



Sensors



Switches



Controls

Application notes



Application Note : November 2021

Market involved : Energy

Product : EM540

Customer : Storage system OEMs, Installers, System Integrators

Subject : Residential photovoltaic monitoring

CUSTOMER ISSUE :

In residential applications, photovoltaic panels are often installed in combination with battery storage systems.

The storage system supervisor unit needs to know the actual photovoltaic production and load consumption, to manage the power flow to or from the battery.

To work properly (prevent feeding the grid, as this is forbidden in many countries), the system needs real time data, but energy meters commonly available in the market are too slow, with a typical response time of around 1 second.

Furthermore, the low resolution of the available frequency data is not sufficient to detect anomalies.

OUR SOLUTION :

The EM540 is able to continuously analyze any phase, providing accurate data of voltage, current, power and many other single-phase and system variables, updated (even via serial communication) every 100 ms.

Frequency resolution is 0.001 Hz, therefore the EM540 is able to provide top quality measurement capabilities, which are usually available only in much more expensive devices.

BENEFITS :

- 100 ms refresh time via Modbus RTU
- 0.001 kWh energy and 0.001 Hz frequency resolution