What is stacking?
Stacking inverters allows them to act as a single system. They will work together to charge batteries and provide power to loads.

How many inverters can be stacked?
Off grid: up to 10 inverters

Grid interactive, 120/240Vac: up to 2 inverters

3 Phase: 3 inverters (one off-grid inverter per phase)

I have Export inverters, can I stack them?
Yes. Export inverters stack in the same way as off grid domestic inverters.

What kind of output can I get from a stacked system?
Off grid:
A single120Vac output with all inverters in PARALLEL
Split phase 120/240Vac with inverters stacked SERIES/PARALLEL

Grid interactive:
120Vac with a single inverter
Split phase 120/240Vac with 2 inverters

3 Phase:
120/208Vac Y configuration

Can I stack grid tie inverters in a 3 phase configuration?
No. At this time, grid tie inverters can only be stacked in Classic mode.

What is the difference between Classic stacking and Outback stacking?
Classic stacking allows you to connect 2 inverters in a 120/240Vac system without a transformer.

With Outback stacking, a system can be connected with 2 or more inverters (up to 10) as a single system. A transformer is required for a 120/240Vac system in Outback stacking.

Do I need a transformer if I use Classic stacking?
A transformer can be used to step up or step down, but is not required and is not used for balancing.

Why do I need a transformer with Outback stacking?
The transformer balances the load between the inverters very much like with a generator.
More specifically, the master inverter controls the output of each slave. The output is determined by the load on the master. If the outputs of each inverter were separate, there could be varying voltages on each leg.

How is the system wired?
This varies with the number and types of inverters.
Configurations rely on the 3 wire (2 hot legs and a neutral) with the exception of parallel and 3 phase systems.
Inverter 1 is Master for all systems.

PARALLEL
All inverter outputs are connected to hot leg 1. All slave inverters are set as OB Slave L1.

SERIES (Grid tie only)
Each inverter output to separate hot leg. Slave inverter is set to Classic.

SERIES/PARALLEL
Because off grid inverters can be stacked up to ten units, there are many arrangements possible.
There are 2 common (read: simple) setups used.

One way is to have every other inverter connected to one output leg. So each odd numbered inverter is connected to hot leg 1 and the even inverters on leg 2

The other common layout is to have the first half of a system on one leg and the rest on the other. In other words, in a quad stack, inverter 1 and 2 are on leg 1, with 3 and 4 on leg 2.

In either case, each slave is set to OB Slave L# where # is the leg that the inverter is wired to.

3 Phase
Master inverter is set to 3ph Master. The first and second slave are set to 3ph Slave.

What the heck is the Power Save Level and how is it used?
The Power Save Levels allow slave inverters to go to sleep if load on the system is light. This is controlled by the master but can be manually adjusted to wake slave inverters.

Power Save Level Master Adjust Only
Left at 0 for automatic (default). Changing this enables a slave power level. This only affects the master inverter in a system. Adjusting this on a slave does nothing.

Power Save Level Slave Adjust Only
Set this to the power level you want the slave to wake at. Default is 1. Adjusting this on the master does nothing.

So... how do they work together?
As the load increases, the master inverter would enable a power level at 12aac increments. So the first level will come on at about 12aac. Second level around 24aac.

When a power level is enabled, any slave with a matching Slave Level will wake up.
Power save levels will turn off when the system load falls below 4aac.

For more information please visit **www.alpha-outback-energy.com**