



How To Set Up Fortress Power Lithium Batteries Using Outback Inverters

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Introduction

This integration guide will help set up the charge/discharge parameters of Fortress Power batteries as they relate to Outback inverters. For any additional help, please contact techsupport@fortresspower.com

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Parameter settings for Fortress batteries with Radian/FXR

| | | |
|------------------------------|--|----------------------|
| Inverter | 80% DoD, 6000 cycles | 90% DoD, 3000 cycles |
| Absorb Voltage and Time | 54.4, 1 hour | 54.6, 1 hour |
| Float Voltage and Time | 54.4 Time = 0 = Disable | |
| Re-float Voltage | 52.5 | |
| Re-Bulk Voltage | 51.5 | |
| AC Input Mode | Grid Tied (default, adjust as needed) | |
| AC Charger Limit in AC | LFP-5/LFP-10:17A@240V or 34A@120V per battery eFlex/eVault: 30A@240V or 60A@120V per battery | |
| Low Battery Cut-Out Voltage | 50.8 | 50.3 |
| LBCO Delay | 120 seconds | |
| Low Battery Cut-in Voltage | 51.2 | |
| High Battery Cut-Out Voltage | 58 | |
| HBCO Delay | 10 seconds | |
| High Battery Cut-in Voltage | 55.5 | |
| SellRE (Offset) Voltage | 53.2 | |
| Charge Controller | | |
| Absorb Voltage and Time | 54.4, 1 hours | 56, 1 hours |
| Float Voltage | 54.4 | |
| Rebulk Voltage | 51.5 | |
| DC Current Limit ** | LFP-5/LFP-10:80 A per battery eVault: 150 A per battery eFlex: 100A per battery | |
| Absorb End Amps | 0 | |
| FLEXnet DC (FN-DC) | | |
| Battery AH | LFP-5: 100 per battery eFlex :105 per battery LFP-10: 200 per battery eVault: 360 per battery | |
| Charge Voltage | 54.4 | |
| Charged Return Amps | 2% of total battery bank Ah for 10 minutes | |
| Battery Charge | 96% | |
| Relay Invert Logic | No | |
| Relay Voltage | High = 53.4 ; Low = 49.6 | |
| Relay SOC High/Low | SOC High = 0% SOC Low = 0% | |
| Relay Delay | High = 1, Low = 0 | |
| MATE3/MATE3s | | |
| FLEXnet DC Advanced | Low SOC Warning = 15% | |
| FLEXnet DC Advanced | Critical SOC Warning = 10% | |



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Integrating with a SkyBox

The settings below should be programmed into the unit under the Custom choice. Please consult the SkyBox Programming Guide for detailed instructions on how to adjust these settings.

| Inverter | |
|-----------------------------|---|
| Maximum SOC | 100% |
| Minimum SOC | 20% |
| Absorb Charge | Timed |
| Absorb Voltage | 54.4 Vdc |
| Absorb Time | 00:20 |
| Float Charge | Disabled |
| Float Voltage | Can be left at default |
| Float Time | Can be left at default |
| Re-float Voltage | 52.5 Vdc |
| Re-bulk Voltage | 51.5 Vdc |
| Equalize Voltage | 54.4 Vdc |
| Minimum Equalize Time | 00:00 |
| Max Charge Current (Adc) | LFP-5 & LFP-10: 50Adc eVault: 100Adc eFlex: 70Adc |
| Max Discharge Current (Adc) | LFP-5 & LFP-10: 90Adc eVault: 125Adc |
| Grid Charge Limit (kW) | Site specific |
| Low Battery Cutout | 50.2 Vdc |
| LBCO Delay | 15 seconds |
| Low Battery Cut-in | 51.0 Vdc |
| High Battery Cutout | 56.0 Vdc |
| HBCO Delay | 10 seconds |
| High Battery Cut-in | 55.5 Vdc |
| Battery Series | Custom |
| Battery Model Number | Custom |
| Battery Description | Fortress Power |
| Battery Total Amp-Hours | eFlex: 105Ah LFPP-10: 200Ah eVault: 360 Ah |
| Charge Efficiency Factor | 96% |
| Absorb End Amps | 10.0 Adc |



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***Ensure the maximum battery charging current is not exceeded after all charge controllers are taken into consideration (i.e. – 2 FM100 controllers would charge at 200 A total, a violation of the limit if only one LFP-10 is used).*

Best Practice Operation

During testing, it was seen that a commissioning charge was necessary to properly calibrate the SkyBox state of charge monitor. If possible, a full load test should also be performed. Each time the battery reaches the low battery cutout voltage, the SkyBox recalculates a state-of-health (SOH) for the battery. This number is used to more accurately track the SOC.