FOGSTARDRIFT

LiFePO4 Battery
USER MANUAL

2025 V5

WWW.FOGSTAR-DRIFT.CO.UK

Experience off-grid freedom

Here at Fogstar, we've made it our mission to make Lithium Iron Phosphate batteries affordable and accessible to everyone. We've also made the manufacturing process a transparent one.

You can rest assured that your leisure battery contains quality products, including EVE Grade A LiFePO4 Prismatic Cells and a JBD Battery Management System. We've also included heating, Bluetooth and an App as standard.

As a relatively small business based in Worcestershire, we've set our sights on providing customers with the very best product and customer service experience.

In this manual you'll find lots of useful information about your Fogstar Drift Leisure Battery. Of course, if you don't find the answers to your questions, you can always get in contact with our friendly team and we will always be happy to help.

The Fogstar Team

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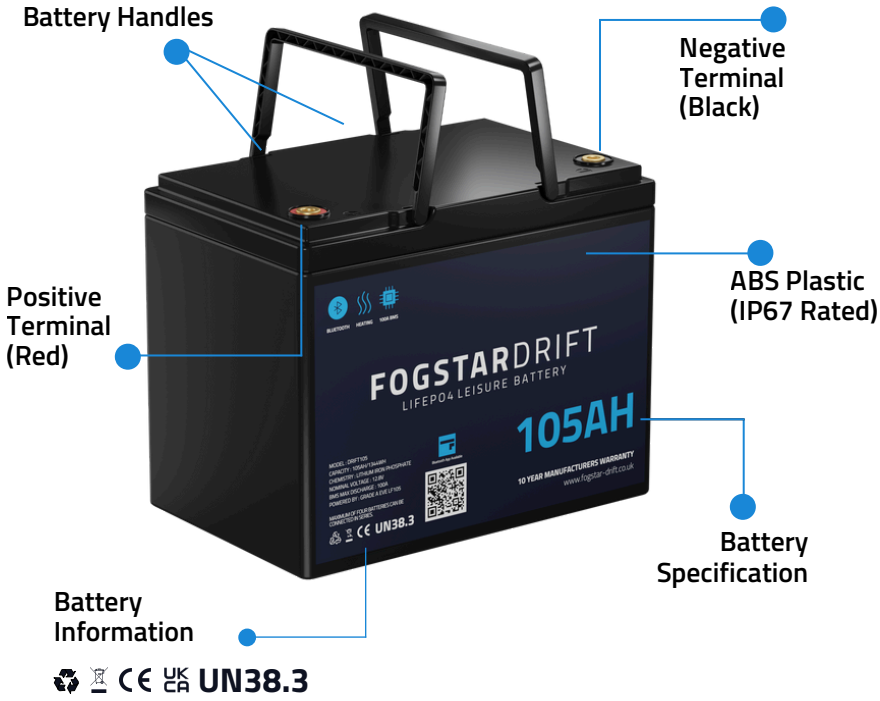
customerservice@fogstar.co.uk 01527 757980 Unit 21 Walkers Road, B98 9HE



Battery Management System

BMS Information	12V 105Ah	12V 230Ah	12V 280Ah	12V 300Ah	12V 460Ah	12V 560ah	230Ah Seat Base	12V 608Ah	12V 628Ah	24V 280ah
Maximum Discharge	100A	250A	250A	250A	250A	250A	200A	250A	250A	200A
Peak Discharge	200A	500A	500A	500A	500A	500A	400A	500A	400A	400A
Max Charging Current	100A	250A	250A	250A	250A	250A	200A	250A	250A	200A
Temperate Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Overcurrent Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Overdischarge Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

TOP TIPS

It can usually take between 4-5 cycles for the BMS to fully 'learn' the battery parameters. Make sure you charge your battery to the full 14.2V during the first few cycles.

BATTERY SPECIFICATIONS






Battery	Fogstar Drift 12V 105Ah	Fogstar Drift 12V 230Ah	Fogstar Drift 12V 280Ah	Fogstar Drift 12V 300Ah	Fogstar Drift 12V 460Ah	Fogstar Drift 12V 560Ah
Cell Type	Grade A EVE LF105	Grade A EVE LF230	Grade A EVE LF280k	Grade A EVE LF304	Grade A EVE LF230	Grade A EVE LF280K
Cell Configuration	4S1P	4S1P	4S1P	4S1P	4S2P	4S2P
Nominal Capacity	105Ah	230Ah	280Ah	300Ah	460Ah	560Ah
Energy	1280Wh	2944Wh	3584Wh	3840Wh	5888Wh	7168Wh
Cell Chemistry	Lithium Iron Phosphate	Lithium Iron Phosphate	Lithium Iron Phosphate	Lithium Iron Phosphate	Lithium Iron Phosphate	Lithium Iron Phosphate
Cell Nominal Voltage	3.2V *4 (12.8V)	3.2V *4 (12.8V)	3.2V *4 (12.8V)	3.2V *4 (12.8V)	3.2V *4 (12.8V)	3.2V *8 (12.8V)
Cycle Life	3500 Cycles @ 80% DOD	4000 Cycles @ 80% DOD	8000 Cycles @ 80% DOD	3500 Cycles @ 80% DOD	4000 Cycles @ 80% DOD	8000 Cycles @ 80% DOD
Maximum Discharge	100A	250A	250A	250A	250A	250A
Maximum Charge	100A	250A	250A	250A	250A	250A
Nominal Voltage	12.8V	12.8V	12.8V	12.8V	12.8V	12.8V
Discharge Cut Off Voltage	10V	10V	10V	10V	10V	10V
Discharge Temperature Range	-20C to 60C	-20C to 60C	-20C to 60C	-20C to 60C	-20C to 60C	-20C to 60C
Charge Temperature Range	-20C to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)	-20C to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)
Storage	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC
Measurements (LxWxH in mm)	260mm x 168mm x 209mm	380mm x 190mm x 245mm	380mm x 190mm x 245mm	380mm x 190mm x 245mm	522mm x 240mm x 218mm	640mm x 245mm x 220mm
Weight	10KG	25kg	26kg	26kg	38kg	50KG
Housing Material	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic

			
Fogstar Drift 12V 608Ah	Fogstar Drift 12V 628Ah	Fogstar Drift 24V 280	Seat Base 12V 230Ah
Grade A EVE LF304	EVE MB31 314Ah	Grade A EVE LF280K	Grade A EVE LF230
4S2P	4S2P	8S1P	4S1P
608Ah	628Ah	280Ah	230Ah
7782Wh	8038Wh	7168Wh	2944Wh
Lithium Iron Phosphate	Lithium Iron Phosphate	Lithium Iron Phosphate	Lithium Iron Phosphate
3.2V *8 (12.8V)	3.2V *8 (12.8V)	3.2V *8 (25.6V)	3.2V *4 (12.8V)
3500 Cycles @ 80% DOD	8000 Cycles @ 80% DOD	8000 Cycles @ 80% DOD	4000 Cycles @ 80% DOD
250A	250A	200A	200A
250A	250A	200A	200A
12.8V	12.8V	25.6V	12.8V
10V	10V	20V	10V
-20C to 60C	-20C to 60C	-20C to 60C	-20C to 60C
-20 to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)	-20 to 60C (Heater Enabled)
10C to 35C @ 50% SOC	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC	10C to 35C @ 50% SOC
640mm x 245mm x 220mm	640mm x 245mm x 220mm	640mm x 245mm x 220mm	275mm x 187.5mm x 315mm
48KG	49KG	50KG	25kg
ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic

Battery Performance

Because Lithium Iron Phosphate batteries utilise a chemical reaction, battery performance will deteriorate over time even if stored for long periods without regular use.

If the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges, the life expectancy of the battery may be shortened, or the device in which the battery is used may be damaged by electrolyte leakage.

Battery Series and Parallel Mode

12V batteries can be connected simultaneously with a maximum of four (4) in series OR (4) in parallel. 24V Drifts can be connected with a maximum two (2) in series or four (4) in parallel.

Storing Your Battery

We strongly suggest your batteries are stored at room temperature, charged to about 30% to 50% of capacity.
We recommend that batteries be charged once every three months to prevent over discharge.

Our JBD BMS contain a wide range of protective features, ensuring optimal charging and battery health throughout the lifecycle of the cells.

Low Temperature Charging
The battery has detected that you are trying to charge whilst the temperature is around 0°C. This warning is normal, and it is used to trigger the heating pads in your battery. Incoming charge current will heat the pads first, and then the battery will allow charge through when it reaches 5°C.

High Temperature Discharging (OTD)
The battery has detected that you are trying to discharge whilst the internal temperature is above 75°C. Discharging has been disabled until the temperature falls within an acceptable range.

Low Temperature Discharging (UTD)
The battery has detected that you are trying to discharge whilst the temperature is below -20°C. Discharging has been disabled.

Pack Overvoltage (POV)
The total voltage of the pack has exceeded the maximum voltage. The BMS has turned off charging so that you do not overcharge the battery. Please discharge the battery.

Pack Undervoltage (PUV)
The total voltage of the pack has reached the minimum allowed voltage. Discharge has been disabled. Please charge the battery.

Short Circuit (SCD)
A short circuit has been detected, and the BMS has protected you, and your battery. Please stop using the battery, and check your system thoroughly for anywhere a short circuit could have occurred. This could also be caused by an extremely large inverter charging its capacitors. If this is the case, disconnect the load and use a pre-charge resistor.

Overcurrent Charging (OCC)
You have exceeded the 200A charging limit. The BMS has disabled charging.

High Temperature Charging (OTC)
The battery has detected that you are trying to charge whilst the internal temperature is above 55°C. Charging has been disabled until the temperature falls within an acceptable range.

Overcurrent Discharging (OCD)
You have exceeded the 200A discharging limit. The BMS has disabled discharging.

Cell Undervoltage (CUV)
A cell has hit the minimum voltage and the BMS has disabled discharging to protect the cell. Please charge the battery.

Connecting to the App

The Fogstar Drift app works on all models of Android and iPhone and is available to download from the App Store and Google Play for free. We've made our app as simple as possible to use. It only contains the information you really need. The user-friendly interface is perfect for even the most hardened technophobes, and the simple navigation is deliberately designed to make for a simplistic user experience.

Android
Download the App Now

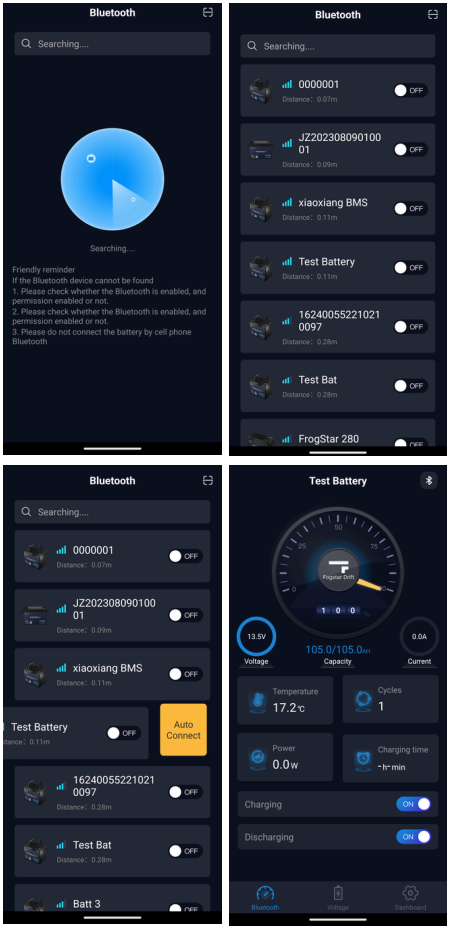
iOS
Download the App Now

Step 1 - Download the App

Scan the QR codes to find the Fogstar Drift App on both Android and iOS.

Step 2 - Connect to your battery

1. Ensure your phone's Bluetooth and Location services are switched on
2. Open the Fogstar Drift App to search via Bluetooth
3. Locate your Fogstar Drift Battery on the Menu
4. Tap the dot to turn the Bluetooth on
5. You can also slide left on your battery to 'Auto Connect' (via the orange tab)
6. Wait a few moments for your phone and battery to establish a connection.
7. You may need to try these steps a few times to 'wake' the BMS.



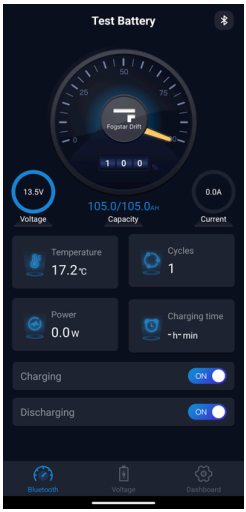
Step 3 - Charging and Discharging Buttons

On the main dashboard of the App, you'll find the 'Charging' and 'Discharging' buttons.

Toggling these buttons to 'OFF' will turn the charge and discharge functions of the battery OFF.

Setting the Discharge button to 'OFF' will effectively put the battery into storage mode.

The Main Battery Screen



When you open the Drift App, you'll land on the main screen allowing you to view the Battery Dashboard, this will show you;

- State of Charge (the % dial)
- Charging and discharging switch
- Battery voltage
- Battery current
- Power in and out
- Temperature detection
- Cycles.

At the bottom of the App, you'll find the Voltage and Dashboard tabs. You can use the information in these tabs to understand more in-depth data about your battery.

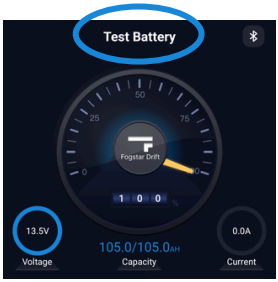
Battery Settings

Under Dashboard > Advanced Settings there is a hidden area that contains your BMS settings. These battery parameters are locked by a password. We lock down the battery parameters to ensure your BMS settings remain protected and unable to be unchanged.

Changing the BMS parameters can permanently damage your unit. The set-up and configuration of these technical specifications are set by JBD BMS and Fogstar, adapting them could result in a significant cell imbalance or errors in the BMS.

Should you wish to reconfigure the BMS for a hybrid set-up, please contact a member of our team at customerservice@fogstar.co.uk to obtain the password, discuss your set-up prior to altering any of the BMS vitals.

Changing your battery name



It's really simple to alter the name of your battery.

1. Open your Battery Dashboard
2. Click the name at the top of the screen
3. Enter your new battery name
4. Once the 'success' notice flags, wait 15 seconds for the change to register.

We stand behind our Fogstar Drift lithium leisure batteries with a 10-year warranty - because we're confident they'll go the distance. But, as with all warranties, there are conditions you need to know.

What's Covered

This warranty covers defects in materials and workmanship that prevent your battery from performing as specified. That includes (but isn't limited to):

- BMS failure
- Cell failure
- Faulty temperature sensors
- Failure to charge or discharge properly
- Internal corrosion

What's Not Covered

Our warranty won't apply if damage is caused by:

- Improper installation or use
- Abuse, neglect, or accidents
- Gross negligence
- Modifications or alterations
- Normal wear and tear
- Natural disasters or "acts of God"
- Using an incompatible charging system
- Significant over-discharge requiring recovery (these can be repaired via our collection, fix, and return service at a flat £60 charge to cover costs)

Registering your Warranty

You can register your 10 year warranty as soon as you receive your battery. Scan the QR code to get started, or visit our Fogstar Drift website.

Reporting an Issue

Should you encounter a problem with your Drift, please send screenshots of your App pages, including the %SOC page, cells voltages, and protect history along with a description of your issue to customerservice@fogstar.co.uk. If your issue is urgent and you need to talk with a member of the tech team immediately, please call 01527 757980.

Can I series or parallel connect my batteries?

12V Drift batteries can be connected simultaneously with a maximum of four (4) in series OR (4) in parallel. 24V Drifts can be connected with a maximum two (2) in series or four (4) in parallel.

What size terminals/posts are the Fogstar Drift Leisure batteries?

The Fogstar Drift terminals are M8 in size. All of our Drift Leisure batteries come with bolts and terminal posts as standard.

What are the charging parameters of the Drift batteries?

12V = 14.2V Bulk/13.6V Float
24V = 28.4V Bulk/27.4V Float
48V = 57.6V Bulk/54.4V Float

Why does my Drift only show temperatures on three of the cells?

It is perfectly normal for cell 4 not to be showing a temperature. Temp 1 is the BMS temperature, Temp 2 is 'battery bank 1' temperature, and Temp 3 is 'battery bank 2' temperature.

What charger shall I use with my Drift?

The recommended charging current for a lithium leisure battery is typically around 20-30% of the battery's capacity. For example, if the battery has a capacity of 200Ah, the recommended charging current would be around 40 amps. It's important to check the specifications of your particular battery to ensure you are using the correct charging current.

Can I lay my Drift on it's side?

Yes, your Drift battery can be lay on it's side, in fact, you can lie a Drift battery in any configuration you wish. All we recommend is that you keep the terminals clear and clean.

How does the heater work in the batteries?

The Drift heating pads are only activated when the battery is being charged, and are only powered by the incoming charge current, not the battery itself. If you put the battery on charge, it will heat the battery first, and then allow current through to the battery when the temperature is safe enough to do so.

The heating pads require a minimal 4 Amp current to start heating the pads. The wattage of the heating pads is 36W, and the internal resistance is 3.8-4.2Ω

What is the recommended Torque for the terminal bolts?

For the terminal bolts, a torque of 6Nm is recommended, but should be kept within a range of 4Nm (minimum) to 8Nm (maximum).

What settings do I use on my charger?

Most chargers have profiles for various different battery parameters (Lead Acid/AGM), you should choose one that fits as close as possible to 14.2V-14.4V bulk and 13.5V-13.6V float.

An acceptable charging range for the Drift batteries is 14.2V-14.4V bulk and 13.3-13.6V float.
For Victron systems, please use a 14.2V bulk and 13.6V float.

How can I store my battery when not in use?

1. Charge the battery to 40-50% of its capacity: This will ensure that the battery has enough power to maintain its internal protection circuits.
2. Store the battery in a cool, dry place: Avoid storing the battery in direct sunlight, extreme temperatures, or humid environments. An ideal storage temperature range is between 5°C and 15°C (41°F and 59°F).
3. Disconnect the battery from any charging or load sources: This will prevent accidental discharge or damage to the battery.
4. Clean the battery terminals: Wipe down the terminals with a clean, dry cloth to remove any dirt or corrosion. Use the bungs provided with the battery to prevent any damage to the terminals.
5. Check the battery periodically: Every 3-6 months, check the battery's voltage to ensure it remains within the recommended range. If the voltage drops below 12V, it's advisable to recharge the battery to prevent damage.
6. For extended storage (over 6 months): If you plan to store the battery for an extended period, it's recommended to charge it to 50% of its capacity every 3 months to maintain its health.

I think my battery is over discharged, what do I do?

Your battery is fitted with a Battery Management System (BMS) that automatically activates over-discharge protection at 11.6V. This prevents damage from being discharged too deeply during normal use.

However, it's important to understand the limits of the BMS. Even in deep sleep mode, the BMS itself needs a small amount of power to keep essential functions alive. On top of this, lithium cells have a self-consumption rate of around 1-2% of charge per month, regardless of use. The BMS cannot stop this natural self-discharge, and it is therefore impossible for it to protect the battery from over-discharge indefinitely if the battery is left in storage without recharging.

If the battery's voltage falls to 7V, the Bluetooth functionality will shut down and the battery will stop communicating. At this stage, the battery must be returned to Fogstar for revival.

⚠ **Important: Allowing your battery to reach 7V is considered improper maintenance and is not covered under warranty. Any revival work required in these circumstances will be chargeable.**

Had a great experience with Fogstar Drift?

We would love to hear your feedback on our Drift product. If you have any photos, videos or clips of our product in action - we'd love to see them. Use the hashtag #fogstardrift to engage with us.

Follow us on Instagram (@FogstarDrift), drop us a Google review, or join our 'Fogstar Drift - Owners Group' on Facebook.

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