



## 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](mailto:techsupport@fortresspower.com)

## How To Set Up Fortress Power Lithium Batteries Using Schneider Equipment

### 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.

<b>Advanced Setting &gt; Inverter Settings</b>	
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
<b>Advanced Setting &gt; Charger Setting</b>	
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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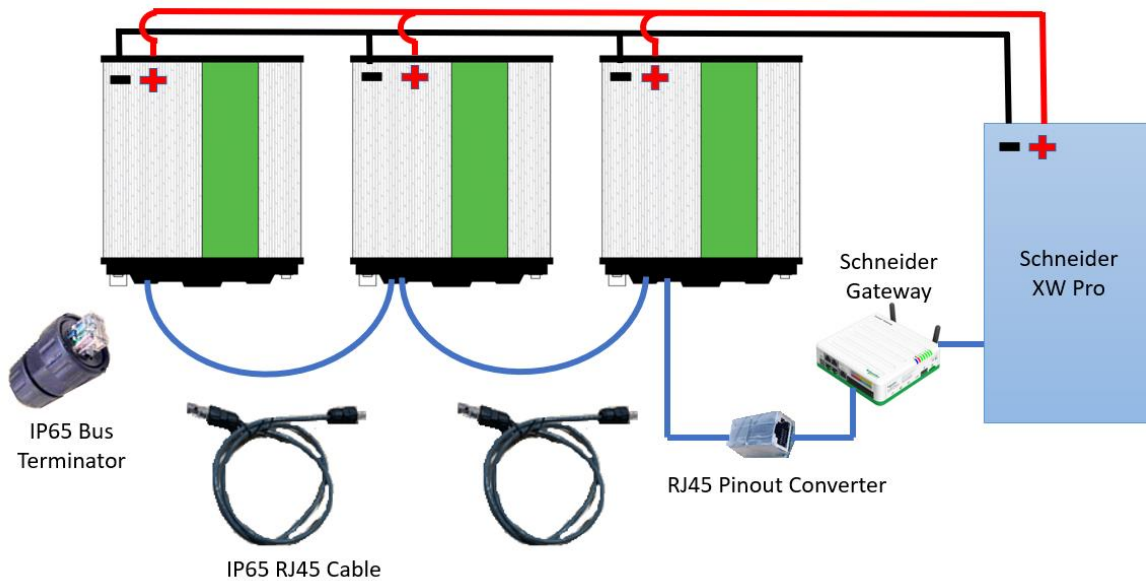
### Open Loop Settings with Schneider Charge Controllers

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	

## How To Set Up Fortress Power Lithium Batteries Using Schneider Equipment

**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. 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 C)
4. 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 D)

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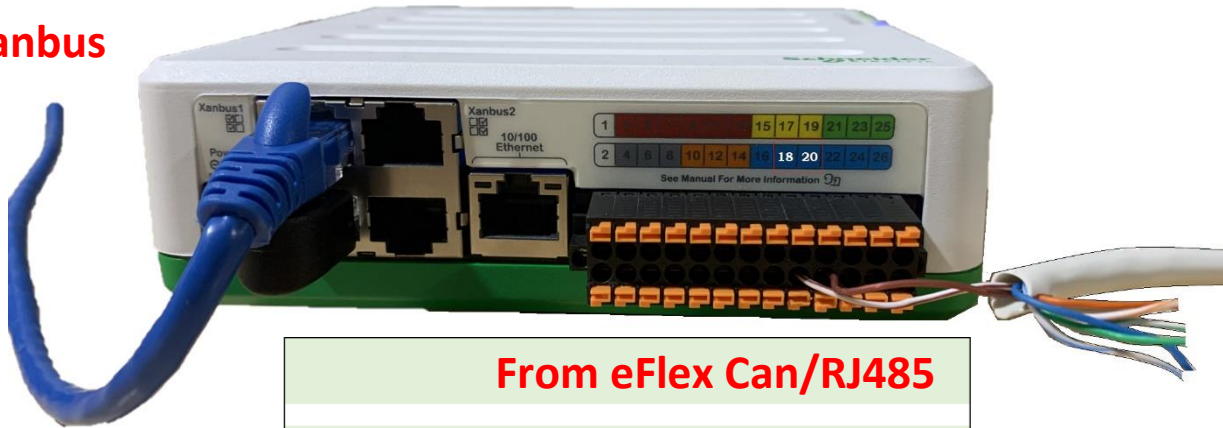
### Appendix

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

## How To Set Up Fortress Power Lithium Batteries Using Schneider Equipment

### Exhibit C

InsightLocal | Version: v1.09 | Build number: 418 | Context Gateway

Dashboard
Devices
Events
Setup
About

Device Overview

Inverter/Chargers

Charge Controllers

Other Devices

Inverter/Charger: XW6648-210 Change Selection

Status Performance Events Configuration **Diagnostics** Firmware Grid Codes

Basic
Advanced

- Controls >
- Inverter settings >
- Charger settings >
- AC settings >
- Grid Support >
- Generator Support >
- Auxiliary Relay >
- Multi-unit Configuration >
- Associations >
- Advanced Features >
- Advanced Device Settings >
- Battery Management System settings >
- Device Instance >
- Modbus settings >

**Charger Settings** ▼

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Battery Type Li-Ion ▼

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Battery Bank Capacity 210 Ah

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Maximum Charge Rate 100 %

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Charge Cycle External BMS ▼

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Recharge Voltage 51.5 V

Note: 105 Amp hours per EFLEX

Apply
Reset

## How To Set Up Fortress Power Lithium Batteries Using Schneider Equipment

**Grid Support**

<p>Grid Support <input checked="" type="checkbox"/> Enabled</p> <p>Grid Support Voltage <input type="text" value="53V"/> V</p> <p>Maximum Sell Scale Percentage <input type="text" value="100"/> %</p> <p>Maximum Sell Amps <input type="text" value="10"/> A</p> <p>Load Shave <input type="checkbox"/> Disabled</p> <p>Load Shave Amps <input type="text" value=""/></p>	<p>Sell Block End <input type="text" value="12:00 AM"/></p> <p>SoC Grid Forming Limit <input type="text" value="80"/> %</p> <p>EPC Enable <input type="checkbox"/> Disabled</p> <p>State of Charge Control <input checked="" type="checkbox"/> Enabled</p>
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Note: Make sure State of Charge Control is Enabled

**Battery Management System Settings**

<p>Fault on loss of BMS status information <input checked="" type="checkbox"/> Enabled</p> <p>BMS Status Lost Fault Trip time <input type="text" value="200"/> s</p> <p>Charge Voltage Limit ( BMS status lost ) <input type="text" value="55"/> V</p> <p>Discharge Voltage Limit ( BMS status lost ) <input type="text" value="51.4"/> V</p> <p>Charge Current Limit ( BMS status lost ) <input type="text" value="55 Amp Per Eflex"/> A</p> <p>Discharge Current Limit ( BMS status lost ) <input type="text" value="60 Amp Per Eflex"/> A</p> <p>Charge Overcurrent Offset <input type="text" value="10"/> A</p> <p>Charge Overcurrent Trip Time <input type="text" value="600"/> s</p>	<p>Discharge Overcurrent Offset <input type="text" value="62.9"/> A</p> <p>Discharge Overcurrent Trip Time <input type="text" value="2"/> s</p> <p>DC Undervoltage Offset <input type="text" value="3"/> V</p> <p>DC Undervoltage Trip Time <input type="text" value="10"/> s</p> <p>DC Overvoltage Offset <input type="text" value="1"/> V</p> <p>DC Overvoltage Trip Time <input type="text" value="5"/> s</p> <p>Fault on loss of State of Charge information <input checked="" type="checkbox"/> Enabled</p>
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Note: Enable Fault on loss of BMS Status / State of Charge Information

### Exhibit D

InsightLocal Connxt Gateway

Dashboard
Devices
Events
Setup
About

Other: BMS 0 [Change Selection](#)

Status [Configuration](#) Basic Advanced

**BMS\_DEV**

Device Association  Note: Be sure to click apply"