

The Innovative Energies **No-Break™ DC** UPS system is able to **automatically** perform a battery condition test (BCT) at preset intervals. The BCT feature is ideal for remote or automated sites and allows plant operators to:

- ◆ *Minimise cost of maintenance*
- ◆ *Identify bad batteries before they fail so they are available when you need them.*

The **No-Break™ DC** system monitors the battery voltage during the BCT and if this voltage drops below a preset value, an alarm is generated and the test is aborted. The alarm signal may be a local alert using the relay output or it may be transmitted back to a central operating station using the **optional communications port** on the **No-Break™ DC** UPS. The communications option also enables the user to remotely start and stop a battery condition test.

There are some limitations which must be taken into account when using the basic battery condition test concept:

1. battery design sizing should be increased to allow for the situation when there is a mains failure after a routine battery condition test
2. varying loads will affect the accuracy of the BCT results; as a guideline, an automatic BCT test should not be performed when the system load **varies** by more than the following percentages:

SR100C: 50% **SR250C:** 40% **SR500C:** 30% **SR750C:** 20%.

3. for lightly loaded systems, external load resistors may be added to improve the accuracy of the battery condition test.

The following options may be used to improve the accuracy of battery condition testing:

1. Using the **SR250V No-Break DC** UPS as shown in Application #2 on page 11 (**No-Break™ DC** connections). This is a single charger which has **dual** battery outputs and a separate output for the connection of external load resistors. This means that there is N+1 redundancy of the battery and also allows each battery bank to be discharged to, for example, 50-60% depth of discharge to give a more accurate indication of the battery condition. The BCT schedule is controlled by the internal microprocessor in the charger so that the BCT tests are conducted at different times and on alternate batteries.
2. Using two complete **No-Break™ DC** charging systems with an additional external load resistor bank, as shown in fig. 1 below. This has N+1 redundancy of both the battery and the charger. Here, as with the dual charger, the timing of the BCT is controlled so that it occurs at different times and on alternate batteries which means that a “full” (eg. 50-60%) discharge test may be performed on each set of batteries.

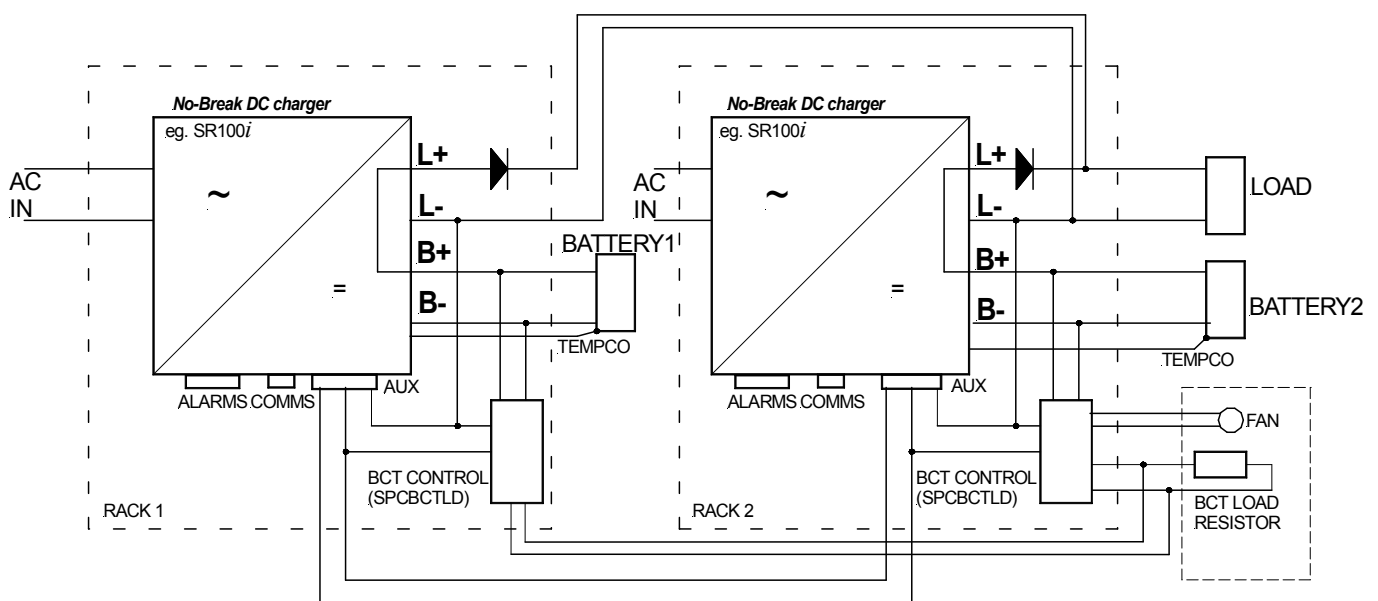


Figure 1: Battery condition test connection schematic for N+1 **No-Break™ DC** UPS system