

Application Note – SolarEdge TerraMax™ Commissioning Procedure

Version History

Version 1.0, December 2024 – Release

Introduction

SolarEdge TerraMax inverter installations require commissioning to ensure optimal performance and reliability. This commissioning procedure is intended for qualified solar installation professionals who possess the necessary technical expertise and certifications. The process guides technicians through critical steps of preparing, configuring, and activating TerraMax inverters, ensuring seamless integration into utility power systems.

Before beginning, installers must review safety guidelines. Careful adherence to these instructions is essential for achieving maximum system efficiency and endurance.



NOTE

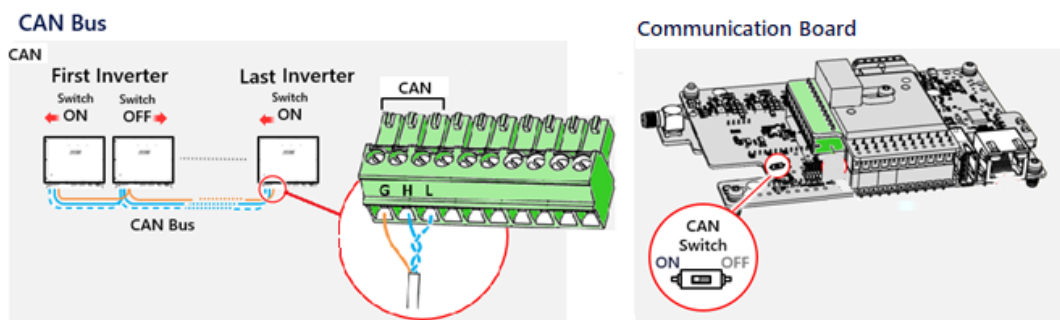
This procedure should be executed only by trained and certified solar installation professionals who understand electrical systems and safety protocols.

Supported Documentation

- [TerraMax Quick Installation Guide](#) EU
- [TerraMax Quick Installation Guide](#) North America

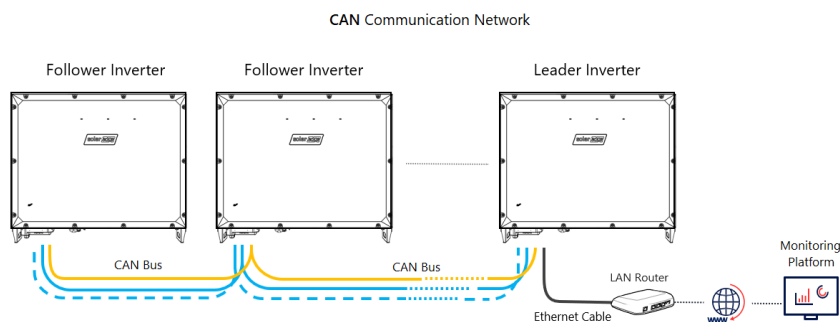
Prerequisites

1. Download the SetApp application.
2. Ensure all inverters are correctly wired.
3. Set the CAN termination switches to **ON** in the first and last inverters on the CAN bus.
4. Set the CAN termination switches to **OFF** in the rest of the inverters on the CAN bus.



System Overview

- The SolarEdge TerraMax system supports up to 13 inverters on a single CAN bus



- One inverter acts as the Leader, managing communication to the cloud
- Inverters are connected via daisy-chain CAN bus communication

Commissioning the Leader Inverter

Step 1 Initial Setup

1. Log into SetApp using your email and password.
2. Scan the QR code on the Leader inverter's rating label.

Step 2 Inverter Activation

1. Move the P/1/0 switch to the **P** position.
2. Release the switch after 2 seconds.
3. Tap **Continue**.
4. Confirm Wi-Fi connection.
5. Wait for firmware installation to complete.

Step 3 Configuration

1. Select country and grid settings
2. Confirm settings by tapping **Yes**
3. Set the inverter as the Leader:
 - Tap **Communication**
 - Select *CAN > Protocol > SolarEdge TerraMax Leader*

Step 4 Optional Power Settings

1. If needed, configure reactive power:
2. Tap **Power Control**.
3. Set static reactive power (CosPhi or Q).
4. Optionally set dynamic reactive power.

Central Commissioning (Multiple Inverters)

Step 1 Preparation

1. Confirm all inverters are correctly wired.
2. Termination switches set to **ON** on the first and last inverters in the bus.
3. Ensure Leader inverter commissioning is complete.

Step 2 Follower Detection

1. Tap **Central Commissioning**.
2. Tap **Detect Followers**.
3. Start detection process.

Step 3 Follower Verification

Review the detected Followers list. If not all inverters detected:

1. Check connectivity.
2. Tap **Long Detect Followers**.

Step 4 Firmware Upgrade

Leader inverter will automatically:

- Pair Followers
- Send firmware
- Upgrade and activate Followers

Troubleshooting

If some inverters fail:

1. Tap **Select**.
2. Choose the failed inverter.
3. Tap **Retry commissioning**.

Alternative Individual Commissioning

If central commissioning is unsuccessful, commission each Follower individually:

1. Scan the Follower inverter's QR code.
2. Complete firmware upload.
3. Repeat for all Followers.
4. Return to the Leader inverter to complete the process.

Verification

Check the **Status** screen of each inverter on your mobile device, to verify power production.

NOTES



- DC commissioning allows installation before AC connection
- System supports up to 13 inverters on a single bus

Setting MODBUS Communication

MODBUS communication between inverters / 3rd party device can be configured over TCP or RS485.

MODBUS over TCP configuration

- From the **Site Communication** menu select: *Modbus TCP port* → *Enable*. A new Port menu is added to the screen (Default port is 1502).
- To modify the TCP port, select **Port**, set the port number, and tap **Done**.



NOTE

The default device ID of the inverter connected to the Ethernet is 1.

NOTE



The TCP server idle time is 2 minutes. The request should be made within 2 minutes to leave the connection open. The connection can remain open without any MODBUS requests.

Modbus over RS485 configuration

To configure the SolarEdge TerraMax Leader inverter:

1. From the [Site Communication](#) menu, set: *RS485-1* → *Protocol* → *SunSpec* (Non-SE Logger).
2. From the [Site Communication](#) menu, set: *RS485-1* → *Device ID*, and enter the MODBUS address (a unique value 1...247) to set the *C_DeviceAddress* register.
3. If needed, set the baud rate to a preferred value: *RS485-1* → *Baud rate* and enter the rate. The default value is 115200.

Enabling Reactive Power at Night Using SetApp

To enable receiving power at night using the SetApp application:

1. From the [Power Control](#) menu, set the [Grid control](#) to **Enabled**.
2. Click **Var at Night** and change Mode to **Q** (Q stands for [Constant Reactive Power](#)).
3. Set the **Q** value in [VAR](#) between -100% and 100% of the inverter nameplate.

If the PID rectifier is active now, it will be disabled.

Enable or Disable PID rectifier using SetApp

To enable PID rectifier:

1. Turn on the AC circuit breaker at the main distribution panel.
2. Turn the DC ON/OFF switch to the ON position.
3. Run SolarEdge SetApp on your mobile device and follow the on-screen instructions until the [Commissioning](#) screen is displayed.
4. In the [Commissioning](#) screen tap **Maintenance**.
5. Tap **PID Mitigation**.
6. Tap Rectifier.

NOTE



When PID rectifier is enabled, it operates when the inverter goes into night mode. It stops operating in the following morning when the inverter wakes up. This cycle of operation continues daily when PID rectifier is enabled.

To Disable PID rectifier

From the [Commissioning](#) screen tap *Maintenance* → *PID Mitigation* → *Disabled*.

Remote Access Configuration

From the [Commissioning](#) screen tap *Monitoring Communication* → *Remote Support* → *Enable*.

When in Disable mode, pushing the toggle *Enable for the next 120 minutes* will open the remote access for that period of time.

Support Contact Information

If you are having technical problems concerning SolarEdge TerraMax products, please contact us:



<https://www.SolarEdge.TerraMax.com/service/support>

Before contacting SolarEdge TerraMax, make sure to have the following information at hand:

- The model and serial number of the product in question.
- The error is indicated on the Inverter LEDs, the SetApp mobile application, or the monitoring platform, if such an indication exists.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The method of communications with the SolarEdge TerraMax server, if the site is connected.
- The product's software version as it appears in the ID status screen.