

ALPHA ESS TECHNICAL NOTICE

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Relevant to Models	All Battery Models

CONTROLLED LOADS & CT PLACEMENT

Installers must consider Controlled Loads carefully when installing batteries.

Controlled Loads should NOT be included in the CTs.

If a Battery Grid-measuring CT includes the Controlled Load, the battery will discharge to meet this load. The result will be:

1. Power moving through the grid Meter as an “export”, earning a small credit.
2. Power moving through the Controlled Load meter as an “import”, charged at a higher Rate.

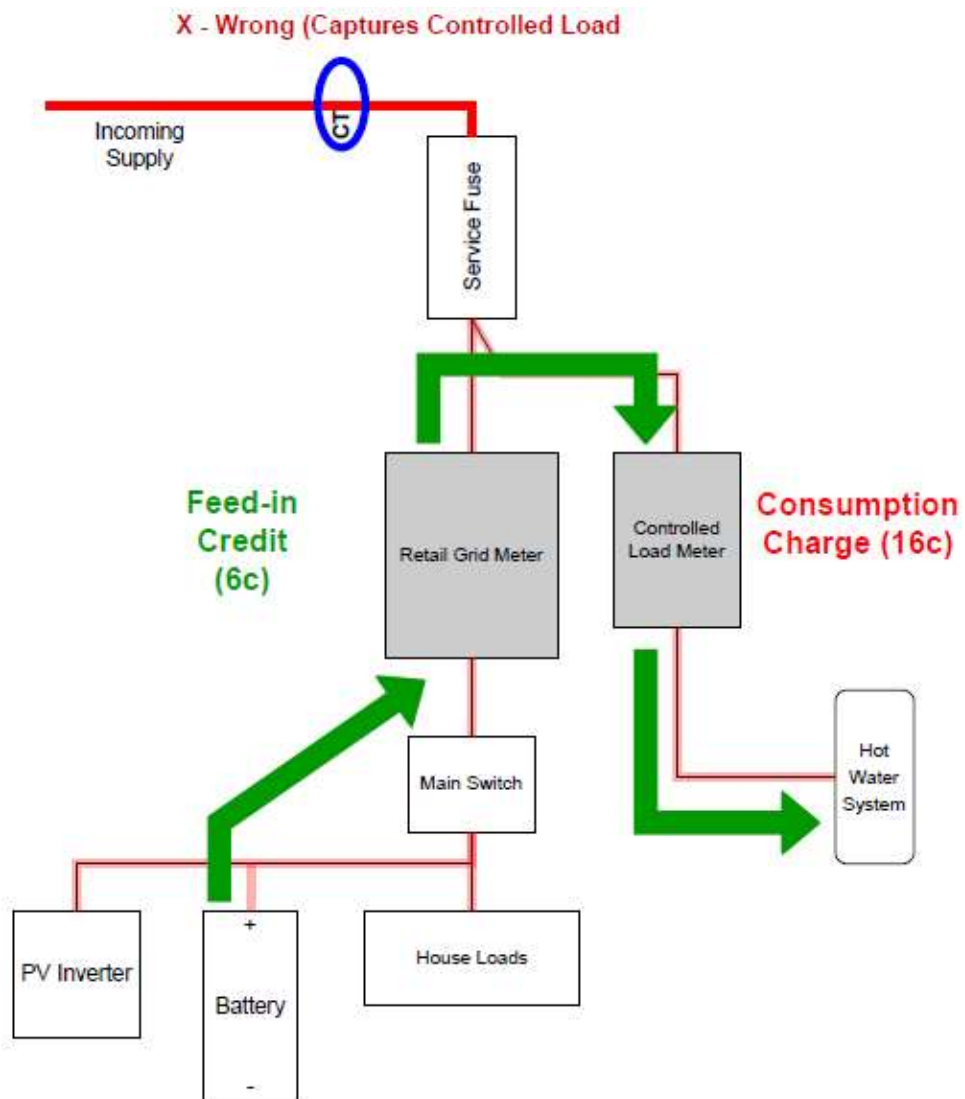


Figure 1 - Power flow through Controlled Load meter from Battery

The Diagram below shows the Correct CT positioning for a Single-Phase House. Note that the PREFERRED position for the CT is between the Main Switch and the Retail meter. The reasons for this preference are:

1. Installers have less chance of accidentally measuring at the wrong side of the Service Fuse (and less chance of reversing CTs accidentally).
2. On 3-phase houses, there is less chance of an accidental phase crossover because you can compare the voltage at the Main Switch terminals. If you clamp a CT near the service fuse, there may be a crossover of phases by the time the wires reach the Main Switch.

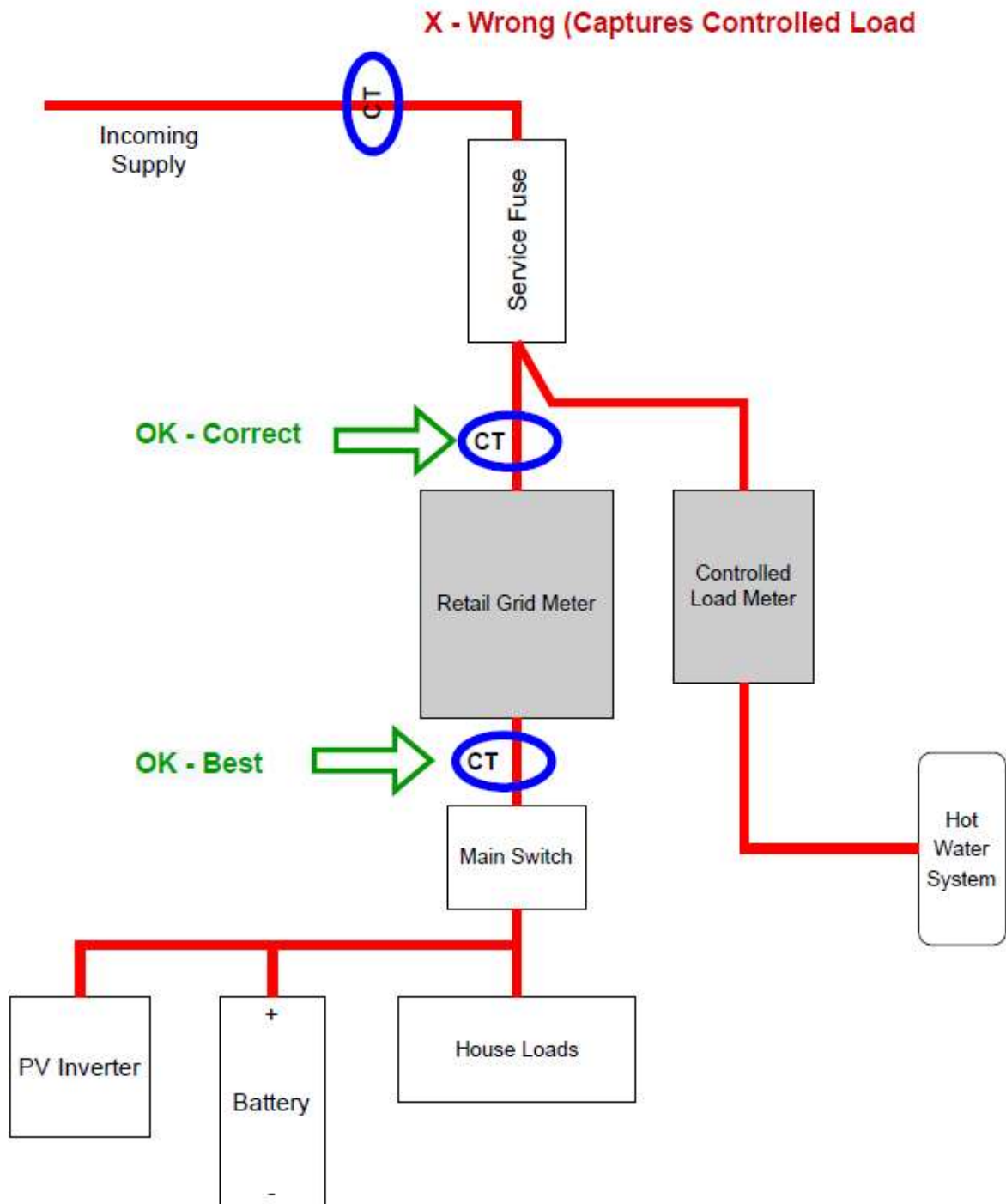


Figure 2 - Correct CT Locations vs Incorrect

WHAT TO DO WITH CONTROLLED LOADS

- a) Controlled loads can be left as they are (VPPs should be unaffected if the Controlled Load is left out since they would likely have access to full retail data of all meters), OR
- b) Controlled Loads can be moved across into the normal loads, no longer being “controlled”.

It is always advisable to discuss the impacts with the home owner first.

Alpha’s general recommendation is not to move controlled loads unless:

1. There will be plenty of exported solar throughout the year (including Winter), over and above the solar required to supply the house and charge the battery.
2. The Appliance on the Controlled Load has some type of Timer Mechanism that allows the homeowner to ensure it functions in the cheapest period or when there is plenty of Solar.
3. The normal house consumption has been considered to ensure that the battery will not be drained by the new, relocated controlled load, and leave the homeowner without backup and battery power through the evening Peak Pricing period and beyond.
4. The homeowner clearly understands that if there is no solar on a given day, and the relocated Controlled Load is unable to be supplied by excess solar, they may pay more for the electricity than if they had left the appliance on the Controlled Load circuit.

As a general recommendation, Alpha suggests that homeowners observe and examine their battery and solar data over a full year before deciding to move Controlled Loads over to normal metering.

Typically, it is not economical for most Immersion Hot Water systems to move, but it can often be beneficial to move Heat Pumps (hot water or pool pumps) since they are generally more efficient in the day anyway.

Figure 3 shows an example of a Service Fuse on a 3-phase house where the CT position at the top of the service fuse would accidentally include the Controlled Load.

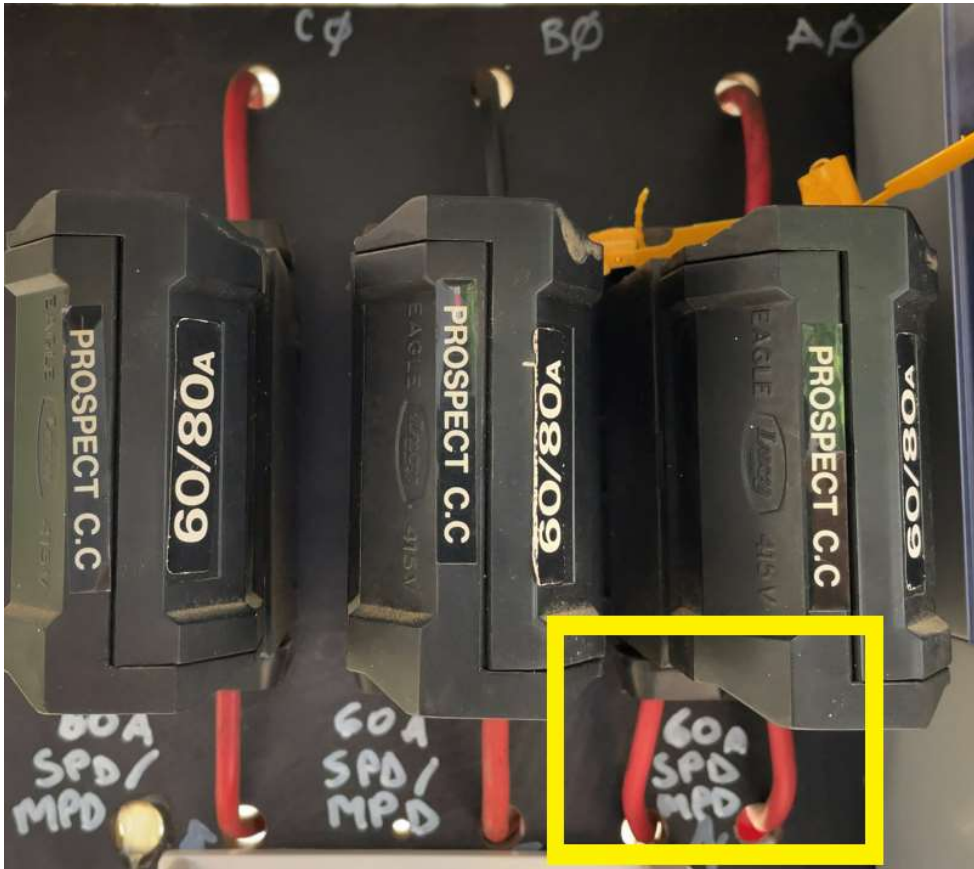


Figure 3 - Controlled Load wire visible at the bottom on the 3rd Service Fuse