



Installation Guide

Flexible Coil

Current Transformer

Version 1.0

Contents

Support and Contact Information	2
Flexible Coil Current Transformer Installation	4
Overview	4
Package Contents	6
Installation Guidelines	6
Installing the Flexible Coil CT in an Energy Meter with Cellular Connection	7
Technical Specifications	16

Support and Contact Information

If you have technical problems concerning SolarEdge products, please contact us:

Support Center: <https://www.solaredge.com/us/service/support>

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APAC (Asia Pacific) (+972)	073 240 3118	support-asia@solaredge.com
Belgium (+32)	0800-76633	support@solaredge.be
China (+86)	21 6212 5536	support_china@solaredge.com
DACH & Rest of Europe (+49)	089 454 59730	support@solaredge.de
France (+33)	0800 917410	support@solaredge.fr
Italy (+39)	0422 053700	support@solaredge.it
Japan (+81)	03 6262 1223	support@solaredge.jp
Netherlands (+31)	0800-7105	support@solaredge.nl
New Zealand (+64)	0800 144 875	support@solaredge.net.au
Republic of Ireland (+353)	1800-901-575	support-uk@solaredge.com
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US & Canada (+1)	510 498 3200	ussupport@solaredge.com
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Middle East & Africa (+972)	073 240 3118	
South Africa (+27)	0800 982 659	
Turkey (+90)	216 706 1929	
Worldwide (+972)	073 240 3118	

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

- Model and serial number of the product in question.
- The error indicated on the Inverter SetApp mobile application LCD screen or on the monitoring platform or by the LEDs, 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 server, if the site is connected.
- The inverter software version as appears in the ID status screen.

Flexible Coil Current Transformer Installation

Version History

February 2019 - initial release

Overview

SolarEdge offers use of a Flexible Coil Current Transformer (CT; also known as Rogowski coil) as an alternative to the split core CT. The flexible coil is useful for installation in the distribution panel when there is insufficient room for installation of a split core CT.

NOTE



Flexible coils, which are less accurate than solid core CTs, should not be used in Zero Export Limitation applications.

The flexible coil is supplied with a conditioning circuit, which converts the coil's output to a 0.333V output signal that is compatible with the meter.

Each conditioning unit is calibrated to its specific coil, therefore combining coils with different conditioning circuits is not allowed.

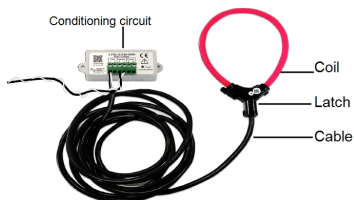


Figure 1: Flexible coil components

The flexible coil can be used in two modes:

- A single coil in a figure-eight shape that enables measuring two phases
- Two separate coils are connected to the meter, one per phase.

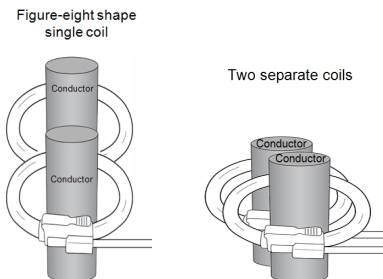


Figure 2: Flexible coil modes

If two coils are used, the second conditioning circuit is installed outside the meter.

Package Contents

- Flexible coil connected to:
 - Conditioning Circuit
 - Twisted pair wire (black and white)
- This installation guide

Installation Guidelines

Follow these guidelines:

- The conductor should pass through the center of the coil, and not close to the coil's edge, as illustrated in *Figure 3*.
- For improved accuracy, avoid contact between the coil and external conductors.

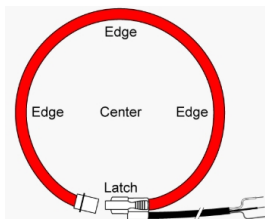


Figure 3: Flexible coil edges

Installing the Flexible Coil CT in an Energy Meter with Cellular Connection

This section describes installing one or two flexible coil CTs in the Energy Meter with Cellular Connection. Two single flexible coil CTs may be used if bending one coil into a figure-8 shape is impossible for measuring two conductors. If two flexible coil CTs are installed, the second conditioning circuit is installed outside the meter, however its power cable (*not* supplied by SolarEdge) is connected to the power supply in the meter.

→ To install one conditioning circuit and coil:

1. If a PV system is installed, turn the inverter ON/OFF/P switch to OFF. Wait 5 minutes for the capacitors to discharge.
2. Turn the Connection Unit (if applicable) to OFF.
3. Turn OFF the AC circuit breakers on the distribution panel.
4. Remove the meter cover: Release the 4 cover screws and remove the cover.
5. If not already open, open the drill guide at the right side of the meter, taking care not to interfere with any of the internal components. It is recommended to use a Unibit drill.

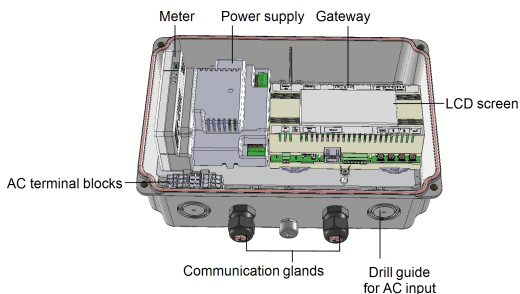


Figure 4: Meter interfaces

6. Release the two standoff screws at the top of the meter (see *Figure 6*).
7. Position the conditioning circuit on the standoffs and use the screws to fasten the circuit to the enclosure .
8. If required, mount a second conditioning circuit in the main distribution panel.
9. Insert all the wires through the conduit opening.

10. Use a flat screwdriver to connect the wires from the conditioning circuit(s) as follows (see *Figure 5* and *Figure 6*):

Pins	Label	Connect to	Connection method
1, 2	Coil	Flexible coil (black/ white; pre-connected)	<ol style="list-style-type: none"> 1. Disconnect the wires from the conditioning circuit connector. 2. Insert the coil cable through the conduit. 3. Reconnect to the conditioning circuit connector according to the color code.
3, 4	Output	Meter CT connectors (black/ white twisted pair)	<ol style="list-style-type: none"> 1. Route the wires of the twisted pair (supplied with the meter) to the meter CT connectors. Make sure the wires do not contact live terminals or bus bars. 2. Connect the white and black wires to the color coded L1CT connector. <p>If you connect two coils, connect the output pair to L2CT. Refer to <i>verify correct CT installation</i>: on page 12.</p>
5, 6	Power	Meter power supply DC terminal blocks (black/ red cable)	<p>Use the power cable supplied with the meter. The conditioning circuit power input is not polarity sensitive, so the positive wire may be connected to either terminal.</p> <p>If you connect two coils, daisy-chain the wires to the conditioning circuit inside the meter (a second power cable is <i>not</i> supplied by SolarEdge). Refer to <i>verify correct CT installation</i>: on page 12.</p>

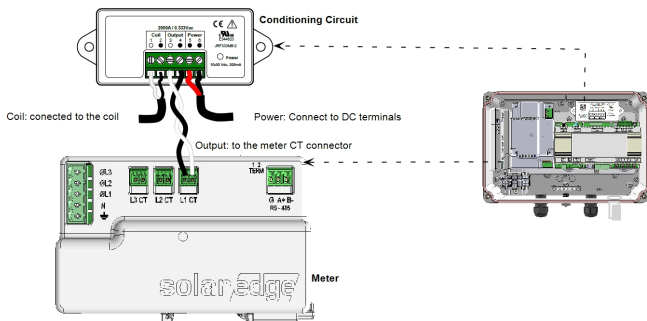


Figure 5: Conditioning circuit wiring

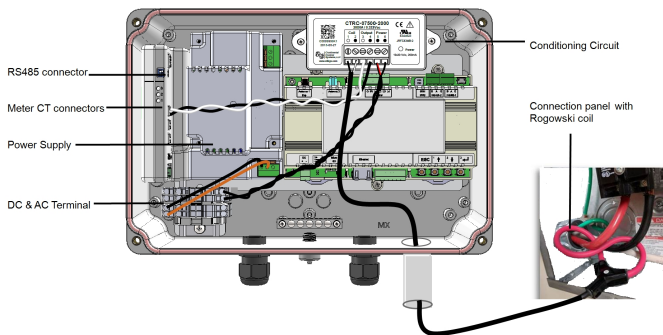


Figure 6: Meter with a single flexibel coil

11. Open the coil by squeezing the flaps and carefully pulling

11 Installing the Flexible Coil CT in an Energy Meter **solar**edge

the coil from the latch. Avoid pulling the red flexible part of the coil.

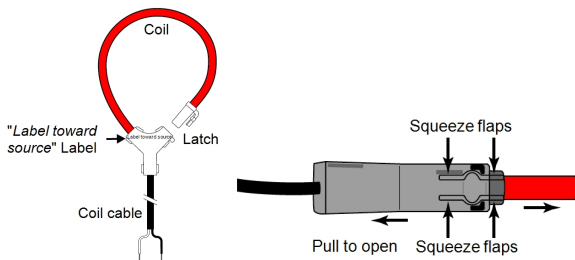


Figure 7: Opening the latch

12. Bend the coil into a figure-8 shape and place around the two conductors.

For best accuracy, position the latch (coil ends joint):

- Away from any other external line conductors
- Away from the conductors being measured if the coil is loose



WARNING!

ELECTRICAL SHOCK HAZARD. Do not touch uninsulated wires when the meter cover is removed.

2. Turn ON a home appliance (load) for power consumption (import energy).
3. Check the meter reading on the LCD screen of the meter.

Import Meter	
Status:	< OK >
Power [W]:	x x x x x . x
Energy [W h]:	x x x x x . x

4. If the power reading is a positive value, the flexible coil is installed correctly. Otherwise, do the following:
 - a. Turn OFF the AC breaker on the main distribution panel.
 - b. Open the meter cover.
 - c. Swap the wires of the **Output** black / white cable at the Conditioning Circuit (see *Figure 5*).
 - d. Close the meter cover.
5. Turn ON the AC breaker and inverter (if applicable).

→ To install a second CT:

Refer to *Figure 9* and *Figure 10*.

1. Install the conditioning circuit outside the meter, in the main distribution panel.

2. Insert the Output black and white wires of the second conditioning circuit through the meter's conduit and connect to the color coded **L2CT** connector.
3. Prepare a 12V DC cable sufficient for the distance between the meter and the conditioning circuit.
4. Insert the power cable of the second conditioning circuit through the conduit and connect to the meter's conditioning circuit in a daisy chain connection, as illustrated below:

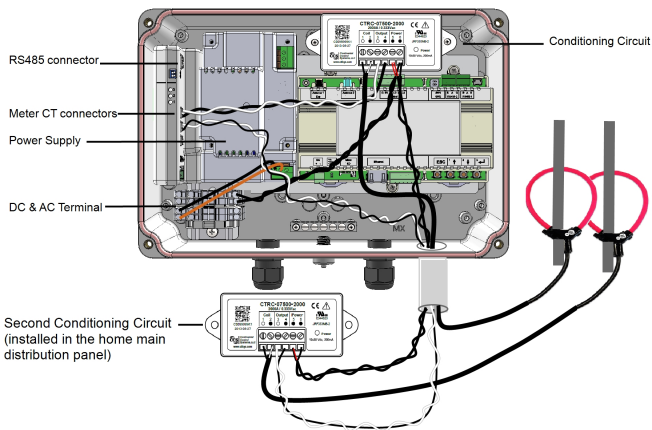


Figure 9: Connecting two coils

15 Installing the Flexible Coil CT in an Energy Meter **solar**edge

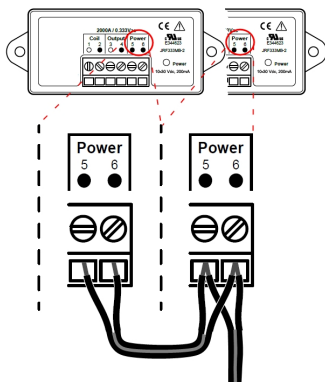


Figure 10: Power daisy chain connection

5. Place the coil around the conductors: Make sure to point the label on the cable joint (with the text: "*Label toward source*") towards the current source (generally the utility meter).

Technical Specifications

Installation Information		
Amperage Rating	250	A
Coil Wire Length (from latch to conditioning circuit)	8 / 2.4	ft / m
Coil Length	3.15 / 8.0	in / cm
Output wires ⁽¹⁾	2.4 / 8 22 AWG, twisted black/ white	m/ ft.
Frequency (nominal)	50/60	Hz
Maximum voltage	600	Vac
Measurement category	CAT III , 600 Vac	
Standard compatibility	UL E344623 (PICQ2); UL 61010B-1	
Accuracy		
Basic Accuracy	±1.0% of reading from 5% to 120% of rated primary current	
Conductor Position Accuracy Error	Due to the location of the conductor within the coil: Edge ±1.5%, Latch ±5%	

⁽¹⁾May be extended to 30 m/ 100 ft.

External Conductor Accuracy Error	$\pm 2.5\%$ of rated current: if an external conductor carrying the CT's rated current is in contact with the CT, the CT output may change by up to $\pm 2.5\%$ of the rated current.	
Corner Position Accuracy Error	$\pm 1.0\%$ maximum: if the CT is installed adjacent to a sharp bend in the conductor being measured.	
Temperature Variation Accuracy Error	$\pm 1.5\%$ variation from: -20°C to $+60^{\circ}\text{C}$ / -4°F to $+140^{\circ}\text{F}$	

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