

OutBack Chargers with Blue Ion Batteries

The following pages detail specific settings and methods used when integrating a Blue Ion LFP battery with OutBack equipment. Also found in the paper is a discussion of 'best fit' FLEXnet DC (FN-DC) settings and state of charge monitoring with lithium batteries.

Integrating with a Radian/FXR

The following charge settings are recommended when pairing a Blue Ion battery with a Radian or FXR system. Please consult the *MATE3s Programming Guide* for detailed instructions on how to adjust the settings.

Inverter	
Absorb Voltage and Time	55.0 Vdc
Absorb Time	0.2 hr
Float Voltage and Time	55.2 Vdc
Float Time	0.0 hr
Re-float Voltage	N/A
Re-bulk Voltage	50.0 Vdc
AC Charger Limit (A _{AC})	30 Aac
Low Battery Cutout	48.0 Vdc
LBCO Delay	10 seconds
Low Battery Cut-in	49.0 Vdc
High Battery Cutout	60.0 Vdc
HBCO Delay	10 seconds
High Battery Cut-in	58.0 Vdc
Charge Controller	
Absorb Voltage and Time	55.2 Vdc
Absorb Time	0.2 hr
Float Voltage	55.2 Vdc
Re-bulk Voltage	50.0 Vdc
DC Current Limit	60/80/100 Adc ¹
Absorb End Amps	3 A / full cabinet (16 kWh)
FN-DC	
Battery Ah	300 Ah / full cabinet (16 kWh)
Charged Voltage	54.8 Vdc
Charged Return Amps	3 A / full cabinet (16 kWh)
Battery Charge Efficiency	96%
MATE3s	
FN-DC Advanced	Low SOC Warning = 15%
FN-DC Advanced	Critical SOC Warning = 10%

¹ Max current limit based on charge controller model.

State of Charge Monitoring

Using the settings above, several tests were performed to monitor the accuracy of the OutBack FN-DC against the Blue Ion 2.0 eGauge monitor. In all scenarios, the FN-DC and eGauge began to diverge when the battery was heavily discharged. When SOC was high (>90%), the average difference between the two measurement devices was between zero and one percent. The greatest average differences occurred at very low SOC (<20%). In most cases, the FN-DC erred low relative to the eGauge.

A graph of state of charge measured against the SOC difference between the FN-DC and the eGauge is provided for reference.

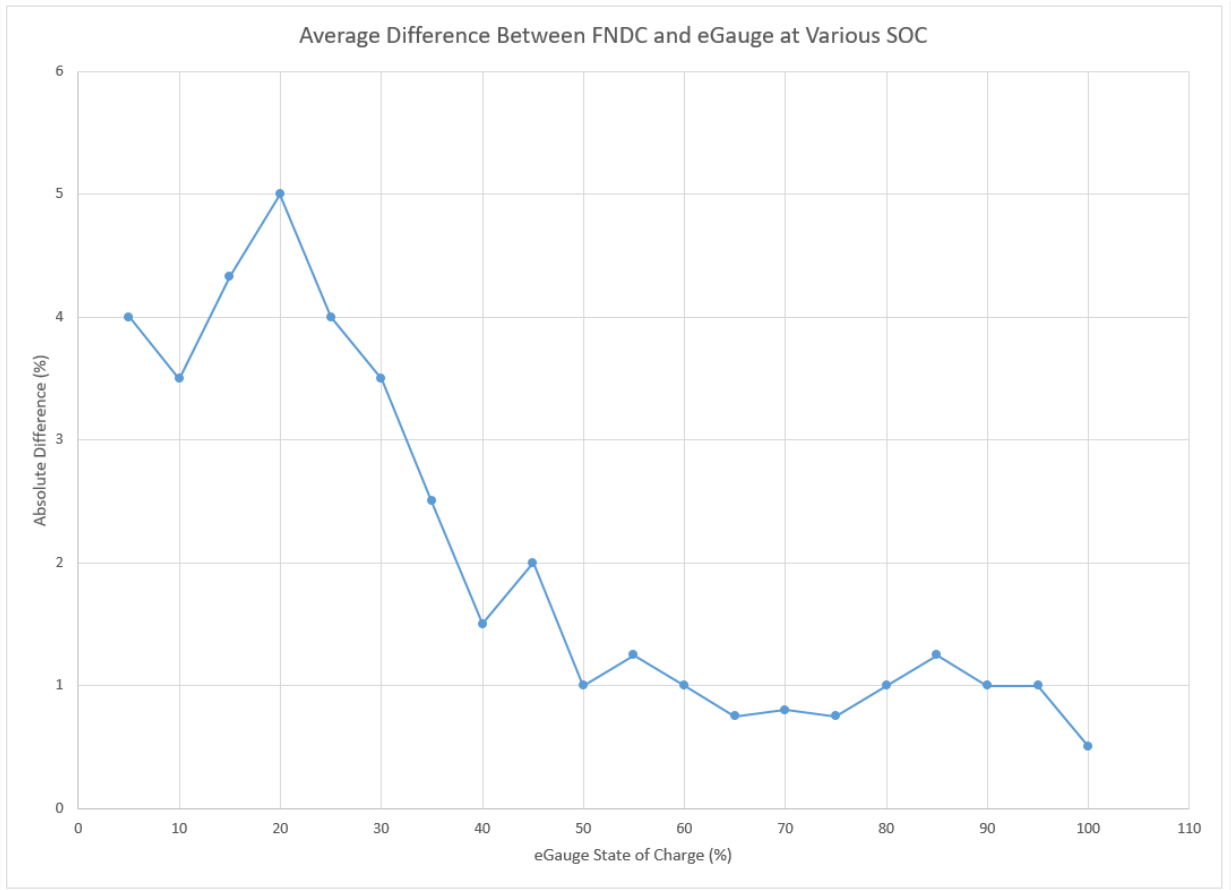


Figure 1

About OutBack Power

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

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