How To Set Up Fortress Power Lithium Batteries Using Schneider Equipment

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Introduction

This integration guide will help set up the charge/discharge parameters of Fortress Power batteries as they relate to Schneider inverters, as well as the setup of closed-loop communication between the eFlex 5.4 and Schneider. For any additional help, please contact techsupport@fortresspower.com

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Open Loop Settings for Fortress Batteries with Schneider Inverters

Charger Setting > Custom Setting		
	80% DoD, 6000 cycles	90% DoD, 3000 cycles
Battery Type	Custom	
Charge Cycle	2StgNoFloat	
Bulk Voltage	54.4 V	54.6 V
Max Bulk Current	eFlex:55A per battery eVault:100A per battery LFP-10: 70A per battery	eFlex: 60A per battery eVault:150A per battery LFP-10: 80A per battery
Max Discharge Current	eFlex: 60A per battery eVault: 160A per battery LFP-10: 100A per battery	
Battery Capacity	eFlex: 105AH per battery eVault : 360AH per battery LFP-10: 200AH per battery	
Max Charge Rate Percentage	eFlex:60A per battery eVault:100A per battery LFP-10: 70A per battery Divided by Total Inverter DC Amperage	eFlex: 60A per battery eVault:150A per battery LFP-10: 80A per battery Divided by Total Inverter DC Amperage
Default Battery Temperature	Warm	
Recharge Volts	51.3	
Grid Support Volts**	53	
Absorb Volts	54.4	
Absorb Time	1 Hour	
Charge Block Start	Default	
Charge Block Stop	Default	
Advanced Settings > Inverter Settings		
Low Battery Cut Out Voltage	48V	
LBCO Hysteresis	2.0V	
LBCO Delay	5 Sec	
High Battery Cut Out Voltage	eFlex: 61V eVault: 61V LFP-10: 63V	
Search Watts	Default	
Search Delay	Default	

****The Parameter Setting for Grid-tie Sell Mode:**

In a DC coupled system, **Grid Support or Enhanced Grid Support** mode supplies PV power to the loads and sells surplus power to the grid. This mode of operation keeps the batteries as completely charged as possible. The **Enhanced Grid Support** **only works with lead acid batteries, please disable it when you use Fortress batteries.**

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Grid Support Mode is used for the systems with DC Sources not communication over Xanbus.

Advanced Setting > Inverter Settings	
Charger	Enabled
Enhanced Grid Support	N/A
Grid Support	53V
Recharge Volts	51.3 V
Sell Mode	Enabled
Max Sell Amps**	PV array size ÷ 240V ÷ total inverter output kW
Advanced Setting > Charger Setting	
Recharge Volts	51.3 V

*** For example, if the system has a 10 KW PV array and 2 of XW+ 5848 inverters, the Max Sell Amps per inverter will be 10,000W/240V/2 = 21A*

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Open Loop Settings with Schneider Charge Controllers

Parameter Setting for Fortress Batteries with Schneider XW+ MPPT 60/80

Advanced Setting > Charger Setting		
Battery Type	Custom	
Custom Setting		
	80% DoD, 6000 cycles	90% DoD, 3000 cycles
Charge Mode	3 Stage	
Eqlz Support	Disabled	
Bulk Voltage	54.4 V	54.6 V
Absorb Voltage	54.4 V	54.6 V
Absorb Time	60 minutes	
Float Voltage	54.4 V	
Battery Temperature Compensation	0mV/C	
Battery Capacity	eFlex: 105AH per battery eVault : 360AH per battery LFP-10: 200AH per battery	
Max Charge Rate Percentage*	eFlex:55A per battery eVault:100A per battery LFP-10: 70A per battery Divide by total CC amp output	eFlex: 60A per battery eVault:150A per battery LFP-10: 80A per battery Divide by total CC amp output
Charge Cycle	Warm	
Recharge Volts	51.3 V	
Absorb Time	1 Hour	
Default Battery Temperature	Warm	
Battery Voltage (Auto-detected)	48V	

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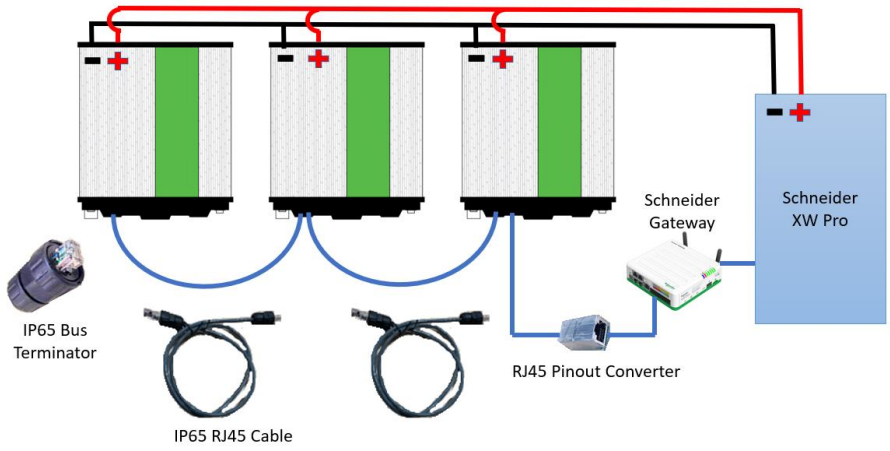
Setting up Closed-Loop Communication between eFlex 5.4 and Schneider XW Pro

All Fortress Power batteries work in open-loop communication mode—that is, with voltage detection. However, closed-loop communication between the **eFlex 5.4** and the Schneider inverter improves the efficiency of a lithium battery. The following is a guide to setting up closed-loop communication between the eFlex 5.4 and the Schneider inverter.



Connecting the eFlex to the Schneider inverter

1. Connect a CAT6 cable into the eFlex and then into the RJ46 pinout converter (Exhibit A).
2. Using another CAT6 cable, cut off one end and connect pin 7+8 (brown-white + brown) and connect the pin 7 (brown-white) to **port 18** and pin 8 (brown) to **port 20** on the Conext Gateway (Exhibit B).
3. Power on the eFlex and Schneider as usual and connect to the Conext Insight.
4. Navigate to Setup -> **Device Detection** and run detection for **RS-485-1 with range 1 to 2**. The battery BMS will then appear in the device list, as the Schneider Battery Monitor (Exhibit C).
5. Navigate to the Devices -> **Inverter\Charger** -> Configuration -> **Advanced**
   Charger settings should be set to **lithium ion battery** with an **charge cycle set to external BMS**.
   Grid Support settings should be set to **state of charge control**
   Battery Management System settings should be set to **Fault on Loss of BMS Status** and **loss of State of Charge information**. (Exhibit D)
6. Navigate to the Schneider Devices -> **BMS Menu** -> Battery Bank 1 -> Apply
   Make sure the BMS is associated with Battery Bank 1 by **clicking "Apply"** (Exhibit E)

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Appendix

Exhibit A

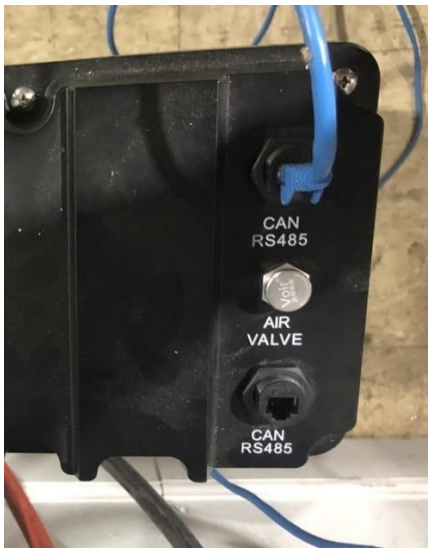

Exhibit B

From Xanbus

From eFlex Can/RJ485
Gateway Port 18 brown-white RJ45 Pin 7
Gateway Port 20 – brown RJ45 Pin 8

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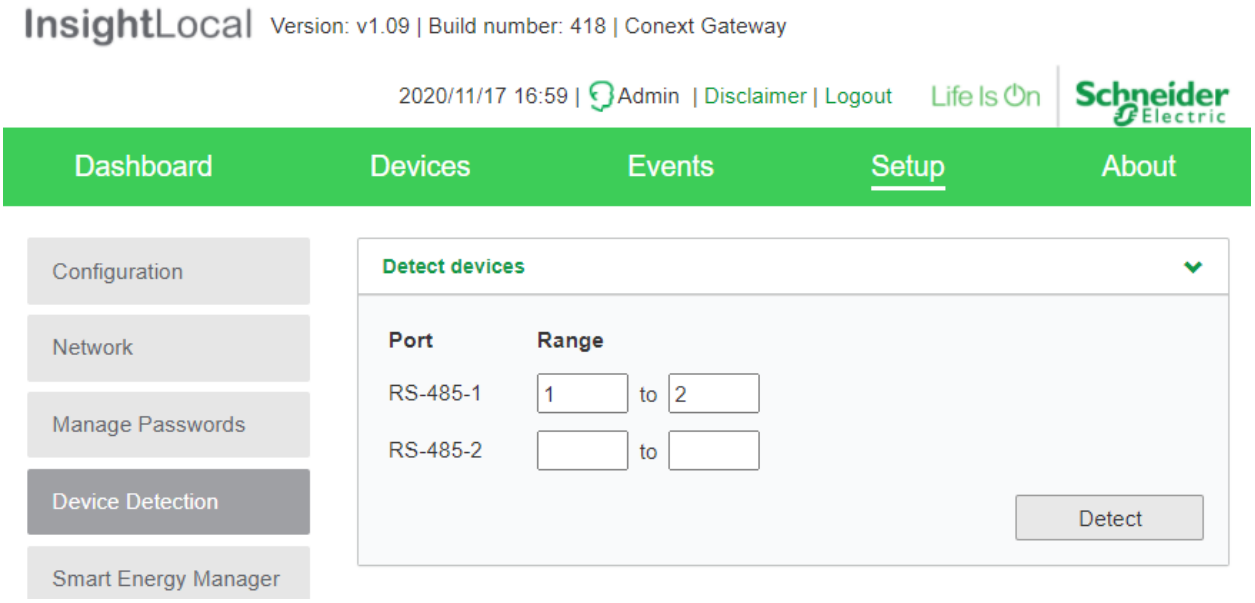
Exhibit C



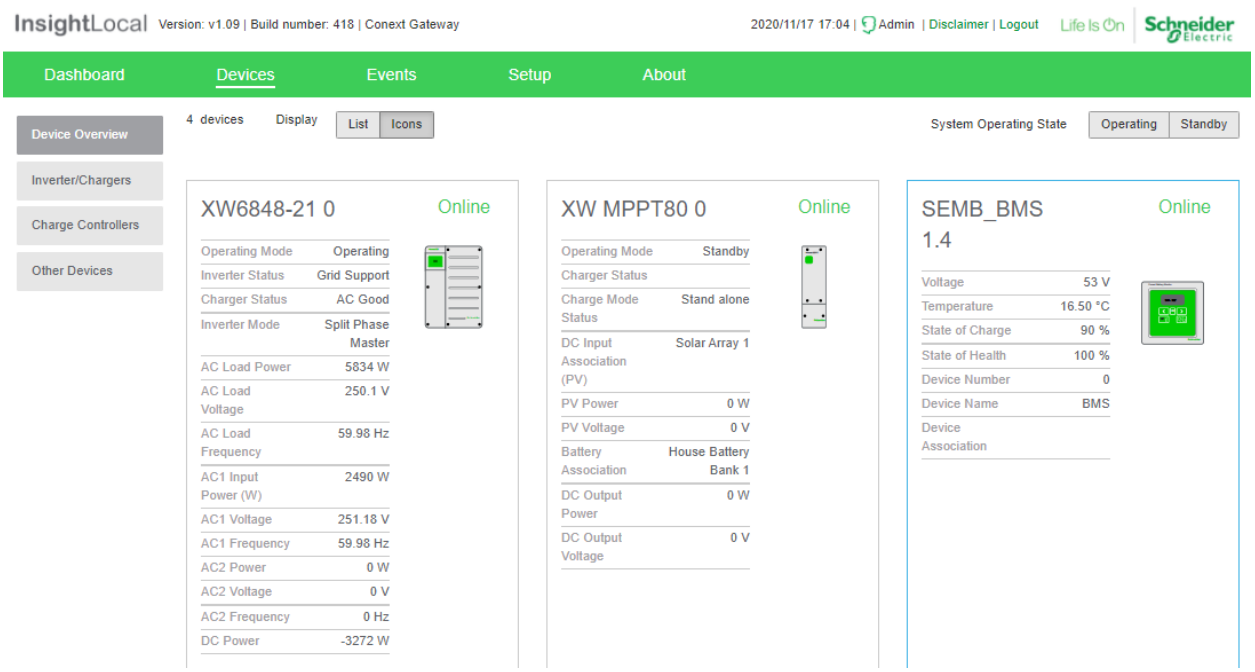


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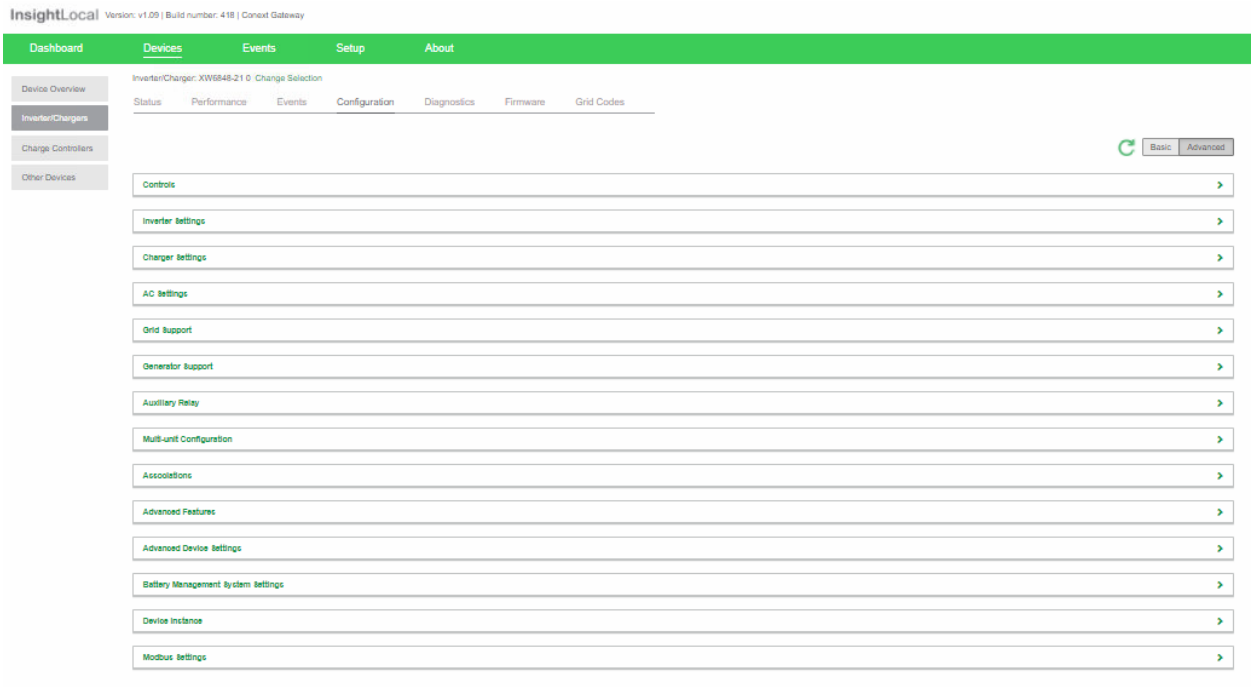
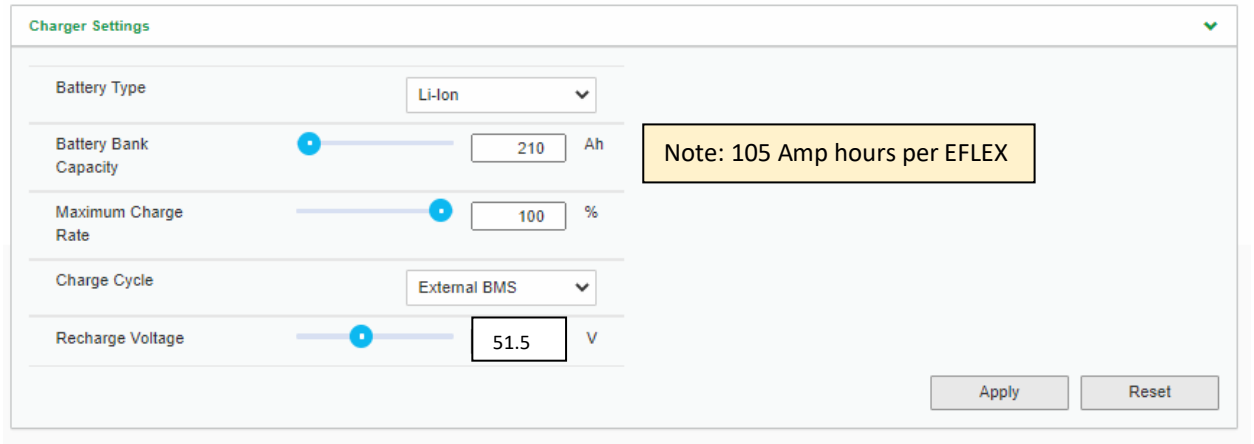
Exhibit D





Note: 105 Amp hours per EFLEX

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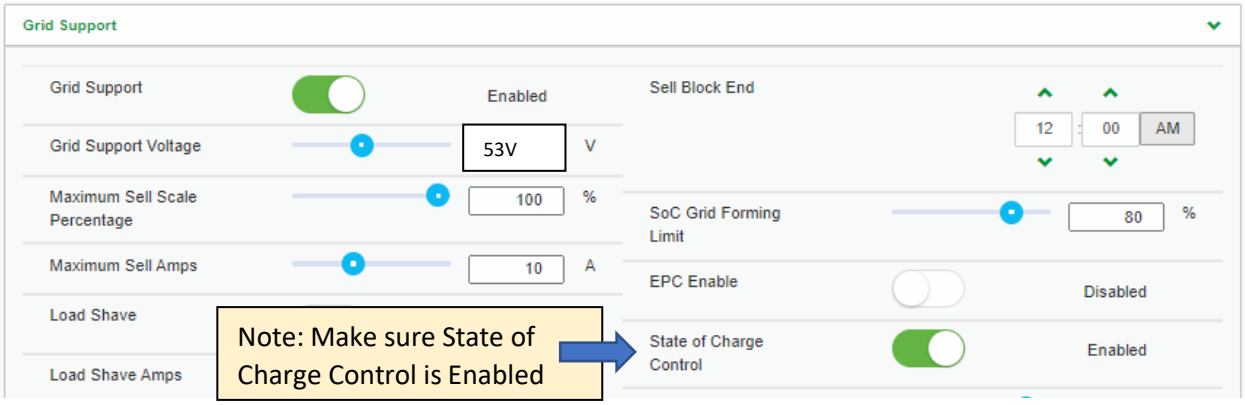

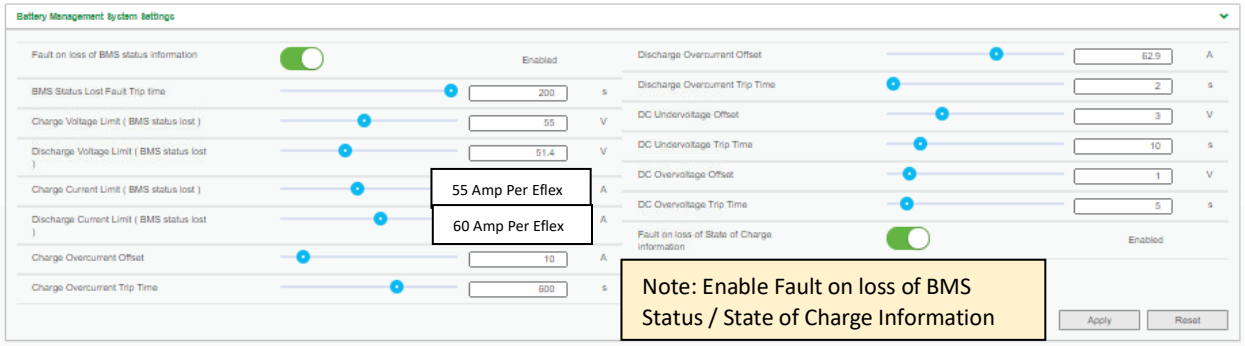

Exhibit E