



**Ready to go 12 V energy storage battery with intergrated Battery Management System. It's a clean, fast, and simple upgrade from lead-acid battery to get you going.**

## Product description

The Flux Power Integrated Battery Module is the fast-track to a light weight lithium energy solution. Complete self contained modules provide all the technology required to transition to a higher energy storage solution. Whether designing a new system or upgrading from lead-acid, the Flux battery module is the fastest "time to market" solution.

Flux Power's LiFePO4 battery modules offer greater energy density and quality at an affordable price. The battery modules are designed using 3.2 V LiFePO4 cells. Each 12 V module's integrated Battery Management System (BMS) monitors and balances each cell, which extends the usable capacity and life of the battery. Flux's BMS uniquely records and reports potential system faults due to over-charge/discharge preventing catastrophic system failure.

The BMS records each cell's charge and discharge cycle over the battery's lifetime. Flux Power's proprietary data recording capability allows OEMs to offer extended battery warranties. In addition, every battery pack from Flux has convenient hold down anchors and lifting pins to make for easy installation. Every module includes a built-in, easy to read, color display that shows vital information such as voltage and temperature.

## Features & Benefits

### Data monitoring

- Active display
- Cell voltages
- Battery and cell temperature
- Error message(s) and reporting
- State of charge (when used in conjunction with Flux CAN current sensor)
- CAN bus communication
- Compatibility with other CAN devices

### Safety

- Non-conductive enclosure
- Safe lithium chemistry LiFePO4
- Lithium cell restraining enclosure

### Size and form factor

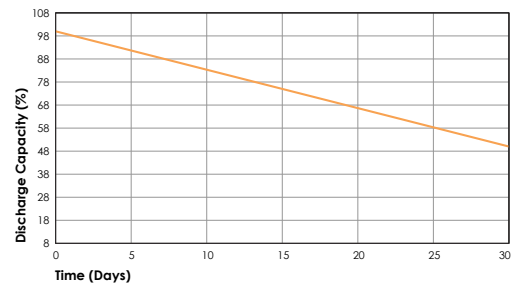
- Compact and stackable
- Modular design
- Factory configurable terminal
- Securable inserts
- Light weight
- Integrated BMS

### Applications

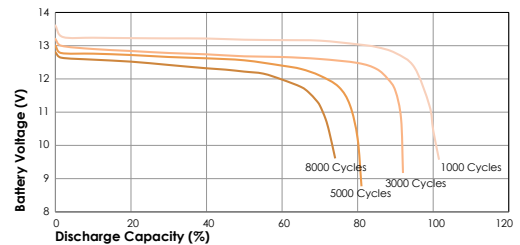
- Electric vehicle (EV)
- Industrial motive
- Military
- Utility energy storage
- Off grid energy storage
- Solar storage
- Replacement of lead acid

## Performance Charts

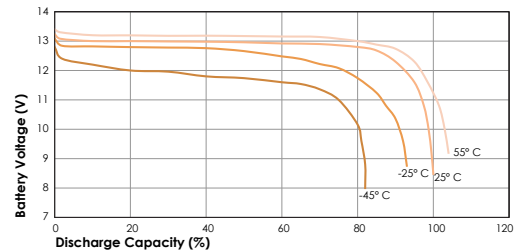
12 V Battery Pack Self Discharge (25° C)



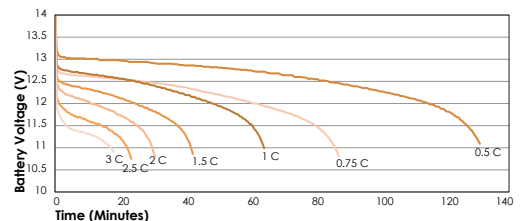
12 V Expected Cycle Life with respect to DOD (0.5 C Charge/Discharge @ 25° C)



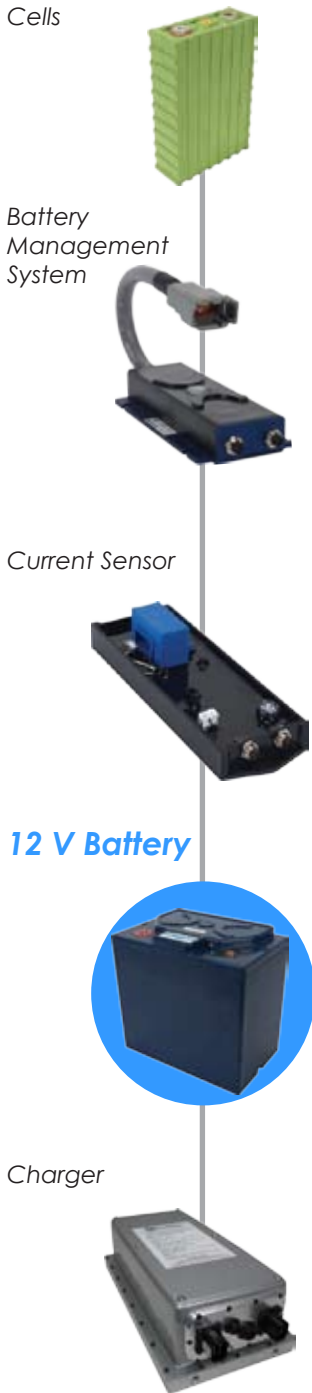
12 V Discharge Curve Under Different Temperature Conditions (0.5 C)



12 V LiFePO4 Battery Discharge Curves (25° C)



## System Diagram



## Specifications

Operational Metrics	FLX2K12 (160 Ah)	FLX2.3K12 (180 Ah)
Nominal Voltage (V)	12.8	12.8
Nominal Capacity @ 25° C (Ah)	160	180
Specific Energy (Wh/kg)	74.2	81.85
Energy Density (Wh/L)	103.4	116.35
<b>Discharge Cycle @ 25° C</b>		
Max Continuous Current (A)	480	540
Max 10 Second Pulse (A)	800	900
Recommended (A)	160	180
Cut-off Voltage (V)	10.0	10.0
<b>Charge Cycle @ 25° C</b>		
Charge Voltage (V)	14.5	14.5
Float (V)	13.6	13.6
Max Continuous Current (A)	160	180
Recommended	≤80	≤90
Charge Time	1 hr	1 hr
<b>Cycle Life @ 25° C</b>		
80% DOD	≥3000 Cycles	≥3000 Cycles
70% DOD	≥5000 Cycles	≥5000 Cycles
Self-Discharge Rate (days)	≤64	≤66
<b>Operating Conditions</b>		
Operating Temperature (C)	-10° to 50°	-10° to 50°
Storage Temperature (C)	-45° to 85°	-45° to 85°
Operating Humidity (Non-Condensing)(%)	5 to 95	5 to 95
<b>Other</b>		
Water/Dust Resistance	IP 56	IP 56
Shipping Classification	UN 3480, Class 9, Part II	UN 3480, Class 9, Part II
Hold Downs	Yes	Yes
BMS CAN Enabled	Internal	Internal
Warranty	2 Years Limited	2 Years Limited

## Modules

### Metric Measurements

FLUX P/N	DESCRIPTION: (LiFePO4 Battery) LCD Optional	Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Volume (cm3)
FLX2K12	160 Ah Module	325.00	198.00	309.00	27.60	19,884
FLX2.3K12	180 Ah Module	325.00	198.00	309.00	28.00	19,884

### U.S. Standard

FLUX P/N	DESCRIPTION: (LiFePO4 Battery) LCD Optional	Length (in)	Width (in)	Height (in)	Weight (lbs)	Volume (in3)
FLX2K12	160 Ah Module	12 4/5	7 4/5	12 1/6	60.72	1,213
FLX2.3K12	180 Ah Module	12 4/5	7 4/5	12 1/6	61.60	1,213

## Related Accessories

- Charger – Air-Cooled
- Charger – Liquid-Cooled
- 3.2 V Battery Cell
- Current Sensor
- BMS (battery management system)
- HDU (hand-held diagnostic unit)
- Fuel Gauge Digital
- Fuel Gauge Analog

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