INSTALLATION INSTRUCTION Model: CT-100-SPLIT-ROW

ENPHASE.

Installing **Enphase CT-100-SPLIT-ROW**

The Enphase IQ Gateway uses a set of three 100A split core Current Transformers(CTs) each for production and consumption monitoring. They perform metering with an accuracy class of 1%. Read and follow all warnings and instructions in this instruction and in the Quick Install Guide included with your IQ Gateway and available at https://enphase.com/contact/support.

SAFETY

SAFETY AND ADVISORY SYMBOLS

⚠	**DANGER**: This indicates a hazardous situation, which if not avoided, will result in death or serious injury.
✓	**NOTE**: This indicates information particularly important for optimal system operation. Follow instructions carefully.

SAFETY INSTRUCTIONS

⚠	**DANGER**: To reduce the risk of electric shock, always open or disconnect circuit from power-distribution system (or service) of building before installing or servicing current transformers.
⚠	**DANGER**: Risk of electrocution! Do not install CTs when current flowing in the sensed circuit. Always install CT wires in the terminal blocks before energizing the sensed circuit.
⚠	**DANGER**: If equipment is used in a manner not specified by Enphase Energy, the protection provided by the equipment may be impaired.
⚠	**DANGER**: Risk of electric shock. Be aware that installation of this equipment includes risk of electric shock. If you wire the IQ IQ Gateway the main load center before beginning wiring. If the subpanel cannot be de-energized, a qualified electrician may safely install the CTs as directed, making sure to connect the leads and then place the CTs around each wire and latch.
⚠	**DANGER**: Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace the CTs.
✓	**NOTE:** Because of variance in switchboard design and main power feed, there may not always be enough space to install CTs.
✓	**NOTE**: Do not install the CTs in a switchboard where they exceed 75% of the wiring space of any cross-sectional area within the equipment.
✓	**NOTE**: Perform all electrical installations in accordance with all national and local electrical codes.
✓	**NOTE:** Restrict installation of current transformers in an area where they would block ventilation openings, or in area of breaker arc venting.
✓	**NOTE:** Not suitable for Class 2 wiring methods and not intended for connection to Class 2 equipment.
✓	**NOTE:** Secure current transformer and route conductors so that they do not directly contact live terminals or bus.
✓	**NOTE:** When wiring the IQ Gateway for production and consumption metering, be sure to install the current transformers (CTs) exactly as described for your application.
✓	**NOTE:** When installing CTs, it is important to match CT and sense voltage phases. Be sure to consistently identify the two AC lines at three points: the main electrical panel feed, the IQ Gateway, and the PV production circuit breaker. Wire colors may not always consistently identify L1, L2 and L3. If in doubt, use a multimeter to check.
✓	**NOTE:** Only run line conductors through the CT. The CT can monitor multiple active conductors. You may run more than one wire through the CT if all wires are on the same phase and they fit the opening in the CT.
✓	**NOTE:** For indoor use only.

SPECIFICATIONS

SPECIFICATION	CT-100-SPLIT-ROW
CT type	Split core
CT accuracy (error rate)	<1%
Maximum primary current	100A
Turns ratio	2500
Dimensions (in mm)	40.1 x 26.4 x 26.7
Aperture	9.8 mm diameter
Maximum conductor size support	16mm^2
CT lead wire length	4m
Primary voltage	250VAC
Frequency	50-60Hz
Operating temperature	-40 to 85 degree C
Compliance	CE, RoHS compliant

INSTALLATION

For more information, see the reverse of this document for tips. Refer also to the *IQ Gateway Quick Install Guide*.



Preparation

A) If not already done, de-energize the home load panel and the PV system.

Installing the CTs for production monitoring

A) Refer to the diagram on the reverse of this document for wiring.

B) Locate the arrow on the CT label and make sure that the AC mains wire(s) are de-energized until you have secured the CT wires in the terminal blocks.

To monitor production on Line 1:
- Connect the white wire to the "I1•" terminal and the blue wire to the "I1" terminal.
- Clamp the CT on active Line 1 of the solar production circuit with the arrow pointing toward the load (away from the solar array).

· **To monitor production on Line 2**:
- Connect the white wire to the "I2•" terminal and the blue wire to the "I2" terminal.
- Clamp the CT on active Line 2 of the solar production circuit with the arrow pointing towards the load (away from the solar array).

· **To monitor production on Line 3**:
- Connect the white wire to the "I3•" terminal and the blue wire to the "I3" terminal.
- Clamp the CT on active Line 3 of the solar production circuit with the arrow pointing towards the load (away from the solar array.

· **Tighten all connections to 0.56 Nm.**

Install the consumption CTs

A) Refer to the diagram on the reverse of this document for wiring.

B) Install the **consumption** CTs on active phases as required:
· Locate the arrow on the CT label.
· Make sure that the AC mains wire(s) are de-energized until you have secured the CT wires in the terminal blocks.

To monitor consumption on Line 1:
- Connect the white wire to the "I1•" and the "I1" to the blue "C1" terminal.
- Clamp the CT on the main supply Line 1. When the consumption CT is on Line 1 conductor, the arrow must point toward the load (away from the grid).

- **To monitor consumption on Line 2**:
  - Connect the white wire to the "I2•" terminal and the blue wire to the "I2"terminal.
  - Clamp the CT on the main supply Line 2. When the consumption CT is on Line 2 conductor, the arrow must point toward the load (away from the grid).
- **To monitor consumption on Line 3**:
  - Connect the white wire to the "I3•" terminal and the blue wire to the "I3" terminal.
  - Clamp the CT on the main supply Line 3. When the consumption CT is on Line 3 conductor, the arrow must point toward the load (away from the grid).
- **Tighten all connections to 0.56 N m.**

C) Close and secure the terminal block door of the IQ Gateway.

D) Turn on the PV system.

INSTALLATION TIPS

Installing multiple conductors in a single CT

If you need to install multiple conductors in a single CT, you must ensure that the conductors terminate on the same line conductor, so the voltage at the terminals of the two conductors will be 0V between them.

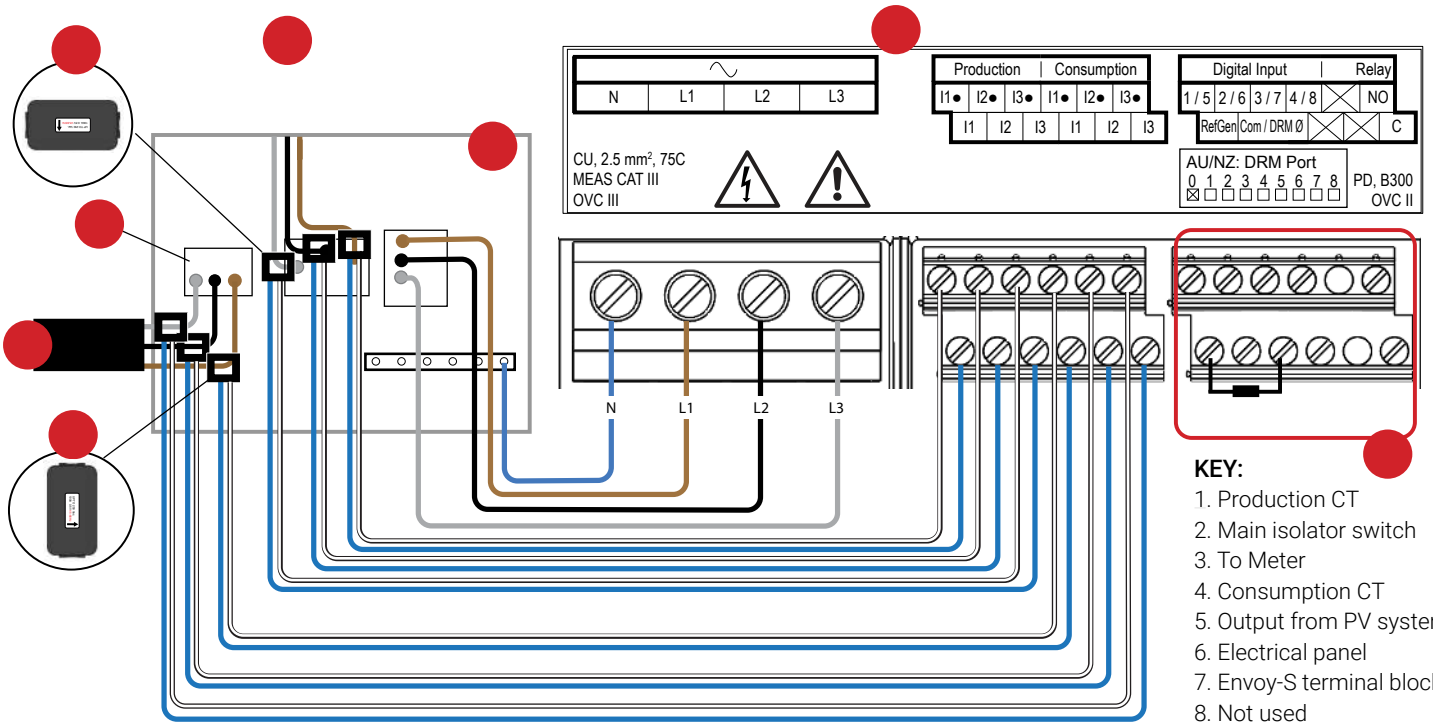
There are some challenges to this approach:

- It is easy to make a wiring error.
- The conductors must fit within the CT.
- All of the conductors on Line 1 must be bundled and with the loads on the Line 1 CT.
- All of the conductors on Line 2 must be bundled and with the loads on the Line 2 CT.
- All of the conductors on Line 3 must be bundled and with the loads on the Line 3 CT.
- You may need to extend some of the circuits.

It is often possible to run all of the conductors in a service panel through a single set of consumption CTs.

Installing parallel-connected CTs for 200A services and in crowded service panels

It may be difficult to install multiple conductors through a single CT when some of the conductors enter from the bottom of the service panel and others enter from the top. Also, some service panels have 200A services that are provided by a set of two 100A conductors and parallel-connected 100A circuit breakers. In those scenarios, you can use a set of parallel-connected consumption CTs to monitor the home's consumption. Do this by installing two consumption CTs, one on each line conductor and then parallel-connecting the output conductors at the IQ Gateway CT wiring terminals or in a wire connector prior to landing in the IQ Gateway terminals.



KEY:

1. Production CT
2. Main isolator switch
3. To Meter
4. Consumption CT
5. Output from PV system
6. Electrical panel
7. Envoy-S terminal block
8. Not used

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