International GTFX and GVFX Series Programming Manual Addendum

Purpose

This document describes additional features added to the International Series GTFX and GVFX which were not included in the Programming Manual for those products.

Scope

This document applies to all OutBack inverter/chargers with firmware rev. 002.092.000 or higher.

Added Features

Grid/Generator Support

When this feature is enabled, the inverter limits the current draw from an AC source, augmenting it with additional current from the batteries when necessary. This helps prevent overload of a small AC breaker or generator during short-term use.

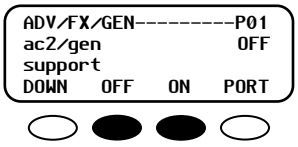
- Initially, the AC source current is used for both loads and battery charging. The ***ac1/grid limit*** or ***ac2/gen limit*** settings dictate the maximum AC draw. If the AC draw exceeds this setting, the inverter reduces its charge rate to give priority to the loads.
- The charge rate will reduce as much as necessary. If the loads equal the amperage setting, the charge rate will be zero.
- If the AC loads **exceed** the amperage setting, the charger will begin operating in reverse. It will take power **from** the batteries and use it to support the incoming AC current.

IMPORTANT:

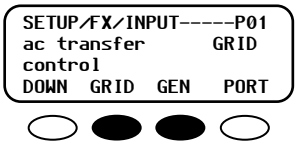
If the AC loads exceed the amperage limit setting, the inverter will drain the batteries. If the loads are sustained, the batteries may discharge completely, and backup power may not be available. To prevent this situation, load use should be planned accordingly.

Programming

This feature is activated by the ***ac2/gen support*** menu item, located in the ADVANCED menus.

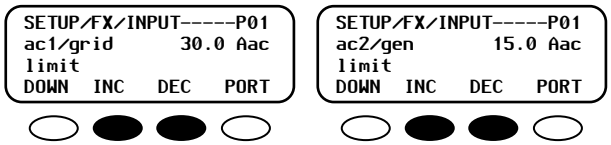


- The default selection is ON. It can be switched OFF using the **<OFF>** soft key.
- Although the menu item is titled ***"ac2 gen support"***, it functions equally well whether the AC source is generator or utility grid.
- Choose between generator or grid criteria using the ***ac transfer control*** menu item in the SETUP menus. The default is GRID. The **<GRID>** and **<GEN>** soft keys will toggle between these respective options.

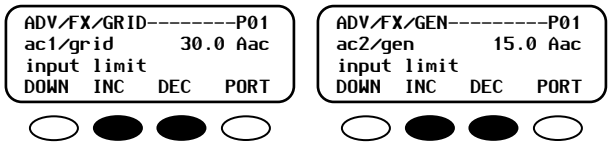


The support level is set using the grid or generator limit settings. These settings should be adjusted to match the size of the input breaker or circuit which is to be supported. If the ***ac transfer control*** menu is set to GRID, the inverter uses the grid settings. If the menu is set to GEN, the inverter uses the generator settings.

- The grid and generator limit settings are found in both the SETUP and ADVANCED menus under slightly different names. In each case, the limits are adjusted using the **<INC>** and **<DEC>** soft keys.

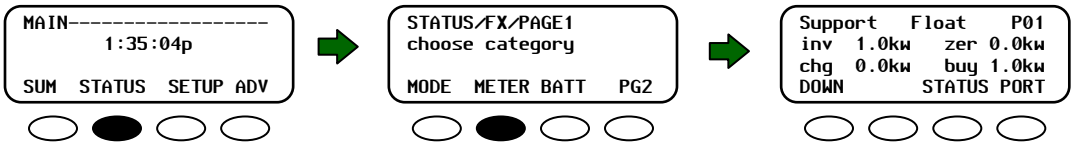


- The limits in the SETUP menus are linked with the ADVANCED items. Only one needs to be changed. If ***ac1/grid limit*** is changed in SETUP, the change will also apply to ***ac1/grid input limit*** in ADVANCED, and so on.

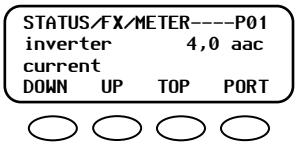


Monitoring

This feature can be monitored in the METER menu, which is selected under the STATUS series of menus.



- The top line of the METER menu shows current status (left) and target status (center). ***Support*** will appear as the current status when this feature is operating. The target status is the voltage (usually a charging stage) which the inverter is either trying to reach or to maintain. If a battery charging cycle was interrupted to provide AC support, the menu will show the appropriate charge stage as its target.
- During AC support, if the unit begins drawing power from the batteries, it is considered to be inverting. The ***inv*** field will display the number of kilowatts consumed.
- The ***inverter current*** field, elsewhere in the METER menu, also shows the number of AC amps consumed.
- Additionally, the INVERTER status LEDS on the MATE and the inverter itself will illuminate while this feature is operating.



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OutBack Three-Phase Stacking

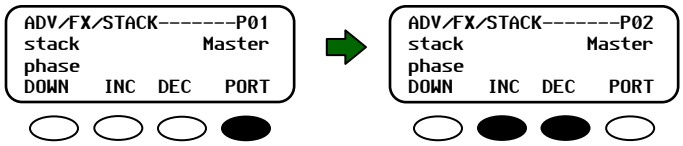
In the past, OutBack inverters could only be stacked in three-phase configuration using one inverter per phase. In addition to this "Classic Three-Phase" configuration, new programming has been added to allow multiple inverters per phase.

- All installation instructions are the same as those in given in the ***International Series GTFX and GVFX Grid-Interactive Inverter/Charger Installation Manual***.
- The jumper in the HUB must be left in the standard position (usually called the "series/parallel" position) for three-phase configuration with International Series GTFX and GVFX models. (This instruction is the same as that given in the Installation manual. However, it is specific for these models, and may conflict with the ***HUB Installation and User Guide***.)
- In theory, any number of inverters may be installed per phase. In practice, it is usually not possible to install more than three per phase, due to the number of available ports on the HUB. This assumes the use of the HUB10.
- It is recommended that equal numbers of inverters be installed on each phase.

Programming

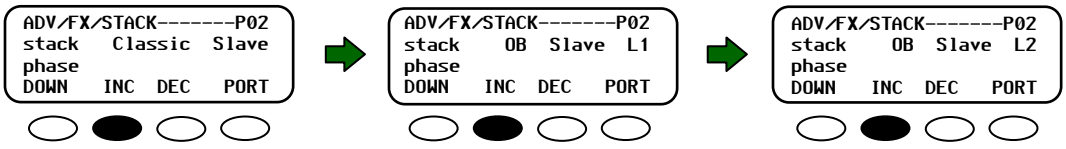
With the introduction of OutBack Three-Phase stacking, the stacking menu layouts have changed.

The first item that appears in the STACK menu is ***stack phase***. This item needs to be programmed separately for each port (inverter) on the HUB. The stack phase for port P01 must be ***Master***, which is the default and which guides the output of all the other inverters. (If it is not set as ***Master***, the setting can be changed using the **<INC>** and **<DEC>** soft keys.)

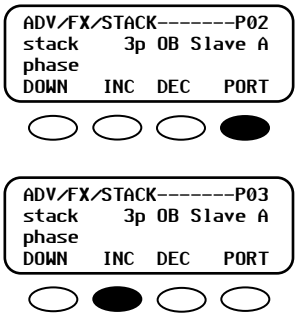


Once P01 is set as master, you must change the port selection with the **<PORT>** soft key, to P02. The default for all ports is also ***Master***, but P02 and higher ports must be set as ***Slave***, on one phase or another. (The following instructions apply to all slaves.) The **<INC>** soft key advances from ***Master*** to the settings listed below.

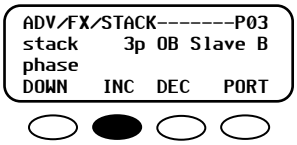
- The next three slave settings (***Classic Slave***, ***OB Slave L1***, and ***OB Slave L2***) are not appropriate for three-phase applications. Continue pressing the **<INC>** soft key to advance past these settings.



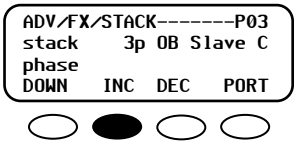
- The next setting is ***3p OB Slave A***. At this point you need to decide the phase for this slave inverter. ***3p OB Slave A*** sets the selected inverter in phase with the master. (Remember that the number of inverters on each phase is usually recommended to be equal). If this setting is appropriate for the inverter on P02, press the **<PORT>** soft key to select the next inverter. If P02 should be set at a different phase, press the **<INC>** soft key to see the next setting.



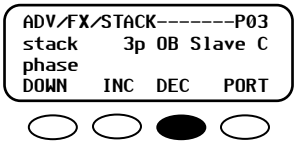
- The next setting is ***3p OB Slave B***. This setting places the selected slave inverter 120 degrees out of phase with the master. If this setting is appropriate for the current inverter, press the **<PORT>** soft key to select the next inverter. If the current inverter needs to be set at a different phase, press the **<INC>** soft key to see the next setting.



- The next setting is ***3p OB Slave C***. This setting places the selected slave inverter 120 degrees out of phase with the ***3p OB Slave B*** inverters. If this setting is appropriate for the current inverter, press the **<PORT>** soft key to select the next inverter.

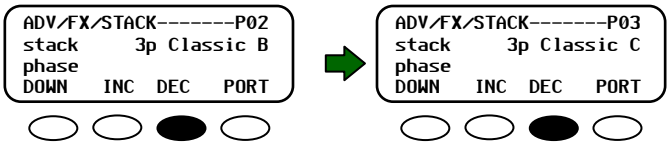


- Use the **<DEC>** soft key to return to any previous setting for a given inverter.



- The remaining settings, ***3p Classic B*** and ***3p Classic C***, are the settings for the three-phase configuration that was in previous firmware revisions. They are not usable for three-phase systems with more than three inverters. However, if you only have a three-inverter system, you may still use these settings.

3p Classic B places that slave inverter (usually the P02 inverter) 120 degrees out of phase with the master. ***3p Classic C*** places that slave inverter (usually the P03 inverter) 120 degrees out of phase with the ***3p Classic B*** inverter.



The next menu items, the ***power save level*** settings, are not normally used with three-phase systems.

This concludes the programming for OutBack Three-Phase Stacking.

About OutBack Power Systems

OutBack Power Systems is a leader in advanced energy conversion technology. Our products include true sine wave inverter/chargers, maximum power point tracking charge controllers, system communication components, as well as breaker panels, breakers, accessories, and assembled systems.

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