

Technical Note – Night Mode Power Consumption in SolarEdge Inverters

Revision History

- Version 1.0, June 2019 – Initial release

Introduction

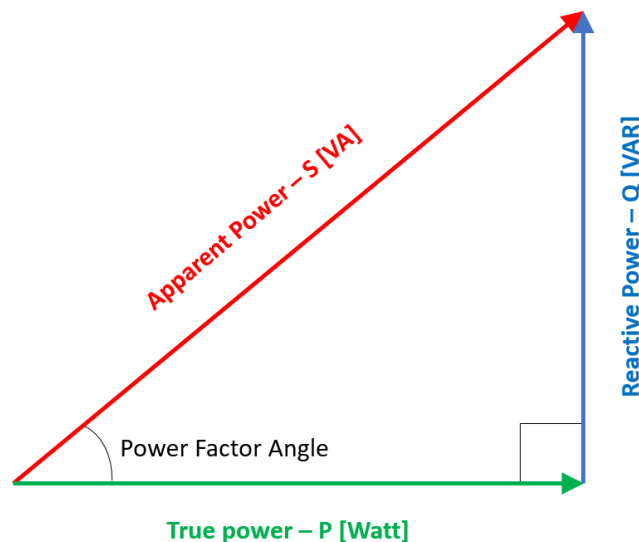
All inverters draw a very small amount of power whilst in standby overnight. The inverter's nighttime power consumption values are available in the inverter technical datasheet.

This document explains power measurement types and how these types' values are measured and calculated.

Power Terminology

- True power (defined by P), measured in Watts – The actual amount of power used or dissipated in a circuit.
- Reactive power (defined by Q), measured in Volt-Amperes reactive (VAR) – The power resulting from inductive and capacitive loads. It is sent back to the grid with a delay between the voltage and current.
- Apparent power (defined by S), measured in Volt-Amperes (VA) – The combination of reactive power and true power. It is the product of a circuit's voltage and current, regardless of phase angle.
- Power factor – The ratio between true power and apparent power.

The following figure illustrates how these three types of power relate to one another in trigonometric form.



Power Consumption in Electricity Bills

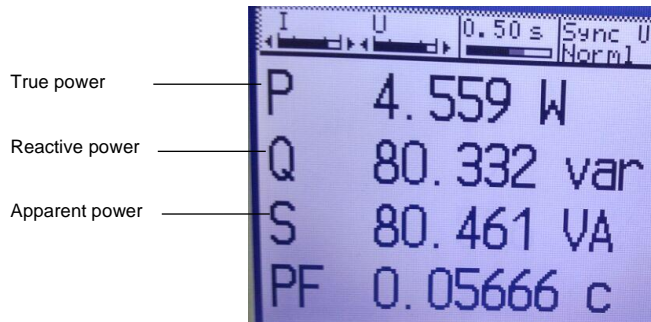
For residential, the electric company usually charges for true power only. For residential systems, electricity bills are calculated based on kWh, which is the amount of real power usage over time, meaning energy consumption.

Measurements

Apparent power values (S – measured in Volt-Amperes) can be calculated by measuring the current [using an ammeter (Ampere Meter) or a regular Digital multimeter (DMM)] and multiplying it by the grid's voltage. However, to measure the true power value, a wattmeter or power analyzer should be used.

Connect a high precision wattmeter on (1Watt accuracy) between the AC supply and the inverter to read the true power measurements.

Following is an example of the readings:



References

- Example of [rates in DACH](#)
- Example of [rates in North America](#)