

Introduction, Contact info & Useful Links

Introduction

This integration guide will help set up the charge/discharge parameters of Fortress Power batteries as they relate to SMA inverters.

Tech-Support Contact Information

- Phone: (877) 497-6937 ext. 2
- Email: techsupport@fortresspower.com

Useful Links

- Warranty Submittal: <https://www.fortresspower.com/warranty/>
- Support Tickets: <https://www.fortresspower.com/support/>

Unpack Batteries and Check Voltage

1. Unpack the batteries and turn each battery on by itself.
2. Note the voltage of each battery and serial number. The serial numbers are useful during warranty submittal.
3. The batteries must be within $\pm 0.5V$ of each other before commissioning. Groups of 4 batteries or more may require a narrower voltage range to commission properly.
4. Turn off the batteries and install them in parallel.

Notes

If the battery voltages are significantly different, one technique is to finish battery installation and only turn on the lowest voltage battery using the pushbutton. Charge the battery, and when the charging voltage is $\sim 0.2V$ above the resting voltage of the next lowest battery, turn it on too. Proceed until all batteries are turned on and at the same voltage level. If the batteries are below 51V, keep charging amperages below 10A per battery.

If the batteries are slightly more than $\pm 0.5V$ from each other, turning on the highest voltage batteries only will reduce their voltages, and turning on the lowest voltage batteries only will lower the highest voltage. Likewise, turning on the lowest

voltage batteries as a group will raise the lowest voltage. Then, all the batteries can be turned on within a 0.5/V difference.

Use of the Fortress firmware update tool can help speed up commissioning times. Fortress installers should request a firmware update tool by filling out a support ticket at <https://support.fortresspower.com>

Wiring Diagram

Sunny Island(s):

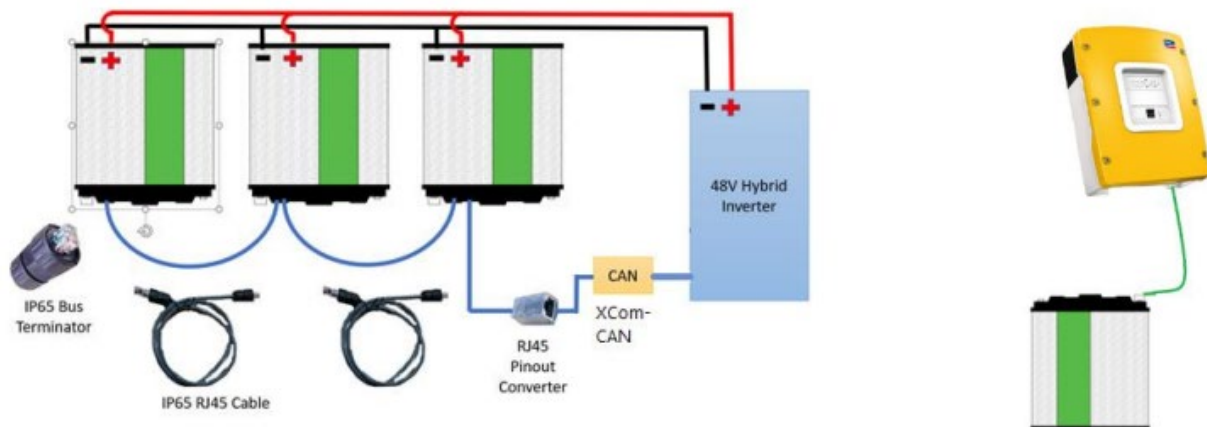
Plug the batteries into the COM Synch In port.

Put the SMA canbus terminator into the COM Sync Out port on the last inverter in the communication chain.

eFlex 5.4kWh LFP

Cable modifications are not needed to establish a communication between the Fortress Power eFlex 5.4 and SMA 6048-US units. Refer to the diagram below (Diagram 1) for further wiring instructions.

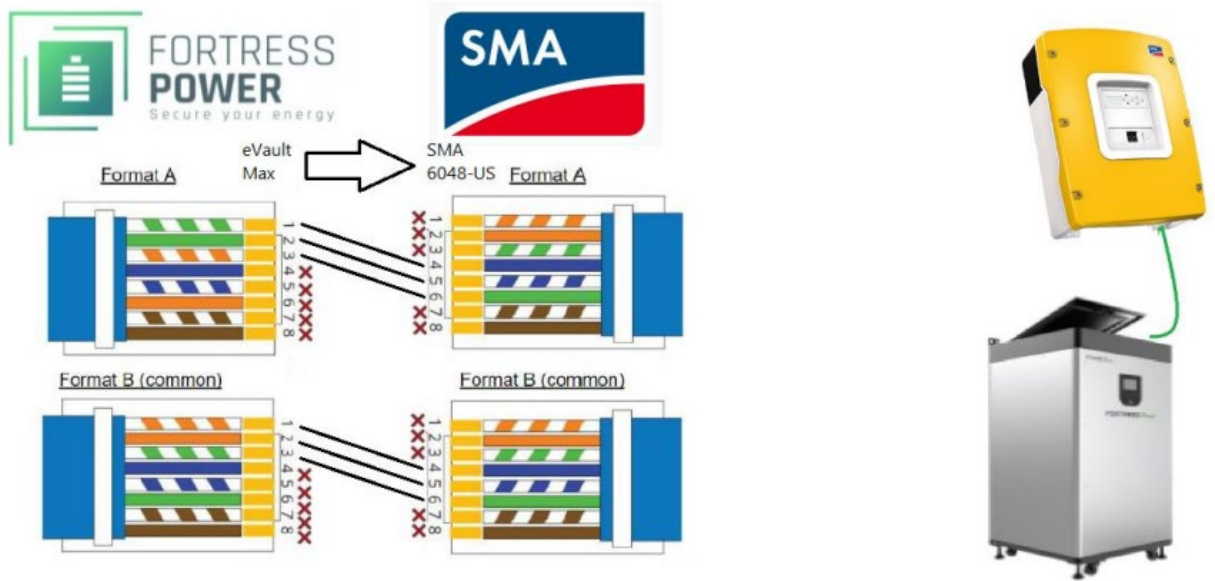
Diagram 1: eFlex 5.4kWh Wiring Diagram



eVault Max 18.5kWh LFP

Cable modifications are needed to establish a communication between the Fortress Power eVault 18.5 and SMA 6048-US units. Refer to the diagram below (Diagram 2) for further wiring instructions. The modifications of the communication cables are to be made using a keystone or other methods of pin assignment.

Diagram 2: eVault MAX Battery-Inverter Communication Wiring Diagram



eVaultMAX Battery Touchscreen

The eVault has a touch screen. The bottom corners of the eVault are touch interactive.



Battery ID, bottom left

Protocol ID, bottom right

Note: Power cycle the first battery in the battery-battery communication circuit after adjusting any of these settings on any battery in the circuit.

Battery ID

Number each battery 1,2,3,4,5... until the end of the battery circuit.
 Except, if only installing one eVault MAX, number the battery "0".

Protocol ID

- 1 = Sol-Ark / Any inverter
- 2 = SMA
- 3 = Reserved
- 4 - Victron
- 5 = Schneider

Inverter Settings

The settings that are to be used to program the SMA inverter are provided in the table below (Table 1). For detailed information on how to commission the SMA inverter and navigate through its settings menu, follow the URL link, <https://www.youtube.com/watch?v=n0cYWfk8wXQ>, which takes one to the SMA's tutorial video for SMA 6048-US.

Note: Please make sure to update Sunny Island Firmware to version 7.3.04 or better

SMA Settings for Closed Loop Operation

All unspecified settings will remain at factory values

Password for SMAe inverter is the Sum of AH in the Password Menu

Ex. 105 Ah Total = 1 + 0 + 5 = 6

Number	Name	Description	eFlex	eVault MAX
210-02	InvChrgCurMax	Max AC Charge Current	100A each	180A each
221-01	BatTyp	Battery Type	Lilon_Ext-BMS	
221-02	BatCpyNom	Nominal Battery Capacity	105 Ah each	360 Ah each
222-01	BatrChrgCur	Charging Current	80A each	160A each
222-02	AptTmBoost	Absorb time for nominal charge	60 min	
222-03	AptTmFul	Absorb time for full charge	60 min	
222-04	AptTmEq	Absorb time for equalize charge	1 hr	
222-05	CycTmFul	Full charge timer	30 days	

222-06	CycTmEqu	Equalization timer	180 days
222-07	ChrgVtgBoost	Cell nominal charge	2.26V
222-08	ChrgVtgFul	Cell full charge	2.3 V (55.2V)
222-09	ChrgVtgEqu	Cell equalization charge	2.3 V (55.2V)
222-10	ChrgVtgFlo	cell float charge	2.3 V (55.2V)
222-12	AutoEquChrgEn	auto equalization	2.2 V (52.8V)
226-01	BatChrgVtgMan	manual set battery charge voltage with disabled BMS	54.5 V
226-02	BatDiChgVtg	min charge V of battery	48 V
226-03	BatDiChgVtgStr	start voltage after under voltage	51.2 V
231	External Settings		user defined settings
232-07	GdVldTm	minimum time for grid in range	<5 sec
232-08	GdMod	grid interface	user defined
232-09	GdRvPwr	permissible grid back feed	user defined
232-41	GdSocEna	activate grid request based on soc	user defined or per 222 01-06
234/235	Generator Settings		user defined
240	Critical Load Panel Relay Settings		user defined