

## Four Simple Guidelines for Current Transformer Installation

This guide is for the solar energy professional who will install current transformers (CTs) with the Enphase IQ Envoy™ in **North America**. Refer to the Enphase IQ Envoy Installation and Operation Manual for complete installation instructions and safety warnings.

### How CTs Work

The IQ Envoy uses readings from current transformers (CTs) to report measurement data for energy production and energy consumption. When CTs are wrapped around a live wire, the current going through the wire induces a current on the CT's secondary winding. The current on the secondary winding is proportional to the current on the original circuit and is used for making measurements.



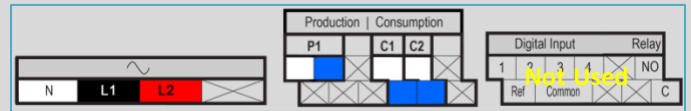
View of Internal Winding

### Polarity Correctness

CTs have a specific polarity, which is determined by the direction of the secondary winding. It is important to maintain proper CT polarity in all installations, otherwise readings will be negative.

### Guidelines

1. CT wire leads must land on the correct terminals on the Envoy.



2. Ensure phase consistency for power (voltage) and CTs (current).

- Blue and white **C1** Envoy terminal CT wires are verified to be from the line 1 CT at main panel.
- Line 1 phase wire at main panel is verified to be consistent with line 1 power wire at Envoy.
- To verify consistency in wiring from main to Envoy, use a voltmeter, measure voltage between L1 main and L1 at Envoy.
  - Main terminal L1 to Envoy L1 terminal = 0V (This is correct.)
  - Main terminal L1 to Envoy L1 terminal = 240V (This is incorrect, phase is reversed)

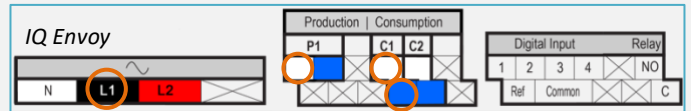


Illustration only

3. To ensure correct polarity, CT arrows must be pointing toward the loads.

- For production CTs, point toward the loads, away from the Solar PV.
- For consumption CTs, point toward the loads, away from the grid.



4. Meters must be enabled using the Enphase Installer Toolkit™ mobile app to report meter data to Enphase Enlighten™.

The correct consumption meter configuration type must be selected to enable the consumption meter.

Use the [Meter Wizard](#) for successful installations every time!



