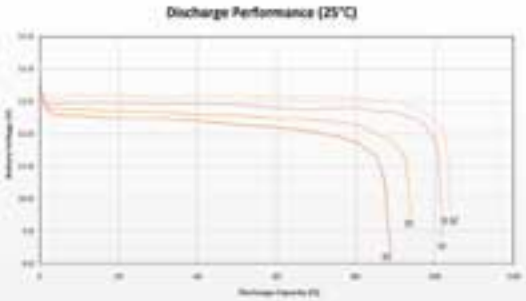
-2010 PRODUCT LINE-

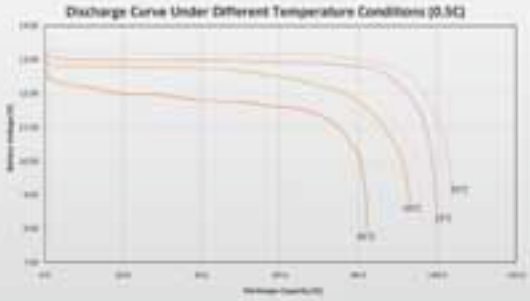
FLUX POWER

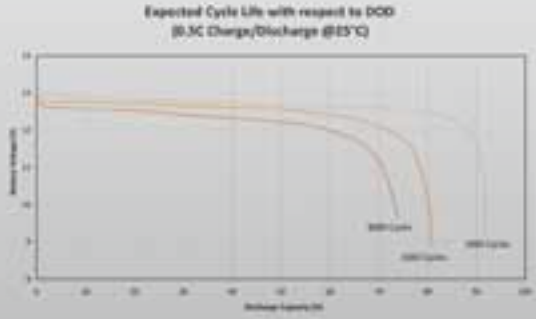
FLUX POWER 12V LiFe PO4 BATTERY

PRODUCT DESCRIPTION:

Flux Power's LiFe PO4 family of products offer great energy density, discharge ability, communicating, and life cycle tracking at an affordable price. Each 12v pack comes with an integrated Battery Management System that extends the life of each lithium cell inside by constantly managing its charge state versus other cells in the system. This system also records every charge and discharge cycle that each cell is put through over its lifetime. This unique tracking enables instant identification of any cell deficiencies and allows extended warranties on the complete system. In addition, every LiFe battery pack from Flux has convenient hold down anchors and lifting pins to make for easy installation of even the largest battery systems.







GENERAL SPECIFICATIONS:

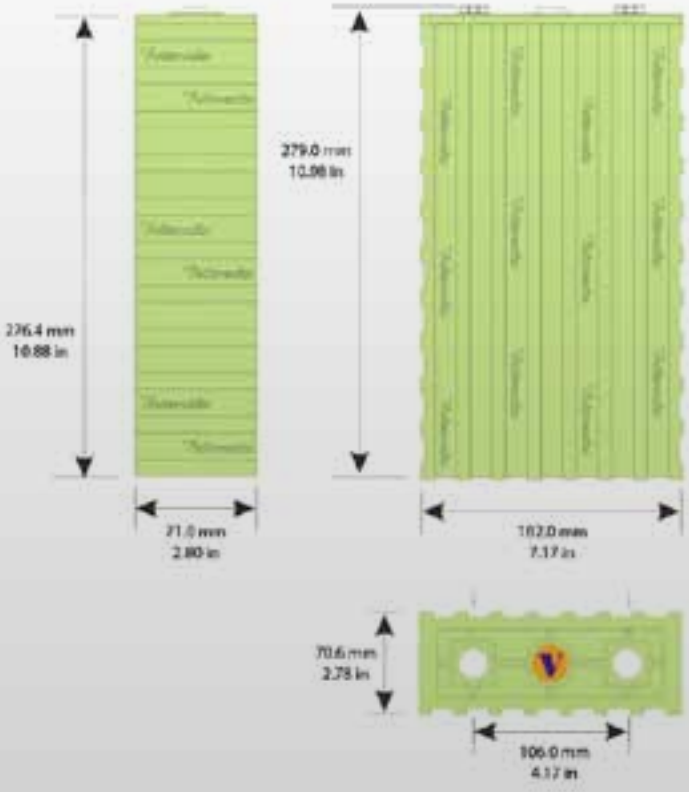
- Battery Type: Li Fe PO4
- Nominal Capacity(C/5): 160-200Ah
- Length: 324mm
- Height: 308mm
- Depth: 198mm
- Weight: 24kg
- Terminal Type: Female M8 x 1.25
- Hold Downs: Yes
- BMS: CAN Enabled
- Max Connected cells: 50
- Operating Temp: -10°C to 50°C
- Shock and Vibration: IEC61960, DIN VG96 924
- Water/Dust Resistance: IP56
- Warranty: 2 Years Limited

FLUX POWER

3.2V BATTERY CELL

Model# LFP160Aha

- Operating Voltage: 2.5-4.5
- Nominal Voltage: 3.2
- Nominal Capacity: 160Ah @ 48A
- Max Discharge Current (Continuous): 480A
- Max Discharge Current (Pulse): 800A
- Maximum Charge Current: 48A (fully charged 4 hrs)
- Operating Temp Charging: -18-75 degrees C
- Operating Temp Discharging: -30 -75 degrees C
- Cycle Life: (80%DOD): 2000
- Cycle Life: (70%DOD): 3000
- Energy Density: 230-380 Wh/L
- Specific Power: 600-1000 W/Kg
- Weight 5.6 kg; 12.4 lbs
- Dimensions: 277 x 182 x 71 mm
- Discharge Rate: << 3% monthly

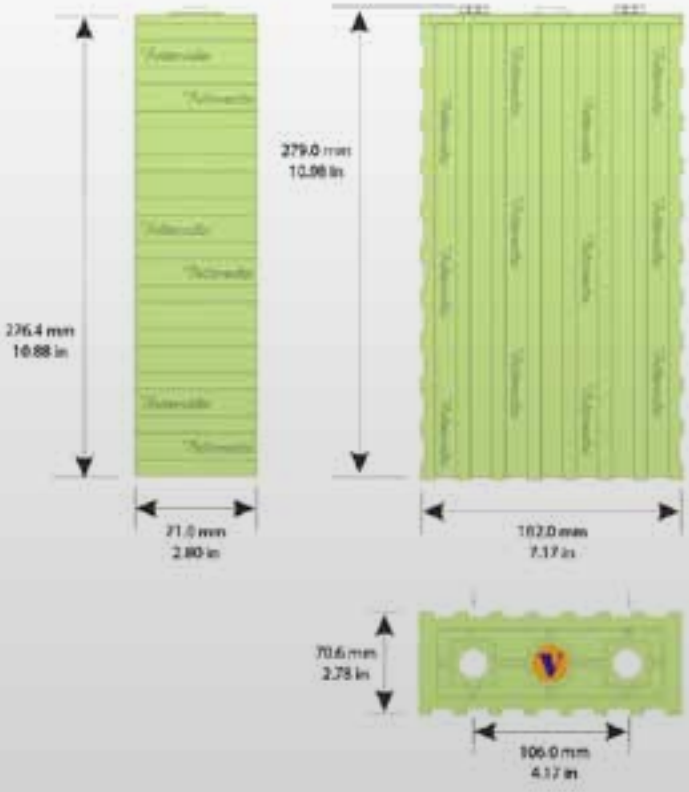


FLUX POWER

3.2V BATTERY CELL

Model# LFP200Aha

- Operating Voltage: 2.5-4.5
- Nominal Voltage: 3.2
- Nominal Capacity: 200Ah @ 48A
- Max Discharge Current (Continuous): 600A
- Max Discharge Current (Pulse): 1,000A
- Maximum Charge Current: 48A (fully charged 4 hrs)
- Operating Temp Charging: -18-75 degrees C
- Operating Temp Discharging: -30 -75 degrees C
- Cycle Life: (80%DOD): 2000
- Cycle Life: (70%DOD): 3000
- Energy Density: 276 - 456 Wh/L
- Specific Power: 720 - 1,200 W/Kg
- Weight 6.72 kg; 14.88 lbs
- Dimensions: 277 x 182 x 71 mm
- Discharge Rate: << 3% monthly



FLUX POWER

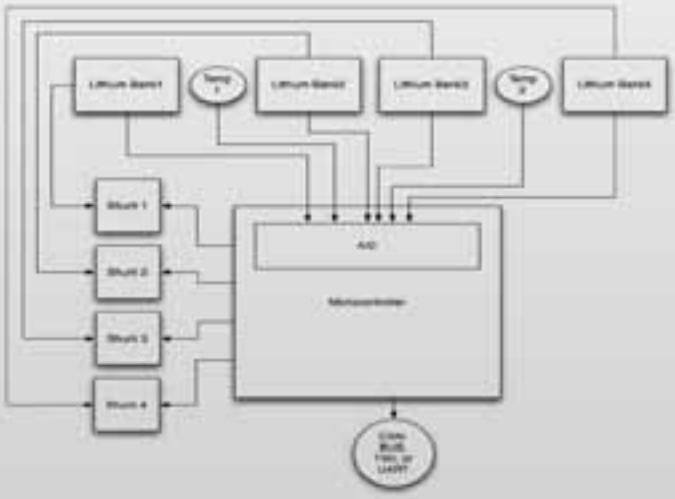
FLUX POWER BMS

PRODUCT DESCRIPTION:

The Battery Management System (BMS) from Flux Power provides two critical functions for battery systems. One is monitoring parameters and reporting errors to a head-end system. The head-end system can then determine the best action to take to prevent battery failure. The other function is battery balancing. The system will analyze the battery cells during charge and determine which batteries to bleed off current from to prevent overcharging and allow the other batteries to catch up. The battery balancing is done by shunting current off via heat. This method of balancing is best for harsh environments and very large battery strings. It prevents the complexity and problems associated with current shuttling.

GENERAL SPECIFICATIONS:

- Battery voltage reporting
- Battery temperature reporting
- Full system battery balancing
- Each board is autonomous in balancing & can operate independently of other boards
- Up to 4 cell battery balancing per BMS module
- Up to 256 boards can be connected in one communication string
- Isolated CAN-BUS communication channel
- Optically isolated output for optional error shutoff without headend



ELECTRICAL SPECIFICATION:

- Operating Voltage: 3.2 - 18V
- Operating Current: 100mA with shunts off
- Shunt Current: 1A per cellVoltage Resolution: 0.01V

BMS MODULE DIMENSIONS:

- Length: 38mm (5.2”)
- Width: 132.2mm (1.5”)
- Height: 20mm (0.8”)

FLUX POWER HDU

(HANDHELD DIAGNOSTIC UNIT)

PRODUCT DESCRIPTION:

The Flux Power Handheld Diagnostic Unit (HDU) is a handheld instrument that displays critical system information allowing the user to access necessary information and monitor overall system health. The HDU is also capable of programming system parameters, features and offsets. This device can be quite useful in the field for system programming or troubleshooting as well as day to day monitoring.

DIAGNOSTIC DISPLAY SPECIFICATIONS:

- Pack Voltage
- Battery Voltage
- Individual Cell Voltage
- Individual Cell Temperature
- Highest Cell Voltage in a Pack
- Lowest Cell Voltage in a Pack
- Highest Cell Temperature in a Pack
- State of Charge
- State of Health
- Error Conditions

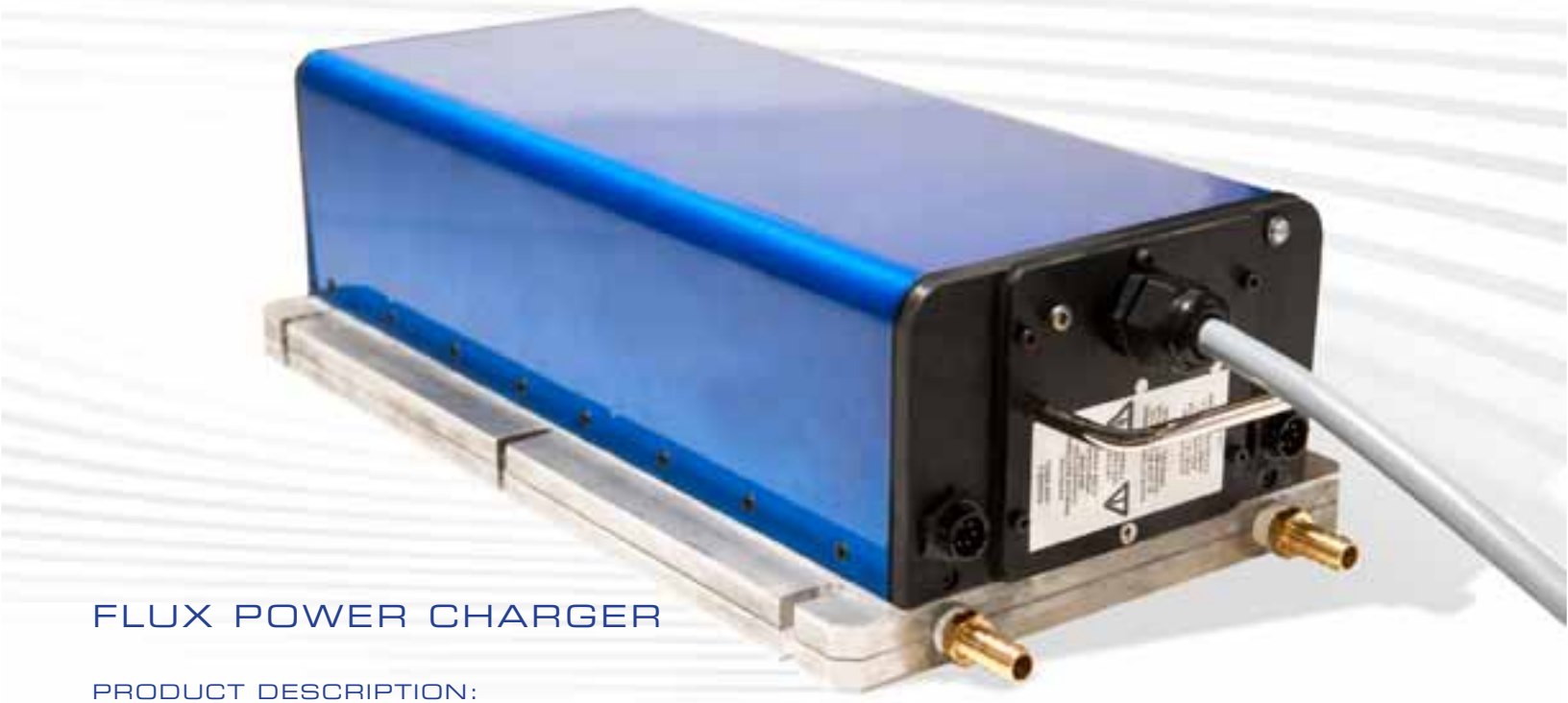
PROGRAMMING SPECIFICATIONS::

- Number of Batteries in a System
- Temperature and Voltage Calibration Offsets
- Individual Cell Shunt Level
- Individual Cell Shunt Current
- High/Low Alarm Settings

DIMENSIONS SPECIFICATIONS:

- Length: 5” (127mm)
- Width: 7.5” (190mm)
- Height: 1.75”(44mm)
- Weight: 10.2oz

FLUX POWER



FLUX POWER CHARGER

PRODUCT DESCRIPTION:

The Flux Power 12 - 450v charger is a ruggedized and environmentally protected AC-DC charger that can be adapted to many applications.

GENERAL SPECIFICATIONS:

- Constant Power Output Charger with constant voltage, constant current and constant power modes
- Configurable Dual Range Output Modules available, 125 - 225VDC or 225 - 450VDC
- Fully isolated output
- Current controlled universal power factor corrected (PFC) input
- Microprocessor controlled with dual CAN bus interface
- Built in clock for programmable charging times
- Programmable charging profiles for multiple battery chemistries
- Multiple units can be paralleled for higher output levels 6kW, 9kW, 12kW and up
- Two chargers can be stacked in series for higher voltage and charging power
- Air cooled with thermostatically controlled fan. Water cooled versions also available
- LED indicator for charging status
- Modular Construction
- Multiple Mounting options

INPUT SPECIFICATIONS:

- VOLTAGE Universal AC Input (90□264 VAC)
- FREQUENCY 47 - 63Hz
- INRUSH CURRENT < 40A @ 230 VAC, 60 Hz, Full Load
- CURRENT 12A / 16A Depending on line voltage
- PROTECTION Fuse 20A
- LEAKAGE < 3mA @ 230 VAC, 60 Hz
- HOLD-UP 20 ms > 85 VAC
- EFFICIENCY 85 - 90% typical depending on line voltage
- HARMONICS EN61000 3 - 2

OUTPUT SPECIFICATIONS

- OUTPUT POWER 1200W (120VAC 15A service) 3000W (240VAC 30A service)
- ADJUSTABLE RANGE 10 - 450 VDC (reduced power below 125 VDC)
- TEMP REGULATION 0.00017° C / W @ 60° C Ambient Air
- RIPPLE < 1% below 20 MHz
- SETPOINT ACCURACY - 2% overall
- OVER CURRENT 105% Self Limiting
- OVER VOLTAGE 110% Self Limiting