Manual and Installation Guide

DF10012, DF5012

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Congratulations you have purchased one of the top 12v batteries on the market

At Dragonfly Energy, we do everything we can to make our batteries compatible with all the existing products on the market, unfortunately there are a few that slip through the cracks. This manual will serve as a guideline to check and see if your current charger will work with your new Dragonfly Energy. Published on our website (dragonflyenergy.com) is also a list of chargers we have found to be compatible with our batteries.

Bulk/Absorption

For your Bulk/Absorption stage, the ideal voltage is between 14.2v-14.6v. This range will allow the battery to fully charge any higher then this and the built in BMS will send the battery into a protect mode.

Float

Our batteries do not need to float so setting your Float voltage to 13.6v or lower will essentially turn it off.

Equalization

Equalization is not recommended for our batteries. Most chargers will allow you to shut this feature off or use a setting that does not use equalization. If you cannot turn off this mode then you will need to adjust the voltage to below 14.6v

Temperature Compensation

Temperature compensation is not needed with our batteries and in some cases, may trigger the built in BMS to go into protect mode. For this reason, we recommend that temperature compensation be shut off or set to 0.

BMS Basic Features

All Dragonfly Energy batteries come with a built-in battery management system (BMS). Our BMS allows us to create one of the safest LiFeP04 batteries on the planet. To help us keep our promise that our batteries will last for 3-5000 cycles, our BMS will put the battery into a protect mode in the event the battery falls outside of one of the following parameters.

High voltage: 14.7v-15.0v

Will not allow any more current into the battery.

Low voltage: 9.0v-10.5v

Will not allow a discharge from the battery. (Note: many chargers must detect a voltage over 10v to send a charge to the battery).

High temperature: 135F

Will not allow a charge or discharge.

Low temperature: 25F

Will not allow a charge

High Current

The current exceeds 100 (+/- 5%) Amps for 30s or 200 (+/- 10%) Amps for 0.5s (this is interpreted as a short circuit)

Allowable output

The BMS constantly monitors the batteries output. We have set the following parameters to ensure our batteries maintain a high level of safety.

DF10012	**DF5012**
Surge: 200a for 30 seconds	Surge: 100a for 30 seconds
Continuous: 100a	Continuous: 60a

Note: Higher current capabilities for ½ second. In all Cases the battery recovers automatically

Cell Balancing

At Dragonfly Energy, we pride ourselves on making the highest quality product that we can. We have found the best way for us to do this is to capacity match the entire way, from the 120 cells to the 4 modules to however many batteries are in your bank just know that they have been specifically selected to give you the best performance. A concern that some customers have is cell balancing. We built passive cell balancing into OUR BMS so that you never have to worry about your battery becoming unbalanced.

Installation

Our batteries are rather straight forward to install, simply connect your positive cables to the positive terminals and your negative cables to the negative terminal. Our batteries work great in either parallel or series configurations (up to 48v). Our batteries come standard with a flag style terminal post. These terminals include a 3/8” hole that allows for most ring terminals to work well with our batteries. For the best connection, we recommend either copper or brass ring terminals.

Parallel

Multiple DF10012 may be mounted in parallel in order to increase the current capacity of the system. When batteries are mounted in parallel, the voltage of the system does not change, but the current limits are additive. For example, two DF10012 batteries mounted in parallel can deliver 200A continuously and 400A for 30 seconds. Three DF10012 batteries mounted in parallel can deliver 300A continuously and 600A for 30 seconds. Therefore, all cables and connections MUST be able to accommodate the high currents that can be delivered by the battery. Appropriate fuses and circuit breakers are also highly recommended to protect downstream components from current spikes and short circuits.

Series

Two DF10012 may be mounted in series to increase the voltage of the system up to a 24V system. When batteries are mounted in series, current capacities remain the same, but the system voltage is additive. Two DF10012 batteries mounted in series to form a nominally 24V system should be charged using a bulk and absorption voltage of 28.8V, and a float voltage below 27.2V.

Storage and maintenance

Storage

Storage could not be easier simply charge the batteries fully and disconnect from any charge or discharge.

Maintenance

Dragonfly Energy Batteries require very little maintenance if any at all. If your batteries are in series and not being charged by a multi-bank charger it is recommended that you fully charge the batteries individually once a year. This will balance out the entire battery bank to ensure the batteries will reach its expected life span. If your batteries are in parallel this is not necessary. Our BMS has a built in passive balancing system that will take care of this for you.

Warranty Policy

In the unlikely event, you are having an issue with one of our batteries we have developed a straight forward warranty policy to help answer any questions you may have.

Dragonfly Energy offers a 3 year manufacturers defect warranty from the date of purchase. This warranty does not cover negligence or misuse of the battery. If it is deemed that battery was used improperly, you will be subject to a $150 an hour repair charge plus parts and shipping.

We also warrant all other complimentary products (inverters, converters, chargers etc) we sell are free from defect for 30 days from the date of purchase. After that time, it is the responsibility of our manufacturing partners and a standard manufacturer's warranty applies (1 year from date of purchase, unless otherwise stated by the manufacturer).

Return & Refund Policy

Thanks for shopping at Dragonfly Energy. If you are not entirely satisfied with your purchase, we're here to help.

Returns

You have 45 calendar days to return an item from the date the item shipped. To be eligible for a return, your item must be in the same condition that you received it in. Your item must be in the original packaging. Your item needs to have the receipt or proof of purchase.

Refunds

Once we receive your item, we will inspect it and notify you that we have received your returned item. We will immediately notify you on the status of your refund after inspecting the item. If your return is approved, we will initiate a refund to your credit card (or original method of payment). You will receive the credit within a certain amount of days, depending on your card issuer's policies.

Shipping

You will be responsible for paying for your own shipping costs for returning your item. Shipping costs are nonrefundable. If you receive a refund, the cost of return shipping will be deducted from your refund.

If you have any questions on how to return your item to us, please contact us.

Contact Us

If you have any further questions, or need help with anything regarding your battery please do not hesitate to contact us.

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