

Application Note – Meter and Current Transformer Selection, Europe, South Africa and APAC

Version History

- Version 1.2, October 2018 –
 - Compatible Meter and CT information and Alternate CT information merged into single document
 - Added bus-bar CTs
- Version 1.1, April 2018 - product name change from "SolarEdge Modbus Meter" to "Energy Meter with Modbus Connection"
- Version 1.0, January 2018 – first version

Introduction

SolarEdge offers a variety of meter and current transformer (CT) models, each compatible with different grid voltages and frequencies:

- **Meter** compatibility is dependent on grid **voltage**
- **CT** compatibility is dependent on grid **frequency**

The following table lists compatible meters and CTs in accordance with AC grid characteristics:

Grid Voltage	220/380V or 230/400V 4-Wire with Neutral	220V L-L or 230V L-L 3-Wire, no Neutral*
Compatible Meter	Energy Meter with Modbus Connection This meter can be used with both 50Hz and 60Hz grids	208V meter** in the following datasheet: Energy Meter with Modbus Connection This meter can be used with both 50Hz and 60Hz grids
Compatible CTs	CTs available from SolarEdge: <ol style="list-style-type: none"> 1. Split core CTs, supporting 50Hz: <ol style="list-style-type: none"> a. 50A: SE-ACT-0750-5 b. 70A: SE-CTML-0350-07 c. 100A: SE-ACT-0750-100 d. 250A: SE-ACT-0750-250 e. 1000A: SE-CTS-2000-100 Additional CT information can be found here 2. Split core CTs, supporting 60Hz: <ol style="list-style-type: none"> a. 200A: SEACT0750-200NA-20 (20 CTs) b. 400A: SEACT1250-400NA-20 (20 CTs) c. 150A: SEACTL-1250-150-C (3 CTs) d. 300A: SEACTL-1250-300-C (3 CTs) e. 600A: SEACTL-1250-600-C (3 CTs) Additional CT information can be found here and here 3. Bus-bar CTs, supporting both 50Hz and 60Hz: <ol style="list-style-type: none"> a. 1200A: SE-CTB-4x4-1200 b. 2000A: SE-CTB-4x4-2000 c. 3000A: SE-CTB-4x4.5-3000 Alternate CTs, not available from SolarEdge: refer to the list below .	

* In some countries, some SolarEdge inverters can be connected to 3-wire grids. For more information, refer to the link: https://www.solaredge.com/sites/default/files/se_three_phase_inverters_for_delta_grids.pdf

** When configuring this meter, the CT rating must be set manually. The rating can be set only once. If you need to set the rating a second time, [contact SolarEdge support](#).

Alternate CTs

The SolarEdge meters are used with 50A, 70A, 100A, 250A or 1000A CTs (for 50Hz) or 150A, 200A, 300A, 400A or 600A CTs (for 60Hz), available from SolarEdge. These CTs meet the high accuracy standards of IEEE C57.13 and IEC 60044-1 over full temperature range and down to below 1% of rated current. They have outstanding linearity and exceptionally low phase angle error which is essential for highly accurate power and energy measurement. They can also be used with bus-bar CTs available from SolarEdge, with 1.5% accuracy.

While these are superior products in their class, some physical constraints in home installations make installing these CTs particularly difficult. This document lists alternative CT vendors whose CTs can be used with the Energy Meter with Modbus Connection.

However, it is important to note that some of these alternate CTs may not carry the same accuracy guarantees as are provided with the SolarEdge CT products. This should be taken into consideration when designing systems with export limitation or maximize self-consumption, where high accuracy may be required.

The following list includes some examples of alternate CTs from approved vendors which can be used with the Energy Meter with Modbus Connection. To ensure compatibility the following CT attributes should be verified:

- Output voltage at rated Amps should measure 0.333 Vac
- Current rating should meet the installation size
- Line frequency should match that of the grid (50/60 Hz)
- Over voltage protection according to IEC 61010-1 CAT III 600V

Continental Control Systems, LLC

- CTS Series Split-Core Current Transformers: https://ctlsys.com/cts_series_split-core_current_transformers/
- CTT Series Solid-Core Current Transformers: <https://ctlsys.com/product/ctt-solid-core-ct/>

MagneLab

- AC Current Sensor SCT-1250 - <http://www.magnelab.com/products/current-sensor-sct-1250/>
- AC Solid-Core Current Transformer UCT-1250 - <http://www.magnelab.com/products/ac-split-core-current-transformer-uct-1250/>

SolarEdge Support Contact Information

If you have technical queries concerning our products, please contact us:

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Before contact, make sure to have the following information at hand:

- Inverter and power optimizer model numbers
- Serial number of the product in question
- The error indicated on the inverter screen or on the SolarEdge monitoring portal, if there is such an indication.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The communication method to the SolarEdge monitoring portal, if the site is connected
- Inverter software version as appears in the ID status screen.