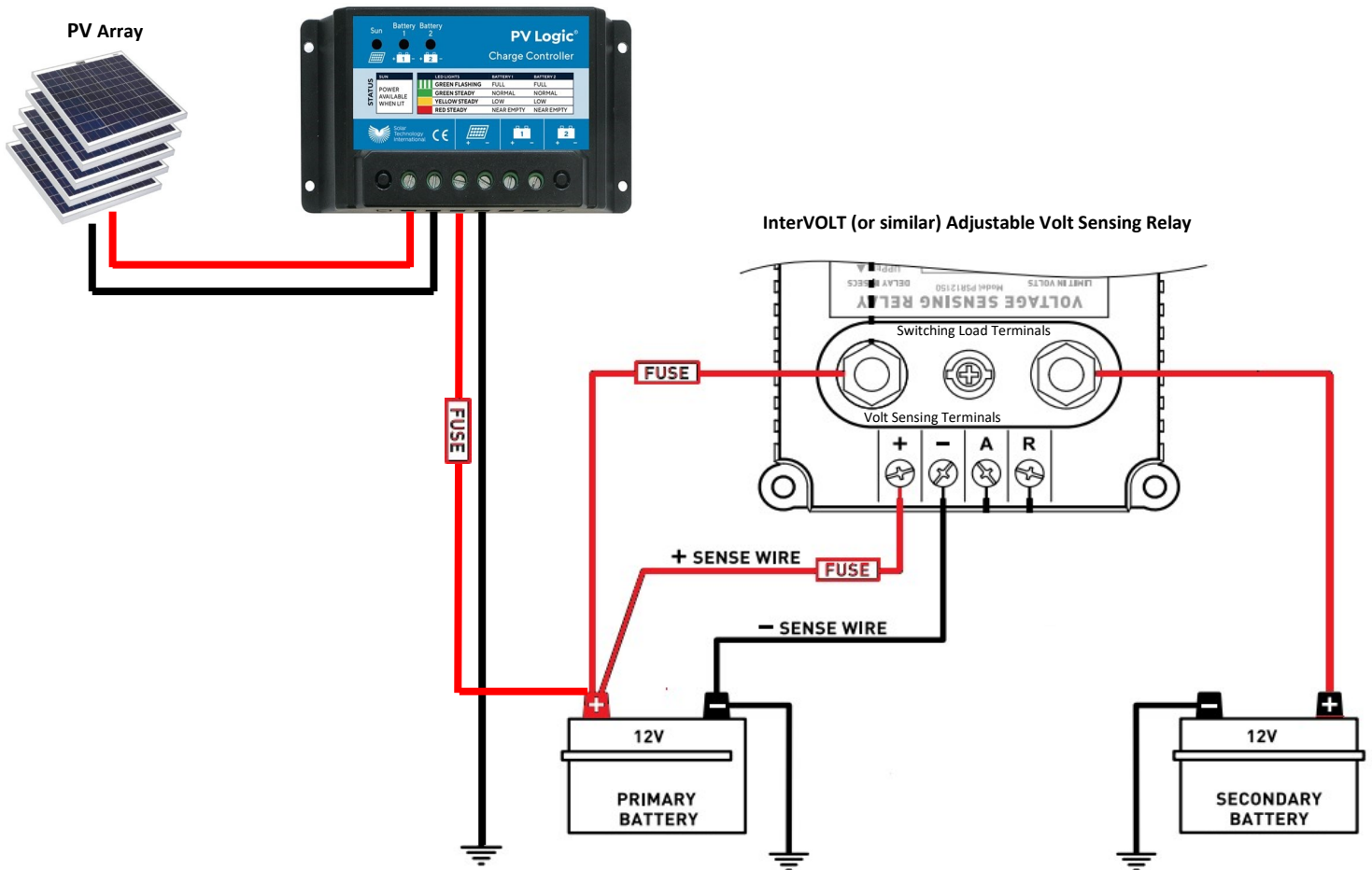


Connecting Two Batteries with Common Negatives to a PV Logic Charge Controller - STCC10 (10Ah), STCC20 (20Ah) and STCC15M (15Ah MPPT)

In certain situations (most often a caravan, motorhome or boat) where two batteries are connected to the charge controller and sharing a common negative, the controller cannot distinguish between the two separate battery voltage signals. As a result it will charge them incorrectly and it can drain one of the batteries.

The easiest way to get around this problem is to separate the negatives so that each battery circuit is completely independent of the other. Understandably, this is not always possible and so another way to get around this issue is to use either a manual changeover switch to switch between batteries, or an adjustable VOLTAGE SENSING RELAY to automatically charge both batteries when generating from solar. There are a few different models available with similar characteristics. Please see below a diagram and instructions of how to make this connection using an InterVOLT PSR, or similar adjustable voltage sensing relay. The typical cost is around £40.



- Connect the + cable to BATTERY 1 + output terminals on the SOLAR CHARGE CONTROLLER to the + terminals of the PRIMARY BATTERY (usually the leisure battery) via an in-line fuse. Ensure cables and fuse are sized correctly to carry the full charge current of the solar charge controller.
- Connect a + & - cable from the PRIMARY BATTERY to the + & - sense terminals of the VOLTAGE SENSING RELAY, ensuring an in-line fuse is fitted to the + cable. The cable and fuse for this step should be sized according to the relay manufacturer's specification.
- Connect the positive terminal of the PRIMARY BATTERY via in line fuse to one of the switching load terminals and the positive terminal of the SECONDARY BATTERY to the other switching load terminal. The cable and fuse should be sized to carry the maximum current that can flow between the two batteries when connected in parallel.
- Connect battery negatives as desired ensuring correct cable sizes to suit wiring system.
- VOLTAGE SENSING RELAY can now be set to close at the maximum (fully charged) voltage of the PRIMARY BATTERY. This will vary depending on the battery type and chemistry—check battery specification. This will then isolate SECONDARY BATTERY until power is available to charge it.