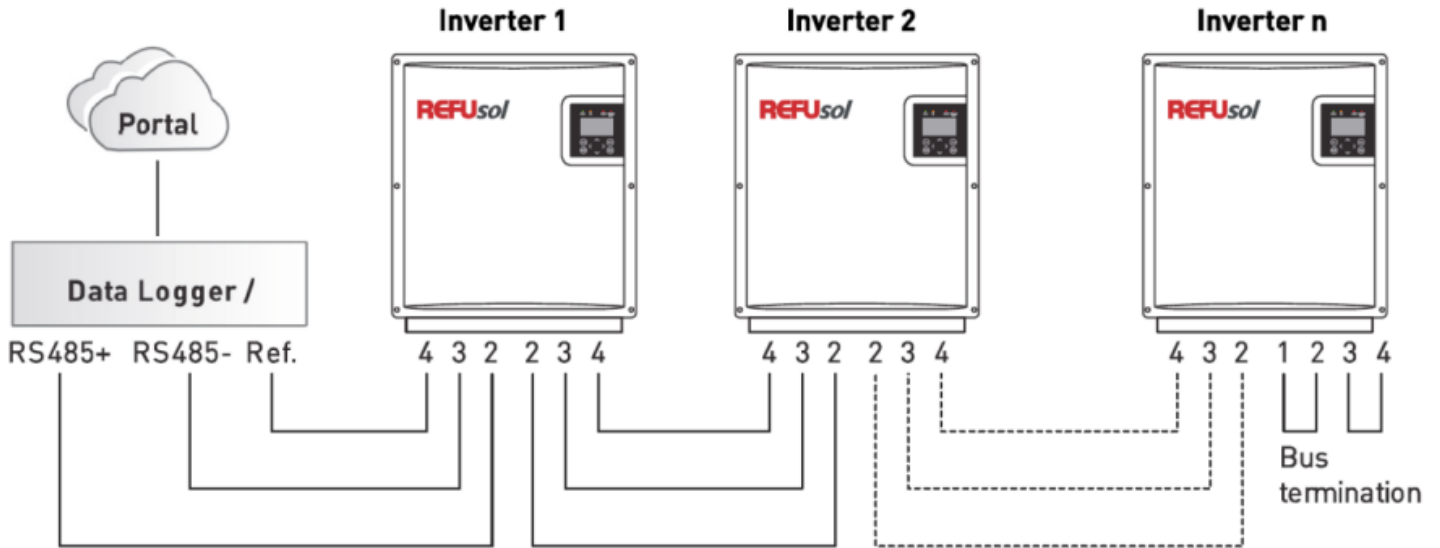
Set the Inverter ID to 1

COMMUNICATION CARD SETTINGS

Single Inverter



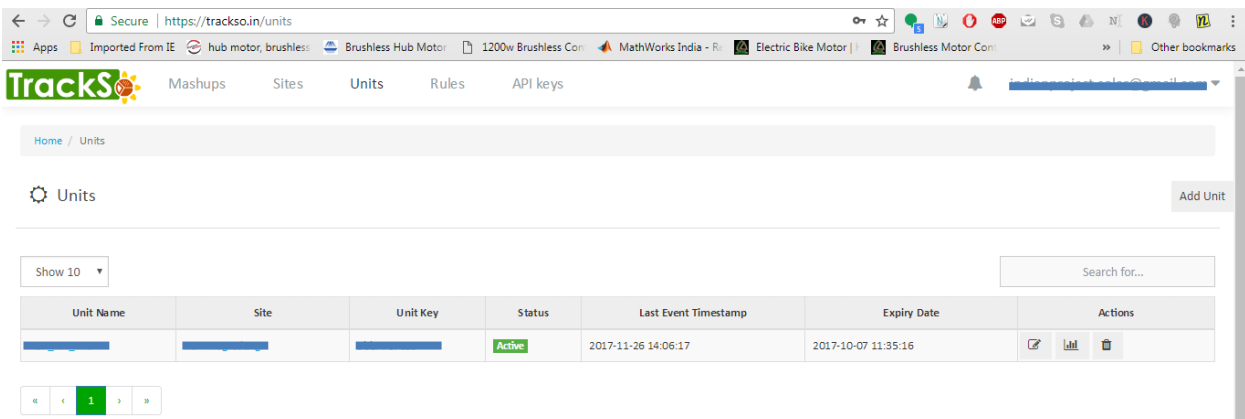
Multiple Inverters



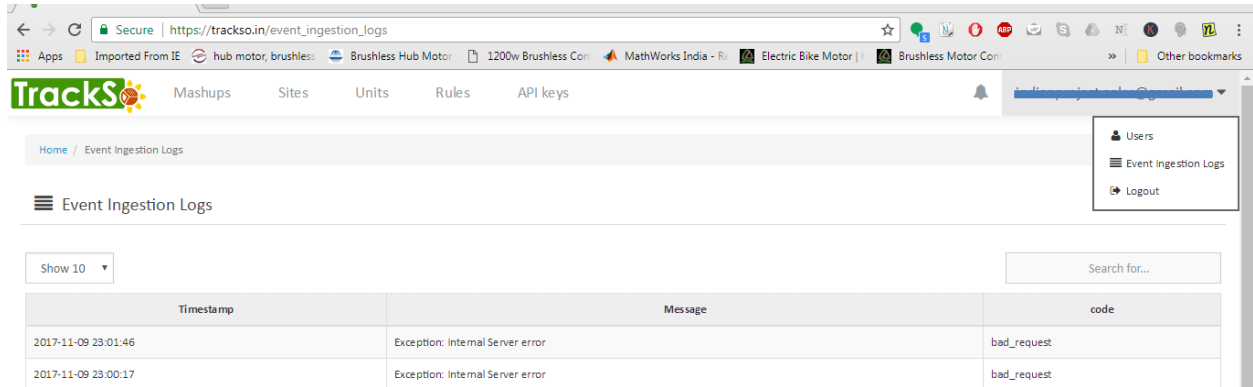
The above details are mentioned in the [Installation & Operation Manual](#) for Refusol Inverters on **Page 26**

WORKING

1. Make relevant connections as mentioned above.
2. Insert the SIM card.
3. Switch on the power to the Inverter.
4. Power LED (Red) of TrackSo IoT gateway glows and stays ON.
5. Internet LED starts blinking
 - a. slowly at first
 - b. fast while trying to connect to internet.
 - c. If Internet LED keeps blinking fast, the hardware gets connected to the TrackSo server within 5 minutes.
6. 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 **Active** for the relevant Unit.



9. If the state remains **inactive** for more than 5 minutes, click on your email ID at the top right of the screen and click on 'Event Ingestion Logs' in the dropdown.



The screenshot shows the TrackSo web application interface. The browser address bar displays 'https://trackso.in/event_ingestion_logs'. The page title is 'Event Ingestion Logs'. A navigation menu includes 'Users', 'Event Ingestion Logs', and 'Logout'. Below the menu, there is a 'Show 10' dropdown and a 'Search for...' input field. The main content area contains a table with the following data:

Timestamp	Message	code
2017-11-09 23:01:46	Exception: Internal Server error	bad_request
2017-11-09 23:00:17	Exception: Internal Server error	bad_request

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@freespirits.in to consult the same.