www.lifepower.za.com

Silver 24V + 48V Installation Instructions

	24V	48V
Max Bulk Charge Voltage	29.2V	58.4V
Recommended Bulk Charge Voltage	28.8V	57.6V
Float Voltage	27.2V	54.4V
Recommended Discharge Cut Off (10% SoC)	24V	48V
Min Discharge Cut Off (0% SoC)	20V	40V
Max Charge/Discharge	100A	100A
Recommended Charge/Discharge	50A	50A
Parallel Support	16	16
Series Support	NO	NO

Departure from these values may result in degraded performance or longevity and large departures may result in warranty being voided.
Maximum values above are supported but for greatest life expectancy recommended values should be used.
Float Voltage may be set to 0V or disabled; float charge is not required for lithium batteries.
We do not recommend setting discharge cut off too close to the minimum 0% SoC, this is where the BMS goes into protection mode and can result in unexpected behaviour.
If the inverter does not allow precise voltage settings use the Gel/AGM charging behaviour.
Ensure the correct sized cables are used as is required by the inverter.
Installation by a professional is highly recommended to ensure safety and stability.
Best practices for installation should always be followed along with adherence to local regulations.

Single Battery Installation

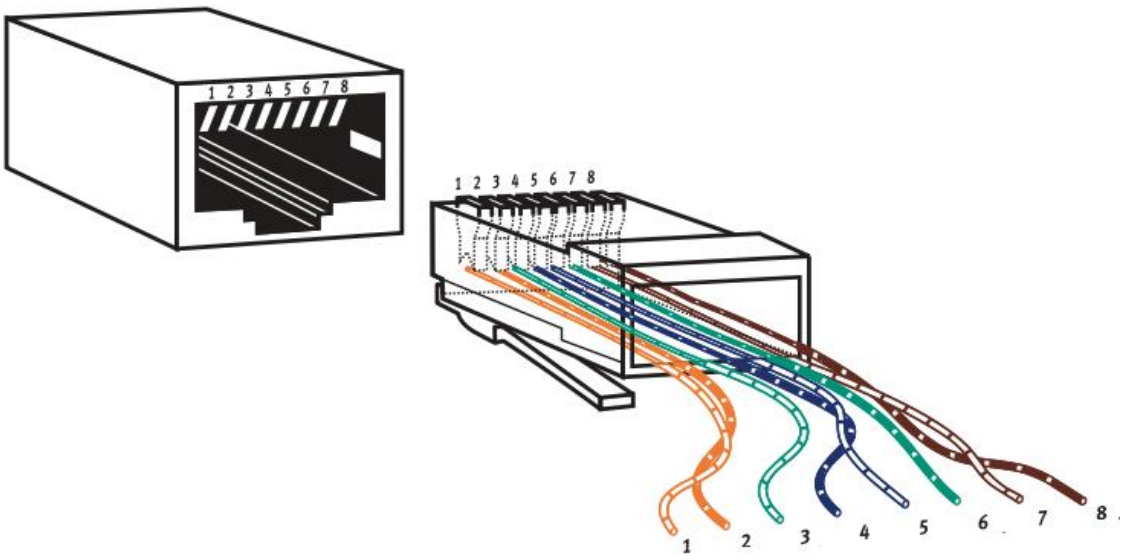
Ensure both inverter and battery are switched off.
Connect positive and negative terminals to each.
Ensure all dip switches are DOWN (refer to Address Assignment below)
Connect the inverter to the battery via the "RS485/CAN" port if using comms (refer to Cable Construction below)
Turn inverter on.
Turn battery on.

RS485/CAN Communication

Communication is not required for single battery operation but can provide useful information and control over the battery and is therefore recommended.
A communication link is required for all parallel set ups.
The $LiFePO_4$WER Silver Range incorporates standard RS485 or CAN communication protocols via an RJ45 (ethernet/LAN) cable.
In order for correct communication to occur the battery and inverter pin-outs need to be correctly connected. This is the **MAIN PROBLEM** with many set ups if not configured correctly. Please ensure the below instructions are carefully followed.

$LiFePO_4$WER Silver Range Pin Outs

PIN	RS485/CAN	IN	OUT
1	RS485-B	RS485-B2	RS485-B2
2	RS485-A	RS485-A2	RS485-A2
3	GND	GND	GND
4	CANH	ADS_IN	ADS_OUT
5	CANL	ADS_OUT	ADS_IN
6	NC	GND	GND
7	RS485-A	RS485-A2	RS485-A2
8	RS485-B	RS485-B2	RS485-B2



Cable Construction

As there are many different inverters that all use different pin-outs a standard ethernet cable will NOT work. The pin-out of the inverter must match the pin-out of the battery.
Your inverter manual or specifications will have the relevant information.
This will require a custom crossover cable be made that connects each pin correctly.
This cable can be made up by your installer or any computer shop. CAT5 or higher may be used.

EXAMPLE:

Inverter	
Pin 1	RS485-B
Pin 2	RS485-A
Pin 3	GND
Pin 4	CANL
Pin 5	CANH
Pin 6	GND
Pin 7	RS485-A
Pin 8	RS485-B

Battery	
Pin 1	RS485-B
Pin 2	RS485-A
Pin 3	GND
Pin 4	CANH
Pin 5	CANL
Pin 6	NC
Pin 7	RS485-A
Pin 8	RS485-B

This is an example ONLY, cable requirements will depend on the model of inverter used.
NOTE: Pin 6 is not connected to anything on the battery.
If the inverter manual only specifies certain pins the others may be left disconnected.
Make sure to test the cable very carefully after crimping it. Self-made cables are very often the causes of very hard to diagnose problems.

Connect the inverter to the battery via the "RS485/CAN" port; if available CAN is recommended.

If the pin-outs are matched the $LiFePO_4$WER Silver Range will be compatible with all major brands of inverters.

Address Assignment

In order for the inverter to differentiate between multiple batteries an address needs to be assigned via the dip switches on the front of the battery marked "ADD"
Only switches 5, 6, 7 and 8 will be showing.

DOWN = OFF
UP = ON

The first battery connected to the inverter via the "RS485/CAN" port should be configured with all switches DOWN/OFF ie:

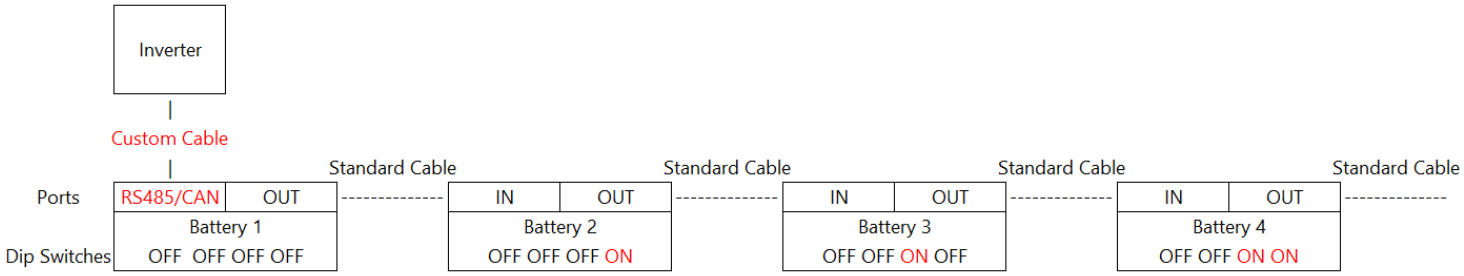
OFF	OFF	OFF	OFF
5	6	7	8

This is the default but should be checked.

Parallel Installation

Connect the first battery to the inverter as shown above.
Charge individual batteries to the same voltage separately before connecting in parallel. Failure to do so could result in large current discharge when connecting.
Do not mix models, brands, or types of batteries.
Batteries should all be connected to the same busbar and inverter.
RS485/CAN communication is **REQUIRED** for all parallel set ups.

In order for the inverter to communicate with all the batteries they should be connected as per the diagram below.



NOTE: Only the Inverter to Battery 1 connection is required to be customised. Battery to battery cables should be standard ethernet/LAN cables, CAT5 or higher.
Dip switches must be set exactly as shown.
For strings of more than 4 batteries please contact us for the address settings, up to 16 batteries can be connected.