

Ag102 Higher Back-up Power

Some battery back-up applications require a higher back-up capacity than can be supported by a single 7Ah battery. This application note shows how to connect 2 x Ag102 modules and 2 x 7Ah batteries in parallel, to double the back-up capacity. Figure 1 below gives an example of how this extra capacity can be achieved.

In Figure 1 the upper half of the circuit (0V IN and above) is a standard configuration detailed in application note AN102-1, with ZD1, R2 and Q1 fitted to improve the change-over (back-up) switch point. The lower part of the circuit shows the additional Ag102 module and battery, used to boost the output capability. These could simply be made No Fit components, if the extra capacity isn't required on a lower spec product variant.

C1, ZD1, R2, RL1, Q1 and D1 are common to both Ag102 modules.

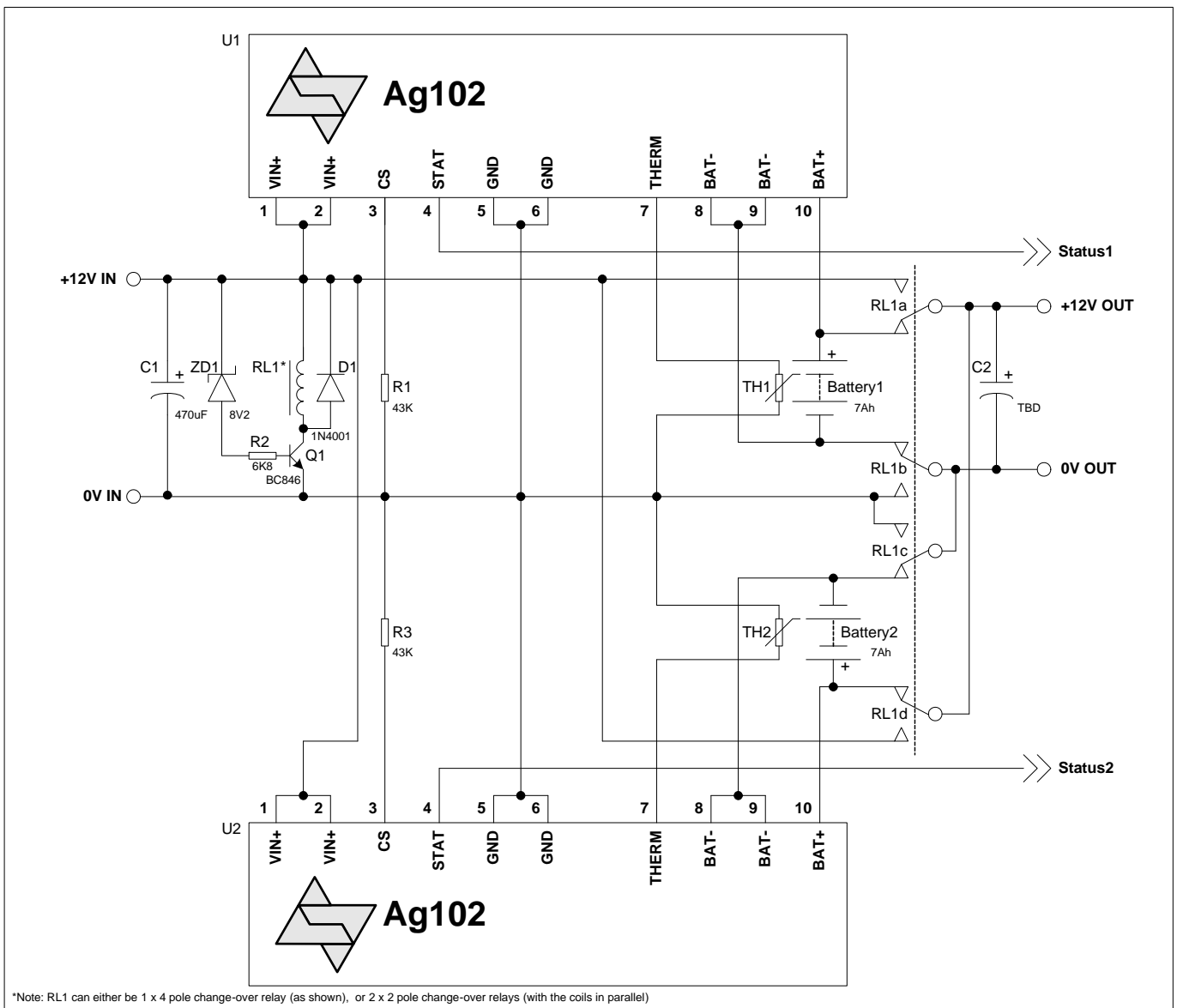


Figure 1: Parallel Configuration

When a 12V supply is connected to the '+12V IN' input; RL1 will activate and connect the 12V supply directly to the output (+12V OUT). At the same time it will supply power to both Ag102 modules, which will charge their respective batteries. It is important that the +12V supply has sufficient power capability to drive both Ag102 modules and the output load (when all are at maximum capacity).

If for some reason the +12V supply is lost, then RL1 will deactivate and Battery1 & Battery2 will now be connected (in parallel) to the output. The output current from each battery may initially be different, but this will balance out over time. This is due to the cell voltage tolerance and will probably be more noticeable if the batteries are made by different manufacturers.

With the circuit shown in Figure 1, RL1 will deactivate when the voltage reaches ~9V. C2 can be fitted (if required) to prevent the output dropping to 0V before the relay fully switches over (connecting the back-up batteries). The value of C2 will be dependant on the output load requirements. But it is also very important if C2 is fitted, the contacts of RL1 can withstand the surge current required to charge C2.

When the 12V supply is connected, the status of each battery can be monitored using the Ag102 STAT output pins ('Status1' and 'Status2').