



CHANNEL AND CT SELECTION

NOTE: This document applies to 120V/240V split phase residential services only. **Three phase GEM installation have different channel and CT rules.**

HOW MANY CHANNELS ARE NEEDED?

- One channel is needed for each load. A double breaker (240V load) only requires one channel.
- If more than 32 channels are required, it is possible to couple two 120V breakers on a single GEM channel.

HOW MANY CTs ARE REQUIRED?

- Two large CTs are required for the main panel feed (only one main panel CT for countries with 230Vac power)
- One CT is required for each single pole breaker
- One CT for 240V “**balanced**” loads
- Two CTs for 240V “unbalanced” loads (Dryer, Stove/Range, Spa/Hot tub, Workshop 240V receptacle, Split duplex receptacle)

Balanced 240V Loads

Central A/C, Baseboard heater, Water heater, Sauna, Pump

Unbalanced 240V Loads

Dryer, Stove/Range, Spa/Hot tub, Workshop 240V receptacle, Split duplex receptacle

EXAMPLE

The picture on the right shows four breakers:

- Two single breakers (15A and 20A)
- Two double breakers (30A and 40A)

These four breakers represent 4 loads:

- Kitchen counter
- A/C Unit
- Electric Stove
- Refrigerator

Four channels are needed, one for each load.

Five CT sensors are required:

- 1 for Kitchen counter
- 1 for A/C Unit since it is a balanced 240V load
- 2 for Electric Stove because this is an “unbalanced” 240V load
- 1 for Refrigerator

