

INSTALLATION GUIDE

Brand: SMA
Type: Solar On Grid String Inverter
Models: SMA Solid Q50

CONNECTION DIAGRAM

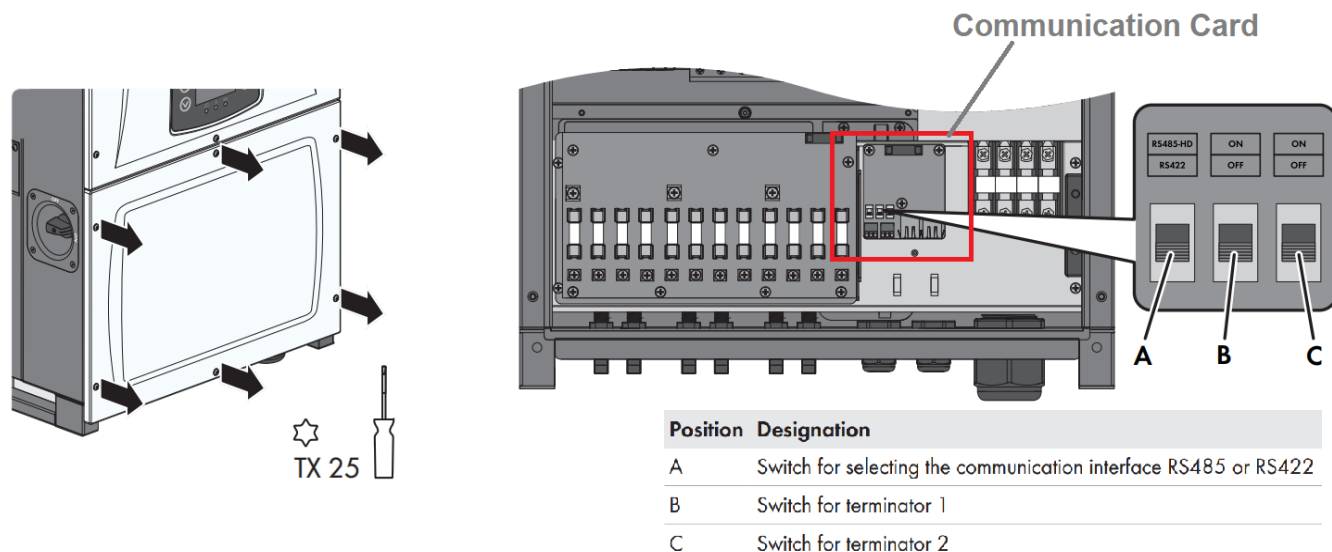


Figure S1 –SMA String Inverter Communication board

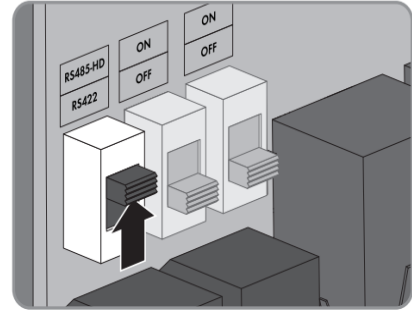
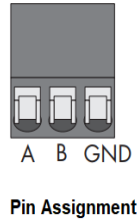
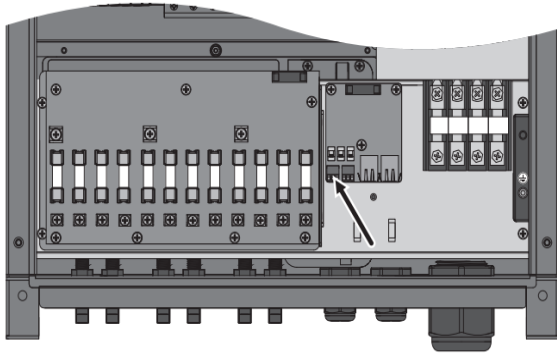
Steps for Connection

- 1) Loosen the screws of the lower cover.
- 2) Locate the communication card as shown in Figure S1
- 3) Guide the network cable through the cable glands and complete connection as per Method-1 or Method-2 mentioned (Pictures on next page)
 - Method-1**-Connect Pin A of Inverter to Pin 3 (Data+) on TrackSo and connect Pin B of inverter to Pin 4 (Data-) on TrackSo
 - Method-2**-Insert one side of LAN wire in RJ45 port of Inverter, on other side Short 1st and 3rd wire and connect to Pin 3 (Data+) on TrackSo and short 2nd and 6th Wire and connect to Pin 4 (Data-) on TrackSo
- 4) Complete Terminating Switch settings as per Page-3

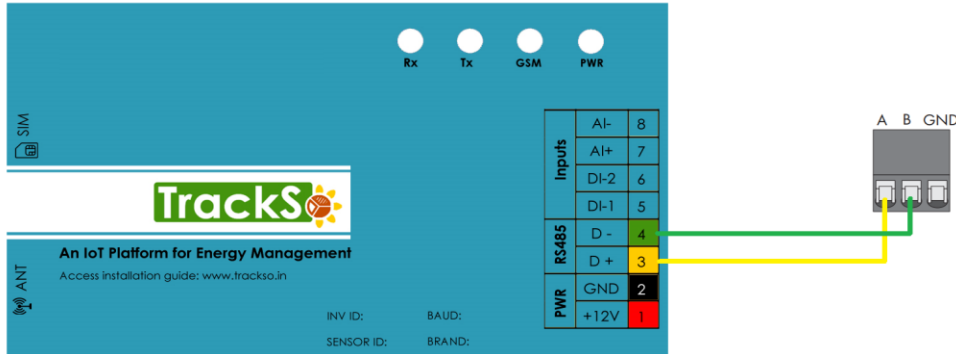
		Method-1 RS485	Method-2 RS422	
		Inv Pinout	Inv RJ45 Pinout	TrackSo Pinout
Port-1	Data +ve	A	Short 1 st and 3 rd Wire	D+ (3)
	Data – ve	B	Short 2 nd & 6 th wire	D- (4)
	Gnd	-	-	-
Port-2	Data +ve	Used for Daisy Chain Connection in case of Multiple Inverters		
	Data – ve			
	Gnd			

METHOD-1 CONNECTING USING RS485 PORT

If the RS485 interface is used, set the switch for selecting the communication interface to RS485

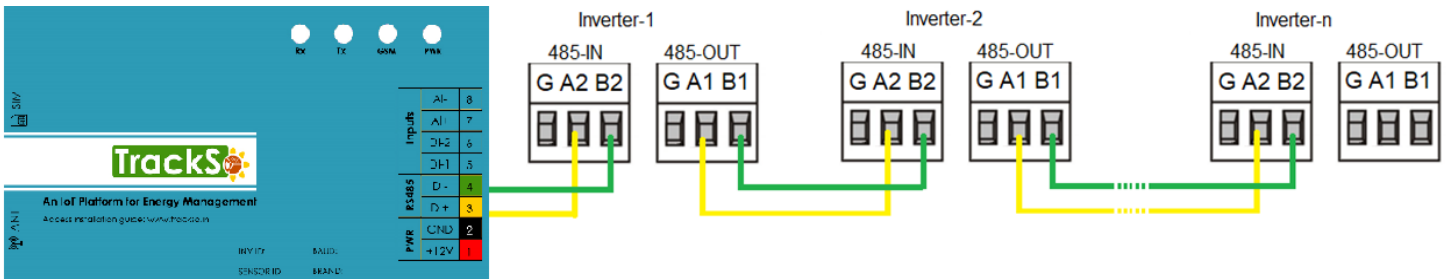


Switch Assignment



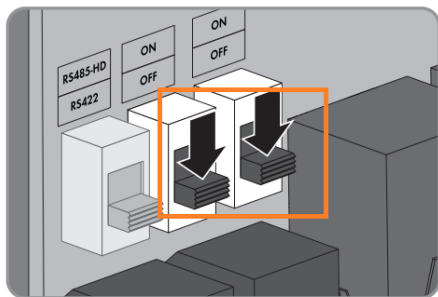
Multiple Inverter Connections

If multiple SMA SolidQ50 Inv are used, connect all Inv in daisy chain mode over the RS485 communication cable. Set different Modbus address (3~256) for each inverter in LCD display and set terminator resistance in inverters



Single Inverter

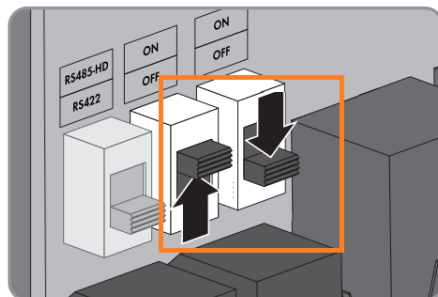
If only one inverter is used, set both switches for the terminators on OFF.



Multiple Inverter

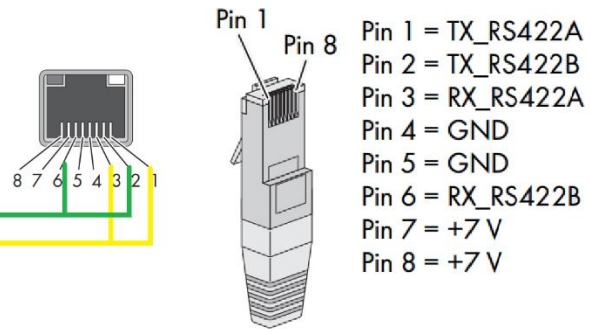
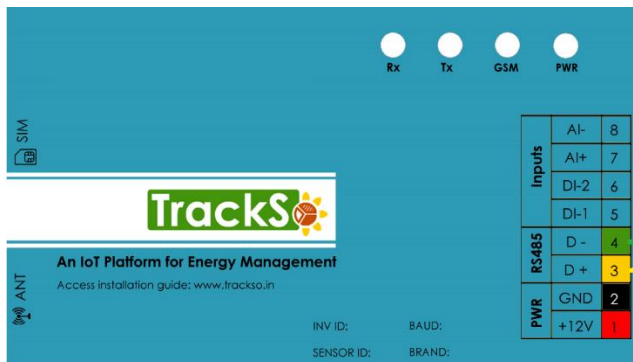
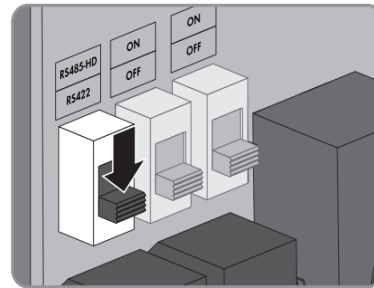
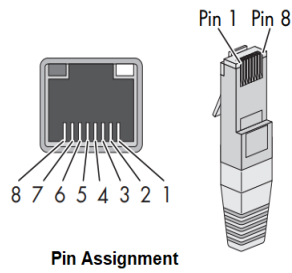
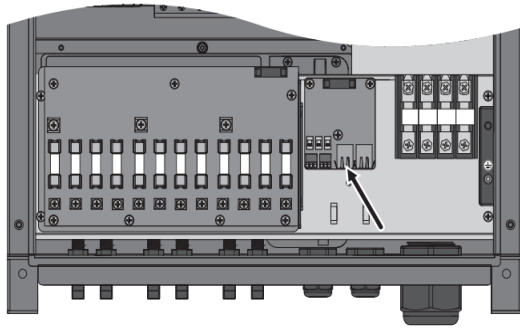
If the RS485 interface is used, set on the last inverter of the communication chain one of the two switches for the terminators (close to the data capture device as reference point) on ON.

On all other inverters, set both switches for the terminators on OFF



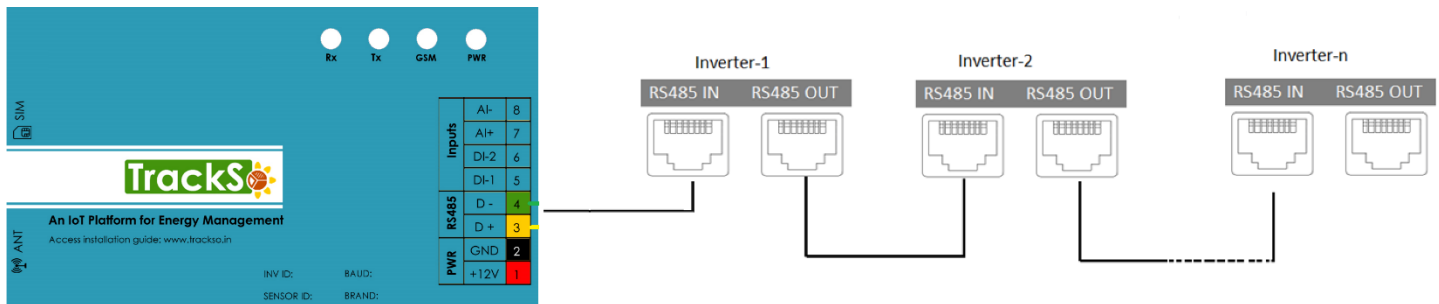
METHOD-2 CONNECTING USING RS422 PORT

If the RS422 interface is used, set the switch for selecting the communication interface to RS422



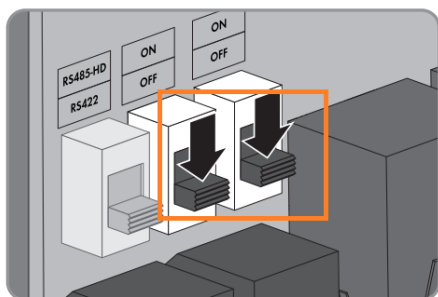
Multiple Inverter Connections

If multiple SMA SolidQ50 Inv are used, connect all Inv in daisy chain mode over the RS485 communication cable. Set different Modbus address(3~256) for each inverter in LCD display and set terminator resistance in inverters



Single Inverter

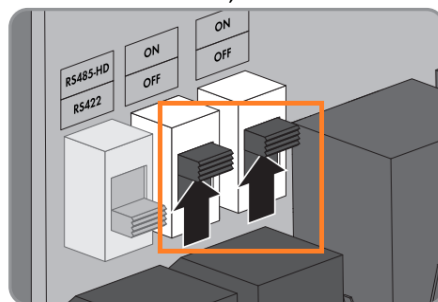
If only one inverter is used, set both switches for the terminators on OFF.



Multiple Inverter

If the RS422 interface is used, set on the last inverter of the communication chain both switches for the terminators (close to the data capture device as reference point) on ON.

On all other inverters, set both switches for the terminators on OFF



DEFAULT CONFIGURATION IN TRACKSO IOT GATEWAY

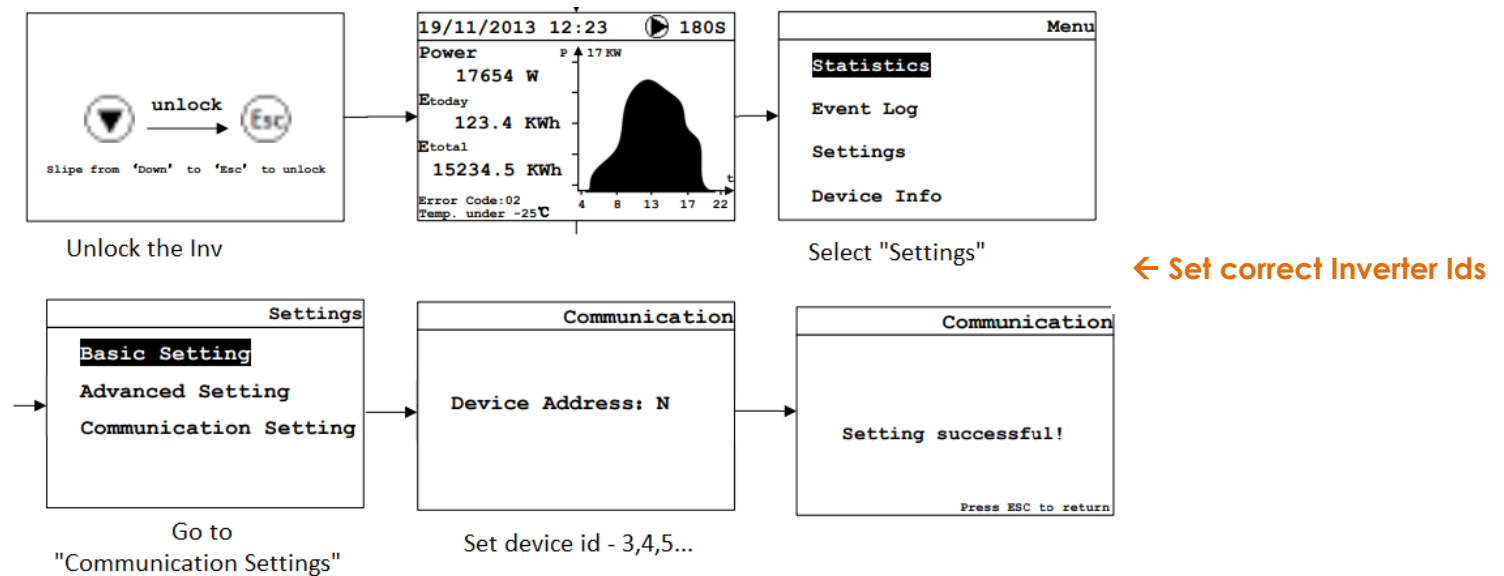
Inverter ID: **3, 4** Continuous numbering starting with 3, (**Range:** 3 to 247)
Baud Rate: **9600 (Default) (Values:** 9600, 19200, 38400)
Data Bits: 8 , Stop Bit: 1 , Parity: None

CONFIGURATION AT THE INVERTER END

SETTING THE INVERTER ID

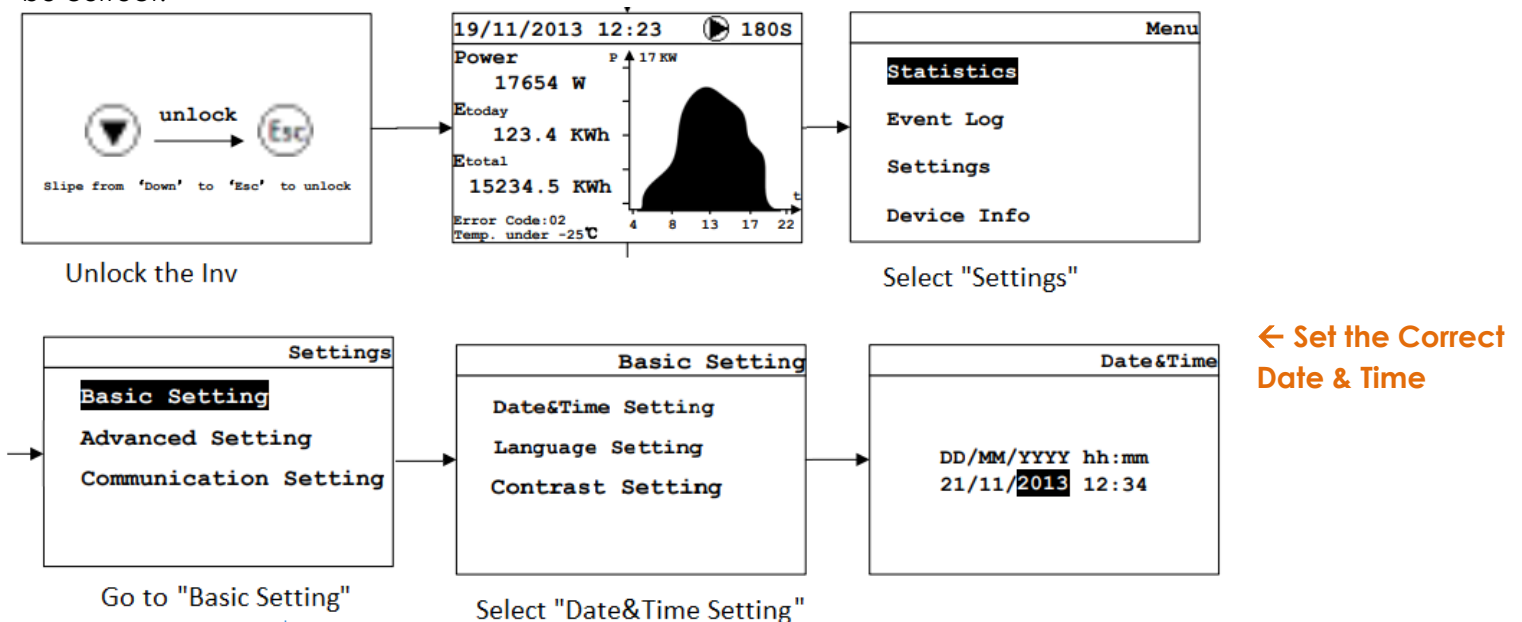
The inverter ID is used to identify the inverter in a RS485 connection

- 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.



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.



TRACKSO WORKING

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

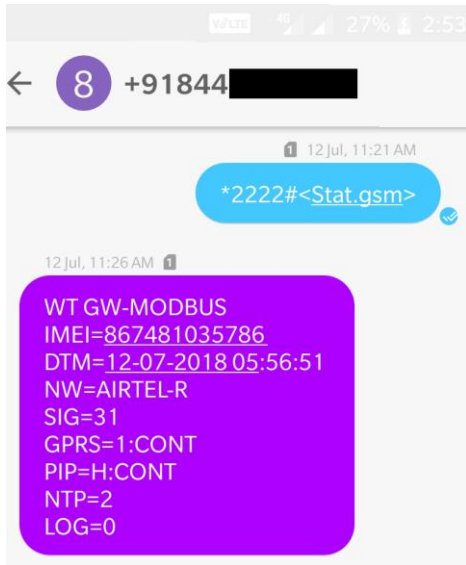


3. Switch on the power to the TrackSo device. (Minimum 12V/1A input is required)
4. Power LED (Red) of TrackSo IoT gateway glows and stays ON.

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
		LED Status	Connection State													
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		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 **Receiving** for the relevant Unit.

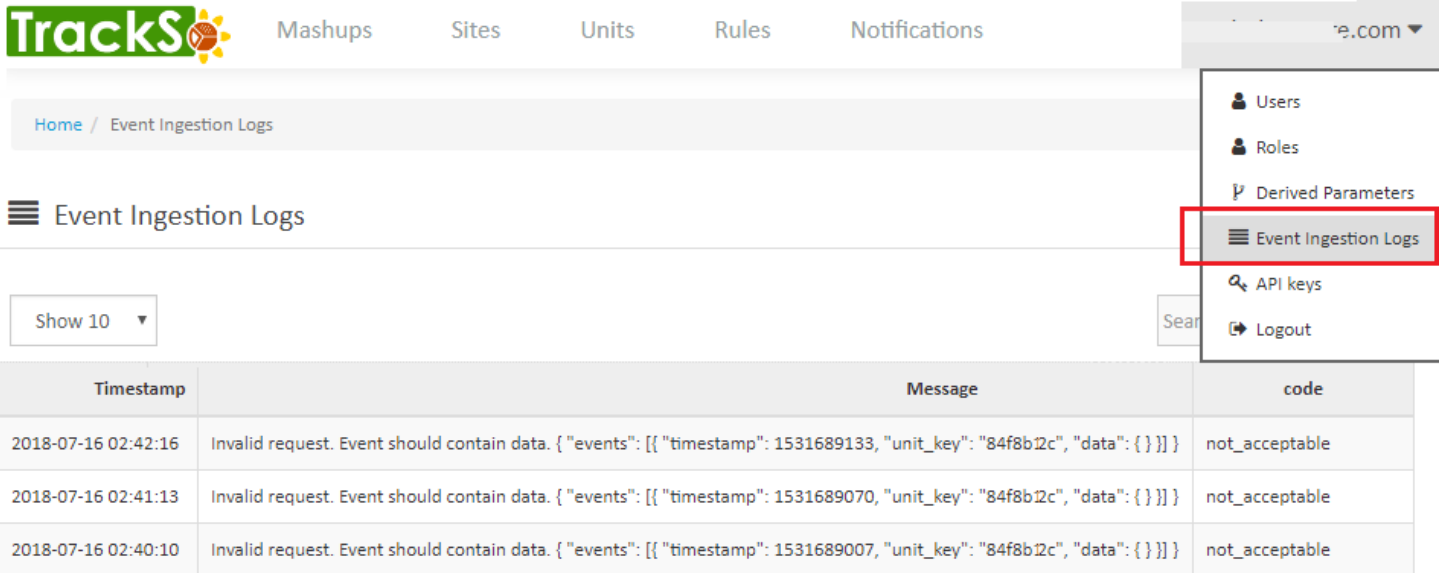
TrackSo Mashups Sites Units Rules Notifications

Home / Units Add Unit

Show 10 Search for...

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-Schnieder		7799	Inverter	Receiving	2018-07-16 02:24:05	034235444/2	9	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.

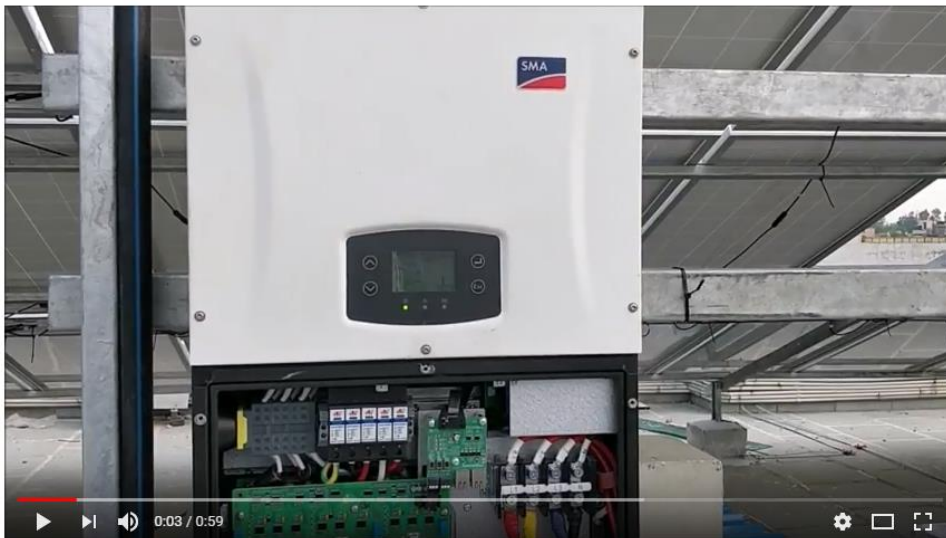


The screenshot shows the TrackSo web application interface. At the top, there is a navigation bar with the TrackSo logo and menu items: Mashups, Sites, Units, Rules, and Notifications. A user profile dropdown menu is open, showing options: Users, Roles, Derived Parameters, **Event Ingestion Logs** (highlighted with a red box), API keys, and Logout. Below the navigation, the breadcrumb path is 'Home / Event Ingestion Logs'. The main heading is 'Event Ingestion Logs'. There is a 'Show 10' dropdown and a search box. Below this is a table with three columns: Timestamp, Message, and code.

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 support@trackso.in to consult the same.

INSTALLATION VIDEO



TrackSo Installation video for SMA SolidQ50



Scan the QR code to view the video

Video Shortlink- <https://goo.gl/3VC2jp>

Video Link - <https://www.youtube.com/watch?v=n0h0pcgiDyo>