



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	54.6, 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)		We recommend to not use Flexnet 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	1% 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.