



Motive Lithium Batteries

Overview

With an enhanced feature set developed based on 10 years of experience with the ground breaking Lithium SAFEFlex product line, Lithium SAFEFlex Plus is a comprehensive battery solution designed to meet the cost, performance, efficiency and durability requirements of the rugged warehouse environment. It includes application-specific cell chemistry and intelligent battery management electronics. Lithium SAFEFlex battery systems are high cycle life, low maintenance solutions for industrial vehicles with a broad specification range to fulfill the most demanding requirements. The drop in replacement batteries make upgrading from Lead Acid to Lithium simple. The batteries are sized to fit the standard material handling lead acid battery compartment, along with meeting the truck battery weight requirements

Safety & Protection

- Higher safety Lithium Iron Phosphate chemistry cells utilized in the battery systems
- Voltage, Current, and Temperatures are continuously monitored by Green Cubes Technology's custom Battery Management System (BMS) which controls the internal safety contactors and disconnect fuse

Energy Savings

- Recharge efficiency of 98% or higher helps save electricity and also reduce damaging effects of heating the batteries
- Improvements in runtime capacity efficiency of 10% or higher

Features

Improved Robustness, Reliability and Serviceability

- Modular design with individual cell monitoring
- Distributed BMS intelligence and datalogging
- Galvanic isolation of signal interfaces
- Advanced WiFi connectivity & Network Security Protocols
- Resilient FW Bootload and OTA FW Upgrades
- Charge ports or single point battery connection replicates today's lead acid without special truck or charger modifications

Flexible Design for Optimized Truck Applications

- Green Cubes custom Battery Management System (BMS) can be adjusted for different performance based upon the application
- High current trucks with accessories
- Extreme low temperature cold storage operations
- Fast Opportunity Charging without effecting cycle life
- Fully ballasted battery for heavy counterbalance trucks or non-ballasted batteries for light application

Benefits: Low Total Cost of Ownership

- High cycle life
- True fast charge/ Opportunity Charge
- Low Maintenance
- Drop in Lead Acid replacement
- No watering
- No equalization charging
- No battery watering or washing

Specifications

SAFEFlex Plus

Voltage class	48V	36V
Nominal Capacity	525 - 840 Ah 26 - 43 kWh	630 - 840 Ah 24 - 32 kWh
Nominal Voltage	51.2 V	38.4 V
Operating Voltage	49.6 - 56.8 V	37.2 - 42.6 V
Operating Temperature	-4°F - 122°F	
Charge Current continuous (max)	320 A	
Discharge Current continuous (max)	320 A	
Discharge Current peak	636A/30s, 1200A/7s	
Protections	Over and Under Voltage Protection	
	Over and Under Temperature Protection	
	Over Current Protection	
Communication	CANBus	
	USB	
	Ethernet	
	Wi-Fi	
Storage Temperature	-4°F - 113°F (One Month)	
	32°F - 95°F (One Year)	
Storage Humidity	≤ 70% RH	
Ingress Protection	IP 2X	
Agency Approvals	UL 2580 (pending)	
	ISO 13849	
	UN 38.3	
Battery Modes	Active, Sleep, Ship/Storage	
Chemistry	Lithium Iron Phosphate	

Specifications

Design Model Matrix

Core Models (*)	Voltage	Lithium Capacity	Weight	Dimension			Available Ballast Trays
				L	W	H	
FBP2-048-0501-2-0-S1-IJ-KK-2	51.2 V	525 Ah	1191 lb / 540 kg	37.24 in	27.55 in	21.87 in	38.50 x 32.75 x 22.50
FBP2-048-0501-2-1-S1-IJ-KK-2			1590 lb / 721 kg	945.9 mm	699.8 mm	555.5 mm	39.00 x 38.50 x 22.50
FBP2-048-0601-2-0-S1-IJ-KK-2		630 Ah	1301 lb / 590 kg				39.00 x 39.25 x 22.50
FBP2-048-0601-2-1-S1-IJ-KK-2			1700 lb / 771 kg				45.00 x 45.00 x 22.50
FBP2-048-0701-2-0-S1-IJ-KK-2		735 Ah	1412 lb / 640 kg				
FBP2-048-0701-2-1-S1-IJ-KK-2			1811 lb / 821 kg				
FBP2-048-0801-2-0-S1-IJ-KK-2		840 Ah	1522 lb / 690 kg				
FBP2-048-0501-1-0-S1-IJ-KK-2			1061 lb / 481 kg		20.86 in		38.25 x 24.44 x 22.50
FBP2-048-0501-1-1-S1-IJ-KK-2		525 Ah	1460 lb / 662 kg		529.8 mm		38.00 x 30.32 x 22.50
FBP2-048-0601-1-0-S1-IJ-KK-2			1172 lb / 531 kg				38.50 x 32.75 x 22.50
FBP2-036-0601-4-0-S1-IJ-KK-2	38.4 V	630 Ah	933 lb / 423 kg	29.19 in	19.45 in	29.65 in	38.0 x 20.5 x 30.0
FBP2-036-0601-4-2-S1-IJ-KK-2			1008 lb / 457 kg	741.4 mm	494.0 mm	753.1 mm	38.0 x 21.0 x 30.0
FBP2-036-0601-4-3-S1-IJ-KK-2			1083 lb / 491 kg				
FBP2-036-0601-4-4-S1-IJ-KK-2			1158 lb / 525 kg				
FBP2-036-0701-4-0-S1-IJ-KK-2		735 Ah	1008 lb / 457 kg				
FBP2-036-0701-4-2-S1-IJ-KK-2			1083 lb / 491 kg				
FBP2-036-0701-4-3-S1-IJ-KK-2			1158 lb / 525 kg				
FBP2-036-0801-4-0-S1-IJ-KK-2			1083 lb / 491 kg				
FBP2-036-0801-4-2-S1-IJ-KK-2		840 Ah	1158 lb / 525 kg				
FBP2-036-0901-4-0-S1-IJ-KK-2			1158 lb / 525 kg				
FBP2-036-0601-6-0-S1-IJ-KK-2		630 Ah	736 lb / 334 kg		25.81 in	20.60 in	38.0 x 27.0 x 22.5
FBP2-036-0601-6-2-S1-IJ-KK-2			811 lb / 368 kg		655.6 mm	523.2 mm	35.0 x 27.0 x 22.5
FBP2-036-0601-6-3-S1-IJ-KK-2			886 lb / 402 kg				
FBP2-036-0701-6-0-S1-IJ-KK-2		735 Ah	736 lb / 334 kg				
FBP2-036-0701-6-2-S1-IJ-KK-2			811 lb / 368 kg				
FBP2-036-0801-6-0-S1-IJ-KK-2		840 Ah	736 lb / 334 kg				
FBP2-036-0501-3-0-S1-IJ-KK-2			736 lb / 334 kg		13.09 in	29.65 in	38.0 x 14.0 x 30.0
FBP2-036-0501-3-2-S1-IJ-KK-2		525 Ah	811 lb / 368 kg		332.5 mm	753.1 mm	38.0 x 15.5 x 30.0
FBP2-036-0601-3-0-S1-IJ-KK-2			811 lb / 368 kg				38.0 x 17.5 x 30.0
		525 Ah			19.45 in	20.60 in	38.0 x 21.0 x 22.5
					494.0 mm	523.2 mm	38.0 x 24.5 x 22.5
FBP2-036-0501-5-0-S1-IJ-KK-2			736 lb / 334 kg				38.0 x 27.0 x 22.5
FBP2-036-0501-5-2-S1-IJ-KK-2			811 lb / 368 kg				38.0 x 33.0 x 22.5
FBP2-036-0601-5-0-S1-IJ-KK-2		630 Ah	736 lb / 334 kg				35.0 x 27.0 x 22.5

ABOUT GREEN CUBES TECHNOLOGY

Green Cubes Technology develops and manufactures a complete portfolio of lithium power systems that enable our OEM and enterprise customers to transition from Lead Acid and Internal Combustion Engine (ICE) power to Lithium-ion battery power. We utilize proven hardware and software platforms to build the most reliable lithium battery systems in our industries. With over 300 employees across six countries, Green Cubes has been producing reliable, high performance and high quality products for over 30 years.

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