

# Upgrading Inverter to Revision 001.006.063 and Updating Inverter AC Current Inputs

## Objective of the application note

**Overview:** This note will instruct how to upgrade an OutBack inverter to revision 001.006.063 firmware when needed. Some settings will need to be re-adjusted after the firmware upgrade. The 001.006.063 firmware applies for the following grid-interactive models: GS4048A, GS8048A, FXR3048A, FXR2524A, VFXR3648A, VFXR3524A.

A MATE3s system display using revision 001.001.000 or higher must be used for inverter firmware revision 001.006.063.

## Scope/Introduction

Upgrading may be necessary for many reasons. Some examples of these reasons include:

- The local jurisdiction is requiring and allowing retroactive firmware upgrades for “Grid Support” (HECO Rule14H) functionality.
- The system is older, with multiple inverters, and some inverters were replaced by models with the 001.006.063 firmware version. All inverters must have the same firmware revision.

If upgrading an OutBack inverter to 001.006.063 is necessary, some settings will need to be readjusted after the firmware upgrade. The 001.006.063 firmware applies for the following grid-interactive models: GS4048A, GS8048A, FXR3048A, FXR2524A, VFXR3648A, VFXR3524A.

## Solution

Upgrading an OutBack Inverter to 001.006.063 will increase the resolution of all AC current settings to  $\frac{1}{4}$  Aac. After an upgrade to 001.006.063, the inverter will have all AC current settings reduced by a factor of 4. These settings may need to be re-adjusted to the desired settings. The five AC current limits affected are:

- **Grid Input Current Limit**
- **Gen Input Current Limit**
- **Charger AC Limit**
- **GridZero DoD Amps**
- **Maximum Sell Current**

The MATE3s will display the correct value. The original settings will change by a factor of  $\frac{1}{4}$ .

**Example:** The original **Grid Input Current Limit** was set to 16 Aac. After an inverter firmware upgrade to 001.006.063, the MATE3s will display 4 Aac and the inverter will limit the grid input current to the updated 4 Aac setting. If the original setting of 16 Aac is what was desired, the inverter needs to be reset back to 16Aac using the MATE3s.

## Application Note

### Procedure

- A. Upgrade MATE3s firmware to 001.001.000 or higher
- B. Upgrade inverter firmware to 001.006.063
- C. Update **AC Input and Current Limits**
- D. GridZero mode only: Update **DoD Amps**
- E. Update **Maximum Sell Current**

#### NOTES:

- ❖ Ensure the SD card with the appropriate files has been inserted into the MATE3s before starting the steps below.
- ❖ Refer to the *MATE3s System Display and Controller Programming Guide* and *Overview Guide* for instructions on performing any of the following steps.



#### **CAUTION: Equipment Damage**

Do not disconnect the MATE3s or otherwise stop the upload before completion. Any interruption could permanently corrupt the MATE3s.

#### **A. To upgrade MATE3s firmware to 001.001.000 or higher:**

1. Bring up the **Enter Password** screen using the **LOCK** navigation key. Enter the password to bring up the **Main Menu**.
2. From the **Main Menu**, enter the **Firmware Update** menu. From the products displayed on this menu, select **MATE3s**.
3. Press the **<Update>** soft key. The screen will show updates for several minutes with the yellow **BATTERY STATUS** indicator flashing rapidly. A status bar will appear showing the percentage completed.

Revision is complete when the home screen reappears.

#### **B. To upgrade inverter firmware to 001.006.063:**

1. Bring up the **Enter Password** screen using the **LOCK** navigation key. Enter the password to bring up the **Main Menu**.
2. From the **Main Menu**, enter the **Firmware Update** menu. From the products displayed on this menu, select the appropriate inverter series (**FXR Inverter** or **GS Inverter**).
3. Press the **<Update>** soft key. The screen will show updates for several minutes with the yellow **BATTERY STATUS** indicator flashing rapidly. A status bar will appear showing the percentage completed.

Revision is complete when the home screen reappears.

## C. To update AC Input and Current Limits:

1. Bring up the **Enter Password** screen using the **LOCK** navigation key. Enter the password to bring up the **Main Menu**.
2. From the **Main Menu**, enter the **Settings** menu.
3. From the **Settings** menu, enter the **Inverter** menu.
4. From the **Inverter** menu, enter the **AC Input And Current Limit** screen.
5. On the **AC Input And Current Limit** screen, update the following settings to the desired values:
  - a. **Grid Input Current Limit**
  - b. **Gen Input Current Limit**
  - c. **Charger AC Limit**

## D. To Update DoD Amps:

**NOTE:** This procedure is only applicable if **Grid Zero** has been selected in this menu.

1. Bring up the **Enter Password** screen using the **LOCK** navigation key. Enter the password to bring up the **Main Menu**.
2. From the **Main Menu**, enter the **Settings** menu.
3. From the **Settings** menu, enter the **Inverter** menu.
4. From the **Inverter** menu, enter either the **Grid AC Input Mode and Limits** or **Gen AC Input Mode and Limits** screen, depending on the input selection.
5. On the appropriate screen, set **DoD Amps** to the desired value.
6. Repeat steps 4 and 5 for the other input screen if appropriate for this system.

## E. To Update Maximum Sell Current:

### NOTES:

- ❖ This procedure requires the installer password to be established. If this password has not been previously established, follow the steps below. If it has been established, skip to the next page.
- ❖ Refer to the *Programming Guide* or the following address online for more information:  
<https://youtu.be/77LSv4uS3fs>

### To establish an installer password from the default setting:

1. Bring up the **Enter Password** screen using the **LOCK** navigation key.
2. Enter the default installer password **1732** to bring up the **Main Menu**.
3. From the **Main Menu**, enter the **Settings** menu.
4. From the **Settings** menu, enter the **System** menu.
5. From the **System (Configuration)** menu, enter the **Installer Settings** menu.
6. In the **Installer Settings** menu, select **Change Installer Password**.
7. Change the password to a usable entry that is different from the default setting. Record the new password.
8. Cycle the power to the MATE3s. This can be accomplished by simply disconnecting and reconnecting the communications cable.

## Application Note

### To change the *Maximum Sell Current* setting:

1. Bring up the *Enter Password* screen using the **LOCK** navigation key.
2. Enter the *established* installer password to bring up the *Main Menu*.
3. From the *Main Menu*, enter the *Inverter* menu.
4. From the *Inverter* menu, enter the *Grid Interface Protection* menu.
5. From the *Inverter* menu, enter the *Sell Current Limit* screen. Set the *Maximum Sell Current* setting to the desired value.

## Exceptions or Precautions

- Outback Power Technologies does not recommend downgrading an inverter from firmware 001.006.063 to any other firmware revision and does not support this application. Downgrading will increase AC current limits by a factor of four. This risks forcing the system to attempt to exceed its rated limits.
- A MATE3s system display at 001.001.000 or higher must be used for inverter firmware revision 001.006.063.

Do not use a MATE3s with revisions lower than 001.001.000 with this inverter revision. With revision 001.000.000, the MATE3s would display values that are four times larger than the actual settings; however, the onscreen value cannot exceed the original upper limit. This effectively limits the setting range to  $\frac{1}{4}$  the intended value. If this occurs, upgrade the MATE3s to 001.001.000.

**Example:** An *Inverter Grid AC Input* setting of 40 Aac would give an internal result of 10 Aac. Since the onscreen value cannot exceed the original maximum of 50 Aac, the maximum possible setting would result in no more than 12.5 Aac.

- Do NOT use the older **MATE3** system display for inverter firmware 001.006.063 or greater under any conditions. The MATE3 is not compatible with this firmware revision. Similar to the previous item, the MATE3 would display values four times larger than the actual settings although the onscreen behavior is not the same.

**Example:** The *Inverter Grid AC Input Limit* range, when set to its maximum of 50 Aac with the MATE3s, would appear to have a value of 200 Aac when using the MATE3.



### **IMPORTANT:**

Other problems may occur when using the MATE3 besides the example listed here.

## Application Note

### About OutBack Power Technologies

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

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### Other

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